



# XXXIII Annual Congress of ISVS and International Symposium

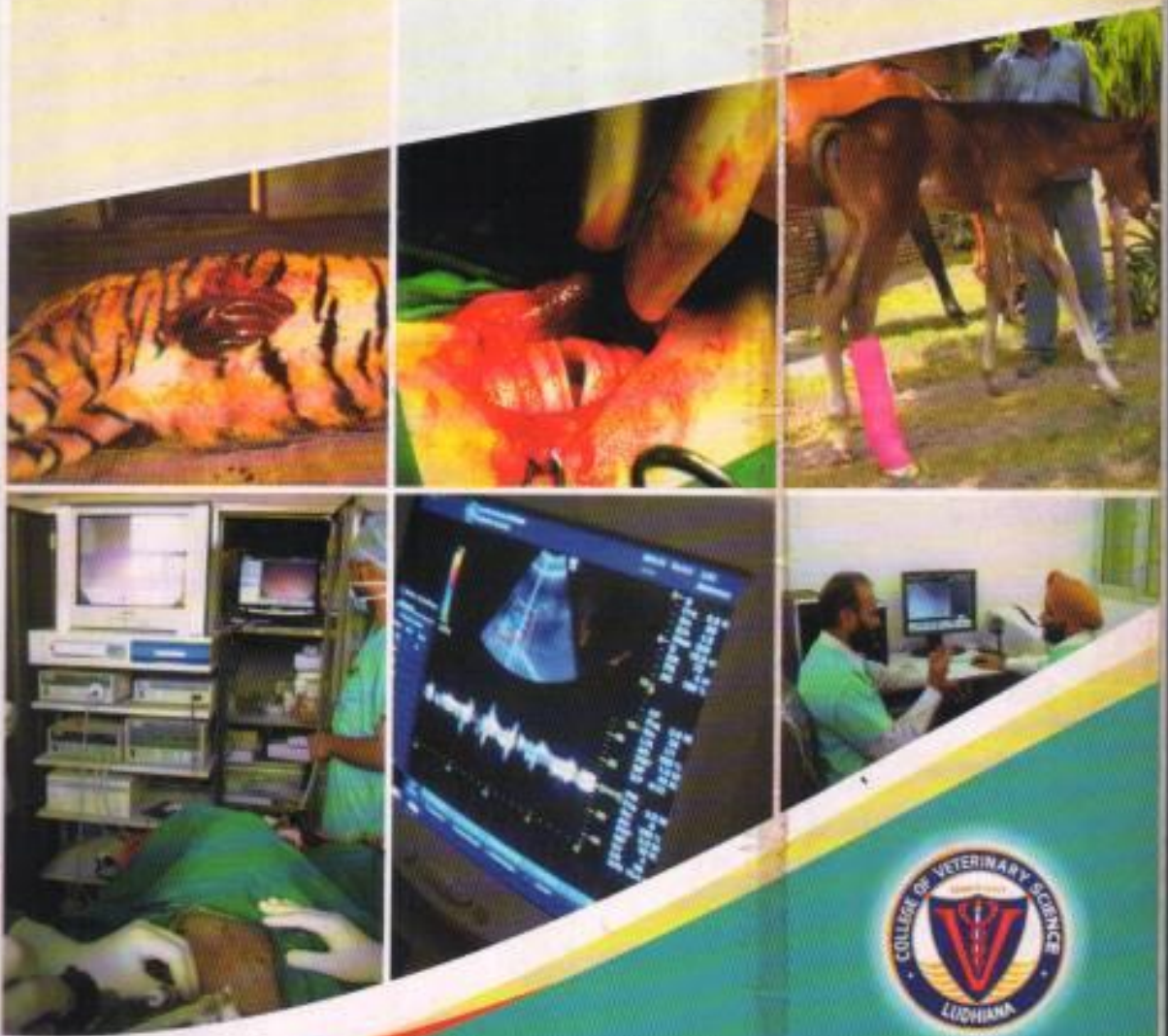
on

**CURRENT TRENDS IN DIAGNOSTIC IMAGING AND MANAGEMENT  
OF SURGICAL AFFECTIONS IN DAIRY ANIMALS**

November 11 to 13  
2009



**ABSTRACTS**



Department of Veterinary Surgery & Radiology  
Centre of Advanced Studies  
College of Veterinary Science  
Guru Angad Dev Veterinary and Animal Sciences University,  
Ludhiana- 141004, Punjab (India)



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# PROGRAMME

Time	Session	Venue	Chairman	Co-chairman	Rapporteur
<b>Day 1</b>					
<b>11. 11. 2009</b>					
09:00 - 10:30 AM	Theme Session	Le-Baron Hall	Dr. P. Kulkarni	Dr. Dipak De	Dr. N. Rajendran
10:30 - 12:30 PM	Inauguration	Le-Baron Hall			
12:30 - 01:00 PM	Inaugural Tea	Le-Baron Hall			
01:00 - 01:45 PM	RPS Tyagi Oration Award	Le-Baron Hall	Dr. R.N. Kohli	Dr. Amarpal	
01:45 - 02:45 PM	Lunch	Paris Hall			
02:45 - 05:00 PM	Ruminant Surgery Session	Le-Baron Hall	Dr. S.N. Sharma	Dr. D. Makhdoomi	Dr. R.V. Suresh Kumar
05:00 - 05:10 PM	Tea Break	Paris Hall			
05:40 - 06:00 PM	Equine Surgery Session	Le-Baron Hall	Dr. S.M. Jayadevappa	Dr. M.S. Bhadwal	Dr. S.P. Tyagi
07:00 PM	Snacks & Dinner	Le-Baron Hall			
<b>Day 2</b>					
<b>12. 11. 2009</b>					
09:00 AM - 01:00 PM	Small Animal Surgery Session	Le-Baron Hall	Dr. S. Thilagar	Dr. N.S. Jadon	Dr. C.B. Devanand
09:00 AM - 01:00 PM	Radiology and Imaging Technique Session	New Hall	Dr. I.S. Chandana	Dr. Rishi Tayal	Dr. B.V. Shivaprakash
09:00 AM - 11:00 AM	Small Animal Poster Session Part I (SAP-1 to 61)	Lawns ( <i>Posters SAP 1-61 should be displayed before 09:00 AM</i> )			
11:00 AM - 01:00 PM	Small Animal Poster Session Part II (SAP-62 to 122)	Lawns ( <i>Posters SAP 62-122 should be displayed during tea time</i> )			
11:00 AM - 11:10 AM	Tea Break	Paris Hall			
01:00 PM - 02:00 PM	Lunch Break	Paris Hall			
02:00 PM - 05:00 PM	Orthopaedic Session	Le-Baron Hall	Dr. V.K. Sobti	Dr. K.B.P. Raghavender	Dr. D.U. Lokhande
02:00 PM - 05:00 PM	Avian Zoo & Wild Animal Surgery Session	New Hall	Dr. M.S. Vasanth	Dr. D.B. Patil	Dr. A.M. Pawde
02:00 PM - 04:00 PM	Large Animal Poster Session	Lawns ( <i>Posters should be displayed during lunch time</i> )			
04:00 PM - 04:10 PM	Tea Break	Paris Hall			
7:00 PM	Snacks & Dinner	Waddi Havell (Vehra Shagnan Da)			
<b>Day 3</b>					
<b>13. 11. 2009</b>					
09:00 AM - 12:00 Noon	Anaesthesiology Session	Le-Baron Hall	Dr. A.C. Varshney	Dr. B. Ramesh Kumar	Dr. Indramani Nath
11:00 AM - 11:10 AM	Tea Break	Paris Hall			
12:00 Noon - 01:00 PM	Award Session	Le-Baron Hall	Dr. S.M. Usturge	Dr. N.H. Kelawala	Dr. N. Dhanalakshmi
01:00 PM - 02:00 PM	Lunch Break	Paris Hall			
02:00 - 04:00 PM	Interaction with field vets & Plenary session	Le-Baron Hall			
04:00 PM	Tea	Paris Hall			
07:30 PM	Dinner	Paris Hall			

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# PREFACE

I welcome the participating delegates from India and abroad for XXXIII Annual Congress of Indian Society for Veterinary Surgery and International Symposium on "Current Trends in Diagnostic Imaging and Management of Surgical Affections in Dairy Animals" at Department of Surgery and Radiology, College of Veterinary Science, Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana, Punjab, India from 11 to 13 November, 2009.



The theme of the conference and international symposium "Current Trends in Diagnostic Imaging and Management of Surgical Affections in Dairy Animals" is very important and appropriate as concerned to livestock and dairying under Indian conditions. Recently, emergence of non-invasive and safer diagnostic imaging modalities has helped to diagnose many surgical and medical conditions in large animals for early diagnosis and treatment.

The subject of Veterinary Surgery and Radiology is very vast and encompasses veterinary anaesthesia, radiology and surgery of various farm, wild and pet animals. From time to time, it is very important to collect, update and discuss scientific and clinical information available on these aspects to address current problems faced by field veterinarians and clinicians. The topics of the abstracts included in the conference have special insight into the current problems encountered at institutional and field levels. I am hopeful it will definitely help in efficient diagnosis and surgical treatment of various conditions encountered in livestock. Although the present collection is by no means complete but every effort has been made to make it a useful compilation for the research workers and practicing veterinarians.

I take the opportunity to extend my sincere thanks to various organizations like Department of Science and Technology, Indian Council of Medical Research and Council of Scientific and Industrial Research for sponsoring the ISVS annual congress and International symposium. I am thankful to Prof. (Dr.) RCM Kaza, from Maulana Azad Medical College, New Delhi and Chairperson, Foresee India who has readily agreed to be the Chief Guest on this annual event of ISVS. I am greatly indebted to Dr. V.K Taneja, Vice Chancellor, GADVASU and Patron of ISVS congress and international Symposium for his time to time guidance, suggestions and encouragement. I acknowledge the valuable guidance and support extended by Dr. Simrat Sagar Singh, Dean, College of Veterinary Science and Convener of the symposium. Thanks are also due to various surgical equipment and pharmaceutical companies for their financial support to make this event a success. All individuals and Organizations who have extended their direct or indirect help for successful conduct of this conference are also acknowledged hereby.

At last, but not the least, the untiring efforts put in by the faculty members and editorial committee for compiling the abstracts and souvenir are gratefully acknowledged.

I am sure, you will find this abstract book useful and knowledge worthy.

November 11, 2009

A handwritten signature in black ink, appearing to read "N. Saini", with a long horizontal flourish extending to the right.

(Narinder Singh Saini)  
Organizing Secretary

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**XXXIII Annual Congress of ISVS  
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2009**

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**RUMINANT SURGERY  
SESSION**

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Department of Veterinary Surgery & Radiology  
Centre of Advanced Studies  
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- R-1** **Pervaginam Ovariohysterectomy as Salvage Surgical Management of Chronic Recurrent Genital Prolapse in Twelve Cows**  
*H. K. Mahida, P. H. Tank, M. A. Dhami, K. B. Vala, A. M. Patel and M. G. Maradia*  
 COVS, Anand Agricultural University, Anand, Gujarat
- Twelve cows suffering from chronic recurrent genital prolapse which were not responding to medical as well as other clinical management had been treated surgically by pervaginam ovariohysterectomy as salvage measure. All the cows had swollen and thickened hanging cervico-vaginal mass and had history of chronic recurrence at every oestrous in earlier phase which later became fibrous and irreducible. To alleviate the suffering and stress, the cows were subjected to ovariohysterectomy including resection of affected cervico-vaginal prolapsed mass through vaginal approach under mild xylazine sedation and epidural analgesia in lateral recumbancy. All the cows had uneventful recovery. The details of peri-operative management and the surgical techniques are described.
- R-2** **A Novel Technique of Providing Stability at the Site of Flexor Tendon Anastomosis in Bullocks**  
*A. S. Patil and B. R. Balappanavar*  
 College of Agriculture, University of Agricultural Sciences, Dharwad, Karnataka
- Healing following primary tendon repair is a slow process. So providing robust tendon anastomosis (tenorrhaphy) with minimal gap formation, minimal moment at the site of repair, limited adhesion and preservation of the tendon's intrinsic blood supply are essential for healing of the transected tendons. This study describes a novel technique for providing stability at the site of tendon anastomosis. Four bullocks presented to the hospital for surgical repair of the transactions of the both the superficial and deep digital flexor tendons of unilateral hind limb due to harrow blade were taken for the present study. Under Xylazine sedation and intravenous regional anesthesia with 2% Lignocaine HCl tenorrhaphy was performed by Bunnel sutures using Vicryl No- 2. Then tendon sheath was closed with continuous sutures using Vicryl No- 2. To neutralize the forces acting on the anastomosis placed interrupted Prolene No- 2 sutures transversely through the body of the tendons and around the two stiff wires placed adjacent to the skin on either side of the tendon. Then fascia and skin were closed routinely. Keeping the leg in slightly flexed position and using U-splints made of iron rods Plaster of Paris cast was applied and maintained for four weeks leaving a window for regular wound dressing. A course of Antibiotics, NSAIDs and Antihistamines were administered and all the animals recovered uneventfully indicating minimum moment at the site of anastomosis.
- R-3** **Transabdominal Diaphragmatic Hernial Repair Under Sedation and Local Anaesthesia in Buffalo**  
*J. B. Patel, J. N. Mistry, P. B. Patel, S. R. Chaudhary, D. N. Suthar, M. J. Z. Khan, J. S. Patel, P. B. Kankonkar, S. S. Nerurkar, P. R. Shrawankar, T. P. Patel and C. N. Patel*  
 COVS & AH, S. D. Agricultural University, Sardarkrushinagar, Gujarat
- Total twenty one clinical cases of diaphragmatic hernia (DH) in buffaloes were presented during August, 2008 to August, 2009 in the Teaching Veterinary Clinical Complex, Sardarkrushinagar with the history of recurrent tympany, scanty pasty faeces, drop in milk production and progressive loss of condition. All cases were tentatively diagnosed as diaphragmatic hernia. On first day, these animals were subjected to rumenotomy for the evacuation of ruminal contents, foreign bodies and to confirm the shape and site of hernial rings. Next day, animals (nine) were sedated with Xylazine @ 0.1 mg/kg body weight intramuscularly and then herniorrhaphy was performed under local infiltration with 2% Lignocaine hydrochloride by standard post-xiphoid trans-abdominal approach in supine position without positive pressure ventilation. Pre and post operative treatment was followed. Out of these, six cases were survived while, three buffaloes died during or after herniorrhaphy.
- R-4** **Use of Ferroskope and Blood Trypsin Inhibitor Spot Test for Diagnosis of Foreign Body Syndrome in Camels (*Camelus dromedarius*)**  
*D. N. Suthar, J. N. Mistry, B. N. Suthar, P. B. Patel, S. S. Chaudhary and K. B. Patel*  
 COVS & AH, S. D. Agricultural University, Sardarkrushinagar, Gujarat
- Total 485 Kuchchhi camels were examined at Teaching Veterinary Clinical Complex, clinical camp and door steps of owners with the history of partial or complete anorexia and suspended ruminal

motility. All the camels were examined with metal detector (Ferroskope) to find out presence of any metallic foreign body in fore stomach of camels. Out of 485, 30 camels showed presence of metallic foreign bodies at level of compartment of stomach I &/or II. Blood samples were collected from all these (30) camels and they were tested for trypsin inhibitor spot test (TIST). Amongst those, 14 camels showed positive reaction and 16 camels showed negative results for TIST. Early diagnosis of potential metallic foreign bodies is important in field condition and hence use of metal detector and TIST combined were studied and discussed in this paper.

R-5

#### **Impact of Socio-Economic Status in Transport of Surgical Cases to Veterinary Hospital**

*D M Makhdoomi, M. R., Fazille, N.A., Toofani, A. Hafiz, H. K. Bhattacharya and Mohmad Ari Khan*

SKUAST-K, Srinagar, J&K

The surgical cases irrespective of species are mostly disinclined to move. The owners are under strenuous economic stress while presenting the ailing animals for treatment to the Hospital. The different factors included non availability of door step treatment, long distance up to the treatment centre, lack of specialized treatment in rural areas. Different modes of transport used by the owners from different economic strata included, hand driven cart, scooter, motor cycle, Horse driven cart, load carriers and trucks etc. The paper documents reducing the cost of transportation of the surgical cases to the hospitals.

R-6

#### **Cannula Assisted Percutaneous Tube Cystotomy in Calves with Intact Bladder**

*M.R Fazili, B. A. Buchoo, H.K. Bhattacharyya and D. M. Makhdoomi*

Faculty of Veterinary Sciences and A.H SKUAST-K, Srinagar- J&K

Eight male crossbred jersey calves aged up to 4 months, suffering from obstructive urolithiasis presented before rupture of the urinary bladder were subjected to percutaneous tube cystotomy. Urinary bladder catheterization under local infiltration analgesia in left paralumbar fossa was accomplished through a small abdominal opening just sufficient to introduce index finger protected stainless steel cannula loaded with polyvinyl chloride catheter. The catheter was fixed to the skin with a stay suture. Abdominal opening closure required single suture placement. Six animals urinated normally within 12 days of the surgery. As compared to conventional tube cystotomy, surgical stress and chances of abdominal infection to the patient; duration and cost of surgery were all considerably reduced.

R-7

#### **Use of Direct Ophthalmoscope for the Diagnosis of Ocular Disorders in Indigenous Cattle at Field Conditions**

*F. Karlette Anne, P.R Patel and P.H Tank*

COVS & AH, Anand Agricultural University, Anand- Gujarat

An ophthalmic examination of 50 randomly selected cattle suffering from ocular disorders was performed under field conditions using a direct Ophthalmoscope. It was observed that the overall distribution of different types of ocular disorders was 14 cases (28%) with cataract, 11 cases (22%) with retinal degeneration, 8 cases (16%) with bilateral convergent strabismus (BCS) with exophthalmia, 5 cases (10%) with corneal pathology, 3 cases (6%) with ocular growths and 9 cases (18%) with other disorders like microphthalmia, iridocyclitis, membrana nictitans prolapse, iris coloboma, persistent papillary membranes, hyphema and hypopion. Most of the animals had an unknown etiology of the disorder, but were suggestive of being caused due to physical trauma by foreign bodies, while some cases were suspected to have a genetic origin. Most of the animals had an unclear history regarding duration of the illness, majority being chronic in nature (46 cases, 92%) ranging from an occurrence of 2-4 years duration. All cattle with bilateral ocular disorders under the present study failed the obstacle course test, denoting a state of complete loss of vision. All the cattle affected by retinal degeneration, cataract and BCS were observed to have been affected in both eyes. A low level of plasma  $\beta$ -Carotene was found in majority of the cattle under the study, suggestive of a low level of vitamin A implying a deficiency. The tissue from a kankrej bullock suspected to have ocular SSC was confirmed by a histopathological examination. Medical treatment of ocular disorders was successfully performed in certain cases (N=8); however, surgical intervention was required in cases (N=3) like cataract, ocular growths and membrane nictitans prolapse. No treatment was performed in the remaining cases because the prognosis was found to be poor.

**R-8 Studies on Fishnet Thread as Non Absorbable Suture for Bovine Laparotomies***Makkena Sreenu and N. V. V. Hari Krishna*

NTR- COVS, Sri Venkateswara Veterinary University, Gannavaram- A.P.

The cost of suture material (Vetafil) accounts for a major share in large animal surgeries. To introduce a least cost suture material fishnet thread was evaluated in large animals for its tensile strength, tissue reaction and healing properties as an alternative to some of the non absorbable suture materials for cutaneous suturing and laparotomies

**R-9 Omasal Impaction - Irrigation of Reticulo Omasal Orifice through Rumenotomy***Balappanavar B.R., Kalburgi S.D. and Patil Anil*

Department of Animal Husbandry and Veterinary Services, Gadag -Karnataka

Nine cases were presented to the various institutions with the complaint of anorexia and distended abdomen. The animals were not responding to the treated for Bloat/ Tympany. Three animals died on 7-8 days of onset of symptoms. All the rest of animals were referred to the veterinary hospital during the period of study. On clinical examination the animal had sunken eye balls, distended abdomen with fluid filled rumen. Aspiration of ruminal contents revealed soft semi liquid ruminal fluid without gas. The animals were dull, anorectic and had not passed the dung. Ruminal motility was sluggish. Per rectal examination revealed empty intestine. Rumen was greatly distended. Mucus with yellow colour was seen adhering to the hand after rectal examination. Temperature were with in the normal range. The cases were mostly reported during winter season (September-December) The animals were given purgatives. Six cases were medically managed with Mifex\* 500 ml, DNS 2 lts, and RL 2 lts given as intravenous injection along with Cremaffin liquid 210 ml orally. The animals were made to walk briskly for 1-2 kms. The next day three animals started taking feed and water. They also started passing a small quantity of dung. Rest of the three animals there was no improvement. So, it was decided to perform exploratory rumenotomy. The rumenotomy was performed under local infiltration anesthesia with 2% xylocaine hydrochloride\* in standing position. Contents of the rumen were semiliquid (slurry) was drained out. Rumen and reticulum were explored for foreign bodies. Small quantity of sand in the reticulum was removed. The reticulo-omasal orifice was relaxed but the omasum was hard and fully distended. A long 10 inch curved blunt and blunt scissors was introduced into the reticulo omasal orifice and was rotated 10-12 times. Soft flexible rubber pipe was introduced through the rumenotomy site and the tip was held at the entrance of reticulo-omasal opening. One liter of water was introduced into the pipe through the funnel connected at the high end. Movement of water in to the orifice was confirmed. Now the pipe was held tight along with the reticulo omasal opening to prevent the back flow of fluids in to reticulum. 500 ml of glycerin was then poured into the high end funnel, 30 liters of water along with 2kg jagary, 100 gms salt, 100 gms baking soda was introduced through the pipe. Rumenotomy and laprotomy sites were closed in routine manner. Dicrystein S 2.5 gm for 5 days. Vetalgin 10 ml for 3 days intramuscular injections were given. Wound dressing was done daily for 10 days. DNS 1 lts, and RL 1 lts was given as intravenous injection for 1 day. Sutures were removed on the 10 day of operation. The animal were alert, active and started taking feed after 6-8 hour after surgery. The animals passed dung after 24-36 hours with normal consistency. Recovery was uneventful.

**R-10 Urolithiasis- Comparison of Urethrotomy alone and Urethrotomy & Cystotomy Combined in Clinical Cases of Urolithiasis in Bullocks.***Balappanavar BR*

Department of Animal Husbandry and Veterinary Services, Gadag - Karnataka

The cases presented to the Veterinary Hospital, Gadag with the history of anuria were randomly chosen for urethrotomy alone or urethrotomy combined with cystotomy. In Group - I Post scrotal urethrotomy operation in all animals was performed under epidural anaesthesia and local infiltration with 2% xylocaine. In Group- II Cystotomy was performed in all animals under local infiltration with 2% xylocaine along with the Post scrotal urethrotomy. The cases were monitored for six months. Group - I Out of the six cases of which under went the Urethrotomy operation three recovered without any recurrence of symptoms of urolithiasis and three had recurrence. The owners were reluctant for further treatment. Group -II Out of the eight cases two cases were presented very late and had distended abdomen with ruptured urinary bladder. The animals died before the start of treatment. Six cases were subjected to the cystotomy combined with urethrotomy. Five cases recovered with out any recurrence of urolithiasis. One animal which had cystoliths and completely embedded urethroliths in

the ischial part of urethra died during the operation. One in the Group II had mucus plug along with cystitis. All the animals in Group II exhibited cystitis. No recurrence was noted in the Group II animals. During the period of study, All the animals were given Enrofloxacin 15ml intramuscular injection daily for 10 days, 2-4% salt water orally for 10 days, Vetalgin 10ml for 3 days. Wound dressing was done for 10 days. Mannitol 1000ml intravenous injection was given for two days to the animal with mucus plug. Urethrotomy helps to relieve the condition of anuria. However, there is every possibility of recurrence of urolithiasis. Cystostomy combined with urethrotomy helps to reduce the chance of recurrence of urolithiasis in the field condition.

R-11

### **Gunny Bags Filled with Agriculture Waste as Cheap and Alternative Bedding for Casting of Large Animals under Field Conditions for Surgical Procedures**

*Balappanavar B. R. and Patil Anil*

Department of Animal Husbandry and Veterinary Services, Gadag - Karnataka

The gunny bags were filled with agricultural byproducts viz. green grass, green gram waste, and green gram plant after harvest, onion leaves after harvest, hay, Jawar husk, rice bran husk etc. and ends of gunny bags were sewed. About 10 to 11 gunny bags were required to use as bedding for a bullock. The gunny bags were laid on the floor in two rows of five bags each. The animal was brought to the side of the gunny bag-bed and casted on to it. The remaining one gunny bag was used for supporting the head and neck. The animals were comfortable during and after surgery lying on the gunny bag bed. Gunny bag bed avoids bed sore, skin abrasions, prevents radial nerve paralysis. The animal can be casted on any kind of floor at rural area viz., Stony, slippery, muddy, uneven surfaces. The materials are easily available at rural area. This also avoids contamination of dust or mud during surgical procedures. No extra cost is involved. This is also comfortable to the Surgeon to perform surgery as the patient is at an elevated area. This is also easy to elevate the hind quarters during urethrotomy, cystostomy, and reduction of the post partum prolapse of reproductive organs. This can also be comfortably used during postoperative recovery period. Gunny bags Filled with Agriculture by product waste, Covered with polythene Sheet avoids contamination of mud/dust.

R-12

### **Efficiency of Surgical Correction of Diaphragmatic Hernia without Positive Pressure Ventilation in Buffaloes**

*M. J. Z. Khan, P. B. Patel and J. N. Mistry*

COVS & AH, SDAU, Sardarkrushinagar

The present study was conducted on 12 clinical cases of diaphragmatic hernia in buffaloes during January, 2008 to April, 2009. In all these buffaloes diaphragmatic hernia was tentatively diagnosed based on clinical signs and by auscultation of reticular sound at the level of 6<sup>th</sup> rib at right side of thoracic cavity. These animals were subjected to rumenotomy by stander technique followed by herniorrhaphy. Herniorrhaphy was performed under sedation with xylazine hydrochloride @ 0.1 mg/kg body weight (intramuscularly) and local infiltration of 2% lignocaine hydrochloride along the incision line. Herniorrhaphy was done through post-xiphoid trans-abdominal approach, keeping the animal in supine position without using intermittent positive pressure ventilator. To approach the abdominal cavity a crescent shape incision, caudal to the xiphoid cartilage was given. Adhesions were separated by blunt dissection and hernial ring was closed by using number 2 black braided silk in continuous lock stitch suture pattern. Out of 12 buffaloes operated for diaphragmatic hernia, 8 survived and 4 died during or immediate post-operative period. All survived buffaloes were 5-8 years of age group, among them 3 were pregnant and 5 were non-pregnant. Out of 3 buffaloes which had single large hernial ring at the center of diaphragm, 2 died during herniorrhaphy.

R-13

### **Diagnosis and Surgico-Therapeutic Management of Traumatic Pericarditis in Cattle**

*A.K. Bishnoi and T.K. Gahlot*

COVS & AH, Rajasthan Agricultural University, Bikaner- Rajasthan

Traumatic pericarditis was diagnosed in 25 cases of cattle, on the basis of history, clinical findings, haematological tests, glutaraldehyde test, roentgenography and echocardiographic diagnostic imaging techniques. Lateral thoraco-abdominal radiography of the 5 cases at the appropriate technical factors revealed radiopaque metallic foreign body in the cardiac region in 2 cases while in the other 3 cases the presence of radiolucent fluid in the pericardial sac masked the other radiological details of the thoracic area. The echocardiography through the right 4<sup>th</sup> intercostal space using the 3.75MHz

convex probe revealed enlarged anechoic pericardial fluid area surrounding the compressed anechoic right and left ventricles. This anechoic pericardial fluid area was found diminished in size post-pericardiocentesis. The surgical treatment involved pericardial drainage and lavaging through pericardiocentesis, thoracotomy by 5<sup>th</sup> rib resection and through 5<sup>th</sup> intercostal space. Therapeutic treatment included different groups of antibiotics, NSAIDs, B-complex with liver extract, diuretic and fluid therapy, which was carried out for a varied period. The findings of this study revealed that radiography and echocardiography could form important ancillary imaging diagnostic tools in traumatic pericarditis while in treatment pericardiocentesis together with therapeutic treatment provided a better survival period as compared to the thoracotomy.

**R-14 Clinico-Haematological Changes Associated with Diaphragmatic Hernia and Traumatic Reticulo-Peritonitis in Buffaloes**

*M. J. Z. Khan, M. M. Pathan, P. B. Patel and J. N. Mistry*  
COVS & AH, SDAU, Sardarkrushinagar

In the present study an attempt was made to early diagnose the diaphragmatic hernia (DH) and traumatic reticulo-peritonitis (TRP) on the basis of clinical and haematological findings. The study was carried out on 48 she buffaloes of age between 2-10 years. The buffaloes were divided into three groups, group - I of apparently healthy animals (N = 6), group - II of DH (N = 12) and group - III of TRP (N = 30). Recurrent tympany, reticular and cardiac sound, scanty/ pasty faeces and frothy/ pasty rumen content were seen in almost all the cases of DH. However, congestion of conjunctival mucous membrane, impaction of rumen and arched back condition were more common in case of TRP. The increase in rectal temperature, heart rate and respiration rate were more marked in TRP than that of DH. The haemoglobin, PCV, TLC were elevated in all the cases, but the haemoglobin and PCV were more elevated in DH, but the level of TLC were marked elevated in TRP. Neutrophilia, lymphopenia and eosinophilia were more marked in TRP. This clinico-haematological study also provides enough indications about the prognosis and evaluation of the risk factor for undertaking surgery.

**R-15 Clinical and Rumen Liquor Profile Study in Non-Penetrating Foreign Body Syndrome in Goats**

*R. G. Shirao, S. P. Mehesare, M. G. Thorat, R. V. Raulkar, and K. M Khan*

Post Graduate Institute of Veterinary and Animal Sciences, Akola

The present investigation was carried out on 12 animals divided into two groups comprising six animals in each. The selection of animal was randomly carried out on the basis of history and symptoms such as loss of appetite, health status and distended abdomen. The first group 'A' having presence of non-penetrating foreign bodies 2 to 5 % of body weight. The second group 'B' comprised of animal having presence of non-penetrating foreign bodies more than 5% of body weight. These two groups were subjected to clinical and rumen liquor profile study before laparo-ruminotomy and on 1<sup>st</sup>, 3<sup>rd</sup>, 7<sup>th</sup>, 14<sup>th</sup> and 30<sup>th</sup> post operative day. Clinical observations in affected animal revealed anorexia, dehydration, dullness, depression, decreased ruminal movements, increased heart rate, pulse rate and respiration rate. The faeces were semisolid. Lusterless rough body coat, lethargic movement and hide bound condition was noticed in some animals before the surgical intervention. Rumen liquor examination revealed rise in pH with reduction in protozoan density, and increase in cellulose digestion time before operation. All the clinical and rumen liquor parameters were within normal range after 30 days of operation. From the overall investigation, it is suggested to perform laparo-ruminotomy for removal of non penetrating foreign bodies to restore normal ruminal environment with improvement in digestion.

**R-16 Glutaraldehyde and Glyoxal as Crosslinker for Caprine Diaphragm - In-Vivo Study**

*A. K. Sharma, Amit Kumar, Naveen Kumar, S. K. Maiti, Rukmani Dewangan, Himani Singh and R.V.S. Pawaiya*

Indian Veterinary Research Institute, Izatnagar, Bareilly- UP

The caprine diaphragm was crosslinked with glutaraldehyde (GA) and glyoxal (GO). *In-vivo* studies were conducted to evaluate the biocompatibility. The caprine diaphragm was collected from local abattoir. Cross-linking was carried out at room temperature for 24 h with 0.6% and 1% solution in phosphate buffer saline, respectively. The uncross-linked diaphragm was used as control. The tissue was washed with normal saline solution. The specimens were cut into 1020mm size pieces and cross

linked with above mentioned chemicals. *In-vivo* studies included subcutaneous implantation of the cross-linked grafts. The immuno-reactivity of cross-linked and uncross-linked graft material was assessed by ELISA. The serum samples were collected before implantation and on day 15, 30 and 90 post-implantation to check the extent of antibody generated towards the graft component. Evaluation of tissue reaction around the grafts was done by gross and histopathological observations. The values of absorbance were significantly higher ( $P < 0.05$ ) in cross-linked groups as compared to pre-implanted values. They decreased significantly ( $P < 0.05$ ) on day 30 and 90. Gross observation on day 15 did not show any significant loss of tissue mass when compared with pre-implanted material. The biomaterials were covered with white fibrous connective tissue which was denser on day 30. On day 90, the uncross-linked and GA cross-linked diaphragm was completely resorbed. The microscopic observation in GA cross-linked graft on day 15 revealed that host reaction was confined around the graft whereas, GO treated implant showed very mild cellular inflammatory reaction which was confined to periphery of the graft with necrotic debris. The uncross-linked graft showed extensive inflammatory reaction, invading cells within the graft. The GA cross-linked graft showed mild infiltration on day 30 and was completely resorbed on day 90. The GO cross-linked graft showed pronounced inflammatory reaction. The uncross-linked graft showed heavy infiltration of mononuclear cells within the graft collagen fibres on day 30, and was completely resorbed on day 90.

R-17

### Successful Management of Congenital and Acquired Salivary Cysts in Bovine

*S. P. Tyagi and Amit Kumar*

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Salivary cysts on cheek involving Stenson's duct are infrequently observed in bovines whereas congenital salivary cyst due to closed intraoral orifice of Stenson's duct is an extremely rare condition. The management of salivary cysts by attempting to destroy the parotid gland function by injecting irritants is quite painful and may lead to recurrence besides carrying the risk of xerostomia. Radical surgical excision of parotid gland is also a complicated and risky surgery. The author successfully treated congenital as well as acquired salivary cysts in bovine by an alternative technique of surgical creation of an intraoral fistula. The paper describes the cases, the surgical technique, the postoperative management and outcome of such cases.

R-18

### Effect of Supplementation of Zinc Methionine on Digital Characteristics in Crossbred Dairy Cattle

*Swaran S Randhawa, K. Dua, R. S. Singh, P. S. Dhaliwal and A. K. Sharma*

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Twenty eight lactating dairy cows selected from a commercial dairy herd at Ludhiana were stratified into two groups of 14 animals each by keeping approximately equal number of animals with different lameness scores in both the groups. Fourteen animals in the treatment group were supplemented with zinc methionine for a period of 5 months in a controlled study keeping the other 14 as untreated control. Hoof trimming was undertaken in all the dairy cows before and after the trial period. Claw lesions were examined to evaluate the effect of zinc methionine on the frequency and severity of claw lesions. It was observed that supplementation of zinc methionine resulted in significant decline in disease score owing to heel erosions and sole avulsions. White line hemorrhages though present in small number disappeared totally after supplementation. Zinc methionine caused a significant effect on the recurrence of overgrown soles and corkscrew hooves. However, there was not much improvement in lameness score and rear leg view conformation. On the whole, a significant decline in number of heel erosions, sole avulsions, resolution of all the white line hemorrhages and a control of the reoccurrence of overgrowths resulted in significant decline in overall disease score in cows fed zinc methionine as compared to cows those were not fed zinc methionine. Trace mineral analysis of hooves before and after supplementation of zinc methionine revealed a non-significant increase in hoof sole zinc status with no change in sole copper, manganese and iron levels.

R-19

### Intestinal Obstruction due to Intussusception in Cattle: A Review of 20 Clinical Cases

*R. B. Kushwaha, A. K. Gupta, M. S. Bhadwal, A. K. Tripathi and Seema*

F. V. Sc & A.H, SKUAST- Jammu

Intussusception was diagnosed in twenty cattle with the history of not passing dung for 2 to 10 days. Cattle aged up to 2 years was affected more (9) than those aged between 2-4 years (6), 4-6 years (4) and

8 year (1). Cattle presented were more (12) in summer than other season. All the cattle had the history of colic signs before obstruction. Most of the cattle were not passing the dung for 4-6 days. Anorexia was the consistent finding after the cessation of feces, whereas water intake was normal in most of the cases. Cessation of feces, dullness, and depression, bilateral distention of abdomen, sunken eyes and dry muzzle were the common clinical findings. Per rectal examination of 13 cases showed presence of intussusception mass below and right side of pelvic brim in 8 cases and no palpable mass in 5 cases. In 7 cases, per-rectal examination was done due to young age. In most of the cases, rectum was empty with adherence of blackish content over the hand. Intussusception was noticed more in ileum and colon. Resection and end to end anastomosis was done by right flank Laparotomy under para-vertebral nerve block in simple continuous pattern followed by cushioning pattern using either cat gut no. 2/0 or vicryl 1/0. In most of the cases, mass was congested and necrosed. In most of the case, motility was seen in distal segment. Post-operatively, cattle were treated with broad spectrum antibiotic, analgesics, fluid therapy (DNS-5%, KCl-1.0%, Mifex) and rumenotonic. Cattle passed the dung on the same day in 12 cases and next day in 5 cases and on third day in 3 cases.

R-20

### **Surgical affection of teat in dairy cattle and buffaloes- A study of 20 clinical cases**

*M. S. Bhadwal, R. B. Kushwaha, A. K. Gupta and A. K. Tripathi and Seema F. V. Sc & A.H, SKUAST- Jammu*

Study was conducted in twenty clinical cases including cattle (13) and buffaloes (7) with the history of different types of teat lesions. The different types of teat affection diagnosed were hard milker (7), traumatic injuries & wounds (6), teat spider (3), teat fistula (2), imperforated teat (1) and growth in teat cistern (1). Most of them were aged between 4-6 years (3-10 years), in 2<sup>nd</sup> -3<sup>rd</sup> lactation and calved recently. The hind quarter (Rt-11, Lt-13) were involved more than the fore quarter (Rt-4, Lt-1). In 4 cases, both right and left teats were involved. Most of the procedures were performed under sedation with xylazine @ 0.05 mg/kg i.m. and local analgesia either ring block or infusion in teat cistern. Enlargement of teat canal followed by insertion of teat plug or infant feeding tube no. 10 were found effective for the hard milker whereas, rupturing of membrane with Hudson teat spiral and subsequently maintenance of catheter in teat and udder cistern were effective treatment. Traumatic injuries with full thickness lesion were repaired in three layers using vicryl 2/0. Chemical cauterization or phenols was not found effective for teat fistula. Post-operative treatment included Pendistrin-SH intramammary infusion twice a day, Enrofloxacin-15ml i.m, Gentamicin-20 ml i.m., melonex-15 ml i.m. Catheter blockade, kinking or dislodgement of catheter and physical alteration of milk were the common post- operative problems. In most of the cases repetition was required.

R-21

### **Diagnosis and Surgical Management of Reticular Abscess in Bovines**

*H. Athar, J. Mohindroo, A. Kumar, K. Singh and V. Sangwan*  
COVS, GADVASU, Ludhiana- Punjab

The present study was conducted on 11 bovines (7buffaloes and 4 cattle) suffering from reticular abscess that were presented with a history of anorexia, tympany, reduced milk yield, abdominal distension and loss of defecation. Leucocytosis with neutrophilia was seen in majority of the animals. The blood biochemical analysis revealed elevated levels of total protein, globulin and fibrinogen. Peritoneal fluid examination revealed elevated TLC with neutrophilia. On radiographic examination, reticular abscess could be diagnosed only in 35.4% (n=4) cases while 72.85 (n=8) cases were diagnosed ultrasonographically. Ultrasonographically, a circumscribed hypoechoic structure with well developed capsule was evident in six animals while in two animals abscess had mixed echogenicity without well developed capsule. The ultrasonographic findings were confirmed upon laparorumenotomy. Incising and flushing of reticular abscess was found successful in treating reticular abscess.

R-22

### **Diagnosis and Surgical Management of Omasal Impaction in Bovines**

*Hakim Athar, J. Mohindroo, Kiranjeet Singh, Ashwani Kumar and Tarunbir Singh*  
COVS, GADVASU, Ludhiana- Punjab

The present study was conducted on bovines suffering from the omasal impaction. Majority of the animals were depressed, had anorexia, reduced milk yield, abdominal distension and loss of defecation. The blood biochemical analysis revealed elevated levels of total protein and fibrinogen

and decreased levels of plasma sodium, potassium and chloride. Ultrasonographically, scanning of omasum over a large area extending from 8<sup>th</sup> to 10-11<sup>th</sup> intercostal space having no contractility with acoustic shadow was found confirmatory for omasal impaction. The ultrasonographic findings were confirmed upon laparorumenotomy. Flushing of omasum with water under pressure along with kneading was successful in relieving omasal impaction.



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**EQUINE SURGERY  
SESSION**

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**Department of Veterinary Surgery & Radiology  
Centre of Advanced Studies  
College of Veterinary Science  
Guru Angad Dev Veterinary and Animal Sciences University,  
Ludhiana- 141004, Punjab (India)**

**E-1 Physical and Behavioural Changes Following use of Burdizzo for Castration in Horses - 56 Cases**

*Anil S. Patil*

College of Agriculture, University of Agricultural Sciences, Dharwad- Karnataka

Fifty six horses owned by nomadic shepherds were presented to the hospital for castration during the past four years. These owners were reluctant for gelding operation because of the difficulty in post operative care due to their migratory style of living and also due to the cost and risks involved in surgical procedure. So, use of Burdizzo (with slight alterations in the procedure) in castrating these horses was evaluated. A thick multi layered piece of woolen cloth was placed around the spermatic chord during crushing to avoid breakage of skin during the procedure. All the animals were given a dose of Tetanus Toxoid along with a course of antibiotics, NSAIDs and corticosteroids for five days. A three months post procedural follow up was done to assess the physical and behavioral changes, scrotal size variation and testicular atrophy. The findings are analyzed and discussed.

**E-2 Surgical Management of Soft Cataract in a Foal**

*P. V. Parikh, D. B. Patil, S. K. Jhala, Nisha Joy, M. J. Sheth, K. R. Mistry, Mehraj u din dar, A. H. Pitroda and B. G. Prajapati*

COVS & AH, Anand Agricultural University, Anand - Gujrat

A three month old filly was presented with history of vision loss since birth. Detailed ophthalmological examination including indirect ophthalmoscopy and B-Mode ultrasonography revealed bilateral soft congenital cataract. Complete blood examination including serum creatinine, ALT and blood glucose ruled out any systemic involvement. The cataractous lens in the left eye was removed by extracapsular cataract extraction technique under xylazine- ketamine anaesthesia. Postoperatively, near vision regained within 2 months and corneal oedema was managed using topical NSAIDs and antibiotic- steroid combination.

**E-3 Surgical Management of Prolapse of Rectum with Invagination of Colon in a Donkey**

*B. Ramesh Kumar, N. Aruljothi, and T. P. Balagopalan*

Rajiv Gandhi College of Veterinary and Animal Sciences- Pondicherry

A male Indian donkey aged two years was presented to the Teaching Hospital, Rajiv Gandhi college of Veterinary and Animal Sciences, Puducherry with a history of prolapsed rectum since two days. On clinical examination, the rectum was prolapsed to a length of 20 cm with necrosis of the distal end. On palpation of the prolapsed mass, a segment colon was felt invaginating inside the lumen of the rectum and it was decided to amputate the necrosed mass. The animal was anaesthetized with Xylazine-Ketamine by I/V route and after amputation of the prolapsed rectal portion using standard procedure; the stump was fixed to anocutaneous junction by simple interrupted sutures using polyglactin 910 suture material. Amoxicillin - Cloxacillin (2g) and Prednisolone (10 mg) was administered postoperatively and dressed the sutured site using cetrimide cream. The sutures were removed on 10<sup>th</sup> day and the animal recovered uneventfully.

**E-4 Surgical Management of Lateral Hernia in a Horse**

*Vivak Malik, S. Purohit, Gulshan Kumar, Tejveer Singh and Mohd. Nadeem*

COVS, U.P. Pt. DDU Pashu-Chikitsa Vigyan Vishwavidyalaya, Mathura

Adult horse aged 7 years presented to university veterinary hospital with the history of large swelling just anterior to the left stifle joint since 20 days after the accidental fall on the blunt stone on the roadside. The animal showed inappetance and constipated feces. On the basis of history, palpation and ultrasonographic examination, it was diagnosed as a case of lateral hernia and surgical management of hernia was decided. The animal was anaesthetized using 1 mg/kg body weight xylazine and 2 mg/kg body weight ketamine. Taking all the aseptic precaution, the incision was made and the slit between the muscles was located. Intestinal herniated mass was identified and repositioned back into the

abdominal cavity. The peritoneum with inner muscle layer was sutured using chromic catgut no. 2. The second layer of suture was applied in horizontal mattress pattern using same material. The skin was closed by nylon in simple interrupted pattern. Course of broad spectrum antibiotic along with analgesic and multivitamin was given for 3 days. The edematous swelling observed on 2<sup>nd</sup> post-operative day resolved with single IM injection of Lasix. Uneventful recovery was observed and sutures were removed on day 12.

E-5

#### **Surgical Management of Ameloblastoma in a Stallion**

*Arvind Sharma, Adarsh Kumar, M. S. Kanwar, Amit Kumar, Sheikh Imran, Bhanu Pratap Singh Thakur and V. S. Nanda*

DGCN College of Veterinary and Animal Sciences, CSK HPKV, Palampur- H.P

A sixteen year old Kathiawari Stallion was presented at the college clinic with the history of a growth on the lower jaw at the level of incisors on the left side since a month. The condition followed an injury sustained due to fighting with a stable mate resulting in an avulsion of the corner incisor. The growth was highly vascular, gradually increasing in size and always bled during fodder engulfment. Salivation and halitosis were also observed. Animal was rapidly losing condition. The growth was surgically removed along with the teeth under constant rate infusion using triple drip technique (Xylazine-Ketamine-Guaifenesin). Haemorrhage was controlled using liquid nitrogen. A pressure bandage was applied over the surgical wound for 24 hours and subsequently the wound was irrigated with povidone-iodine mixed saline solution. Local application of Mandi's paint was done for 20 days along with a course of antibiotics, analgesics and B-complex vitamins. The wound healed completely after 5 weeks. Histopathology of the growth revealed it to be an *Ameloblastoma* a highly invasive tumour. The complete anaesthetic, surgical and post-operative management shall be discussed.

E-6

#### **Rehabilitation of a Pony by a Sling and Electroacupuncture Therapy**

*M. M. S. Zama, M. Hoque, A. M. Pawde, H. P. Aithal and S. K. Maiti*

Indian Veterinary Research Institute, Izatnagar, Bareilly-UP

A four year old pony was referred to the surgery unit of Referral Veterinary Polyclinics, IVRI, Izatnagar with a complaint of inability to get up and stand had history of soon after casting for examination of hoof. The animal was lifted and supported on indigenously developed hoist cum sling which was further supported over a metal frame designed of scrap GI pipes along with tube inflation devices. Electroacupuncture therapy was given on alternate days, after 10 sessions the animal regained reflexes and could partially support the weight when assisted by sling and frame combination. However, the animal could not stand on its own.

E-7

#### **Surgical Management of Uterine Torsion in Mares**

*N. S. Saini, S. S. Singh, J. Mohindroo, S. K. Mahajan, M. Raghunath, N. Singh, A. Kumar, V. Sangwan, T. Singh, K. Singh*

COVS, GADVASU, Ludhiana-Punjab

The present paper describes the surgical management of uterine torsion by caesarean section in four mares presented to Department of Surgery and Radiology, GADVASU, Ludhiana. Mares had difficulty in foaling and exhibited signs of colic for variable period of time. After confirmatory diagnosis surgical intervention was planned. Mares were anesthetized by Xylazine (1 mg/kg.b.wt) and Ketamine (2mg/kg.b.wt.). Animals were intubated and maintained on Halothane anesthesia. Midline celiotomy was performed and foals were delivered by caesarian section. Uterus was closed in routine manner. In three mares, before closing the abdominal wounds the uterus was detorted manually and confirmed for its normal position per vaginally. In fourth mare uterus was badly adhered to abdominal wall and making the detortion not possible and this animal was euthanized with owner consent.

### **E-8 Histomorphological Evaluation of Low Level Laser (LLL) effects on of the Superficial Digital Flexor Tendon in horses**

*Davood Sharifi, Alireza Nadjafpour and Seyed Hussein Marjanmehr*

Faculty of Veterinary Medicine, University of Tehran, Iran

The purposes of this study were to determine the effect of low level laser (LLL) on the histomorphological changes in the experimentally traumatized SDFT in horses. Using 8 adults castrated horses having 290 to 420 Kg/bw with 3 to 10 years of age. The mid- left fore limb superficial digital flexor tendon was splitted longitudinally in full thickness of 10 cm in length using B.P. blade (15 Time strikes), then the connective tissue and skin was approximated using No 2 Nylon. Horses were divided into two groups of control and treated with 4 horses each. No treatment was given to control one, whereas treated group was subjected to LLL therapeutic regimens of Mustang 2000 for 15 minutes ( 5 minutes diode laser with 630 nm and 10 minutes infrared with 890 nm wave length ) daily contact method for 14 continuous days . On the 60 day after traumatizing tendons, the samples were collected from normal and study limb of the fore limbs in all horses to be fixed and stained with H& E stains. Histopathological changes showed advanced healing quality, less adhesions and better fiber alignment in experimental group specimens comparing with control group specimens. Results of this study showed that using of low level laser in acute and sub- acute phases of SDF tendonitis can improve the speed and quality of healing in horses. The main advantages of LLL significantly accelerated healing and remodeling of traumatized tendon to regain its compact collagen arrangement and saving time and cost benefit too.

### **E-9 Survey of Ocular Disorders Affecting the Vision in Horse**

*R. Thangadurai and Sarbani Hazra*

VAS WBUAFS, Kolkata- West Bengal

The equine eye is prone to problems because of its large surface area and decreased immunity to disease. Loss due to visual impairment in equine industry is enormous, keeping this view the present study was undertaken to study the prevalence threatening disorders in a large population of horse as there is paucity of such report globally and from India. Routine and special diagnostic ophthalmic tests were conducted, including ophthalmoscopic examinations, tonometry, and conjunctival swab culture. A variety of ocular condition were identified, recurrent equine uveitis 24% was diagnosed the major cause of vision threatening disorder among other condition like glaucoma 13%, corneal ulcers 8%, cataract 3%, synechia 2% and retinal hemorrhage 1%. Most common bacteria isolated from normal eye were staphylococcus spp and from cases with corneal ulcers was *Pseudomonas* spp. This study shows that prevalence of ophthalmic disorders in horse are higher than perceived and it is a significant cause of stress to the animal apart from causing great economic loss due to the severe morbidity of the animal.

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### Ultrasonographic Observations of the Hematoma and Neoplasm in Dogs

*Prem Singh, S. K. Chawla, Subhash Chander, Kuldip Singh and R. K. Chandolia*  
College of Veterinary Sciences, CCSHAU, Hisar

Two cases of ear haematoma and three cases of neoplasms of neck region in adult dogs were reported to TVCSC for treatment. Their ultrasonographic study was conducted to differentiate the haematoma swelling from that of neoplastic swelling. The ultrasonographic image of ear haematoma showed hyperechoic image of the blood clot present in the centre of the haematoma. The centric blood clot was surrounded by anechoic serum/ plasma. The ultrasonographic image was hyperechoic both on dorsal and ventral extremities of the ear, which may be due to formation of adhesions. The ultrasonographic images of the neoplasms showed almost uniform hypoechoic density. There were multiple hyperechoic septa dividing the hypoechoic image of the tumours into many lobules. Although ultrasonographic density of the blood clot and haematoma is similar but there was no evidence of hyperechoic septa and multiple hypoechoic lobules in cases of haematoma. Therefore ultrasonography is a very useful techniques in differentiating the image of haematoma to that of neoplasm to adopt correct line of treatment.

### Ultrasonographic Observations and Surgical Treatment of Preputial and Penile Diseases in Cattle

*Prem Singh, N. S. Bugalia, S. M. Behl, S. K. Chawla, R. K. Chandolia*  
College of Veterinary Sciences, CCSHAU, Hisar

Seven clinical cases of cattle suffering from internal mucosal prolapse of prepuce (2), preputial tumours (2), paraphymosis (1) and rupture of urethra (2) reported for treatment in TVCSC. All these were examined ultrasonographically. The ultrasonographic observations showed different layers of prepuce mucosa, narrowing of urethral lumen and formation of adhesions in cases of prolapse of preputial mucosa, preputial tumours and paraphymosis. These animals were operated for resection of prolapsed masses and preputial tumours. These responded well to the surgery, but one bull (operated for preputial tumour) became recumbent after 15 days and died. In case of paraphymosis, separation of mucosa from the penis was done surgically. The separated penis was put back into the prepuce and a loose purse string suture was applied around the preputial orifice. This animal responded well to the treatment. Ultrasonography in cases of rupture of urethra, showed images of lumen of urethra, penis & its coverings and the point of rupture just posterior to the glans. The scan also showed echogenic multiple septa of connective tissue and hypoechoic multiple cavities with accumulated urine. The accumulated urine was evacuated out and a combination of anti-inflammatory drug and antibiotics was infiltrated at different sites. The preputial douching was carried out for 15 days. One animal responded well but the another one could not survive. On the basis of this study, the ultrasonography was observed to be a useful technique to evaluate the extent of adhesions and to locate the site of rupture of urethra in cattle.

### Ultrasonographic Observations and Surgical Treatment of Some Developmental Urogenital Defects in New Borne Buffalo Calves

*Prem Singh, R. K. Chandolia, S. K. Chawla, Rishi Tayal, Sandeep Saharan & Rajesh Sahu*  
College of Veterinary Sciences, CCSHAU, Hisar

The ultrasonographic study was carried out in 6 newly born buffalo calves between the age group of 2-5 days with history of retention of urine. These calves were divided into two groups of 4 female buffalo calves having the history of not passing urine since birth (Group-I) and of 2 male buffalo calves with history of agenesis of uro-genital system alongwith anus (Group-II). Ultrasonographic study was carried out to know the exact cause of retention of urine in Group-I and to know the extent of developmental defect of urinary and digestive system in Group-II. In 1st group, the ultrasonograms showed irregular hypoechoic shadow of distended urinary bladder with hyperechoic embryonic membranes lining the urinary bladder, thus preventing the passage of urine from urinary bladder to the urethra. In 2<sup>nd</sup> group, ultrasonography showed position of blind-rectum, vaginal vestibule, penile

urethra and testis. In animals of Group-I, the embryonic membrane of urinary bladder was punctured by pushing metallic catheter towards urethra. The metallic catheter was removed and the patency was maintained by polyethylene catheter. All the calves passed urine, but out of 4 female buffalo calves only 3 calves could survive. In Group-II, the animals having agenesis of urogenital defect, the life could be extended only up to 4-6 months. Ultrasonography was observed to be helpful technique not only in locating the site of obstruction but also in deciding suitable surgical approach to be followed by the surgeon to clear the obstructions.

1-4

#### **Diagnostic Significance of Haemato-Biochemical Profile, Mammography and Ultrasonography in Canine Mammary Gland Tumours**

*M. A. Dhami, P. H. Tank, R. K. Prajapati and A. J. Dhami*

College of Veterinary Science and Animal Husbandry, AAU, Anand- Gujarat

Haematology, serum biochemistry, mammography and ultrasonography were performed in selected six bitches with mammary gland tumours. Haemato-biochemical parameters studied (Hb, PCV, TEC, TLC, DLC, ESR, SGOT, SGPT, BUN, Creatinine) did not fluctuate much from the reference values, except in a bitch which showed other concomitant pathology. Both mammography and ultrasonography were used probably for the first time in canine patients for the diagnosis of the mammary gland tumours as pre-evaluation methods, which provided prognosis and the guideline for the treatment. Out of the six cases, mammogram of four cases revealed well defined soft tissue mass in glandular tissue with absence of microcalcification and infiltration of deep fat tissue suggesting benign type of tumours, whereas rest of the two cases revealed large echogenic mass in mammary gland with small calcification suggesting it to be a malignant mass. Upon ultrasonographically, three cases showed a well defined hypoechoic lesion in mammary gland with regular margins having no evidence of internal necrosis or calcification and underlying muscles appeared normal which were suggestive of benign lesions, while rest of three cases showed a heterogenous hypoechoic lesion with irregular margins and few cystic areas which were suggestive of infective or malignant lesions. The lesions were confirmed upon histopathological examinations of excised tumour masses.

1-5

#### **Retrospective Evaluation of Radiographs of 73 cases of FBS/DH *vis-à-vis* Intra-Operative and Clinical Findings**

*R. N. Chaudhary, Rishi Tayal, Kuldeep Singh, S. M. Behl, S. K. Chawla and Anresh Kumar*

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The preoperative interpretation of radiographs of cranial forestomach in lateral recumbency of 73 cases of FBS (Foreign body syndrome)/ DH ( Diaphragmatic hernia) were compared with intra-operative findings on laparo-rumenotomy and was correlated with clinical findings. The intra-operative findings were similar to radiographic findings in 67 ( $\approx 92\%$ ) cases. Out of 43 ( $\approx 60\%$ ) cases which were positive for potential foreign bodies and negative for DH, 16 were containing more number of potential foreign bodies than depicted in radiographs. 6 cases were positive for DH as well as FB and 3 cases were positive for DH and negative for FB, the laparo-rumenotomy findings were also similar. Out of 8 ( $\approx 11\%$ ) cases which were suspected to be DH positive, one case was DH negative on laparo-rumenotomy. In 12 ( $\approx 16\%$ ) cases the diagnosis through radiographs was NAD (no abnormality detected) but on laparo-rumenotomy potential foreign bodies were removed from 4 cases with reticular adhesion to abdominal wall. The reticular abscess was suspected in one case on radiography while 14 cases of FBS were having reticular abscesses of different sizes on laparo-rumenotomy (in two cases of FB were present within the abscess). Peritonitis of varying degree was present in 7 cases but it was not detected radiographically. In clinical observation inappetence to anorexia, recurrent tympany and no response to medicinal treatment were the most consistent findings in the cases of FBS.

### 1-6 **Standardization of Teat Model for Hands- On Theloscopy and Theloresectoscopy in Wet Lab**

*B. G. Prajapati, P. V. Parikh, D. B. Patil, S. K. Jhala and Nisha Joy*

College of Veterinary Science and Animal Husbandry, AAU, Anand-Gujarat

Twenty four teats collected from slaughter house were used to standardize the model for theloscopy/theloresectoscopy. The teats were allotted to four groups. For theloscopic examination air was infused into the teat cistern in the first group and saline in the second group. In the third and fourth groups, polyps or membranes made from teat mucosa simulating teat pea/teat spider were placed within the teat cistern for removal by theloresectoscopy. During theloresectoscopy, in the third group air was infused in to the teat cistern, while in the fourth group saline was infused. For theloscopic examination, infusion of air in to the teat cistern was found superior to saline, whereas for theloresectoscopy saline was ideal.

### 1-7 **Management of Teat Spider Using Theloresectoscopy in a Goat**

*S. K. Jhala, P. V. Parikh, D. B. Patil, B. G. Prajapati, Nisha Joy, Mehraj ud din dar and K. R. Mistry*

COVS & AH, Anand Agricultural University, Anand

A 6 year doe was presented with right udder agalactia since 10 days following kidding. Clinical examination revealed distended udder with partial fibrosis. In the previous lactation the animal had similar problem in the same teat following kidding. Ultrasonography and theloscopic examination confirmed the condition as teat spider. The teat spider was successfully removed by theloresectoscopy. In spite of aggressive antibiotic coverage, later the animal developed complete fibrosis of udder making it non functional.

### 1-8 **Ultrasound Diagnosis of Distention, Seepage and Rupture of Urinary Bladder in Male Buffalo Calves**

*Sandeep Saharan, Prem Singh, Rajesh Sahu, S. K. Chawla and R. K. Chandolia*

College of Veterinary Sciences, CCSHAU, Hisar- Haryana

The study was carried out in 20 male buffalo calves ranging from 2 to 6 months of age. The animals were reported to TVCSC with history of anuria. The urinary bladder was scanned by placing curvilinear transducer onto the pelvic area para medially. Seepage of urinary bladder was present in 9 cases, whereas rupture of urinary bladder was present in 4 cases. In the remaining 7 cases, there was distention of urinary bladder. The distended urinary bladder gave hypoechoic image of the accumulated urine and hyperechoic image of the thickened urinary bladder wall. In these cases, distended ampulae of the ureter alongwith its course could be visualized. In cases of seepage of urinary bladder, there was distention of wall of urinary bladder. Due to distention, there was thinning of the wall of the urinary bladder that appeared as hypoechoic in ultrasound image. The difference in echogenicities of urine in urinary bladder and outside could be easily demarcated indicating seepage of the urine from urinary bladder. In cases of rupture of urinary bladder, there was complete disruption of hyperechoic wall of the urinary bladder. The urine accumulated in the abdominal cavity and could be visualized as hypoechoic image with floating of intestinal loops. The echogenicities of urine in urinary bladder and in abdominal cavity was similar. In all its 4 cases, there was rupture on the ventral side of the urinary bladder. All these cases of seepage and rupture of urinary bladder were confirmed by laparotomy and treated accordingly.

### 1-9 **Studies on Ultrasound Guided Biopsy in Canine**

*Prachi Taksande, S. B. Akhare, B. M. Gahlod, M. S. Dhakate, S.V. Upadhye and V. S. Panchbhai*

Nagpur Veterinary College, Nagpur- M.S.

The study was carried out on 12 dogs to find out the feasibility of ultrasound guidance for biopsy and fine needle aspiration cytology for diagnosing the abnormalities or affections of liver, spleen, kidney,



prostate gland and various disorders on the basis of histopathology along with occurrence of any complication during biopsy or post biopsy in dogs. Hematobiochemical studies were carried out at scheduled interval. No significant alterations in the hematobiochemical values were observed at post biopsy. The study concludes that the feasibility of ultrasound guidance for biopsy and fine needle aspiration technique was satisfactory for diagnosing the tumors of liver, spleen, kidney, prostate gland and various disorders. Biopsy and fine needle aspiration samples could be obtained easily without causing much pain to the animal, any post biopsy complications, with minimum hemorrhages. Sufficient sample size could be obtained with the sample notch of 1.8 cm as provided with the punch except in one case wherein, the core biopsy and histopathology of the gross tissue revealed different observations. No local complications were noticed at the site of insertion of the needle and the wound healed in due course. Fine needle aspiration of the lesion less than 2 cm was very effective as compared to the biopsy punch. However, the biopsy punch was suitable for the biopsy collection of the lesions more than 2 cm in size. Thus, ultrasound guidance was found suitable for sample collection through biopsy punch and fine needle aspiration for diagnosing the disorders of the internal organs and therefore could be practiced routinely in canines.

I-10

#### **Diagnosis of Obstructive Urolithiasis in Male Buffalo Calves by Ultrasonography**

*Sandeep Saharan, Prem Singh, Rajesh Sahu, S. K. Chawla and R. K. Chandolia*

College of Veterinary Sciences, CCSHAU, Hisar- Haryana

The present study was carried out in 14 male buffalo calves with age of 2-6 months. Ultrasound examination for the urethra (pre and post-scrotal) was done using a real time, B-mode diagnostic ultrasound with linear array transducer. The main cause of urine retention in male buffalo calves was concretion in pre as well as post-scrotal urethra but incidence of occurrence was more in pre-scrotal urethra (N=5) as compare to post-scrotal (N=3). On ultrasound examination the lumen of urethra appeared anechoic with hypoechoic appearance of concretion that blocked the complete urethra. In the pre-scrotal urethra the concretion were present towards the glans in 2 calves and in the middle of the urethra in 3 calves. In post-scrotal urethra, the hypoechoic concretions were present anterior to the sigmoid flexure in 3 calves. The incidence of calculi lodgment is more common in post-scrotal urethra (N=4) as compared to pre-scrotal urethra (N=2). Ultrasonographically the calculi could be visualized as hyperechoic appearance in the lumen of urethra. In pre-scrotal urethra calculi were present either in the middle or towards the glans penis. In one unusual case, there were two calculi. The size of first calculi was 12mm and size of second calculi was 4mm in length. In post-scrotal urethra the calculi lodgment was more common posterior to the sigmoid flexure. In post-scrotal urethra, the size of calculi was as big as 5mm. The calculi and concretions were removed by urethrotomy from the site where these were detected with ultrasonography.

I-11

#### **Radiological Examination for Differential and Final Diagnosis in Bovines**

*K. S. Chaudhari and M. G. Thorat*

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Radiographs of 338 clinical cases of cattle and buffalo reported to TVCSC, COVAS, Udgir (M.S.) were studied for recording the incidences of various affections in bovine. All these cases were having the history of tympani (acute/ chronic/ recurrent). All animals were subjected to lateral plain radiography of reticulo- thoracic region. Out of these cases 27.81% of the cases were interpreted as foreign body syndrome, of which 21.59% were potential and 6.21% were non-potential foreign bodies. 4.44% of cases showed presence of foreign body in the thoracic region. The incidence of diaphragmatic hernia was recorded in 6.50% of the animals. Further, lung abscess was recorded in 2.94% of the cases.

**B- Mode Ocular Ultrasonography in Veterinary Practice**

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In the study 78 cases (canine – 75, equine – 2 and avian - 1) were presented with ocular abnormalities during 2008 – 2009. All the animals were subjected to detailed ophthalmic examination followed by B mode ultrasonography using 12 MHz linear probe. The ultrasonographic findings were normal in 39 cases, cataract in 22 (mature – 7, hypermature – 7, cortical – 6 and congenital - 2), vitreal degeneration in 10, retinal detachment in 4, hypopion in 1, aphakia in 1 and tumor in 1 case.

**Ultrasonographic Evaluation and Guided Biopsy of Intra-Abdominal Masses in Dogs**

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Ultrasound is a non-invasive, safe diagnostic procedure which allows visualization of abdominal structures and its pathology in different sections. The objective of the present study is to evaluate the ultrasound in diagnosing abdominal masses and its assistance in sample collection. Twenty Clinical cases of dogs with signs of space occupying intra-abdominal masses were examined using ALOKA( Prosound SSD 3500) ultrasound machine. Besides routine clinical examination, ultrasound guided FNAB using 20 X 1.5" needle and Trucut biopsy were carried-out for sample collection. The average age of the affected animals ranges form 4-14 years and the type of masses diagnosed were splenic hemangiosarcoma (25%), Hepatocellular carcinoma (20%), Lymphosarcoma of the spleen (10%), Lymphosarcoma of the liver (10%), Hepatic abscess (10%), Lymphoma of mesenteric and iliac lymph nodes (15%) and non-specific adenocarcinoma (10%). The breed involved were Non-descript (20%) Spitz (15%), Dachshund (15%) German shepherd (15 %) and others. Ultrasound was effective in diagnosing 70 per cent of lesion based on the echogenic pattern and the anatomical location of the organ. In Two cases, the radiograph was helpful in locating the organ involved. Precise sampling of the mass was achieved at the desired site and the collected sample was a true representative of the mass in 80 per cent of cases. No complications were observed after the ultrasound guided sample collection. It is concluded that ultrasound and guided biopsy techniques were effective and precise in diagnosing intra abdominal lesions in dogs.

**Role of Software's in Diagnostic Imaging and Management of Surgical Affections in Dairy Animals**

*Dr. Surjit Singh Makker*

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Software is a general term for the various kinds of programs used to operate computers and related devices. (The term hardware describes the physical aspects of computers and related devices.) In this Age of Information Technology and Internet, if a Veterinarian does not updates himself with the latest information & various techniques, He is certainly stand to loose out on critical information in diagnosis, treatment, and management that can make all the difference between curing the animal or otherwise. Something which may be very helpful for him in managing a hospital or clinics, or dairy farm or stud farm or Poultry farm. A software is helpful if it full fills some of following Criterias # it is user friendly # it simplifies Record keeping and Disease Surveillance.# it makes Diagnosis and Treatment of Animal Easier.# it helps Veterinarians to update themselves about recent advances in the field. Medical diagnostic technology has made rapid strides after the advent of computer. Many of the advances in human diagnostic medicines are translated into veterinary medicine in the developed countries. In brief, newer branches like Imaging, Radiodiagnosis, Telemedicine, Telesonography and Teleradiology have emerged. Broadly the instrumentation /devices devised with the modern technology are Image Intesifier T.V. system, Ultrasonography (USG), Computed Tomography (CT), Magnetic Resonance Imaging (MRI), Bone Scintigraphy , Digital Substraction Angiography (DSA), Laparoscopy-thoracoscope, Theloresectoscope, Rhinoscope, Otoscope etc, Endoscopy, Pulse Oximetry. So keeping all things in Mind we can develop more and more Veterinary Software's and

customize them accordingly so that they can be very helpful in Diagnostic Imaging and Management of Surgical Affections in Dairy Animals, specialized therapy like ophthalmic micro-surgery, Dentistry, Orthopedic surgery, Pulmonology, thoracic surgery, cardiology, gastroenterology and Veterinary radiation oncology.

I-15

#### **Endoscopy – Visualization of Unseen Parts for Accurate Diagnosis**

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Four cases of vomiting since last 3 – 15 days were presented to the department of Surgery. The patients were not responded to routine treatment and the contrast radiograph of two cases showed a space occupied mass in distal part of esophagus. The blood values of all the cases were near normal, hence were examined by endoscope. Endoscopy of first case visualized soft tissue inflammatory mass in the distal part of esophagus whereas other case showed soft tissue mass with protruding sac clearly and was diagnosed as *Spirocerca lupi* nodule. The case responded well with respective treatment. Other two cases were diagnosed as hemorrhagic gastritis and gastric ulcer respectively through endoscope, and were also responded with treatment. Proper treatment of all above cases was possible due to accurate diagnosis. Endoscopy provides more descriptive or photographic picture of structure and is more sensitive tool for detection of morphological alteration in the organs, therefore has advantage of providing accurate diagnosis. Esophagoscopy provides visualization of color, texture of mucous membrane, narrowing / dilation of lumen and presences of any foreign body or soft tissue mass or nodules on the wall for accurate diagnosis. Similarly, gastroscopy also allows accurate visualization of mucous membrane of stomach and helpful for detection of foreign body or soft tissue growth on the wall of stomach and helps in evaluation of healing pattern of gastric ulcers for better management. It also facilitates collection of samples by biopsy along with cytological examination and fluid estimations. Therapeutic gastroscopy provides easy retraction of foreign bodies along with visual evaluation of progress of healing of gastric ulcers.

I-16

#### **Imaging Urinary Bladder with Alternate Contrast Materials**

*Hoque, M., Sharma, M.C., Zama, M.M.S., Dey S. and Setia, H.C.*

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Imaging of urinary bladder in small animal has a great potential to understand its various complex pathophysiological phenomena like anatomical position, mucosal pattern, wall thickness, lumen diameter, obstruction, calculi, inflammation, neurogenic status etc. in a non-invasive way. Plain radiography failed to produce a good quality image of normal bladder, except radiopaque calculus in bladder. Potassium iodide (15%) was found suitable for retrograde cystography and the results were comparable with that of standard positive contrast agent. Pneumocystography was suitable to detect space-occupying lesions in the bladder. Ultrasonography provided instant image of urinary bladder with shape, size, location, internal consistency, wall thickness, prevoid and postvoid urine volume. Image quality could be maximized when the patient was prepared with fasting, enema and urine-filling of bladder. Infusion of water into the bladder through catheter enhanced the image quality when urine in bladder was found evacuated. Urosonography can detect wide varieties of affections of urinary bladder and has an edge over other imaging modalities.

I-17

#### **A Note on Cardiac Imaging for Structural and Functional Assessment of Canine Heart**

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Structural and functional assessment of canine heart is very often warranted by the clinicians to address cardiac diseases. It is found that a good quality survey radiograph provides sufficient information on cardiac size, initial identification of chamber enlargement and size of the great vessels, pulmonary circulatory dynamics and congestive heart failure. ECG findings could detect the presence of specific chamber enlargement, myocardial disease, ischaemia, pericardial diseases, certain

electrolyte imbalances and drug toxicities. Echocardiography offers details imaging of internal cardiac anatomy. Moreover, Doppler echocardiography detects normal and abnormal blood flow patterns and estimates intravascular pressures. Contrast echocardiography is used to detect intracardiac blood shunting. Cardiac sonography has replaced invasive cardiac catheterization and angiocardiology in many instances. Cardiac catheterization and angiocardiology were used to determine intracardiac and vascular pressures, cardiac output, oximetry and the anatomy of the pulmonary or systemic vasculature and thus helped detecting cardiac diseases, forecasting prognosis and devising treatment protocols. Single pass or blood pool radionuclide scanning studies are used to detect cardiac shunting and measure ventricular volumes. It is concluded that the radiographic evaluation is best conducted in association with an ECG and when facility available, an echocardiogram are the best option for cardiac assessment in clinical perspective in canine.

#### **Radiographic and Ultrasonography Evaluation of Canine Mammary Tumors and its Metastatic Lesions in Dogs**

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Radiography and Ultrasonography was performed in 54 dogs (n = 54) for evaluation of canine mammary tumours (CMN) and its metastatic lesions in liver, lungs and other organs. Thoracic radiograph of 19 out of 54 (35.18%) cases of CMN revealed soft tissue densities indicating pulmonary metastasis. Most of these densities were indicative of infiltrative type of metastatic lesions, whereas others were in the form of either focal nodular or miliary type of soft tissue densities. One guide dog exhibited well-developed nodular metastatic lesions throughout the lungs. Another dog had a large well-defined solitary metastatic nodular soft tissue density in apical area of lung. Abdominal Radiography could not diagnostic metastasis in any case. Majority of canine mammary tumours exhibited soft tissue density. In the present study, majority of the CMN cases examined with ultrasound did not reveal any abnormal echo pattern in the abdominal organs suggestive of any metastasis except in one case where hypoechoic multiple nodular echo patterns were observed in the liver indicating metastasis. Mammary tissue evaluation showed in 55 per cent of CMN cases, mixed echo patterns, followed hypoechoic (35%) texture and rest showed totally anechoic (10%) texture indicating cystic CMN. Most of the cases (70%) observed well-defined margins and the rest (30%) showed irregular margins. However, in 30 per cent of the cases anechoic pattern were also observed along with fixed type of echo pattern. It is concluded that radiology is useful for diagnosing the metastasis lesions in lungs where as ultrasonography is useful in diagnosis of liver metastasis in dogs.

#### **MRI studies in Neurological Disorders – A review of 4 cases**

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Three year old, mixed breed female was presented to the clinic with a staggering gait, sudden loss of sight, attempts to walk and would stumble and fall. RT-103.5. Tests for *E. Canis* and distemper were negative. Conservative treatment was being given, and she showed neurological deficit on 10th day of treatment. Plain and contrast MRI showed evidence of myelitis and scarring of spinal tissue. 10 year old dachshund had a leiomyosarcoma which was surgically excised, showed recurrence after 6 months. It evinced pain in the forelimb. MRI with contrast highlighted metastasis in the supraspinatus muscle, lungs and liver. 9 month old Rotweiller had sudden weakness in all limbs and syncope like symptoms. It was treated with Gardinal for a week, showing similar symptoms in the following week. Blood and serum profile was normal. MRI studies of brain and spinal cord showed no lesions. 9 year old Labrador with loss of sudden loss of muscle mass, showed pain in left hindlimb and thoracic spine. MRI showed fibrous tissue at the hip joint, compression at the cervical region, degeneration and osteophytes of thoracic vertebrae.

I-20

**Survey Radiographic and Positive Contrast Ear Canalographic Evaluation of Canine Otitis**  
*Sachin J. Shenoy, C. B. Devanand, K. D. John Martin and T. Sarada Amma*  
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A study was carried out to evaluate the radiographic changes of canine otitis, in order to develop a systematic approach for the diagnosis and management in 12 clinical cases. The dogs were subjected to detailed clinical, otoscopic and survey radiographic examination to assess the extent of affection of the auditory system. Otoscopic examination was found to be useful for examination of ear canal and tympanic membrane except in cases of extensive ear canal involvement like stenosis and obliteration. Dorsoventral views were ideal for evaluation of external ear canal and petrous temporal bone. Lateral oblique views were ideal for evaluation of individual tympanic bullae and rostro-caudal open mouth views were adequate for evaluation of tympanic bullae without superimposition of other bony structures. Positive contrast ear canalography was the suitable procedure to assess the status of tympanic membrane when its examination by otoscopy was precluded owing to stenosis or obliteration of lumen of horizontal canals and to study the luminal diameter.

I-21

**Radiographic Evidences of Vertebral Column Affections in Dogs- A Retrospective Study of 687 Cases**

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Major affections of vertebra like fractures, intervertebral disc calcification, discospondylitis and spondylosis were reviewed through the radiographs in the current study during the period of 2005-2009 in Madras Veterinary College. Of the 687 dogs suspected for these conditions, 387 dogs showed radiographic lesions. Fractures were predominantly noticed in thoracic vertebra (65 cases), followed by lumbar vertebra (56 cases) in non-descript breeds; of which, majority of the fractures were between T<sub>12</sub> and T<sub>13</sub> (33% each), followed by L<sub>7</sub> (19.35%) and L<sub>6</sub> (16.13%). Intervertebral disc calcification was noticed in 54% in lumbar vertebra (mostly L<sub>4</sub> and L<sub>5</sub>), followed by thoracic vertebra which was 45% (mostly T<sub>12</sub> and T<sub>13</sub>) and was mostly in Dachshund. Discospondylitis were noticed in 14 cases, frequently in Dachshund, German Shepherd dogs and Lhasa Apso. Mostly, spondylosis was present in 48% of the cases, especially in lumbar vertebra (62.72%) above 9 years and in German Shepherd dogs (30.67%). Other results will be discussed.

I-22

**Use of Ultrasound in Pet Practice.**

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This paper highlights the various ultrasonographic findings in 653 dogs presented for various complaints to the Veterinary Hospital, Belgaum (Karnataka) from a period of June 2005 to June 2009 using a micro-convex dual frequency probe (5 MHz -- 7.5MHz). Ultrasound was primarily used for pregnancy diagnosis in 337 cases. The gestational sacs with viable embryos could be identified 25-30 days post breeding. In obstetrical cases (n= 17), fetal viability was determined. Endometritis and pyometra were diagnosed in 28 cases, even prior to obvious clinical signs. Retained testicles were located in 6 dogs. Prostatic hyperplasia (n= 8), prostatitis (n= 3) and prostatic abscess (n= 1) could be differentiated. Echocardiography was attempted in 9 cases. Hepatic parenchyma was assessed in 10 cases and pathological conditions like cyst (n= 2) and abscess (n= 3) were noticed. Splenomegaly was seen in 14 cases. Kidneys were evaluated (n= 48) for their relative echogenicity to that of liver and spleen. Cystitis (n= 23) and cystic calculi (n= 12) were diagnosed. The ovaries, pancreas and gastrointestinal tract were difficult to evaluate ultrasonographically. It is concluded that ultrasound proves to be a valuable diagnostic aid in routine pet practice.

### **Radiographic, Ultrasonographic and Laparoscopic Diagnosis of Urogenital Disorders in Dogs**

*S. Tumariya, A. Shahi, M. K. Bhargava, S. Jawre, R. Singh, and V. P. Chandrapuria*

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The present study was conducted on clinical cases of 34 male dogs, irrespective of breed and age, showing the sign of urogenital disorders. After physical examination temperature, pulse rate and respiration rate were recorded. Radiographic ultrasonographic and laparoscopic examination was performed in all the animals followed by urine analysis and haemato-biochemical examination. The incidence of urogenital disorder in the present study was 4.40% out of which maximum were of benign prostatic hyperplasia (32.35%) followed by calculi at different sites (23.53%), cryptorchidism (14.71%), orchitis (11.76%), cystitis (8.82%) and testicular tumours (8.82%). To detect nephroliths and cystoliths radiography and sonography both were found equally good followed by laparoscopy while, for urethrolith radiography is the only technique. To detect retained testicles, orchitis / scrotal inflammation, cystitis, and testicular tumour ultrasonography was found best diagnostic modality, followed by radiography whereas laparoscopy has no role to detect these conditions. Haematological parameters were within the normal limits, whereas, moderate increase in BUN and Creatinine was seen in most of the cases.

### **Radiographic and Ultrasonographic Study of Hepatobiliary Affections in Dogs**

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Fourteen cases showing the clinical signs, indicative of hepatobiliary disorder were subjected for haematological, biochemical, physical, clinical, radiographic and ultrasonographic analysis. The maximum cases of hepatobiliary affections were of nodular hyperplasia (4), followed by cirrhosis (2), ascites (2), hepatic cyst (1), hepatic abscess (1), cholelithiasis (1), altered liver texture (1), hepatomegaly (1), and Jaundice (1). In most of the cases the values of haematobiochemical parameters showed leukocytosis and decrease in red blood cell count, while SGPT, ALP, and total protein showed significant increase. On the basis of radiographic and ultrasonographic studies, it was concluded that ultrasonography served as a valuable aid not only in diagnosis of clinical cases of hepatobiliary disorders but also provided the base to diagnose the type of lesions in dogs. Efficacy of ultrasound was more in case of focal diseases than diffused diseases of liver.

### **Laproscopy/Endoscopy Guided Ocular Fundus Imaging Technique- A novel approach towards ocular diagnostics**

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Diagnostic imaging with fundic camera is a well established ophthalmic imaging technique but is not widely accepted in Veterinary practice due to its high cost involvement. Considering the need of a simpler and cheaper alternative use of laproscopic probe for fundus imaging was tried and standardized in the present study. In this method the laproscopic probe was placed directly in contact with the anaesthetised cornea to obtain clear images. The experiment was conducted on canine cases and satisfactory fundic images were obtained. Anterior chamber, lens, iris, irido-corneal angle, vitreous and retinal images were visualized clearly in the patients with clear cornea. Laproscopy/endoscopy probe aided fundic imaging technique is cost effective, efficient, user friendly diagnostic technique in small animal practice.

### **Diagnostic Imaging in Canine Ophthalmic Cases with Special Reference to Ocular Ultrasonography**

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Ocular ultrasonography is one of the important diagnostic procedures in ophthalmology. This

technique is significant in cases where ophthalmoscopic examination has limited use. Twenty canine cases presented for ocular affections were subjected to ocular ultrasonography with 5 Mhz microconvex sector probe using the closed eyelid technique after liberal application of jelly. Images were obtained by placing the probe in horizontal, vertical and oblique planes. The lens structure, vitreoretinal image and peri orbital fat can be satisfactorily visualized by the 5 Mhz linear probe. Partial retinal detachment was observed in 2 cases, vitreous haemorrhage in 4 cases, cataractous lens in 14 cases. Ocular ultrasound is a useful diagnostic tool in cases where ophthalmic examination is limited, especially in cases of hypema, corneal opacity and cataract cases and serves as an added advantage in the prognosis of the cataract cases subjected for surgery.

1-27

### **Clinical, Radiographic and Arthroscopic Evaluation of Carpal Joint Affections in Indian Thoroughbred Horses**

*Samar Halder, R. Suresh Kumar, L. Nagarajan, C. Balachandran and Geetha Ramesh and A. Ramanathan*

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The work was carried out to evaluate the joint affections by clinical, radiographic and arthroscopic examination and to find out correlation between them. Incidence of joint affections revealed more frequent involvement of right forelimb in young male horses 'up to 6 years of age'. Of the three cases of DJD, characteristic degenerative changes were observed only in two joints on survey radiographs whereas arthroscopy facilitated accurate assessment of articular cartilage damage in all the horses. Osteochondral lesions were not appreciable on radiographic examination but all the cases were diagnosed arthroscopically. Evaluation of intra-articular ligament was made possible only by arthroscopy. Arthroscopy revealed that radial carpal-third carpal branch (lateral) was more frequently injured than the medial branch. Synovitis was usually accompanied by various grades of lameness, synovial effusion, heat and periarticular swelling. Inflamed and clubbed villi, hyperaemic synovial membrane, fibrin deposit, free floating cellular debris were the common arthroscopic findings. Cruciate chip fracture of the radial carpal was radiographically silent but was evident on arthroscopic examination. One horse was diagnosed for subchondral cystic lesion of the fourth carpal bone both radiographically and arthroscopically.

1-28

### **Arthroscopic Diagnosis of Partial Rupture of Cranial Cruciate Ligament with Avulsion of Tibial Eminence, Osteochondritis Dissecans and Degenerative Joint Disease of Stifle Joint in Three Indian Thoroughbred Horses**

*Samar Halder, R. Suresh Kumar, L. Nagarajan, C. Balachandran, Geetha Ramesh and A. Ramanathan*

West Bengal University of Animal and Fishery Sciences, Kolkata - West Bengal

Clinical, radiographic and arthroscopic evaluations were carried out in three Indian Thoroughbred horses with stifle lameness. Radiographic examination of the stifle joint did not show any bony lesions. Arthroscopic examination of the stifle joint diagnosed a case of partial rupture of cranial cruciate ligament with avulsion of tibial eminence at the point of insertion of cranial cruciate ligament, osteochondritis dissecans on the medial border of patella and medial trochlear ridge in another horse and early degenerative joint disease of femoropatellar joint in the third horse. A comprehensive approach to diagnose the stifle lameness was effective for immediate treatment, pain free ambulation and assessment of prognosis. Clinical examination confirmed the seat of location in horses with stifle lameness reported in this study. Survey radiography was of no diagnostic value as there was no bony lesion whereas arthroscopy was proved to be a valuable diagnostic modality to diagnose the involvement of soft tissue or articular cartilage.

### **Ultrasonographic Findings of Pericarditis and Pleural Effusions in Bovines**

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The present study was conducted on 16 bovines suffering from pericarditis (6 buffaloes and 4 cows) and pleural effusions (6 buffaloes). Clinically most of the animals were reluctant to move and had muffled heart sound along with brisket oedema. Haematobiochemical changes included increased total leukocyte count, neutrophilia, increased plasma globulin concentration, decreased albumin/globulin ratio and increased fibrinogen concentration. Indistinct line of diaphragm, loss of thoracic detail, ground glass appearance of thoracic cavity and loss of cardiac silhouette were most common radiographic findings in both the conditions. Ultrasonographic findings in cases of pericarditis were separation of parietal and visceral pericardial layers filled with hypoechogenic to echogenic contents whereas anechoic fluid was present outside the heart and caudally in cases of pleural effusions.

### **Comparison of Radiography and Ultrasonography for Diagnosis of Diaphragmatic Hernia in Bovines**

*H. Athar, J. Mohindroo, K. Singh, A. Kumar and M. Raghunath*

COVS, GADVSU, Ludhiana- Punjab.

Present study was conducted on 101 animals suffering from thoracoabdominal disorders out of which twenty seven animals (twenty six buffaloes and one cow) were diagnosed with diaphragmatic hernia based on clinical signs, radiography, ultrasonography and left flank laparotomy. Radiography alone confirmed diaphragmatic hernia in 18 cases (66.67%) with a sac like structure cranial to the diaphragm. In 15 animals the sac contained metallic densities while in three cases a sac like structure with no metallic densities was present. Ultrasonography was helpful in confirming diaphragmatic hernia in 23 cases (85.18%) and ultrasonographically reticular motility was evident at the level of 4<sup>th</sup>/ 5<sup>th</sup> intercostal space in all the animals. B+M mode ultrasonography was used for the first time for diagnosis of diaphragmatic hernia in bovines and the results suggested that ultrasonography was a reliable diagnostic modality for diaphragmatic hernia in bovines.

### **Ultrasonography as an Adjunct Tool for Planning Surgery in Canine Mammary Tumor Cases**

*Pankaj Gupta, M. Raghunath and J. Mohindroo*

COVS, GADVASU, Ludhiana

Twenty three cases of canine mammary tumors were examined ultrasonographically before surgery to determine their nature (cystic or non-cystic), extent of neoplastic margins (ill-defined or well defined and their relationship with surrounding tissue) and internal echogenicity of tumor. These ultrasonographic features were then compared with intraoperative findings. Out of 23 cases 13 were non-cystic, 5 were cystic and remaining 5 were of mixed nature. 13 had irregular margins whereas in 43.48% cases the tumor was completely isolated from the surrounding tissue. Intraoperative findings were in complete compliance with the ultrasonographic findings which suggest that ultrasonography must be used as an adjunct tool for planning surgery in canine mammary tumor cases so that intraoperative complications could be avoided.

### **A Clinical Study on Ultrasound Guided Biopsy and Fine Needle Aspiration Biopsy of Splenic Affections in Dogs**

*C. Singh, S. K. Mahajan, J. Mohindroo, N. K. Sood, N. S. Saini and S. S. Singh*

College of Veterinary Science, GADVASU, Ludhiana

The clinical study was conducted on 11 clinical cases of dogs presented for splenic affections. The USG-FNAB was done in 10 clinical cases and USGB was done in one clinical case. In the present study the technique of USGB and USG-FNAB was found to be accurate without any complications.



The USG-FNAB helped diagnosing extramedullary hematopoiesis, suppurative splenitis and lymphoma of the spleen. Hemangiosarcoma was the condition which was diagnosed with USGB. Ultrasonography helped in characterization of splenic parenchyma for change in size and echotexture. So in the present study, USG-FNAB and USGB were found to be an easy, safe, economical, accurate and reliable technique for diagnosing prostatic affections in dogs.

**XXXIII Annual Congress of ISVS  
and International Symposium  
2009**

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**SMALL ANIMAL SURGERY  
SESSION**

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**Department of Veterinary Surgery & Radiology  
Centre of Advanced Studies  
College of Veterinary Science  
Guru Angad Dev Veterinary and Animal Sciences University,  
Ludhiana- 141004, Punjab (India)**

### **Surgical Management, Histological Classification and Microstructure of Canine Mammary Gland Tumours**

*M. A. Dhami, P. H. Tank and D. J. Ghodasara*

COVS & AH, Anand Agricultural University, Anand- Gujarat

Surgical excision of mammary tumour was the primary treatment of choice in this study to improve towards the favourable prognosis and the life of patient. In most of the cases, simple lumpectomy or mastectomy, performed under general anaesthesia, was sufficient enough to remove the tumour mass or the affected mammary gland. Out of 29 cases operated, recurrence was noticed in 3 cases about 8-10 months later. Patients with tumour mass having diameter less than 5 cm had better prognosis. The tumour size, its growth rate, local infiltration into skin, ulceration of skin, distant metastasis, involvement of local lymphnodes and histopathological nature of tumour helped to predict prognosis or survival after surgical excision. Grossly, the tumour masses varied in size from 2.0 X 1.5 X 1.0 cm<sup>3</sup> to 21 X 15 X 14 cm<sup>3</sup> with ovoid, elongated, rounded or irregularly nodular shape and firm consistency and weighed 50 to 750 gm. On sectioning, some of the tumours showed lobulations with multiple cysts that were filled with slimy amber coloured fluid, while others showed lobulated areas of homogenous whitish to cream coloured masses, and had secondary lesions like necrosis, pus formation and ulceration in few of the tumours. Out of total 29 canine mammary tumours studied histopathologically, 15 (51.72 %) were found benign and 14 (48.27 %) were malignant mammary tumours. In general, frequently encountered benign mammary tumours were fibroadenoma, papillary adenoma, adenoma and fibroma, and malignant tumours were solid carcinoma, malignant myoepithelioma and malignant mixed tumour.

### **Comparative Evaluation of Surgical and Adjuvant Chemotherapy in Canine Mammary Tumours**

*S. K. Maiti, S. Khimta, D. Kumar, B. Bhadane, N. Kumar, A. K. Sharma and M. M. S. Zama*

Indian Veterinary Research Institute, Izatnagar, Bareilly- UP

Twenty dogs of different breeds and ages with spontaneous mammary tumours were utilized for the study. These animals were divided equally into two groups of ten animals each. One group was subjected to surgical excision (lumpectomy, simple mastectomy, en-bloc dissection, half chain removal, unilateral mastectomy or radical mastectomy) under xylazine-ketamine anaesthesia, as per merit of the case. Another group was subjected to surgical excision followed by chemotherapy with Doxorubicin @ 60-75 mg/M<sup>2</sup>BSA I/V once in every two weeks for four weeks. The surgical excision gave satisfactory results with a success rate about 60%. Whereas the adjuvant chemotherapy group found to be more effective with a success rate more than 80%. The effectiveness was based on postoperative clinical, radiological findings and owner's report. There was a significant decrease in TLC and PCV, accompanied by neutropenia, eosinopenia, lymphocytosis and monocytosis and reduction in immunoglobulin (IgG) in animals subjected to surgical excision followed by chemotherapy.

### **Applicability of Skin Staples for Different Surgical Procedures in Canines**

*Shally Mattoo and J. Mohindroo*

COVS, GADVASU, Ludhiana

The present study was conducted on 37 dogs presented to Department of Surgery and Radiology during the period from February 2007 to April 2008. The study was carried out to evaluate applicability of skin staples in different surgical procedures, which included eighteen cases of long bone fracture, four cases of lacerated wound, four cases of wound dehiscence after nylon suturing, eight cases of ventral incision of which four were mammary tumor, two cystotomy, one of ovariohysterectomy and one of GIT foreign body and one case of small tumor on head. For all the cases signalment, general condition of animal, rectal temperature, hematological and biochemical parameters were recorded. Number of sutures applied, total time of application, stability of suture and ease of application were recorded during surgery. In post operative follow up suture line was assessed

on alternate days. It was seen that stapling was 15-16 times faster than conventional suturing. Staples were easy to apply. Stapling showed wide range of applicability and they brought about wound healing with good cosmesis. Staplers can be used as emergency aid for clinicians. It was seen that removal of staples was less painful and easy.

SA-4

#### **A Study on Mammary Tumor in Canine with Special Reference to the Cyclophosphamide Chemotherapy**

*Suryawanshi, R., Pawshet D. B., Mehsare S. P., Joshi M. V., Bijwal D. L. and Ali S. Z.*  
College of Veterinary Science, Rajendranagar, Hyderabad-AP

The aim of the present study was to follow the efficacy and adverse reaction of cyclophosphamide chemotherapy combined with surgical excision of malignant mammary tumor in dog on basis of clinical, haematological and chest radiographic parameter. The study was conducted on 18 clinical cases reported at Campus Veterinary Hospital, aged between 7-11 years from various breed. They were randomly divided into two groups consisting of nine dogs in each group. After histopathological confirmation of tumor in nine cases, they were put on surgical excision and cyclophosphamide ( $100 \text{ mg/M}^2$  (BSA)) in first group and remaining dogs on simple surgical excision of tumor in second group. The blood picture revealed severe neutrophilia, anemia and thrombocytopenia with slight alteration in BUN & Creatinine values in first group with digestive disturbances. Post-chemotherapeutic chest radiograph showed decrease in nodular lung density. The present study was concluded that the use of cyclophosphamide along with surgical excision of malignant mammary tumor suppresses the further new growth and distant metastasis but accompanied with immunosuppressive effect and temporary adverse reaction like alopecia, gastritis, weakness and haematuria in five dogs in first group.

SA-5

#### **Complications of Extra Capsular Cataract Extraction (ECCE) in Canines - A Review of 60 Cases**

*Nisha Joy, S. K. Jhala, D. B. Patil, P. V. Parikh, M. J. Sheth and K. R. Mistry*  
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The study was conducted from 2007-2009 to evaluate the intraoperative and postoperative complications of cataract surgery. Fifty four dogs out of 97 affected with cataract were subjected to extracapsular cataract extraction. Out of 54 dogs, 22 (28 eyes) were subjected to ECCE and 32 (34 eyes) to ECCE along with implantation of PMMA (41 D, 7 mm optic and 17 mm height) intraocular lens. Most common complications during surgery were intraoperative bleeding (4), bulging (5), pupillary constriction (5), vitreal prolapse (1) and chemosis (7). Postoperative complications included corneal oedema (12), corneal opacity (25), posterior capsular opacity (8), anterior subluxation of lens (4), glaucoma (2), fibrin clot (14), suture dehiscence (5) and retinal detachment (1). Management of intraoperative and postoperative complications has been analysed.

SA-6

#### **Surgical Management of Caudal Esophageal Foreign Bodies in Dogs**

*V. Mahesh, Ashish Holey, D. R. Manjunatha S. Prabhudeva and L. Ranganath*  
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Esophageal obstruction is very common in dogs. Two male dogs aged one and four years presented to the Veterinary College Hospital, Bangalore with the history of retching, dysphagia and regurgitation. Physical examination revealed no abnormality in the oral cavity. The plain radiographs confirmed radioopaque foreign body in the caudal esophagus close to cardia. Exploratory laparotomy was performed and bone piece in one case and corn cob in other case were removed. The animals recovered well.

### Wound Healing Potential of Autologous Bone Marrow-Derived Cells on Excisional Dermal Wounds of Rabbits

*Bizunesh M. Borena, A. M. Pawde, Amarpal, H. P. Aithal, P. Kinjavdekar, Rajendra Singh and Dinesh Kumar*

Indian Veterinary Research Institute, Izatnagar, Bareilly- UP

The wound healing potential of autologous bone marrow-derived nucleated cells was evaluated in full-thickness skin (thoracolumbar region) wounds on 20 clinically healthy rabbits. Three wounds of 2x2 cm full thickness skin, one on left side and two right to the midline, were created on dorsal lumbar region of each rabbit under xylazine-ketamine anaesthesia. The wounds in each animal were randomly assigned to three treatments i.e. injection of autologous bone marrow-derived cells into wound margins (BI), topical application of bone marrow-derived cells over the wound surface (BT) and 5 % povidone-iodine solution (PI) (control). Wounds were observed for 28 days for granulation tissue formation, wound contraction, histopathological and histochemical evaluation and duration of complete healing. The time of appearance of granulation tissue was significantly less in BI treated wounds (mean,  $3.22 \pm 0.22$ ) than BT (mean,  $3.89 \pm 0.40$ ) and PI (mean,  $4.89 \pm 0.47$ ) groups. Wound contraction was significantly ( $P < 0.05$ ) higher in BI treated wounds (73.00 % and 97.35 %) than BT (58.75 % and 84.87 %) and PI (54.84 % and 84.60 %) groups on days 14<sup>th</sup> and 21<sup>st</sup> post-operation. A higher proportion of wounds healed earlier in BI group than control groups. Histopathological findings showed that early disappearance of inflammatory reaction, better epithelialization, significantly more neovascularisation, more fibroplasias and collagenation and early histological maturation in BI and BT treated wounds than in control wounds.

### A Clinical Study on Dental Disorders in a Canine Hospital Population

*F. Karlette Anne, P.H. Tank, P.R. Patel*

COVS & AH, Anand Agricultural University, Anand- Gujarat

A study on dental disorders in a canine hospital population was undertaken with an objective to explore the oral pathology, and to evolve diagnostic, prophylactic as well as therapeutic protocols. During the study period (November 2008 to February 2009), 30 dogs (3.37% of all cases) were identified to have serious dental disorders. Their mean age was 7 years 7 months, 16 were males and the breed distribution was Spitz (N=9), GSD (N=8), ND (N=4), Doberman (N=2), Pomeranian (N=2), and other (N=5). The major oral abnormalities observed were halitosis (N=26), at least one tooth missing (N=7), structural/shape defects (N=14), and tumours (fibromatous epulis (N=1)). The mean oral pH was 7.7 and the median index values were Plaque Index=2, Calculus Index=1.5, Gingival Index=1, Periodontal Disease Grade=1, and Furcation Index=1. A case by case approach was adopted to devise a line of treatment. Dental therapy performed included dental scaling and polishing (40%), tooth extractions (10%), LN<sub>2</sub> cryotherapy (3.33%), along with the administration of oral and systemic antibiotics as well as supplementation with multi-vitamins and minerals. We found that perioperative antibacterial irrigation of the oral cavity with 0.2 percent chlorhexidine gluconate solution, povidone iodine and metronidazole was beneficial. At follow up examination, the animals demonstrated good recovery (n=15), satisfactory recovery (n=7), poor recovery (n=4). Three cases were lost at follow up. In view of the spectrum of dental disorders and its gravity to cause discomfort to the quality of life of the dogs, a perspective and controlled study on owners' awareness and prophylactic professional dental care is envisaged.

### A Clinical Study on Laparoscopic Vasectomy for Control of Reproduction in Stray Dogs

*S. R. Tatelu, L. B. Sarkate, N. H. Moru, D. U. Lokhande and G. S. Khandekar*

Bombay Veterinary College, Parel, Mumbai- Maharashtra

Laparoscopic vasectomy was undertaken in 12 apparently healthy male dogs. The dogs were randomly divided into two equal groups. 6 dogs were subjected to laparoscopic bilateral vas occlusion using electrocoagulation (Group I) with bipolar cautery, while the remaining 6 dogs were vasectomised laparoscopic titanium clip application (Group II) using 5 mm clip applicator. Two pre-

anaesthetics, Acepromazine (@ 0.04 mg/kg intravenously) and Diazepam (@ 1 mg/kg intravenously) were also compared to develop a suitable anaesthetic combination with Propofol anaesthesia (5 mg/kg intravenously) for laparoscopic vasectomy. Anaesthetic and haematological parameters along with serum cortisol were studied. Semen evaluation was done on 8<sup>th</sup> post-operative day. An average time of 14.67 ± 0.71 and 19.35 ± 0.98 minutes per dog was required for completion of laparoscopic vasectomy in Group I (electrocoagulation) and Group II (clip application), respectively. Overall, electrocoagulation was found superior to clip application in terms of ease of performance, hemostatic efficacy, time as well as cost factor. Trendelenberg position (30°) and 13 mm Hg pressure gradient CO<sub>2</sub> insufflation were beneficial for the procedure. No major or minor complications were seen either during or after laparoscopic sterilization. The cost of surgery was approximately Rs. 150.00 and 500.00 per dog in Group I and II respectively. The Diazepam+Propofol combination was found better during laparoscopic examination and surgery as compared to Acepromazine+Propofol combination. Hematological and serum cortisol levels were within normal physiological limits, in both the groups. The semen samples showed complete azoospermia after 7 days. All the dogs made uneven recoveries within few hours following surgery and not much post-operative care was required. The technique of sterilizing the male dog proved beneficial over the conventional castration for male sterilization drives.

## SA-10

### A Comparative Study on Laparoscopic Ovariectomy and Laparoscopic Ovariohysterectomy in Clinical Cases of Queen Cats

*N. H. Moru, L. B. Sarkate, S. R. Tatelu, D. U. Lokhande and G. S. Khandekar*

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Twelve apparently healthy queen cats of 2-4 year age and weighing 2-3 kgs were subjected to laparoscopic sterilization. They were randomly divided into two groups of 6 cats each. Ovariectomy was performed in Group-I, whereas ovariohysterectomy in Group-II by three port fixation technique using bipolar electro-coagulation method with 5.5mm port size. These groups were further subdivided into two anaesthetic groups. Three cats from each group were anaesthetised with a combination of xylazine (1 mg/kg b.wt. I/m) and ketamine (25 mg/kg b.wt. I/m) while in the remaining cats from each group were anaesthetised with a combination of acepromazine (0.08 mg/kg b.wt. I/m) and ketamine (25 mg/kg b.wt. I/m). Laparoscopic, anaesthetic and haematological parameters were studied. The mean time required for laparoscopic ovariectomy (31.4 ± 4.04 minutes) was lesser than laparoscopic ovariohysterectomy (48.2 ± 3.4 minutes) and was found safe and more reliable. The 5mmHg CO<sub>2</sub> pressure was found most suitable as it provided better working place and comfort to both the cat as well as surgeon. Xylazine-ketamine combination was found better over acepromazine-ketamine combination as it provided greater degree of muscle relaxation which facilitated easy grasping of ovaries. Haematological parameters remained within the normal physiological limits in cats of both the groups. Laparoscopic sterilization could replace the conventional sterilization technique in cats as it is easier, quicker and cost effective.

## SA-11

### Canine Mammary Tumors: A Diagnostic and Therapeutic approach

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The present clinical study was conducted on 72 dogs with canine mammary tumors presented to the College of Veterinary Science, Tirupati. Highest incidence of CMTs was observed in the age group of 10-12 years. Majority of the cases reported were nulliparous followed by pleuriparous and uniparous. Spitz was the most commonly affected dog breed. Inguinal pair was the most commonly affected gland. All the tumors varied widely in size ranging from 2-12 cms. Thoracic radiographs revealed distant metastases in 9 dogs as well defined nodules or masses (cannon balls), solitary nodule, multiple small nodules and diffuse interstitial pattern. Ultrasonography found helpful to rule out abdominal metastases and to know the presence of anechoic fluid filled cystic spaces. Electron microscopic studies disclosed no viral etiology in mammary carcinogenesis. Diagnostic cytology techniques

FNAB, NAF cytology established the malignancy in tumors. C-reactive protein values and AgNoR counts differentiated the malignant tumors from the benign tumors. Histopathological examination revealed 18 benign and 54 malignant CMTs. Adenocarcinomas were the most frequently encountered malignant CMTs. Immunohistochemical studies were carried out on 24 malignant CMTs and majority of the tumors (75%) were found to have hormonal receptor positive expression. Majority of adenocarcinomas (70%) were expressing PR positivity. Proliferative markers like P53, C-erb B2 oncogene expression was studied and found in 20.83% and 25% of malignant CMTs respectively. Treatment modalities like surgical excision/chemotherapy/surgery and chemotherapy/surgery and hormonal therapy were adopted. In chemotherapy, neutropenia was observed. Doxorubicin and Cyclophosphamide were the anti cancer drugs used in the chemotherapy. Dogs with hormonal receptor positive CMTs were given hormonal therapy with tab. Tamoxifen. In the present study a combination of surgical excision of CMTs and adjunctive hormonal therapy gave the best results with complete regression of the tumor mass compared to the other treatment modalities. Majority of the animals had no recurrence of tumor growth. Chemotherapy along with surgical excision of CMTs gave better results with 72% of disease free interval. Surgical excision remains the best treatment modality, still unprecedented for the treatment of localized or low grade or benign tumors. 1

SA-12

#### **Comparison of Vascular Wall Changes to Rapamycin (Sirolimus) Versus Bare Metal Stents in Balloon Injured External Iliac Arteries of Rabbit**

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Twenty- one Sirolimus Eluting Stents (SES) were compared with 21 Bare Metal Stents (BMS; control) by implantation into left and right balloon injured external iliac arteries, respectively of 21 healthy New Zealand White (NZW) rabbits. Under Ketamine-Diazepam-Xylazine anaesthesia and fluoroscopic guidance using 3mm coronary balloon catheter, FlexyRap (SES) and FlexyStar (BMS) stents (3 mm diameter and 13 mm long) were deployed. Stents were successfully deployed at 6 atm balloon dilation pressure in prior balloon injured iliac arteries. Various histopathological parameters were assessed after rabbits were sacrificed at 7, 14 and 21 days (7 rabbits in each group). Each stented vessel was subjected to resin embedding technique and methyl methacrylate sections were obtained using tungsten carbide knife for Haematoxylin-Eosin and Martius, Scarlet, Blue staining. On histological examination, SES showed marked reduction in almost all histological parameters. Morphometric analysis showed that arteries with SES had a larger luminal area ( $p < 0.0001$ ), lower intimal ( $p < 0.001$ ) and medial ( $p < 0.001$ ) thickness and lower intimal index ( $p < 0.003$ ) as opposed to arteries stented with BMS.

SA-13

#### **Studies on the Effects of Ovariohysterectomy of Healthy Bitches on Calcium Metabolism**

*A. K. Maji, Ashoke Kumar, Samar Halder, S.K.Nandi, S. Batabyal, S. Roy, P. Mukherjee and R. Ahich*

WBUA&FS, Kolkata- West Bengal

Twelve healthy adult bitches of 3-4 years of age presented for routine 'animal birth control program' at university clinics were randomly divided in group- A (n=6) and group- B (n=6). In Gr-A, hysterectomy and unilateral oophorectomy and in Gr-B, panhysterectomy were done. Hematological, biochemical, radiological evaluation were made preoperatively and postoperatively at one month interval upto 5<sup>th</sup> month. Histopathological studies were done at 5<sup>th</sup> month after operation. Non-significant changes in hematological parameters, significant changes in serum estradiol ( E2) and nonsignificant changes in serum alkaline phosphatase , calcium and phosphorus were observed. No-diagnostic observation of osteoporosis was evident upto 5<sup>th</sup> month postoperative period in Gr B animals by histopathology and survey radiography.

**SA-14 Phacoemulsification Combined With Intra Ocular Lens Implantation in Dogs –A Review  
Four Cases**

*C. Ramani, M. Shiju Simon, S. Sooryadas and R. Suresh Kumar*  
Madras Veterinary College, TANVASU, Chennai

Five dogs presented to the Small Animal Ophthalmology Unit of the Madras Veterinary College Teaching Hospital with bilateral mature cataracts were subjected to this study. All animals were apparently healthy and the thoracic radiograph, haematological and serum biochemistry results were normal. Surgical correction was resorted to. All dogs were anaesthetized using propofol and maintained with 1.5 – 2 % isoflurane in 100% Oxygen. The eyes were prepared aseptically and the pupils were fixed using 5-0 silk. Stab incisions were made at corneo-scleral junction using 2.8 mm keratome at 3 O' clock position followed by intracameral injection of adrenaline (0.2 ml) to effect mydriasis. Capsulorrhexis was then done using a 23 gauge hypodermic needle bent at a 45 degree angle at the tip followed by phacoemulsification and intra ocular lens implantations were performed. Each eye was operated at an interval of one month. Surgical technique, implications, power of the lens used and outcome will be discussed in detail.

**SA-15 Modified Technique of Vasectomy for Birth Control in Dogs**

*Doddamani Jahangir, Usturge S. M., Honnappagol Suresh, Dilipkumar, Kasralikar Vivek*  
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The study was undertaken in eight adult healthy dogs to study the feasibility of minimal invasive modified technique of vasectomy using a hook for birth control in dogs. The modified technique provided several advantages viz., minimal incision, ease of exteriorization of vas deferens, faster procedure, no cutaneous stitches, less chances of bleeding, less discomfort, no antibiotic coverage, quick healing of wound, high efficacy and absence of contamination and complications of operative site. Semen evaluation revealed no change in volume of ejaculate, colour changed from white - opalescent to colourless and normospermia to azoospermia was obtained on day one itself. The quality of ejaculate observed on subsequent days was similar to that on day one post operation. The above findings suggested that modified technique of vasectomy is suitable for birth control in dogs.

**SA-16 Evaluation of Fish Air Bladder as a Graft for Cystoplasty in Dogs**

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The present experimental study envisaged evaluation of the Fish air bladder as a xenogenic graft for cystoplasty in canine models. The experimental study was undertaken on 36 adult canine models of either sex with apparently good health status. The animals were categorised into two groups- Group I (with immunosuppression) and Group II (without immunosuppression), each comprising of 18 dogs. Corticosteroid (Methylprednisolone, DEPOMEDROL®, Pfizer) was administered for the sake of immunosuppression at the specified dosage as underlined in the technical programme of the present experimentation. The course of the present experiment ran for a period of 28 days, post-cystoplasty with day 0, 7, 14 and 28 being the specified days of observation. The results were analyzed in the light of various parameters viz. Gross and behavioural changes, clinico-haematological, histobiochemical, histopathological, immunological (ELISA) and ultrasonographic study. Various clinical haematological parameters exhibited the tendency to fluctuate within the normal physiological range except the monocyte, lymphocyte and serum creatinine which registered a significant variation ( $P < 0.05$ ) on day 7, 14 and 28 of the cystoplasty. The mean  $\pm$  S.E. values of the absolute monocyte count on day 7 varied significantly ( $P < 0.05$ ) with that of day 14 and day 28, the value recorded on day 14 and 28 did not vary significantly with each other. The mean  $\pm$  S.E. values of the lymphocyte count on day 14 and 28, post-cystoplasty differed significantly ( $P < 0.05$ ). However, the serum creatinine levels on day 7 differed significantly with that of day 14 and 28 which differed non-significantly with each other. Under histo-biochemical parameters, except for the elastin, rest (collagen, Hydroxyproline)



Hexosamine) exhibited a significant variation ( $P < 0.05$ ) in the values recorded on day 7, 14 and 28, post-cystoplasty. ELISA readings, too, were found to differ significantly ( $P < 0.05$ ). The caudal portion of the Fish air bladder seemed to be a suitable area to be used as graft in the present experimentation in the light of appreciable avascularity, texture with uniform thickness which guide the successful outcome of any cystoplasty procedure in general. For the intake of graft, administration of corticosteroid seemed to be indispensable as only 66.66% survivability could be recorded in animals with immunosuppression as against none without immunosuppression.

SA-17

#### **Comparative Study of Applanation Tonometry (Tonopen-Vet) to Indentation Tonometry (Schiotz) in Normotensive and Glaucomatous Dogs**

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Intraocular pressure (IOP) measurements were compared in nonpathologic normotensive eyes and glaucomatous eyes of dogs presented to the Small Animal Ophthalmology and Orthopaedic Units of Madras Veterinary College Teaching Hospital. Applanation tonometry, using Tonopen-Vet, was performed after desensitizing the cornea with topical anaesthetic. Indentation tonometry, using Schiotz tonometer, was performed in the same eye, 10 minutes after the first procedure. To avoid operator error, all IOP measurements were taken by the same person. The mean IOP measurements between Tonopen-Vet and Schiotz were statistically analysed in comparison to normotensive and glaucomatous eyes.

SA-18

#### **Intraocular Pressure and Pupillary Diameter – Their Relationship and Changes Following Mydriasis in Dogs**

*C. Ramani, Sooryadas, S., Arun Prasad, V. Kavitha and R. Sureshkumar*

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Intraocular pressures (IOPs) and pupillary diameters (PD) in dogs of different breed, age and gender presented to the Small Animal Ophthalmology Unit of Madras Veterinary College Teaching Hospital were recorded. IOP was measured by an applanation tonometer (Tonopen-Vet), while the PD was measured using a 20mm spread Castroviejo Caliper. Those normotensive eyes needful of a detailed posterior segment examination and subjected to mydriasis using topical tropicamide eye drops, were again measured for the IOPs and PDs. IOPs and PDs before, and their changes following mydriasis were calculated and compared. The results are statistically analysed and presented.

SA-19

#### **Minimally Invasive Vas Occlusion Technique (MIVOT): another option in the population control of stray dogs**

*Baljit Kaur, R.C.M. Kaza, Simrat Sagar Singh, N.S. Saini and Sachin Patil*

Civil Hospital, Amritsar- Punjab

Stray dogs present a huge burden to the society in terms of the works loss and diseases produced by dog bites. Control of stray dog population is easier said than done. Success of any program on population control of stray dogs depends on sterilization of 70% of the strays in a given geographic area within 6 months, before the next reproductive cycle begins; otherwise the entire effort is wasted. Currently, Animal Birth Control (ABC) program in India follows gonadectomy in dogs as a measure to control stray dog population. Though gonadectomy has its distinct advantages in pet dogs it carries an element of to stray dog survival. Moreover gonadectomy is a surgical procedure which requires training in this field and full fledged operating facility. Long post-operative care is necessary and it carries significant surgical morbidity and mortality. Hence we devised Minimally Invasive Vas Occlusion Technique (MIVOT) for control of stray dog population. **Materials and Methods:** Two instruments were specially designed considering the cornified scrotal skin of dogs. Twenty one stray dogs were captured and vasectomy was done under general anesthesia according to MIVOT principles. **Results:** Difficulty level was categorized based on time taken to dissect the vas from its fascial coverings as well as the difficulty encountered in going through the skin. Mean operating time

was found to be different for different groups. There was steep learn curve for the investigators, for initial few cases more time was required to complete the surgery but later it settled down to around 15 min average. There was no co-relation found between weight of dogs and time taken for surgery. **Clinical Significance:** MIVOT is a simple, inexpensive, quick, minimally invasive surgical procedure for vasectomy on dogs; some training is required to learn the procedure. It is highly recommended for control of stray dog population, MIVOT should be adopted.

SA-20

#### **Study of Testicular Tumor in Canines – A Case Report of 6 Cases**

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Six adult male dogs with average age of 8-10 years were presented to BSPCA hospital with the history of growth in the inguinal region side to penis. On radiography of chest no metastasis was noted. Hematobiochemical analysis didn't show any significant changes. Dogs were operated under general anesthesia using 2.5 % thiopentone sodium @ 20 mg/kg. On histopathological examination two dogs having growth on right side of penis showed hormone secreting sertoli cell tumor with atrophic and uninvolved testical and other four showed interstitial cell tumor. All the dogs recovered without complication.

SA-21

#### **Some Observations on Gastric Dilatation-Volvulus syndrome in Dogs**

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A total of twelve dogs of either sexes were reported with the varying signs of attempts at vomiting, acute distension of abdomen, restlessness, rapid and laboured breathing. Clinical symptoms confirmed with radiographic examination confirmed the condition to be Acute Gastric Dilatation with volvulus in 11 cases and chronic gastric dilatation in one case. German shepherd and Doberman breeds were more prone for the condition. The condition was mostly found between the age of 2 to 8 years and degree of torsion was mostly 180° with splenic torsion in 3 cases. The serum biochemical profile indicated hypoglycemia and hypokalemia. All the cases were subjected to surgical correction of condition followed by ventral midline gastropexy in 7 cases. Partial gastrectomy in 2 cases, splenectomy in 1 case was required to be undertaken due to compromization of the vasculature. In all the cases except one responded to surgical correction, however, recurrence was noted in 2 cases wherein gastropexy was not performed.

SA-22

#### **Digital Photography as an Aid for Diagnosis and Teaching of Veterinary Ophthalmology – Basic Principles and Few Case Studies**

*Sooryadas, S., C. Ramani, Abhishek Kumar Mishra, A. Arun Prasad, G. D. Rao, R. Ganesh, Nagarajan and R. Suresh Kumar*  
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Practicing Veterinary Ophthalmologists come across interesting cases or procedures which desire to be photographed or recorded. The lack of professional knowledge and equipments leads to failed documentation of such cases; or even if photos are taken with ordinary cameras. So to make this process easy, a consumer-grade digital camera was used as an economic alternative for capturing images of ocular affections of eyes in dogs. A camera equipped with Macro-mode function was used for the purpose. The possibility of visualizing the anomalies and pathologic changes in the eye were more from digital images, than from the examination of the eye of the animal (because the animal will not always be co-operative). The digital pictures were helpful in showing clients what their animals have; making the anomalies so clear, even to the untrained eye. The basic principles, experience and few case studies using digital camera, with the help of photographs, is highlighted here.

### **Efficacy of Low Level Laser Therapy on Healing of Clinical Open Wounds in Dogs: Clinical Studies**

*M. Singh, M. K. Bhargava, A. Shahi, A.P. Singh, S. Jawre, R. Singh and G. Kocchar*  
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The present study was carried out in 30 dogs. The dogs were randomly divided in to 5 groups, each group consist of 6 animals. The various types of wounds including chronic fibrosed, deep laceration, maggotised, dog bite and accidental traumatized wounds were treated by conventional treatment in group I and by low level laser therapy using 2 min.:10 Hz: 1.2 Joules, 4 min.:10 Hz:2.4 Joules, 2 min.:30 Hz:1.2 Joules, and 4 min.:30 Hz:2.4 Joules of energy respectively in groups II, III, IV and V dogs respectively. The laser treated wounds showed decreased inflammation, and exudation with earlier regeneration of granulation tissue, better organization, compactness and intense epithelial regeneration leading to rapid healing as compared to group I animals. The maximum size of the wound with its maximum reduction was observed in group III animals. The clinical observations like rectal temperature showed significant increase in all the groups of animals. However pulse & respiration rate showed non- significant variation. On the basis of above studies it was concluded that decrease inflammation & exudation with clinically no scab during healing, suggestive of anti-inflammatory & cosmetic properties of Low level laser therapy with maximum efficacy at 4 min.:10 Hz:2.4 Joules followed by 4 min.:30 Hz:2.4 Joules

### **Management of Hind Quarter Weakness by Electroacupuncture Therapy in Dogs**

*S.W. Monsang, A. M. Pawde, P. Kinjavdekar, Amarpal, H. P. Aithal, Jasmeet Singh, & H.C. Setia*

Indian Veterinary Research Institute, Izatnagar, Bareilly- UP

A total of 20 cases of hind quarter weakness were referred to the surgery unit of Referral Veterinary Polyclinics, IVRI, Izatnagar were diagnosed on the basis of clinical radiographical and neurological examination. These animals were referred by the treating vets with variable durations of onset of illness. Survey radiography was found as most variable diagnostic aids for spinal disorders, however, sedation was required for agile and uncooperative dogs. Treatment with CNS metabolic activators and electroacupuncture therapy was initiated in various groups. The improvement was assessed on clinical signs. Electroacupuncture therapy was found effective.

### **Rehabilitative Management of Crippled Companion Animals**

*A. M. Pawde, Amarpal, H. P. Aithal, Jasmeet Singh, S.W. Monsang & H.C. Setia*

Indian Veterinary Research Institute, Izatnagar, Bareilly- UP

Clinical cases of paralysis and hind quarter weakness presented to the surgery unit of Referral Veterinary Polyclinics, IVRI, Izatnagar over a period of 3 years (2006-09) were subjected to clinical radiographical and neurological examination on the day of admission and weekly intervals. The therapies were awarded mainly assist on neurological evaluation (AS PER ASCI) which helped in localtization of lesions. Neuroprotective drugs alongwith electroacupuncture therapy were found effective.

### **Pyometra in Bitches and Queen Cats: A Clinical Study of 23 Cases**

*R. V. Suresh Kumar, N. Dhanalakshmi P.Veena, Ch Sreelatha, P. Sankar and P. Yasotha*  
College of Veterinary Science SVVU, Tirupati- AP

Pyometra is a common clinical condition in bitches however rare in queen cats. In this present study 19 cases of bitches (aged between 5-14 years) and 4 queen cats presented to college clinic and referred cases were diagnosed by clinical hematological, radiological and Ultrasonographic examination. Different symptoms like inappetance lethargy, vaginal discharges, abdominal distension, restlessness, itching at perineal region were observed. Also pyometra of unusual size (3) pyometra with mammary tumours (2) pyometra with TVT(1) pyometra with haemometra (2)

pyometra with serosal cysts (1) pyometra with cystic endometrial hyperplasia (1) along with non presentation of pyometra were reported. Among 4 cases of queen cats presented pyometra with ventral hernia (1) pyometra with abdominal wound (1) and other two with closed routine pyometra were noticed. Mild cases were treated with antibiotics and prostaglandins with temporary incomplete relief however surgery was performed in all the cases. Two cases did not turn up for follow up and 1 died because of old age and extensive malignancy. In cats two cases recovered and two cases did not turn up for follow up. Clinical features, results and outcome of all the cases are discussed.

SA-27

**Standardization of Port Placement for Laparoscopic Unilateral Nephrectomy in Pigs**  
*Mehraj u din Dar, D. B. Patil, P. V. Parikh, Akhilesh Kumar, Nisha Joy and S. K. Jhala*  
 COVS, Anand Agricultural University, Anand- Gujarat

The study on standardization of port placement for laparoscopic unilateral nephrectomy was done on 26 pigs. All pigs underwent laparoscopic nephrectomies as per the standard procedures performed by urology residents and few by the first author (M D). At the end of surgical procedure, measurements (cm) between the ports and selected bony prominences were taken with pigs still under insufflation. Pigs weighing between 12-19 kg (Group I) were routinely used for laparoscopic urologic procedures, hence based on our findings an overall guideline involving placement of camera, working and backhand ports for this group was suggested below. The camera port can be placed at a distance of > 5 cm each from umbilicus and stifle joint, and the working port can be placed at a distance of > 3 cm from last rib; further with the increase in body weight, 1 cm length should be increased for both ports. Overall a distance of 12-16 cm between stifle joint and working port should be maintained. Backhand port should be placed at a distance of < 18 cm from xiphoid.

SA-28

**Evaluation of the Effect of Magnetic Field in Treatment of Tendon Injuries in Dog**  
*A. K. Srivastava and Neeraj Sinha*  
 Pet Aid Centre, Indira Nagar, Lucknow- India

The mechanism of magnetic field effect for treatment and healing of tendinous injuries is not understood yet. This study was conducted on 10 clinically adult healthy indigenous dogs. They were divided into two groups of control and experiment. The animals were administered general anesthesia. The left SDP Tendon was exposed and 3 windows of 0.6 cm thickness, 0.3 cm length with 1 cm intervals were made on it. In the experimental group the dogs were subjected to magnetic field of 6x800 gauss, for 24 hours daily for 30 days. They were also monitored clinically for one month. Tendon biopsy was collected from the site of operation on 30<sup>th</sup> postoperative day for histomorphological and biomechanical evaluation. Clinical observation of wound healing and physical activity of experimental dogs relatively were quite better as compared to control ones on the 30<sup>th</sup> day of treatment. Histomorphological changes of tendon biopsy indicated that the presence of low number of inflammatory cells and high rate of the mature fibroblast and subsequent increase in regular arrangement of collagen fibers at the site of windows qualitatively and quantitatively were significantly better in the experimental group. The biomechanical test revealed that the tendons of the dogs in the experimental group were more resistant than tendons of dogs in the control group, which was due to positive effect of magnetic field therapy and therefore faster healing rate of tendinous injuries. The result of this study indicated that M.F.T reduces edema, local swelling as well as proliferation of fibroblasts and regular arrangement of collagen fibers. This study proved that M.F.T is a good noninvasive physical therapy for tendon healing.

SA-29

**Laparoscopic Ovariectomy in dogs: A Clinical Report of two cases**  
*Bakhtlari, Azin Tavakoli, Alireza Khalaj, Elnaz Shariati*  
 Faculty of Veterinary Medicine, University of Tehran- Iran

Neutering of bitches is the most common surgery in small animal practice. Ovariectomy has been widely accepted as a standard procedure and alternative for ovariohysterectomy in Europe. Many advantages including reduced surgical time, smaller incision and fewer traumas have been reported.

ovariectomy. To introduce and observe the safety and feasibility of laparoscopic ovariectomy the technique for the first time in Iran was performed in two dogs. Under general anesthesia dogs were placed in dorsal recumbency and 45 degree right or left lateral position for either left or right ovariectomy. Three portals were used for ovariectomy including a 10- mm trocar for introducing the camera at the umbilicus and the other two 5-mm portals were placed 3 cm cranial and caudal to the umbilicus. The ovaries were identified and grasped by the grasping forceps from the cranial port and thermal coagulation of ovarian pedicles were performed by bipolar electrocauter introducing from the caudal port. Finally the ovaries were removed from the camera port after the pedicles were resected and checked for hemorrhage. Laparoscopic ovariectomy was easy, safe and feasible to be performed and seems preferred method of neutering in healthy bitches.

**Clinical Studies on Optical Rehabilitation with and without IOL Implantation in Canine**  
*Vikas Kumar, V. P. Chandrapuria, A. Shahi, Devendra Gupta, Brijesh Choudhari, M. K. Bhargava, S. Jawre and R. Singh*

College of Veterinary Science and Animal Husbandry, Jabalpur

The present study was carried out in 12 clinical cases of canine cataract, divided in to two groups with 6 dogs in each. In group I, ECCE was performed whereas in group II, IOL was implanted following ECCE. Before the surgery, animals of both the group were subjected to different optical tests evaluating various neuro ophthalmological responses including Menace or blink reflex, Cotton ball test, Obstacle test, Pupillary light reflex, Dazzle response test or Photic blink test and behavior and activity of the patient. Post operative vision assessment was studied on 3, 7, 15, 30 and 60th post operative day. Group A animal showed sluggish to present grade menace reflex, cotton ball test on 30-60 day. Partial vision was present in 50% of animals on obstacle test and out of 6 animals, 4 showed sluggish to good response to papillary light reflex, dazzle response was present in 5 and absent in one dog. Studies on group B animals revealed almost similar vision response on 15, 30 and 60<sup>th</sup> day except poor response to obstacle test in 3 animals and normal vision in rest of the 3 animals. Behavior and activity of all the dogs was fair to good post operatively. On the basis of above studies it is concluded that obstacle and dazzle response are of great value for assessing optical rehabilitation. The optical restoration was better in group B animals than in group A.

**Mammary Gland Tumour in Bitches: A Clinical Study**

*A. K. Gupta, R. B. Kushwaha, M. S. Bhadwal and Sharad Kumar*  
 F. V. Sc & A.H, SKUAST- Jammu

Mammary gland tumour was diagnosed in ten bitches with the history of hard growth in mammary gland for varied period. Spitz was more (5) affected than German shepherd (3), Dalmatian (1) and Doberman (1). The median age group was 10 years (5-13 years). The growth were solid (9) and cystic (1), single (3) and multilobulated (7), intact (7) and ulcerated (3) with varied period (15 days to 1.5 years). In 2 cases, growth was due to recurrence of mammary gland tumour. Two dogs also had vaginal tumour (1) and pyometra (1). Rectal temperature was  $> 103^{\circ}\text{F}$  in 7 cases,  $102-103^{\circ}\text{F}$  in 2 cases and  $101.8^{\circ}\text{F}$  in one case. In eight bitches, growth was located in left side (Pectoral-2, abdominal-1 and inguinal-5) whereas; right inguinal mammary gland was involved in 2 bitches. Radiography of 2 cases showed metastasis in lung and calcification of gland. The growths were excised surgically under xylazine/diazepam and ketamine anaesthesia. Post-operatively, all bitches were given antibiotics, serratiopeptidase for 5-7 days. All the cases showed complete recovery without any complication except in one case where severe haematoma was noticed.

**Evaluation of Vasectomy Technique on 122 Stray Dogs**

*P.K. Gandhi, Navdeep Singh, Gurpreet Singh and Jaspreet Singh*  
 Animal Husbandry Department- Punjab

Vasectomy was performed by the team of veterinarians of Animal Husbandry Department, Amritsar

on 122 stray dogs captured by Municipal Corporation, Amritsar acting on direction of Dog Administration, Amritsar to evaluate the efficacy of specially designed minimally invasive technique to get rid off stray dog menace. Vas deferens of both the sides were dissected out one by one by single puncture at median raphe by using specially designed vas holding & vas dissecting forceps. Vas deferens were occluded separately by ligating them using 2/0 silk thread and then about 2 cm segment of vas were removed between the two ligatures. It was observed that the technique is less time consuming and needs practically no postoperative care, thus make it more effective to meet the objective. By this technique a large number of animals can be operated and released to their respective areas easily on the same day that makes the procedure more cost effective and practical. By this technique 122 animals were successfully operated and released in the area from where the animals were captured. The study reported minimal complications.

SA-33

### **Reproductive Tract Tumours in Bitches – A Review of Six Cases**

*Mala Shammi, M. Shiju Simon, G. D. Rao and R. Suresh Kumar*

Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai

Six bitches presented to the Small Animal Surgery Unit of the Madras Veterinary College Teaching Hospital with reproductive tract tumors were reviewed in this study. The animals were of different breeds and all of them were over ten years of age. Depending upon the location of the tumor the animals exhibit the clinical signs like vaginal discharge, straining while urination, progressive distention of abdomen, vomiting, anorexia and polydipsic etc. Thoracic lateral radiograph and haematological parameters were normal in all dogs. Serum biochemistry results were normal in all dogs except one case, had elevated BUN and creatinine value. In three cases, abdomen lateral radiography revealed space occupying mass at the cranial region. All dogs were anaesthetized using propofol and maintained with 1.5 – 2 % isoflurane in 100% Oxygen. Among the six cases, exploratory laparotomy of three had vaginal fibromas, two had uterine leiomyoma and one had ovarian papillary adenocarcinoma were surgically resected. The entire animal had an uneventful recovery. Reproductive tract tumors are the second most common reproductive tumors, in female dogs, after those of the mammary glands. The vast majority is benign (86%), arises from the smooth muscles, and is found in intact female dogs. Details will be presented and discussed.

SA-34

### **TNM Staging and Histologic Grading for Prognosis of Canine Mammary Neoplasms**

*Pankaj Gupta, M. Raghunath and N. K. Sood*

College of Veterinary Science, GADVASU, Ludhiana

The prognosis in 40 cases of canine mammary neoplasms (CMNs) was studied on the basis of TNM staging and histologic grading. Based on TNM staging, animals were graded as having guarded and poor prognosis. The percentages of deaths recorded in one year follow up period in I, II and III grades were 25%, 33.33% and 73.6% respectively. The tissue samples were subjected to histopathological examination after surgery and on the basis of severity of malignancy, tumors were given grade-I, II and III. The percentages of deaths recorded in grade-I, II and III were 0%, 42.10% & 72.72% respectively. These results suggest that both TNM staging and histologic grading help in predicting prognosis and must be done in routine for better management of canine mammary tumor cases.

SA-35

### **Comparative Evaluation of Aspiration and Non Aspiration Techniques of Fine Needle Biopsy (FNB)**

*Pankaj Gupta, M. Raghunath and N. K. Sood*

College of Veterinary Science, GADVASU, Ludhiana

Fine needle biopsy was obtained in 38 cases of spontaneous canine mammary tumor (CMT). In 22 cases fine needle biopsy was obtained using aspiration technique and in 16 cases it was obtained using non-aspiration technique and the cytology results obtained were compared with histopathological diagnosis made after tumor removal. The sensitivity, specificity, predictive values and diagnostic accuracy were compared.

accuracy of both the techniques were calculated by comparing diagnosis with histopathology. The sensitivity, positive predictive value and diagnostic accuracy of aspiration technique were 71.43%, 93.75% and 68.18% whereas those of non-aspiration technique were 100%, 100% and 92.30%. The specificity and negative predictive values of non-aspiration technique were also 100%. Among the two techniques studied the non aspiration one had more sensitivity and diagnostic accuracy than aspiration one and therefore should be routinely used to improve the accuracy of fine needle biopsy in tumor diagnosis.

### **Clinical Studies on Surgery and Adjuvant Chemotherapy for Treatment of Canine Mammary Tumors (CMT)**

*Pankaj Gupta and M. Raghunath*

College of Veterinary Science, GADVASU, Ludhiana

The study was done on 35 cases of canine mammary gland tumors which were divided into two groups. In group I, 29 animals were treated with surgery alone and in group II, 6 animals were treated with surgery as well as chemotherapy using combination of vincristine, methotrexate and cyclophosphamide. Out of 29 animals of group I 13 died and 3 did not report back for follow up. The overall survival rate was 50% with mean survival time of  $169.33 \pm 4.99$  days and median survival of 158 (15-365) days after surgery. The live and dead animals median age was 10.5 years and 10 years respectively. In group II, 3 animals died and three survived without any recurrence. The survival rate was 50% with mean and median survival time as  $162.22 \pm 19.60$  days and 137.5 (55-365) days respectively. The live and dead animals median ages were 7.5 (6-9) years and 12 (6-12) respectively. There was no significant difference in survival time and survival rate of both the groups and it is concluded that adjuvant chemotherapy gave good results in young animals.

### **Comparison of Absorbable and Non Absorbable Suture Materials for Treatment of Perineal Hernia in Dogs**

*G. P. Singh and N. Singh*

College of Veterinary Science, GADVASU, Ludhiana

Eight cases of perineal hernia were recorded in sexually intact male dogs. Urination was normal in all the cases but constipation and tenesmus were observed in all the cases. In seven cases, the hernial contents were rectal diverticulum and in one case, large prostate was part of hernial content. All the cases were given soft, liquid and fibrous diet along with laxatives but none of the case responded to medicinal management and surgery had to be performed in all cases. They were not castrated as advised in literature as it was decided to keep their reproductive ability intact. The animals were operated upon and in four animals, absorbable suture material (chromic catgut no. 1-1 and vicryl no. -3) was used and in rest of the four, non absorbable suture material (monofilament non braided silk) was used. Recurrence was reported in all the four cases in which absorbable suture was used and in one case in which non absorbable suture material was used. The mean recurrence period in case of absorbable suture material was four months and in single case of non absorbable suture material, it was seven months.

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### **A Novel Bilateral Linear External Skeletal Fixation device for treatment of long bone fractures in large animals: A report of 12 clinical cases**

*H. P. Aithal, Amarpal, P. Kinjavdekar, A. M. Pawde, K. Pratap, Pankaj Kumar, D. K. Sinha and H. C. Setla*

Indian Veterinary Research Institute, Izatnagar (UP)

A novel design bilateral linear external fixator BLEF was used in 12 cases (10 cattle and 2 horses) for the management of a variety of compound fractures of relatively straight long bones of large animals, like metacarpus, metatarsus and radius/ulna. The BLF was very versatile, it allowed the placement of pins at any level, more number of pins could be fixed in each bone fragment, allowed transarticular fixation of fractures near the end of long bones. Also allowed fracture reduction by traction of bone fragments and compression at the fracture site by rotating the side bar in opposite sides. These resulted in rigid fixation of fracture fragments, as indicated by early weight bearing and fracture healing in most of the cases. The fixation was easy, less cumbersome with least parts. The postoperative care of the wound and the fixator components was also easy. The BLEF thus provided optimal environment for osteosynthesis.

### **Articular Cartilage Repair using Bone Marrow Derived Cells and Growth Factors**

*Amarpal, H. P. Aithal, P. Kinjavdekar, A. M. Pawde, Jasmeet Singh, Rahul Kumar Udehiya and Ramesh Tiwari*

Indian Veterinary research Institute, Izatnagar (UP), India

In this part of the study 12 rabbits were divide in four equal groups and designated as A, B, C and D. Under xylazine and ketamine anaesthesia an osteochondral defect of 5mm diameter was created in the centre of femoral condyles after opening the stifle joint through lateral parapatellar incision in all the animals. The defect in the animals of group A was not filled by any material and the joint was closed. In the animals of group B the defect was filled by autologous bone marrow cells separated from the bone marrow collected from the lateral aspect of the iliac crest. In the animals of group C the defect was filled with bone marrow cells as in the animals of group B and 30ng transforming growth factor  $\beta$ 1. In the animals of group D the defect was filled with bone marrow cells as in the animals of group B and 30ng insulin like growth factor 1. The animals were observed for the evidence of radiographic and clinical evidence of healing of the cartilage until day 60 postoperatively. The animals were sacrificed on day 60 by intravenous administration of overdose of thiopental sodium and distal femoral extremity including the area of defect was collected and subjected to gross and radiographic examinations. Grossly the healing of the cartilage was evaluated by using multiple scoring systems. The over all median score allotted to the healing cartilage of the animals of group A was 7 and the overall healing of the cartilage was graded as grade III i.e. abnormal. In the animals of group B the over all median score allotted to the healing cartilage was 10 and the overall healing of the cartilage was graded as grade II i.e. near normal. In the animals of group C the median score allotted to the healing cartilage was 13 and the overall healing of the cartilage was graded as grade I i.e. normal. In the animals of group D the median score allotted to the healing cartilage was 12 and the overall healing of the cartilage was graded as grade I i.e. normal. The joint of all the groups were free from any adhesions and contained normal quantity of synovial fluid except for the group A where the joints appeared dry. The radiographs of the gross specimens of the distal end of the femur showed presence of well demarcated osteochondral defect in the animal of group A. This defect was very small on the radiographs of group B and was not discernible in the radiographs of the animals of groups C and D. The histological examination of the tissues further confirmed that autologous bone marrow cells can be used to enhance the rate of healing of skin defects, bone gap defects and intra-articular cartilage, which can be augmented further by addition of transforming growth factor beta-1 or insulin like growth factor-1.

OR-3

**Comparative Evaluation of Static and Dynamic Veterinary Intramedullary Interlocking Nailing Techniques for Femoral Fractures in Canines**

*M. A. Asif, D. Dilip Kumar, B. V. Shivaprakash, S. M. Usturge, Vivek R. Kasaraliker and K. Raidurg.*

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The study was conducted on twenty four clinical cases of dogs with diaphyseal femoral fractures divided into four groups consisting of six animals in each group. Group I animals with transverse diaphyseal femoral fracture were treated with static intramedullary interlocking nailing with one proximal and one distal bolt. Group II animals were treated with dynamic intramedullary interlocking nailing with two distal bolts. Group III animals with oblique diaphyseal femoral fractures were treated with static intramedullary interlocking nailing with one proximal and one distal bolt and an ancillary cerclage wiring at the fracture site. Animals of group IV were treated with two distal bolts and ancillary cerclage wiring at the fracture site. Fractures fixed with static intramedullary interlocking nailing in groups I and III showed early weight bearing when compared to groups II and IV animals. The immediate post-operative radiographic evaluation showed excellent reduction and alignment in all groups of animals. Bony union by negligible callus and early bone remodeling was characteristic finding in groups I and III, where static intramedullary interlocking nailing was used. Bony union by excessive periosteal callus and early bone remodeling was characteristic finding in groups II and IV, where dynamic intramedullary interlocking nailing was used. The static intramedullary interlocking nailing was found to be ideal for treatment of diaphyseal transverse and oblique femoral fracture in dogs.

OR-4

**Closed Normograde Pinning of Tibial and Femoral Fractures in Dogs: An Analysis of 12 Cases**

*Surbhi, Rauoof Ahmad, H. P. Aithal, Amarpal, P. Kinjavdekar, A. M. Pawde, M. M. S. Zameer, H. C. Setia*

Indian Veterinary Research Institute, Izatnagar (UP)

The present report describes the technique, indications and advantages of closed pinning of tibial and femoral fractures based on the results of 12 clinical cases in dogs. Fresh cases of fractures with minimal or no overriding can be best treated with closed method of intramedullary pinning. In femur, proximal metaphyseal and middle/ distal diaphyseal transverse/nearly transverse fractures can be easily reduced and fixed by closed method. In femur, greenstick fractures of the diaphysis can be reduced easily by closed method. The technique involves giving a small nick incision at the lesser trochanteric fossa, medial to the greater trochanter and an appropriate size Steinmann pin is introduced through the trochanteric fossa into the proximal bone fragment. In tibia, on the dorsal surface of the proximal condyle, medial to the middle patellar ligament half way between the tibial crest and the tibial tuberosity, a nick incision is made to introduce the pin. Once the pin has almost reached the lesser trochanteric fossa, reduction of bone fragments is done by applying traction in cases of proximal tibial green stick femoral fractures, and by toggling method in cases of tibial diaphyseal fractures. Oblique fractures should never be tried for closed reduction. The size of Steinmann pin should be smaller than the medullary diameter, very snugly fitting pin may cause cracks/splintering of bone. During closed pinning, pin should be passed in a single attempt; repeated attempts may lead to soft tissue trauma, including damage to blood vessels and nerves. The advantages of closed fixation include less time consumption, minimal tissue trauma and hence early and biological fracture healing.

OR-5

**Epoxy-Pin External Skeletal Fixation for Management of Compound Fractures and Dislocations in Dogs: A Review of 35 Clinical Cases**

*Pankaj Kumar, H. P. Aithal, P. Kinjavdekar, Amarpal, A. M. Pawde, K. Pratap, A. Velavan, Surbhi and H. C. Setia*

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In this study, 2 dogs with compound fractures were treated with uniplanar bilateral design, 24

were treated with multiplanar bilateral designs and remaining 9 cases were treated using circular designs. The cases included compound fractures of radius/ulna, metacarpals, tibia/fibula and metatarsals, and open dislocations of carpal and tarsal joints. In general, epoxy-pin fixation device was easy to apply, wires could be passed in any direction and external frames could be built on the spot as per the case. It was possible to prepare variable size/length side bars or the circular rings (most useful when immobilizing the bone fragments in tibia). The wires of variable diameter could be used in a single case as fixation bolts were not required to fix the wires to the side bars (the wire diameter found most suitable was 1.2-1.5 mm). The transarticular fixation was possible, especially in cases of open joint dislocations and in cases where fracture was near the end of a long bone. Wound management was easy. In general, good healing of open wound was observed within first 10 days in most of the animals. The weight bearing was good to excellent in most of the cases in the immediate postoperative period, indicating stable fixation provided by the epoxy-pin fixator. The animals could adopt and tolerate the fixator very well. Except in 2 cases, there was no damage/deformation of the external frame of the fixator. Fixation was maintained till the healing occurred in all but two cases, where fixation failed. Fracture healing in general was achieved in normal time. Within 30-60 days, complete bridging callus was seen, even in severely compounded fractures, indicating that epoxy-pin fixation provides optimal environment of healing of compound fractures. When compared between different models, multiplanar bilateral and circular designs provided more stable and rigid fixation of fractures than uniplanar design. The epoxy-pin ESF technique is very simple and requires least instrumentation, and can be carried out at any remote place at field level with minimal facilities.

OR-6

#### **Comparative Evaluation of Steinmann Pin, Kuntscher Nail and Interlocking Nail for Repair of Femur Fracture in Canine**

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Eighteen clinical cases of femur fracture in dog presented to the T.V.C.C., N.V.C., Nagpur for treatment were divided in three equal groups i.e Group I, II & III. Femur fractures were immobilized with intramedullary Steinmann pin, Kuntscher nail and interlocking nails in group I, II & III, respectively. The process of fracture healing was assessed on the basis of clinical, radiological, hematological and biochemical observations recorded at scheduled intervals. The results indicate that static intramedullary interlocking nailing provides satisfactory stability, quick rehabilitation of the operated limb and resulting in high success rate.

OR-7

#### **Role of Anabolic Hormone on Healing of Femur Fracture in Canine**

*B.M.Gahlod, S. N. Patil, V.S. Panchbhai, S.B. Akhare, M.S. Dhakate & S.V. Upadhye*  
Nagpur Veterinary College, Nagpur-Maharashtra

Twenty four clinical cases of femur fracture in dog presented to the T.V.C.C., N.V.C., Nagpur were divided into four groups i.e. group I, II, III & IV. Femur fracture were immobilized with intramedullary horn peg in group I & II while in group III & IV, fractures were immobilized with intramedullary Kuntscher's nail and Nandrolone Laurate was administered @ 5 mg/kg body weight intramuscularly in animals of group II and IV at weekly interval for five occasion. The process of fracture healing was assessed on the basis of clinical, radiological, hematological and biochemical observations recorded at scheduled interval. Supplementation of anabolic steroid i.e Nandrolone Laurate during post operative regimen was found to reduce the weight bearing period and assisted in healing of fracture in group II and IV.

OR-8

#### **Evaluations of External Skeletal Fixators for Management of Metacarpal/Metatarsal Fracture in Goats**

*Samar Halder, Asit Kumar Maji, Dipak Kumar De, S.K.Guha, Rajib Kanti Saha*  
WBUAFS, Kolkata- West Bengal

Clinical cases of different types of fracture in Black Bengal and Jamunapari goats have been repaired applying acrylic fiber materials for ESF. The appendicular fractures in 8 animals (5 metacarpal,

3 metatarsal and 1 radius including 1 bilateral metacarpal) were repaired. Simplified type II linear acrylic ESF were applied on 4 metacarpal and 3 metatarsal fractures. In one case, comminuted metacarpal fracture was managed by type II linear acrylic ESF (full pin). The radial fracture was repaired by using type II ESF. A pilot work was carried out to compare linear acrylic ESF with two circular ESF for the management of fracture in three metacarpal and metatarsal in Black Bengal goat. The speciality of the circular rings used in this study is that those rings were fabricated locally from aluminium sheet instead of conventional stainless steel with the aim of reducing the overall weight of the apparatus to prevent the 'fracture diseases' and also to 'reduce the cost' of treatment.

OR-9

### **Comparison of Type IA Single and Double Connecting Bar External Skeletal Fixation for Femoral Fracture Repair in Dogs**

*Dayamon D Mathew and L. Ranganath*

Veterinary College, KVAFSU, Bangalore

A study was carried out in 12 clinical cases of dogs with femoral fractures presented to Veterinary College Hospital, Bangalore. The dogs were randomly divided into Group I and II. Group I dogs were treated with Type Ia single connecting bar where as, Group II dogs with Type Ia double connecting bar external skeletal fixator. Fixator stability, pain score, weight bearing, were recorded on 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 7<sup>th</sup>, 15<sup>th</sup>, 30<sup>th</sup>, 45<sup>th</sup> and 60<sup>th</sup> post-operative days respectively. Radiographs were taken pre-operative, immediate post-surgically, on 7<sup>th</sup>, 30<sup>th</sup>, 45<sup>th</sup> and 60<sup>th</sup> post-operative days respectively. Staged disassembly was performed for removal of fixator. Fixator was found to be stable in all the dogs of both the groups and graded as satisfactory. A higher mean value of University of Melbourne Pain Score (UMPS) was observed in Group I dogs compared to Group II. A gradual decrease in the pain score was observed from 1<sup>st</sup> to 60<sup>th</sup> post-operative day. Early weight bearing was observed in Group II dogs. Radiographically a better femoral fracture healing was observed in Group II dogs. In conclusion, Type Ia double connecting bar external skeletal fixation is a better technique compared to Type Ia single connecting bar external skeletal fixation.

OR-10

### **Haemato-Biochemical Changes Following Femur Fracture Repair Treatment Using External Skeletal Fixation in Dogs**

*Dayamon D Mathew and L. Ranganath*

Veterinary College, KVAFSU, Bangalore

A study was carried out in 12 clinical cases of dogs with femoral fractures presented to Veterinary College Hospital, Bangalore. The dogs were randomly divided into two groups viz., Group I and Group II. Group I dogs were treated with Type Ia single connecting bar external skeletal fixator where as Group II dogs with Type Ia double connecting bar external skeletal fixator. Post-operative influence of external skeletal fixation on the haemato-biochemical parameters was studied on 0<sup>th</sup>, 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 7<sup>th</sup>, 15<sup>th</sup>, 45<sup>th</sup> and 60<sup>th</sup> day respectively. Haemato-biochemical parameters viz., haemoglobin, total erythrocyte count and total leucocyte count, Differential leucocyte count, Serum Calcium and Phosphorus, Serum alkaline phosphatase, Serum aspartate amino transferase, Serum alanine aminotransferase and Serum creatinine were evaluated on the respective days. The haemato-biochemical parameters were moderately influenced by external skeletal application in both the groups of dogs.

OR-11

### **Application of Interlocking Nailing Technique for Fracture Repair in Ruminants and for Fracture of Multiple Bones in Dogs**

*B. V. Shivaprakash., D. Dilipkumar and S. M. Usturge*

Veterinary College, Bidar, Karnataka

Interlocking nailing (ILN) was tried in eight clinical cases of smaller sized ruminants for the treatment of fractures of tibia and also for fractures involving more than one bone in dogs and for fractures of both the hind limbs in dogs. It was found that interlocking nailing can be applied to the small ruminants, calves and heifers for treating the diaphyseal fractures of tibia with satisfactory functional use.

limbs during the early post operative period. Mild knuckling while walking and weight bearing on toes were seen for first 15 days postoperatively in animals where dynamic ILN was used and in animals where interlocking nails of inadequate length were used. These improved during subsequent period and no lameness was detectable on day 45. Weight bearing was more satisfactory with static interlocking nailing during the first one month of post-operative period. Weight bearing was good when two screws were inserted in each fragment compared to the insertion of single screws. Radiologically, the external callous was more on day 60 with dynamic ILN compared to static ILN. The difficulties seen during fixation of ILN was difficulty in locating required holes on the nail inspite of correct design of zig when checked *invitro*. Interlocking nailing was applied to those fractures of canines where both tibia and femur were fractured or when both the tibia were fractured in the same animal. Interlocking nailing was also used when migration of Steinmann intramedullary pin was seen when they were used to treat fractures of both tibia and femur. Interlocking nailing was used in such cases for one bone and intramedullary pinning for other bone. Interlocking nailing was used for tibial fractures of both the hind limbs. Weight bearing was complete on day 30 in these dogs. Hence interlocking nailing was a better choice in case of fractures involving more than one bone.

OR-12

### Fracture Gap Repair with Bone Marrow Nucleated Cells and TGF- $\beta_1$ in Rabbits

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The osteogenic potential of autologous bone marrow nucleated cells with and without TGF- $\beta_1$  was evaluated for healing of radial segmental defects in New Zealand white rabbits. Bone marrow nucleated cells (BMNCs) separated from the bone marrow aspirate by volume reduction centrifuge method were used to fill segmental defect in radius bone alone in group B and with transforming growth factor beta-1 in group C after grafting of hydroxyapatite in the gap defect. Hydroxyapatite alone was grafted in group A, which served as control. The extent of bone healing was evaluated on the basis of clinical signs, gross observations, radiographic, angiographic, histomorphological, histochemical and scanning electron microscopic studies carried out on day 30, 60 and 90 postoperatively. Gross observations revealed that filling of the defect was relatively better in groups C and B as compared to group A. The radiological observations depicted more amount of new bone formation and remodeling in the animals of groups C and B indicating advance stages of healing as compared to group A. Angiograms revealed a normal vasculature at all the stages of healing but at 30 day, maximal increase in vascular supply was seen in the animals of group C which later on became normal. Histological observations showed better quantity as well as quality of new bone formation in the animals of group C as compared to animals of groups B and A. Scanning electron microscopy also supported the results of radiological and histological observations. On the basis of the results it was concluded that application of autologous BMNCs can support the healing of the bone defects. The combination of BMNCs and TGF- $\beta_1$ , however, induces better healing than BMNCs alone.

OR-13

### Modified Type I External Fixators In Dogs

Christie Aguiar and Milind Hatekar

PET AID, Veterinary Clinic & Diagnostics, Pune

A Doberman dog, 6 months of age had a mid shaft spiral tibia fracture of right limb, which was reduced by circlage wiring and modified Type I external fixator. Weight bearing on the fractured limb was noticed a week after surgery. Radiographic evaluation revealed callus formation in 30 days. The external fixator was removed 45 days post surgery. A 5 year old mongrel lactating bitch had left antibrachium comminuted fracture which was corrected by open reduction using modified Type I external fixator. The dog began weight bearing 10 days post surgery. The external fixator was removed 60 days P.O after radiographic evaluation of callus. A boxer female treated by a local vet by mid shaft circlage wiring, was presented with non union compound femur fracture, pus at site of incision and no weight bearing. Excellent healing was noticed after application of Type I external fixator which was removed 32 days P.O after radiographic evaluation of callus.

OR-14

**Management of Metacarpal and Metatarsal Fractures in Cattle by Cost Inexpensive Indigenously designed External Skeletal Fixators**

*N. Dhana Lakshmi, R. V. Suresh Kumar, V. Devi Prasad, P. Veena, Ch. Srilatha and P. Shankar*  
College of Veterinary Science, Tirupati.

Twenty four clinical cases of cattle with unstable metacarpal and metatarsal fractures were stabilized with indigenously made cost inexpensive low carbon stainless steel linear and circular external skeletal fixators. The incidence of breed, sex, age and weight of the animals were recorded and analysed. Twelve cases of different age group of cattle were stabilized with bilateral uniplanar type external fixators of different size frame constructions by using stainless steel threaded or smooth pin connecting rods and clamps. Twelve cases of different age group of cattle were stabilized with Ilizarov's circular external fixators of different size frame constructions by using K-wires, circular plates and other accessories. The outcome of fracture stabilization was evaluated by taking consideration of fixator stability, weight bearing of limb and radiographical examination of callus formation. Type-II and circular fixator application in calves and young animals aged below 3 years showed good tolerance of fixator and satisfactory functional limb outcome without any complications except two cases where pin tract infection and delayed union was observed. In the cases of adult cattle which were stabilized with circular fixators, fracture alignment and healing was not satisfactory and showed more complications of bending of K-wires, frequent loosening of pins along with plates, pin tract infection and nonunion was observed.

OR-15

**Evaluation of Locking Compression Plate and the Conventional Limited Contact Dynamic Compression Plate Fixation Techniques for Femoral Fracture Repair in Dogs**

*P. Manohar, N. Dhana Lakshmi, R. V. Suresh Kumar, Ch. Srilatha, P. Veena, P. Shankar and P. Yasotha*  
College of Veterinary Science, Tirupati.

Twelve dogs presented to the college hospital with unstable femoral diaphyseal fractures were taken as clinical material for the study. The dogs were equally divided into two groups and the fractures were stabilized with selected indigenously made conventional Limited Contact Dynamic Compression Plate (LC-DCP) along with normal DCP screws (Group I) and Locking Compression Plate (LCP) along with locking screws (Group II) following standard AO/ASIF procedures. In both the groups, technical difficulties were observed while application of LC-DCP and LCP. The outcome of fracture stabilization and healing was evaluated with postoperative lameness grading, radiography and biochemical analysis. In both the groups, stabilization showed good clinical outcome with complete normal limb usage within seven weeks except in one case of group I where fixation failure with screw loosening and fragments separation was recorded by second week. In this case, the fracture was again stabilized with IMP and LC-DCP which was healed later. In group II, no implant failure or screw loosening was observed except in one case there was slight bending of plate without much disturbance to alignment. The overall average healing time in both the groups was 6-12 weeks. The fractures showed radiographically excellent postoperative healing of cortical union, absence of fracture line with limited and also bridging callus. However the application of LCP was found easier than LC-DCP with advantages like self tapping locking screws, less precontouring of plate and combi-hole for better fixed and angle fixation of screws.

OR-16

**Use of Modified Moulded PVC Splints with Transfixation Pinning for the Repair of Long Bone Fracture in Large Ruminants**

*R. Ramesh, and S.M.Usturge*  
Bidar Veterinary College, Bidar- Karnataka

The present study consisted of fabrication of modified moulded PVC splints and its use for long bone fracture repair in ruminants in combination with transfixation pinning. This was conducted in 10 clinical cases were simple fractures and remaining were compound fractures. The majority of fractures treated were tibial fracture (75%) and rest were radius ulna fracture (25%). Central

threaded transfixation pins of 250mm length and 4.5 mm diameter and 5mm diameter were used in 4 and 3 cases respectively. In remaining 5 cases, pins measuring 300 mm length and 6.0 mm diameter were used. On 60th day, 6 out of 12 showed normal weight bearing while standing and during walking. One animal out of 12 animals recovered with perceptible lameness and remaining 2 (out of 12) showed malunion. Hematological study revealed stress related neutrophilia in the initial phase of study. Serum calcium level was increased significantly ( $p < 0.05$ ) between 15 to 60 days of observation where as serum phosphorus level was decreased significantly ( $p < 0.05$ ) between 15 to 30 day postoperatively. It could be concluded from the present study that the modified moulded PVC splint technique is feasible technique in the treatment of long bone compound fracture. This technique is economical and viable alternative for treatment of long bone fracture in large ruminants with considerable success rate. Early removal of moulded PVC splits has an advantage of preventing muscle atrophy and infection at the site of fracture. Due to simplicity of the technique it could be easily adopted by the field veterinarian.

#### **Management of Complex Long Bone Fractures in Dogs – A report of 46 cases**

*S. Ayyappan, A. Arunprasad, M. Shiju Simon, B. C. Das, S. Priya and R. Suresh Kumar*  
Madras Veterinary College, TANVASU- Chennai

Forty-four cases of long bone fractures presented to the Small Animal Orthopaedic Unit of the Madras Veterinary College Teaching Hospital with the history of trauma were subjected to either open reduction and internal fixation or external fixation techniques based on the radiographic evaluation of fracture configurations. Complex long bone fractures involving the humerus ( $n=6$ ), radius ( $n=8$ ), femur ( $n=26$ ) and tibia ( $n=6$ ) were managed using techniques such as plate rod, external fixation with 'tie in'/transfixation and cerclage wiring, hybrid external fixation, clamp rod internal fixation, locking compression plating, condylar plating and interlocking nailing. The selection of implants, surgical techniques, implications and outcomes are discussed.

#### **Management of Unstable Diaphyseal Femoral Fractures using Locking Compression Plate combined with Intramedullary Pin in Dogs – A review of six cases**

*S. Ayyappan, Abhishek Kumar Mishra, R. Jayaprakash, M. Shiju Simon, B. C. Das, R. Ramesh and R. Suresh Kumar*  
Madras Veterinary College, TANVASU- Chennai

Six cases of unstable diaphyseal femoral fractures in dogs presented to the Small Animal Orthopaedic Unit of the Madras Veterinary College Teaching Hospital with the history of road traffic accident were subjected to open reduction and internal fixation using plate rod technique (locking compression plate combined with intramedullary pin). Confirmative diagnosis of unstable femoral diaphyseal fractures was made by radiographic evaluation of lateral and craniocaudal views. A pre-operative plan was prepared using a small animal preoperative planning guide developed by the AO/ASIF (Small animal group) using plain radiographs. 3.5mm locking compression plates were used as a buttress on the tension surface of the bone in all the cases and additional stability were provided by insertion of 3mm of intramedullary steinmann pin. Adequate weight bearing was noticed on immediate postoperative day. The surgical techniques, implications and functional outcomes are discussed.

#### **Management of Compound fracture of Radius-Ulna using Circular External Skeletal Fixator (Ilizarov technique) in dogs**

*D. K. Dwivedi, T. N. Ganesh, K. Amerjan and Geetha Ramesh*  
Madras Veterinary College, TANVASU- Chennai

Four dogs with traumatic compound fractures of radius-ulna presented to Madras Veterinary College Hospital, Chennai were treated in this study using transfixation circular external skeletal fixator. The Ilizarov's circular external skeletal fixator consisting of two full and one 5/8 aluminium 90mm rings, six K-wires of 1.6mm diameter each and six connecting rods each of 100mm length proved to be satisfactory for the treatment of fractures in this study. All the dogs were observed upto 60<sup>th</sup> post-operative day. From the 12<sup>th</sup> post operative day, all the dogs started bearing weight partially on the

operated leg while walking except one dog which did not show signs of healing. The Ilizarov external skeletal fixator provided rigid immobilization to the fractured bone and the dogs were able to flex and extend the elbow comfortably during rest as well as on locomotion. During eighth week all dogs except one dog bore weight on the operated limbs without evincing pain. The fracture healed with mild to moderate amount of callus except one dog which did not show signs of healing. The external skeletal fixator device was removed after radiographic evidence of clinical union. The details about the technique of application, post operative care, post operative complications and clinical outcome.

**OR-20 Evaluation of Functional Limb Usage of Long Bone Fracture Repair Using Circular External Skeletal Fixators in Dogs**

*D. K. Dwivedi, T. N. Ganesh, K. Ameerjan, Geetha Ramesh and Mahesh Kumar*  
Madras Veterinary College, TANVASU- Chennai

Six dogs presented with compound fracture of long bones were treated using circular external skeletal fixator and was evaluated for functional limb usage. These animals were followed up for a period of 100 days after surgery and functional limb usage were evaluated before and immediately after surgery at 10 days interval, there after. The operated limb in case of tibial fracture started bearing weight partially while walking just after one day of surgery but marked limping noticed. The operated limb of all the dogs with radius-ulna fracture were in flexion for 10 days post-operatively. But from the 11th day onwards the dogs started bearing the weight partially on the operated limb with paw in normal position. During third week onwards the dogs were able to bear the weight on the operated leg with minimal limping. Between third and eighth week, there was gradual improvement in the weight bearing of the operated limbs. During the eighth week, the dogs were able to bear full weight on the fore-limb and hind limb and were able to jump without evincing pain. The present report deals about the functional limb usage, classification of limb usage on the basis of weight bearing and operative complications.

**OR-21 Successful Management of Tibia-Fibula Compound Fracture Using Ilizarov's Technique in Dogs**

*D. K. Dwivedi, T. N. Ganesh, K. Ameerjan and Geetha Ramesh*  
Madras Veterinary College, TANVASU- Chennai

Two dogs were referred with the history of road traffic accident and non-weight bearing in traumatized hind limb with exposed fractured fragments. In both the dogs the fractured bones were treated using Ilizarov's technique. The Ilizarov apparatus consisting of two full and one 5/8 alumium 100 mm rings, six K-wires of 1.6mm diameter each and six connecting rods each of 100mm length proved to be satisfactory for the treatment of fractures. Both the animals started partial weight bearing on the operated limb just after one day of surgery. K-wire site discharge noticed upto 10<sup>th</sup> post-operative day in both the dogs. The Ilizarov apparatus provided comfort to the dogs and there was absolutely no difficulty in flexion and extension of the stifle joint during rest as well as on locomotion. During third week onwards the dogs were able to bear the weight on the operated limb with minimal limping. Subsequent, radiographs revealed fracture union in both animals with moderate amount of callus. An average fracture healing time of 55 days was observed in the present study. The technique, post-operative care, radiology, clinical outcome and complications were discussed.

**OR-22 Clinical Management of Fractured Tibia in Cattle with the Use of Interlocking Nailing Without Reaming**

*R. P. Pandey, Deepesh Kumar, Gulshan Kumar, Prabha Katiyar and Bharat Singh*  
COVS & AH, PDDUPVV Evam Go Anusandhan Sansthan, Mathura, U.P.

Interlocking nails with or without reaming have been investigated for neonatal bovine femoral, equine humeral and tibial fractures. Tibial shaft fracture was managed by interlocking nailing in the cattle (male aged 4 years, females aged 2 and 5 years, the latter being 7 month pregnant). Through



cm incision in the groove between anterior and medial patellar tendons entry portal at the anterior end of the anterior meniscal ligament was made with a curved awl. Tubular nails of size of 28cm x 12mm (in male and older cow), and 24cm x 10mm (in heifer) were placed after reduction, using an insertion jig. Single, insertion jig guided proximal locking and single C-arm imaging guided free hand distal locking was done. In all the cases partial weight bearing occurred within one week. The younger cow was presented to the hospital after four months and the nail was removed. The older one did not report to the hospital for nail removal, however, full weight bearing and normal calving was reported.

#### 088-23 Management of Radius and Ulna Fracture by Minimally Invasive Technique in Dogs

*Deepesh Kumar, Gulshan Kumar, Kuldeep Gautam, and R.P. Pandey*

COVS and AH, PDDUPVV Evam Go Anusandhan Sansthan, Mathura, U.P.

Two dogs with radius and ulna fracture due to automobile trauma were presented at the university veterinary clinic. Physical examination and radiographic diagnosis was carried out. Fracture in one dog was closed and compound in the other. Fractures were stabilized with nailing of radius alone or radius and ulna both, by minimally invasive technique under image intensifier. Healing occurred uneventfully with routine post operative management. At one month the cortical and medullary continuity was established and callus was evident and the dogs were able to walk with full weight bearing after two months.

#### 088-24 Application of Selected Physiotherapy Techniques for Management of Orthopedic Cases.

*Zama, M. M. S., Hoque, M., Pawde, A. M and Maiti, S. K.*

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Physiotherapy has been a routine practice in human medicine. However, in veterinary practice it is gaining popularity among practicing veterinarians. A few elected techniques of physical therapy e.g. acupuncture, magnet therapy and ultrasound therapy have been used in orthopedic cases with encouraging results. Electrostimulation of acupoints viz. GV20, LIV4, SP6, ST40, BL60 and GB40 was found effective in post-operative rehabilitation of goats with experimental femur fracture. A combination of acupoints in the management of induced aseptic/traumatic carpal arthritis in buffalo calves was found effective. Stimulation of a combination of acupoints was also reported as successful in treating posterior paresis in dogs. Static magnetic therapy was reported to enhance fracture healing in goats. Ultrasound therapy was found effective in fracture healing, tendinous and muscular injury in rabbit and goats.

#### 088-25 Radiological Study of the Effect of BMP on Radius Fracture Healing in Dogs

*A. K. Srivastava*

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Bone morphogenic protein (BMP) can induce molecular and cellular impulses and induce rapid bone healing process. The purpose of this study was to observe the effect of BMP in the healing of fractured bone in dogs. The bovine long bones were collected and processed through de-fating, grinding, decalcification, de-greasing, protein extraction, purification and lyophilization. Ten mixed breed, indigenous dogs were divided into two equal groups. The radius of left arm was prepared. Under general anesthesia, a 1.5x 1.0 cm gap was induced in radius by electric osteotom. On 4<sup>th</sup> post operative day 1 ml (100mg) BMP was injected at fractured site in the test group whereas in the control group only 1ml saline was injected. They were monitored clinically and radiographically. Callus formation was evident profoundly on 15 post operative day and the gap was filled, bridged and united by 30<sup>th</sup> postoperative days. But in the control group callus formation was found later. The radiographic signs were scored and the mean was calculated for each group on 15, 30, 45, and 60<sup>th</sup> day post operation. A significant level of  $P < 0.05$  was assumed. It was concluded that BMP has accelerated bone healing process by osteogenic activity and improved the gap significantly in short period of time.

OR-26

**Comparative Evaluation of Low Level Laser and Transcutaneous Electrical Neural Stimulation on Regeneration of Hip Joint Cartilage in Rabbit**

*Davood Sharifi, Dr.Gholamreza Abedi, Dr.Hossein Jodari, Iraj Sohrabi Haghdooost, Pejman Mortazavi and Mohammad Abedi*

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Repair of cartilage defect in dogs is a challenge in the contemporary orthopedics especially in animals due to different breed sensitivity. During last decade application of Low Level Laser advocated for various orthopedics disorders that is why its effect being evaluated in experimental induced defect on hip joint. The experiment was conducted on 36 New Zealand white male rabbits. These rabbits were subsequently divided into three groups of (control & two experimental) with 12 rabbits each. Under general anesthesia and full exposure and subluxation of right femoral head maximum accessible cartilage was denuded up to subchondral bone using dental bit in all rabbits. Treatment was given to control group, whereas experimental ( I ) was subjected to Low Level Laser Therapy daily for 2 minutes infrared 890 nm and 1 minute red wave with 630 nm wave length 5 days daily, and experiment ( II ) rabbit were subjected to TENS therapeutic treatment at frequency 100Hz and intensity of 80  $\mu$ s for 10 minutes for 14 continues days, then further they subdivided into 3 subgroup of 4 rabbits each with duration of 1, 2 and 3 months. There was no formation of cartilage or fibro cartilage formation in control group samples during observation period. Scar collagen fibers between chondrocyte cells was seen which was not enough to fill the defect. In one month duration in one month duration of experiment I with remarkable connective tissue with chondrocytes beneath that which were located in the large lacunae having different type of cells during one month period in experimental II. Full coverage of defect area with newly formed cartilage having well located chondrocytes in a very large lacuna with huge compact collagen fibers in experiment I with thick fibrous tissues having thin trace of cartilage in experiment II at the end of observation period. Low Level Laser therapy is positively effective in regeneration of articular cartilage.

OR-27

**Effect of Interlocking Nail Diameter on Canine Long Bone Diaphysal Fracture Healing**

*Arshdeep Sharma, M. Raghunath, Ashwathy Gopinathan and S.S. Singh*

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The present study was conducted to evaluate the effect of interlocking nail diameter on diaphysal fracture healing in dogs. In this study, 33 dogs with long bone fractures were treated with intramedullary interlocking nailing. The animals were divided into two groups: In group I (n=16) long bone fracture fixation was done by static intramedullary interlocking nailing with snugly fitting nail diameter and in group II (n=17) long bone fracture fixation was done by static intramedullary interlocking nailing with nail diameter at least 2mm less than internal diameter of the bone. The fractures ranged from simple transverse to highly comminuted/ segmental fractures in both the groups. Fracture reduction and mean union time was comparable in both the groups. Screw related complications like screw bending and misdirected screws were observed in Group II. One case of screw breakage was observed in group I where the distance between fracture line to the proximal of the distal screw was less than 2cm. To eliminate the implant related complications snugly fitting nails should be used with proximal of distal screws locked atleast 2 cm away from fracture line.

**XXXIII Annual Congress of ISVS  
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**AVIAN, WILD & ZOO ANIMAL  
SURGERY SESSION**

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**Department of Veterinary Surgery & Radiology  
Centre of Advanced Studies  
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## Wild & Zoo Animal Surgery

WZA-1

### Surgical Management of Lipoma Involving Neck Region in a Leopard (*Panthera pardus*)

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The occurrence of lipoma is rare in wild animals like Leopard. A male leopard ageing about 6 years housed at the Nandanwan National Park, Raipur, (C.G), was reported for an overgrowth in the neck region on the lower aspect of the ear which was gradually increasing in size from the last one year. The animal exhibited anorexia, dysphagia and dyspnoea. On physical examination, a large mass extending from the caudal border of the mandible down the neck region was felt, which was semisolid in consistency and deeply extended with broad base. Based on clinical examination, it was decided to perform radical surgery to remove the growth. The operation was done under atropine, xylazine and ketamine anaesthesia. The growth was excised using standard surgical technique. Post operatively, injection of Ceftriaxone 1.5 gm I/M for 5 days, Meloxicam (20 mg) I/M for 3 days were given. Daily dressing was done using Topicure spray for 8 days were given. There was uneventful recovery in a time period of 8 days. Histopathological examination of the growth revealed it to be a case of lipoma.

WZA-2

### Surgico-therapeutic Management of Extensively Traumatized Brown Hyena (*Cracutus brunnae*)

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COVS & AH, Anjora, Durg- Chattisgarh

A middle aged Hyena was brought to the clinics by the forest personnels for treatment. The hyena was prostrate having extensive injuries on the head with skin and muscle tear at several places. Clinical examination revealed fracture of the frontal bone of the head, with left jaw and nostrils swollen. The animal was moaning and breathing through mouth having short gasping oral respiration. Heart rate, respiration and temperature were recorded. The wounds were shaved, cleaned and sutured using chromic catgut following anaesthesia. Dehydration and traumatic shock were compensated by infusing Mannitol, Ringers lactate and DNS solutions intravenously. The patient was also treated with antibiotic, steroid, nervine tonic and analgesic.

WZA-3

### Amputation of Right Hind Leg in a Blue Bull: A case Report

B. P. Shukla, R. K. Jain and Pooja Arya

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A Blue Bull aged 4 year was reported to sustain injury at right hind leg during infighting amongst themselves in INDORE ZOO. The bone was protruding out and soiled, it was then decided to amputate the leg from the site of protrusion of bone. A mixture of Xylazine and Ketamine (HBM mixture, 500mg Xylazine+400 mg Ketamine in 4ml distilled water) at the dose rate of 1.8ml was loaded in the dart gun and fired on the thigh. Animal was anesthetized, subsequently loaded on a cart. Surgical area was aseptically prepared from the hock joint upto the lower third of the metatarsal bone. Tourniquates were applied proximal and distal to the amputation site. The elliptical incision was given starting from 2 inches below the fracture to save the skin and muscles. The skin and muscles were reflected back from both the sides proximal as well as distal to fracture site to expose the bone. After the exposure of intact bone above the fractured area, bone was excised with the help of giggle wiresaw. The proximal and distal tourniquet were loosened to check and close the bleeders. All the bleeders were ligated with the No. 1 Vicryl thread. After the bleeding was checked, the muscles were brought closer to each other from both the sides and sutured over the excised surface of the bone tightly. There after skin flap was sutured with the help of cross mattress sutures. Antibiotic Streptopenicilline was given 2.5gm I/M for six days and injection Melonex 10 ml was given for 03 days to relieve pain and swelling. Dressing of the wound was done every 3<sup>rd</sup> day after anaesthetizing the blue bull and stitches were removed on 10<sup>th</sup> day postoperatively and wound was healed uneventful.

WZA-4

**Rectal Prolapse in a Lion****Lokhande, D. U., Adsul, P. B., Sarkate, L. B. and Khandekar, G. S.**

Bombay Veterinary College, Parel, Mumbai

An eight years old male Asiatic Gir Lion was referred for the treatment of rectal prolaps. The lion was anorectic, passing blood in stool, vomiting and unable to pass urine properly. Six days prior, blood revealed high BUN (93 mg %) and creatinine (4.5 mg %) values and thus was treated accordingly for renal failure. Clinically the lion was dull and was having near about 2 – 2.5 feet long rectal prolaps. The prolapsed part was necrosed, putrified and was having even tear. Amputation of prolapsed mass was advised along with treatment for renal failure. The lion was anaesthetized with half the calculated dose of xylazine (1 mg/kg) and ketamine hcl (3 mg/kg) as the animal was dull and emaciated. The lion (weight-160 kg) was well anaesthetized by 80 mg of xylazine and 200 mg of ketamine hcl. In surgery the prolapsed mass was pulled out posteriorly and amputation was performed on normal healthy portion of rectum. The operation last for 28 minutes and lion attended sternal recumbency in 71 min. By the 79<sup>th</sup> min. lion started attempt to getup by fore limbs. However he was on i/v fluids for two operative days and took food and water on 3<sup>rd</sup> p o day. He passed stool on 5<sup>th</sup> day after surgery.

WZA-5

**Intramedullary Pinning for Proximal Tibial Fracture Repair in a Black Buck****B. R. Balappanavar and Anil S. Patil**

College of Agriculture, University of Agricultural Sciences, Dharwad-Karnataka

A black buck was presented with non weight bearing lameness of left hind limb. On clinical examination, swelling and crepitus was observed at left stifle region. On radiographic examination proximal tibial fracture was diagnosed. Retrograde intramedullary pinning was performed under xylazine sedation and local lignocaine infiltration anesthesia. Post operatively modified Thomas splint was applied and maintained for three weeks. A course of antibiotics and NSAID's were given for seven days. Animal recovered uneventfully.

WZA-6

**Normograde Intramedullary Pinning for Fracture Repair in Cattle Egret: Two Cases****A. S. Patil and B. R. Balappanavar**

College of Agriculture, University of Agricultural Sciences, Dharwad- Karnataka

Two cattle egret birds were presented to hospital with history of hitting against vehicle during flight and unable to fly. On clinical and radiographic examination there was fracture of tibia in one bird and fracture of radius and ulna in the other. So as to aid in early recovery it was decided to perform intramedullary pinning in both the cases. Under Ketamine anesthesia normograde intramedullary pinning was performed using Kirschner wires in both the cases. Postoperatively birds were administered with Amoxicillin+ Clavunate and Meloxicam for five days and restrained in a cage for six weeks; both the birds recovered uneventfully and were released to wild.

WZA-7

**Dystocia in a Nilgai (*Boselaphus tragocamelus*) due to Hydrocephalus Monster Fetus****B. R. Balappanavar, A. S. Patil, U. H. Tirlapur and R. C. Hebbali**

College of Agriculture, University of Agricultural Sciences, Dharwad-Karnataka

A Nilgai was presented with dystocia for more than 8 hrs. The animal was administered Xylazine (300mg) and Ketamine (300mg) mixture with pneumatic driven dart syringe to restrain animal. Animal was placed over the soft, elevated bedding and during anesthesia, 10% dextrose solution (4 lit) was administered intravenously. Per vaginal examination revealed ante presentation with laterally deviated head and neck extending over the body of fetus and both the fore limbs extending in the vaginal passage. The fetus was dead and a huge swelling was noticed over the fore head. So, it was diagnosed to be a case of dystocia due to hydrocephalus monstrous fetus. Position of the head and neck was corrected and fetus was delivered by traction. Norfloxacin+ Tinidazole were placed into uterus and to reverse the anesthetic effects Yohimbine (30 mg I/V) was given. It was administered with Amoxicillin and Cloxacillin 3gms, Ketoprofen, Dicyclomine HCl

Dexamethasone for five days. The dam recovered uneventfully. The other abnormalities noticed in fetus are discussed.

#### **An Unusual Case of Gastric Dilatation, and Intestinal Obstruction in a Leopard**

*R. V. Suresh Kumar, P. Veena, N. Dhanalakshmi, P. Yasotha, Ch Sreelatha, Thoiba Singh, Arun and P. Sankar*

College of Veterinary Science, SVVU-Tirupati

Eighteen years old Leopard (rescued animal) belongs to Sri Venkateswara Zoological Park Tirupati was presented to the Department with a complaint of severe anorexia, abdominal distension, weakness constipation for the past 15 days. It has already received course of antibiotics, appetite stimulants, laxatives without any improvement. Clinical, radiographic, ultrasonographic examination was carried out under anaesthesia. Exploratory laparotomy revealed distension of stomach, and adhesions with intestines. Splenic torsion was also noticed. Gastrotomy revealed Nail and hair obstructing at the pyloric end. Enterotomy revealed the hard fecal material and the same was removed. Stomach, intestinal and laparotomy incisions were sutured in a routine way as per the standard procedures. The animal has received post operative antibiotics, analgesics, and regular dressing of the site. It was reported to be dead due to Gangrene of the fore limb later.

#### **Treatment of Gun Shot Wound in an Asian Elephant**

*Indramani Nath, P. K. Roy, K. L. Purohit, J. K. Das, Sobharaj Samantrai*

Orissa Veterinary College- Orissa

A captive elephant aged about 40 years belonging to Jashipur forest division of simlipal tiger reserve, orissa was injured by bullet firing. While a group of naxalites were invading the forest bit house in mid night, the tusker made loud noise. Being scared Naxals fired several bullets causing injuries on both sides of the elephant. Metal detection revealed presence of bullet. Tusker was tranquilized with a mixture of 500mg of xylazine hydrochloride and 200mg of ketamin hydrochloride administered through a captur gun. A pellet was recovered from the wound. Povidone iodine lotion 5% was irrigated through all the wounds. The temperature of the elephant raised to 36 degree centigrade during anesthesia. So the fore head region including ears were sprayed with cold water. The elephant was revived with 5ml of yohimbine hydrochloride. Parenteral ceftriaxone sodium 4gm was administered once daily for 5 days. The elephant recovered uneventfully.

#### **Rescue and Rehabilitation of an in Indian Cobra (*Naja naja*) Trapped in Coal Tar**

*S. Samantara, Indramani Nath, R. Rout, B. N. Mishra*

Orissa Veterinary College- Orissa

A bicellate Indian cobra (*Naja naja*) was presented to the Surgery Department by the members of "Snake Helpline" - ANGO working for wellbeing of Snakes. History revealed the Snake was trapped in a coal tar while chasing a lizard. The local public requested the "Snake Helpline" to rescue the Snake. After rescuing the snake the members observed that the snake was unable to move and the anterior one third part of the snake was adhered to the posterior one third part of the body. A dorso-ventral radiograph did not reveal any fracture or dislocation of the vertebra. Then the snake was anaesthetized with 25mg of Ketamine Hydrochloride was injected intramuscularly. The coaltar strains were removed gradually by cotton swabs soaked in kerosene oil with continuous flushing spraying of Normal saline. After complete removal of the stain the remnants of the kerosene oil was removed by using Dettol soap. Then it was released in a water bucket to remove excess of soap foam. The snake showed its natural movement with raising of its hood and tried to escape from the water body. After two days keen observation the "Snake Helpline" released the Snake in its natural habitat.

**WZA-12 Chronic Wound Management by Oxum Solution in a Chimpanzee (*Pan troglodytes*)***Indramani Nath, S. Samantara, B. N. Mishra, J. K. Das*

Orissa Veterinary College- Orissa

A swelling of 3cm diameter was noticed in the left cheek of a male Chimpanzee "Julu", aged 20yrs old at the Nandankanan Zoological Park. The Zoo veterinarian tried to treat the animal with antibiotics and hot fomentation but all the attempts were in vein as the Chimpanzee threw medicines. Attempts for administration of medicine through the blowpipe and cap-chur gun was made as all the Chimpanzees of that same enclosure (the female, Pampetta and the daughter, Varsha) became excited after they observed the treating physicians and equipments. In the mean time the swelling gradually increased and the female Chimpanzee made it open which resulted in a large sized wound. Then it was referred to the Surgery Department of Orissa Veterinary College. As Chimpanzee did not allow any other person to go near him, Cap Ceff 500mg (Cefalexin) in icecream was offered by the animal keeper. The wound was sprayed with Oxum (Superoxide solution, All Laboratories Ltd., Mumbai) regularly for a period of one month and there was an uneventful recovery leaving a scar mark only.

**WZA-13 Treatment of Rope Strangulated Septic Wound in a Stripped Hyena (*Hyaena hyaena*)***K. C. Patel, Indramani Nath, R. Behera, S. Samantara*

Orissa Veterinary College- Orissa

A stripped Hyena was rescued by the forest officials in the outskirts of Cuttack city and sent to Nandankanan Zoological Park for the rehabilitation. The zoo vet observed that the Hyena was depressed with a piece of plastic rope hanging from the distal part of the limb. The Zoo vet requested the Surgery Department of Orissa Veterinary College for proper treatment. After restraining the Hyena in a squeeze cage, it was tranquilized with a mixture of 0.6mg of atropine sulphate, 15mg of Xylazine hydrochloride and 100mg of Ketamine hydrochloride injected intramuscularly. After 5 minutes Hyena was recumbent. DNS 5% was injected in the recurrent tarsal vein. On examination a piece of rope was found to be embedded and strangulated resulting in a septic wound. After aseptic preparation of the surgical site the strangulated rope was removed. The animal was kept under the coverage of systemic antibiotic Ceftriaxone (500mg) and Meloxicam 5mg for five days. The animal had an uneventful recovery and released to the nearby forest.

**WZA-14 Rescue of Snakes Unusually Plucked in the Cool Drinks and Liquor Tin Can***J. K. Das, I. Nath, T. K. Pattanaik, S. Das, & S. Mallick.*

Orissa Veterinary College, OUAT, Bhubaneswar

One rat snake was presented to the veterinary college, surgery dept, by the Snake Help Line, Bhubaneswar, with a problem of head dipped inside the Thums up cold drinks tin can found in Khandagiri cave, Bhubaneswar. The hole in which it has introduced its head was extended with curved scissors and was relieved. The injured neck portion was applied with Iodine lotion and freed. Another similar case of a Cobra (*Naja Naja*) was found near one bar restaurant with the same problem of introducing its head inside one foreign liquor tin can. In the same way with all precautions the hole was enlarged and the head was removed from the tin can. The injured portion was applied with povidone Iodine lotion and was freed in the forest by snake help line, Bhubaneswar.

**WZA-15 Buoyancy Helps to Heal a Femoral Fracture in an Elephant***K. K. Sarma*

College of Veterinary Science, AAU, Khanapara, Guwahati

A case of distal femoral fracture in an aged Asian elephant (*Elephas maximus*) bull is reported in the present paper. The fracture was a result of logging injury. No specific fracture treatment could be given to the bull except allowing him to remain half submerged in water on his own choice for 12-18 hours every day for over two months. The buoyancy of water had not only given him physical comfort

reducing the burden on the legs, but also helped in the healing of the fracture. The elephant regained nearly full functional abilities of the fractured leg within three months. Long hours of stay in water and lack of wear caused overgrowth of nails and foot pads which had to be trimmed periodically.

#### **Medical and Physical Support Saves the Old Makhna**

*K. K. Sarma*

College of Veterinary Science, AAU, Khanapara, Guwahati

An ageing (54years) logging elephant weakened after two months of strenuous lumbering duty was made to walk for 65 km through difficult hilly roads in two days without rest. After the journey was complete, he suffered from severe dehydration, acute laminitis; he was anaemic also. The exhausted bull was unable to stand for three days and all hopes of a recovery was lost by the owner and handlers. He was treated with intravenous and oral rehydration therapy, vitamin-B-complex, calcium, antihistamins, NSAID and inorganic phosphorus. As he was marginally improved by the medication, some innovative physical aids were provided that enabled him onto his feet. The medical treatment and physical support could save the valuable animal.

#### **Cloacopexy for Cloacal Prolapse in a Python – A Case Report**

*Shiju Simon, M. B. Justin William, R. Suresh Kumar, Mohd. Shaftuzama, A. Arunprasad, R. Srivasthanker and H Pushkin Raj*

Madras Veterinary College, TANVAS-Chennai

An eight year old female python weighing 47 kg was presented to the Surgery Unit of the Madras Veterinary College Teaching Hospital with the history of progressively growing mass protruding through cloacae since one month. On clinical examination the mass found to be soiled, inflamed and edematous. Lateral radiographic view of the prolapsed mass revealed soft tissue swelling and the condition was tentatively diagnosis as cloacal prolapse due to intramural abscess. Surgical intervention was carried out under ketamine hydrochloride anaesthesia @ 20 mg/kg body weight intramuscularly. The animal was positioned in dorsal recumbency and the mass was cleaned with povidone iodine solution and needle aspiration revealed purulent materials. A stab incision was made on the dependent area of the abscess and inspissated pus was removed. The abscess cavity was trimmed and partial amputation of cloacal mucosa was performed. Circumcostal cloacopexy was performed on the lateral aspect using no-1 PGA. The organisms isolated were *Enterobacter* spp., and *E. coli*. A course of antibiotics and analgesics were administered. The animals made an uneventful recovery without recurrence and detail will be discussed.

#### **Evisceration of Mesentery in a Wild Macaque and its Surgical Management**

*Jayaprakash, R., M. Shiju Simon, S. Sooryadas, B. C. Das and R. Suresh Kumar*

Madras Veterinary College, TANVAS-Chennai

A nine year old male monkey weighing 23 kg was presented to the Small Animal Surgery Unit of the Madras Veterinary College Teaching hospital with the history of a two day old traumatic evisceration, due to an accident. The evisceration was seen on the left paracostal region. Self mutilation of the eviscerated mass was reported. Under Ketamine-Diazepam anaesthesia, the eviscerated mass was inspected and immediate surgical correction was resorted to. The eviscerated mass was found to be mesentery which was excised after ligating the stump. The remaining part of mesentery was washed profusely with normal saline and metronidazole and replaced into the abdominal cavity. Abdominal wall was closed in layers using No. 2-0 PGA in a continuous pattern and skin was closed using silk in continuous pattern. Suture region was protected with soft bandage and adhesive plaster covered caudal thoracic and cranial abdominal wall to protect further self mutilation. The bandage was kept for eight days; on the eight day, sutures were removed and the animal had an uneven recovery.



WZA-19

**Treatment of a Critically Injured Rhesus Monkey***Deepshikha Das, Manab Sharma, B. Dutta and K. K. Sarma*

College of Veterinary Science, AAU, Khanapara, Guwahati-Assam

A partially unconscious Rhesus monkey (*Macaca mulatta*) with a severe injury on the forehead was rescued and brought to the Department of Surgery & Radiology. On examination, two deep wounds were seen over its right eye which were still bleeding. Anaesthesia was obtained with 100 mg of Ketamine intramuscularly (@ 15 mg/Kg body weight). The hairs surrounding the wounds were clipped and the area was rendered aseptic by washing with normal saline solution followed by Povidone iodine. The wounds were closed using nylon by simple interrupted sutures after dusting with antibiotic powder. The animal was rehydrated with DNS (5%) and a course of Antibiotic (Immo 500mg), antihistaminic (Avil 0.5ml) and steroid (Dexona 0.5ml) were administered. The antibiotic was administered for five days. The animal removed some of the sutures on fifth and sixth day however, complete healing occurred within fifteenth day. The animal made an uneventful recovery.

WZA-20

**Chondrosarcoma in an Indian Rhinoceros (*Rhinoceros unicornis*) – A Case Report***R. Sureshkumar, B. Justin William, Capt. G. Dhanan Jaya Rao, K. B. P. Raghavendar and E. Pushkin Raj*

Madras Veterinary College, TANVAS-Chennai

A 3.5 tonne 20 year old male Indian Rhinoceros (*Rhinoceros unicornis*) was referred to the department of Veterinary Surgery and Radiology, Madras Veterinary College Teaching Hospital, Chennai from Nehru Zoological Park, Hyderabad with the history of unsuccessful treatment attempt of about two years for clinical condition of chronic progressive ulcerative swelling on its left lower cheek region. Clinical and haematobiochemical parameters were evaluated. FNAB and tissue biopsy of the mass were investigated and the results were confirmed as chondrosarcoma. The animal was anaesthetised by darting with etorphine hydrochloride and acepromazine and the surgical excision of the mass was attempted. The mass was excised and postoperatively the wound cavity was treated with antiseptics. Recurrence of the condition was noticed within three months and thereafter clinical condition of the animal was found to be unstable and the animal eventually died nine months after surgery. Postmortem examination revealed metastatic condition in the vital organs. The case was discussed in detail.

WZA-21

**Caesarean Section in a Deer***Anand Patil and S.M. Ganvi*

Veterinary Hospital, Belgaum-Karnataka

A deer belonging to the 115 Mahar Regiment, Fort Belgaum was presented to the Veterinary Hospital with complaint of dystocia. Radiographs revealed a single fetus and ultrasound examination was done for confirmation of viability of the foetus. The anaesthetic protocol involved atropine, acepromazine, xylazine+ketamine combination. The deer was restrained in right lateral recumbency and the left lower flank was prepared for conducting caesarean section. The uterus was exteriorised and incised to deliver a live fetus. Extensive resuscitative measures were undertaken to restore normal respiration in the kid. The uterus was sutured in two layers in Cushing - Lambert pattern using catgut no: 1 size. The laparotomy wound was sutured in a routine manner. Postoperative care involved wound dressing by the military staff attenders. Parenteral or oral antibiotics could not be administered during the post-operative period since the deer was very apprehensive and would get extremely excited when approached by either us or our staff. However, the deer recovered uneventfully and has been breeding since next cycle. It is concluded that caesarean section remains a viable option for dystocia in deer.

## Avian Surgery

### Decombing an Indigenous Cock: A Case Report

*B. C. Das, R. Jayaprakash, Shiju Simon, M. Vijayakumar and R. Suresh Kumar*  
Madras Veterinary College, TANUVAS- Chennai

A 5 year old white leghorn cock weighing approximately 3 kg was brought to the Small Animal Surgery Out Patient Unit of Madras Veterinary College Teaching Hospital with the history of head tilting due to overgrown comb past 1 year. Clinical examination revealed severely twisted and lowered head due to enlarged comb with difficult in walking and feeding. Surgical excision was performed with electro cautery under ketamine hydrochloride 50 mg/kg body weight intramuscularly induction and 2% sevoflurane maintenance after intubation through the Bain circuit. Surgical wound healed and suture removed on 10<sup>th</sup> postoperative day and cock recovered uneventfully. The implications of decombing technique are discussed.

### A Case of Punctured Wound of the Crop in a Pigeon

*Mohammed Arif Basha K., Nagaraju N., V. Mahesh, Veerabhadriah H. V. and L.Ranganath*  
Veterinary College, Bangalore

A young pigeon was presented to Veterinary College hospital, Bangalore, with a history of crop injury because of fight among the birds and also discharging grain mixed contents from the damaged crop while feeding. The examination confirmed punctured wound of the crop. The area was thoroughly cleaned with warm normal saline and ruptured crop was reconstructed with chromic catgut. The bird was followed for 10 days and recovered uneventfully.

### Management of Humerus Fracture in a Flying Squirrel (*Glaucomys volans*)

*Indramani Nath, J. K. Das, S. Samantara, B. N. Mishra*  
Orissa Veterinary College- Orissa

A southern flying squirrel was rescued by the forest officials near the Similipal tiger reserve and send to the Nandankanan Zoological Park for the rehabilitation. The zoo vet observed that the animal is limping in its right forelimb and was in partial inappetance. So, they requested the Surgery Department of the Orissa Veterinary College for proper treatment. The squirrel was tranquilized with 2mg of ketamine hydrochloride injected intramuscularly after proper physical restraint of neck by a "Y" shaped stick. Palpation of the right limb revealed fracture with crepitating sound at mid shaft humerus. Modified Thomas splint was applied using G.I. wire and leucoplast adhesive tape. The animal was kept inside a small enclosure in order to restrict its movement. The animal showed improvement and started taking its food. After 10 days the Thomas splint was removed and it was observed that the animal was able to bear its own body weight on the affected limb.

### C-Arm Guided Intramedullary Pinning of Humerus Fracture in a Black Kite (*Milvus migrans*)

*B. N. Mishra, Indramani Nath, S. Samantara, J. K. Das*  
Orissa Veterinary College- Orissa

An injured black kite was presented to the surgery department with complaint of flying inability. The bird was rescued by an animal lover while stray dogs were chasing it. Crepitating sound on palpation revealed oblique fracture of right humerus which was confirmed on an image intensifier TV(C-ARM). The bird weighted 400gm and it was anesthetized with 40mg of ketamine hydrochloride. Close intramedullary pinning was done using 4mm Steinman pin by retrograde method under the guidance of an IITV. Additional support was provided by bandaging. The bird was offered with live fishes and multivitamin drops. The bird was kept in a paper cartoon with tiny holes to restrict its activity. Only a single person was allowed to offer food and medicine. The cartoon containing the bird was housed in a

darker place. After one week the rehabilitator reported that the kite stopped taking its food. On palpation a callus was felt at the fracture site indicating clinical union after which the intramedullary pin was removed. On releasing the bird it was able to fly a few distance but it could not attained the flight height. Hence it was decided to keep the bird in the Nandankanan Zoo as an exhibit.

## WZA-26

**C-arm Guided Intramedullary Pinning of Humerus Fracture in a Barn Owl**

*J. K. Das, I. Nath, T. K. Pattanaik, R. K. Rout and B. N. Mishra.*

Orissa Veterinary College, OUAT- Bhubaneswar.

One case of Barn Owl was presented to the veterinary college TVCC from Nandan Kanan zoo having simple fracture of its left humerus while flying inside the cage. On radiological exam it was revealed that complete fracture of humerus at the mid shaft portion. According to the marrow cavity one mm thickness intramedullary pin was introduced in antegrade manner under c-arm guided image intensifier. The remnant portion of the pin was cut and the exposed portion of the pin was fixed and held to the wing with the help of 1" micropore and bandaged. It was kept under observation. After 7 days the pin was removed and the Owl recovered uneventfully.

## WZA-27

**Surgical Management of Fracture of Humerus in a Flamingo**

*T. P. Balagopalan., B. Ramesh Kumar and R. M. D. Alphonse*

Rajiv Gandhi College of Veterinary and Animal Sciences- Pondicherry

An adult flamingo bird (*Phoenicopterus roseus*) was presented to the Teaching Hospital, Rajiv Gandhi college of Veterinary and Animal Sciences, Puducherry with a history of recumbency after an accidental sudden fall on flight. On clinical examination, the bird was found to be affected with a compound mid shaft fracture of left humerus. The bird was apparently healthy and physiological parameters within normal range. Retrograde intramedullary pinning using K-wire was performed under Xylazine-Ketamine combination for stabilizing the fractured fragments. The external wound was closed and protected by bandaging. The wing was immobilized along with the body. Amoxicillin - Cloxacillin (125 mg) and meloxicam (5 mg) was administered IM for four days and the bird was handed over to the Department of Forest, Pondicherry. It was reported that the bird recovered well.

## WZA-28

**Surgical Management of Necrosed Wing in a Barred Owl**

*A. Kumaresan, S. Kathirvel, S. Dharmaceelan, R. Ezakial Napoleon, S. Ravikumar, J.*

*Chandran and N. Rajendran*

Veterinary College and Research Institute, Namakkal- Tamil Nadu

An owl weighting about 350 gm rescued by the forest department, Namakkal was brought to the VC&RI teaching hospital with the history of broken left wing. Clinical examination revealed the left wing in necrosed conditions with fracture of left radius and comminuted fracture of left humerus. X-ray of the wing revealed the multiple fractures of humerus and radius with loss of bone fragments. Since the wound was septic and foul smelling and nature of fractures, it was decided to perform the amputation of the wing. The cocktail administration of diazepam (0.5mg) and ketamine (5mg) was found effective throughout the procedure of amputation of wing. The bird recovered uneventfully.

**XXXIII Annual Congress of ISVS  
and International Symposium  
2009**

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**ANAESTHESIOLOGY  
SESSION**

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**Department of Veterinary Surgery & Radiology  
Centre of Advanced Studies  
College of Veterinary Science  
Guru Angad Dev Veterinary and Animal Sciences University,  
Ludhiana- 141004, Punjab (India)**

### **Evaluation of Atropine-Acepromazine-Xylazine-Thiopentone as an Anaesthetic Combination in Buffalo Calves**

*Saurabh Chaturvedi, Kuldip Singh, Ashok Kumar, Jit Singh, P.K. Peshin and Sukhbir Singh*  
COVS, Chaudhary Charan Singh Haryana Agricultural University, Hisar- Haryana

The study was undertaken in twelve male buffalo calves by administering atropine (0.04 mg/kg, IM) followed by acepromazine (0.05 mg/kg, IM), xylazine (0.04 mg/kg, IV) and 5% thiopentone (5.00 mg/kg, IV). The animals went to sternal recumbency at 1.78±0.11 minute after thiopentone administration. Corneal and palpebral reflexes were lost at 7.43±0.37 minute after thiopentone with complete analgesia at 11.59±0.41 minutes. Complete recovery took 77.19±3.66 minute. Plasma glucose significantly increased at 10 minute of thiopentone administration and recovery. Plasma sodium and potassium remained elevated during anaesthesia. Mean arterial pressure was lowest (110.6±7.375 mmHg) at 30 minute of thiopentone administration as compared to the base value (146.7±8.073 mmHg). Central venous pressure significantly increased (12.7±0.867 cmH<sub>2</sub>O) at 20 minute of thiopentone administration as compared to the base value (6.9±1.124 cmH<sub>2</sub>O). T-wave was isoelectric and became normal after 25 minutes of thiopentone administration. In ST-segment, there was slight uplifting immediately after thiopentone administration.

### **Evaluation of Propofol-Halothane as an Anaesthetic Combination in Buffalo Calves**

*Vishal Kumar, Sukhbir Singh, Ashok Kumar, P. K. Peshin and Jit Singh*  
COVS, Chaudhary Charan Singh Haryana Agricultural University, Hisar- Haryana

The study was conducted in twelve male buffalo calves. Propofol IV @ 4.0 mg kg<sup>-1</sup> and halothane in O<sub>2</sub> mixture were administered for induction and maintenance. Animals became ataxic and fell down at 0:00:30±0:00:02 h:mm:ss. Apnoea was observed at 0:00:53±0:00:06 h:mm:ss but respiration was regained at 0:02:43±0:00:08 h:mm:ss. The palpebral reflex was abolished at 0:03:52±0:00:32 h:mm:ss. After halothane administration, there was appreciable analgesia. Halothane was disconnected after one and half an hour. Swallowing and head rightening reflexes were regained at 0:05:20±0:00:25 and 0:15:40±0:03:56 h:mm:ss, respectively. Animals recovered at 0:37:30±0:05:47 h:mm:ss. Plasma sodium, potassium and glucose were significantly elevated while chloride was reduced significantly. The heart rate significantly increased after propofol which decreased during halothane administration. A significant fall was seen in MAP after halothane administration. The CVP was significantly decreased after propofol but increased significantly after halothane administration.

### **Evaluation of Propofol as an Anaesthetic in Buffalo Calves**

*Vishal Kumar, Sukhbir Singh, Ashok Kumar, Jit Singh and P. K. Peshin*  
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## AN-4

**Clinico-Physiological Response to Lignocaine Alone and in Combination with Buprenorphine and Xylazine for Epidural Analgesia in Buffalo Calves***Tarun Kumar, Raju Sharda, S. K. Tiwari, M. O. Kalim and Kashi Nath*

COVS &amp; A H, Anjora, Durg- C.G

The present study was conducted in fifteen, non descript, healthy male buffalo calves ranging from 6 to 8 month of age and weighing 55 to 75 kg. The animals were randomly divided into 3 groups comprising of 5 animals in each. In group A lignocaine @ 2.2mg/kg, group B lignocaine @ 2.2 mg/kg + Buprenorphine @ 20µg/kg body weight and in group C lignocaine @ 2.2 mg/kg + Xylazine @ 0.05mg/kg was injected epidurally. The onset of anaesthesia was quick in animals of group C (3.8±0.37min) followed by group A (4.40±0.24min) and group B (5.40±0.24min). The duration of analgesia was 162.00±5.38 min, 114.00±2.00 min and 57.00±2.55 min in animals of group C, B and A respectively. Ataxia and motor incoordination was comparatively more in animals injected epidurally lignocaine alone or with xylazine as to lignocaine + buprenorphine. The animals showed marked sedation, drooping of head, salivation, suppression of palpebral reflexes, ruminal stasis and moaning during sedation in group B and C as compared to animals of group A. A decrease in heart rate, respiration and rectal temperature was recorded in animals of all the three groups. Thus, it is inferred that lignocaine can be safely used along with xylazine and buprenorphine for obtaining epidural analgesia in bovines.

## AN-5

**Haemato-biochemical Response to Buprenorphine or Xylazine along with Lignocaine for Epidural Analgesia in Buffalo Calves***Tarun Kumar, Raju Sharda, S. K. Tiwari, Kashi Nath, and M. O. Kalim*

COVS &amp; A H, Anjora, Durg- C.G

Fifteen, non descript, clinically healthy male buffalo calves aged 6 to 8 months and weighing between 60 to 75 kg were used to evaluate the efficacy of lignocaine alone and in combination with buprenorphine and xylazine for epidural analgesia in buffalo calves. The experimental animals were randomly divided into 3 groups comprising of 5 animals in each group. Lignocaine @ 2.2mg/kg, lignocaine @ 2.2 mg/kg + Buprenorphine @ 20µg/kg and lignocaine @ 2.2 mg/kg + Xylazine @ 0.05mg/kg was injected epidurally in animals of group A, B and C respectively. Epidural administration of lignocaine alone or with buprenorphine caused non significant changes in various haematological parameters whereas lignocaine with xylazine resulted in significant decrease in haemoglobin, packed cell volume, total leucocyte count, total erythrocyte count, lymphocytes and significant increase in neutrophil count in buffaloes. Various biochemical parameters viz. serum glucose, urea nitrogen, creatinine, amino alanine transferase and amino aspartate transferase showed significant increase in animals of group C. However, in animals of group A and group B, increase in these values were non significant. The increase in various haematological and biochemical parameters returned to base values within 24 hours of the experiment. Thus, epidural buprenorphine and xylazine along with local anaesthetic can be safely used in buffaloes.

## AN-6

**Halothane Anaesthesia in Medetomidine and Midazolam Premedicated Buffaloes***Vivek Malik, P. Kinjavdekar, Amarpal, H. P. Aithal, A. M. Pawde, Surbhi and Abhishek Saxena*  
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Six buffaloes were used in H1 and H2 groups. In H1 medetomidine (2.5 µg/ kg) + butorphanol (0.05 mg/kg) and in H2 midazolam (0.25 mg/ kg) + butorphanol (0.05 mg/kg) were administered intravenously. Induction by 5% thiopental sodium and maintenance by halothane in 100% oxygen through large animal anaesthetic machine was done. The treatments were compared for clinicophysiological, haemodynamic and haematobiochemical parameters. H1 produced better sedation and analgesia than H2. The quality of muscular relaxation was excellent in both groups. Depression of palpebral, corneal, pedal and pinprick reflexes and extent of salivation was higher in H1 than H2 group. Rotation of eyeball was for maximum time in H1 than H2. Significantly lesser doses of thiopental sodium was required in H1 (3.85±0.63 mg/kg) than H2 group (6.96±0.45 mg/kg).

Halothane concentration in H1 group was from 2.5 to 3.5 %, and in H2 group it was from 2.75 and 4.0 %. The H2 group took significantly more time for incoordination than H1 group. Time taken for recovery, to resume sternal recumbency and standing were higher in H2 than H1 group. Significant bradycardia after premedication in H1 group improved after induction and maintenance period. In H2 significant tachycardia after premedication and thereafter, was recorded. Respiratory rate decreased during pre-induction period and increased after maintenance agents in both groups. Decrease in rectal temperature, Hb, PCV and TLC was observed in both groups. Slight neutrophilia and lymphocytopenia were observed in both groups. Plasma glucose, cortisol, creatinine, urea nitrogen, AST and ALT level increased in both groups Plasma sodium and potassium did not show any definite trend in both groups. Plasma chloride showed a slight increase in both groups. Mean arterial pressure decreased significantly after premedication in H1 group and improved during maintenance. In H2 group, MAP decreased after induction and remained lower thereafter. CVP increased significantly after premedication and decreased immediately after induction till the end in both groups. ECG changes were transient in both groups. Decrease in SpO<sub>2</sub> was observed in both groups. Medetomidine (2.5 µg/kg) - butorphanol (0.05 mg/kg) combination provides better quality sedation, analgesia and muscular relaxation with transient but slightly more cardiac depression than midazolam (0.25 mg/kg) - butorphanol (0.05 mg/kg) combination. Medetomidine-butorphanol combination provides more dose sparing effect on anaesthetics used for induction and maintenance than midazolam-butorphanol combination and maintains cardiopulmonary dynamics better during anaesthesia with shorter recovery times. Halothane along with medetomidine-butorphanol-thiopental premedication may be recommended for balanced anaesthesia in clinical surgeries in buffaloes.

#### **Continuous Intravenous Infusion with Ketamine in Medetomidine and Midazolam Premedicated Buffaloes**

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Continuous intravenous infusion (CII) anaesthesia with ketamine in six male adult buffaloes was made in K1 and K2 groups. In K1 medetomidine (2.5 µg/kg) + butorphanol (0.05 mg/kg), and in K2 midazolam (0.25 mg/kg) + butorphanol (0.05 mg/kg) were used intravenously. Induction was achieved by 5% thiopental sodium in both groups. Maintenance was done by CII with ketamine (1% solution in NS). Clinicophysiological and haemodynamic parameters were recorded at time 0 (base line) and at 5, 10, 15, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110 and 120 min of anaesthesia. Haematobiochemical parameters were estimated at time 0 (base line) and at 30, 60, 120, 360, 720 and 1440 minutes of anaesthesia. Dose of ketamine required for induction and maintenance of anaesthesia was recorded. Group K1 produced better sedation and analgesia than K2. Muscular relaxation was excellent in both groups. Depression of palpebral reflex was better in K2 than K1, whereas, depression of corneal reflex was comparable. Depression of pedal and pinprick reflexes was higher in K1 than K2. Significantly lesser doses of thiopental sodium for induction were required in K1 (2.87±0.44 mg/kg) than K2 group (7.14±0.36 mg/kg). The infusion rates of ketamine were 0.13±0.01 and 0.16±0.01 mg/kg/min in K1 and K2 groups. Weak time was comparable. Recovery time, resumption of sternal recumbency and standing time were higher in K2. Significant bradycardia in K1 and tachycardia in K2 was recorded. Respiratory rate decreased in K1 than K2. MAP decreased significantly in K1 and increased after premedication in K2. CVP increased after premedication, which decreased after induction in both groups. The CVP decreased after maintenance and remained higher. ECG showed sinus bradycardia and decreased atrial depolarization area in K1 and sinus tachycardia and increased atrial depolarization area in K2. No change in ventricular depolarization time and a decrease in ventricular depolarization area were observed in K1, whereas, in K2 ventricular depolarization time and area increased. PR interval did not show a definite pattern but increased in K1. Increased QT interval in K1 and decreased in K2 group was recorded. Increase in amplitude of T wave was observed in K2 group. Decrease in SpO<sub>2</sub> was observed in both groups. It can be concluded that medetomidine - butorphanol provides better quality sedation, analgesia and muscular relaxation with transient but slightly more cardiac depression than midazolam - butorphanol to thiopental anaesthesia in buffaloes.

It provides more dose sparing effect on ketamine than midazolam-butorphanol and maintains cardiopulmonary dynamics better during anaesthesia with shorter recovery times.

## AN-8

### Chemical Immobilization of Stray Bulls for Capture and Rehabilitation from Rajkot City

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A clinical trial on 20 stray bulls was conducted using xylazine @ 0.1mg/kg body weight (10 bulls; 5 lighter & younger and 5 heavier & adult) and 0.2mg/kg body weight (10 bulls; 5 lighter & younger and 5 heavier & adult) intramuscularly using blow pipe and dart. Darting convenience, induction time, maintenance time, capture easiness, loading for rehabilitation, recovery time and complications, if any, during the procedure of chemical immobilizing and subsequent capture and rehabilitation of the stray bulls was studied. It was found that xylazine @ 0.2mg/kg body weight intramuscularly using blow pipe at the distance from less than 5 meter facilitated uneventful immobilization, capture and rehabilitation in city traffic during working hours. Average time taken for induction of sedation was approximately 8 to 10 minutes. The animal remained in sedation for on an average of 20 to 25 minutes during which capture and rehabilitation procedures were completed. Except 2, all the bulls recovered uneventfully and resumed normal activities after 60 minutes of rehabilitation. Almost all the bulls showed various degree of salivation during the period of maintenance and recovery, whereas, 2 adult bulls with a weak health score showed mild tympany accompanied with regurgitation and respiratory distress. The complication ought to be due to sickness and or fullness of rumen. These animals were rescued on rational medical management which later recovered on next day. The procedure was safe for the bulls as well as the personnel involved in capture operations.

## AN-9

### A Comparison between Midazolam-Ketamine and Xylazine-Ketamine Anaesthesia in Pigs

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The clinical and physiological effects of midazolam-ketamine (MK) and xylazine-ketamine (XK) combinations were compared in pigs. A total of 12 pigs were divided into 2 groups, comprising 6 animals in each group. The pigs in MK group received midazolam @ 0.5mg/kg and ketamine @ 15mg/kg and the XK group received xylazine @ 2mg/kg and ketamine @ 15mg/kg intravenously respectively. The efficacy of anaesthesia was evaluated on the basis of clinical (down time, muscle relaxation, analgesia, duration of analgesia, recovery time, sternal recumbency time and standing time) and physiological (temperature, heart rate and respiratory rate) parameters were observed at 0, 5, 30 and 60 minutes of anaesthesia. Down time was significantly ( $P<0.05$ ) different between MK and XK groups, which were  $0.41 \pm 0.09$  and  $0.52 \pm 0.11$  minutes respectively. Muscle relaxation was adequate in all the groups. There was poor analgesia in MK group, while in XK group the analgesia was good. Anaesthesia were produced for  $31.50 \pm 1.28$  and  $54.17 \pm 3.12$  minutes respectively. A significant ( $P<0.05$ ) difference between the groups  $62.34 \pm 2.21$  and  $64.42 \pm 1.44$  minutes respectively for recovery time were recorded. Highly significant difference ( $P<0.01$ ) were observed between the groups  $125.56 \pm 2.58$  and  $86.34 \pm 2.27$  minutes respectively for sternal recumbency and  $137.24 \pm 4.4$  and  $98.65 \pm 3.45$  minutes respectively for standing time. There was significant decrease in heart rate. Rectal temperature and respiratory rate were also recorded in all the groups. On the basis of the results it can be concluded that xylazine-ketamine produced superior quality of anaesthesia than midazolam-ketamine.

## AN-10

### Midazolam-Propofol and Fentanyl-Propofol Anaesthesia in Dogs

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The study was conducted on 12 numbers of dogs of different breeds and either sex, weighing between 8 to 15 kg. The animals were randomly divided into two groups comprising six animals in each group. Group A was premedicated with midazolam @ 0.2mg/kg body weight and group B with fentanyl



2mg/kg body weight i.m. Fifteen minutes after premedication induction was done with propofol i.v. till effect. Induction was judged by ability to intubate and loss of other reflexes. Induction time, induction behavior, duration of anaesthesia, recovery time were monitored in all animals. Heart rate, respiratory rate, rectal temperature, and blood pressure were recorded at 0 min (before premedication), 15, 30 and 60 min post induction. Induction was smooth in both the groups. There was no significant difference in duration and recovery time. Induction dose was significantly low in group B. There was an increase in the heart rate in group A, within the normal physiological limit. There was no significant alteration in respiratory rate, rectal temperature and blood pressure between the groups. Analgesia was more satisfactory in group B. Midazolam and fentanyl both can be used safely as premedication to propofol anaesthesia in dog. Premedication with fentanyl reduces the induction dose of propofol and provide good analgesia.

#### **Evaluation of Glycopyrrolate-Acepromazine-Xylazine-Thiopentone Combinations as Anaesthetics in Buffalo Calves**

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The study was conducted in twelve male buffalo calves by administering glycopyrrolate (0.01 mg/kg, IM) followed by acepromazine (0.05 mg/kg, IM), xylazine (0.04 mg/kg, IV) and 5% thiopentone (5.00 mg/kg, IV). The animals went to sternal recumbency at 1.22±0.07 minute of thiopentone. Complete relaxation of muscles and analgesia were observed at 6.63±0.28 and 8.99±0.21 minute after thiopentone, respectively. Palpebral and corneal reflexes were lost at 9.74±0.21 minutes. Complete recovery took 68.77±1.20 minute. There was significant hyperglycaemia, hypernatraemia and hyperkalaemia during anaesthesia. Slight increase in ESR along with little decrease in PCV was also recorded. There was significant increase in heart rate during anaesthesia. Mean arterial pressure increased to 161.1±2.939 mmHg at 15 minute after glycopyrrolate, which then decreased to 118.3±8.724 mmHg. Central venous pressure remained higher during anaesthesia. T-wave was slightly down at 10 minute after xylazine with slight uplifting of ST-segment after thiopentone.

#### **Comparison of Pre-Emptively Administered Analgin, Ketoprofen and Buprenorphine in Management of Surgical Pain in Dogs**

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Pre-emptive analgesic effects of analgin (25mg/kg,IM), Ketoprofen (3mg/kg, IM) and buprenorphine (0.01 mg/kg, IM) were studied in 15 female dogs undergoing ovariohysterectomy, premedicated with triflupromazine HCl and atropine sulphate and anesthetized with thiopentone sodium. Maximum sedation was observed with buprenorphine followed by ketoprofen and analgin. The dose of thiopentone sodium used for surgery on weight basis was found to be minimum in the buprenorphine group and maximum in ketoprofen group. The recovery time was maximum in buprenorphine and minimum in analgin group. In this double fold blind study, subjective evaluation of pain was done postoperatively at different time intervals using a modified numerical rating scale (NRS). The pain score parameters considered reliable included vocalization, restlessness, abnormal posture and tactile stimulation at the operative site. On comparative basis buprenorphine was the most effective as preemptively administered analgesic followed by ketoprofen and analgin.

#### **A Comparative Evaluation of Halothane and Isoflurane Anaesthesia for Ovariohysterectomy in Bitches**

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A comparative evaluation of halothane and isoflurane anaesthesia for ovariohysterectomy in bitches was studied for the assessment of following parameters: rectal temperature, respiratory rate, heart rate, haematological and biochemical parameters viz., total erythrocyte count, packed cell volume,

hemoglobin concentration, total leukocyte count, differential leukocyte count, platelet count, alanine aminotransferase, aspartate aminotransferase, alkaline phosphatase, plasma creatinine, total plasma protein, electrolytes (sodium, potassium and chloride) and blood glucose and quantitative parameters such as average time for return of swallowing reflex, pedal reflex, head righting reflex, time taken for voluntary leg movement, sternal recumbency and animal to ambulate after cessation of anaesthesia during recovery period and also, qualitative parameters: start position, position change, end position, head position, ear position, eye position, tail position, vocal and others (arched back, stretching, arching back, lip licking, leg up position) were assessed based on video recordings during recovery phase of anaesthesia. Results revealed, in both the Groups, there were non-significant minor alterations in clinical, haematological and biochemical parameters except in halothane Group, where ALT levels were increased significantly. In conclusion, isoflurane anaesthesia was advantageous in terms of ease of administration, maintenance and recovery with minimal adverse effects on physiological status of bitches subjected for ovariohysterectomy procedure.

## AN-14

#### Advantages of Xylazine and Ketamine Anesthesia Along With Local Block for Abdominal Surgery in Mice

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Thirty healthy mice scheduled to undergo laparotomy were divided into three groups according to anesthetic regimen selected Group A (Ketamine alone), Group B (Ketamine and Xylazine) and Group C (Ketamine, Xylazine and linear infiltration with 2% Lignocaine along linea alba). Laparotomy was performed followed by ligation of caudal abdominal aorta. There was increased rigidity of abdominal muscles of animals in Group A, resulting in difficulty in putting incision which was accompanied by bleeding. In Group B the operation was successful with sufficient muscle relaxation and bleeding was negligible. In both Group A & B post anesthetic recovery was stressful, the animals exhibited signs of pain. In Group C the operation was successfully performed followed by smooth recovery from anesthesia, no signs of stress were observed in the post operative period. We conclude that ketamine or ketamine and xylazine combination does not produce sufficient analgesia in mice. Additional linear infiltration of local anesthetic was successful in eliminating post operative pain and the recovery was smooth.

## AN-15

#### Clinico-Physiological and Haemato-Biochemical Response of Detomidine and Ketamine in Combination with Bupivacaine for Inducing Lumbar Epidural Anaesthesia in Buffalo Calves

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The present study was conducted on fifteen healthy non-descript, male buffalo calves aging 6 months to evaluate the efficacy of bupivacaine alone and in combination with ketamine and detomidine for lumbar epidural analgesia. The calves were randomly allotted three treatments: bupivacaine alone (group A), bupivacaine with ketamine (group B) and bupivacaine with detomidine (group C) @ 0.15mg/kg body wt., 0.15mg/kg+2.5mg/kg body wt., 0.15mg/kg+15µg/kg body wt. respectively. The onset of analgesia was significantly shorter in group C as compared to group A and B. In group A and B moderate analgesia of thorax and flank was induced between 30 to 60 min while in group C complete analgesia of this region was induced between 30 to 60 min. Duration of analgesia was also significantly higher in group C compared to group A and B. Salivation was absent in group C whereas, it was mild in group B and extreme in group A. The recovery time was highest in group C animals followed by group B and then group A. The mean respiration and heart rate decreased significantly ( $P < 0.05$ ) in group A and C whereas it increased significantly ( $P < 0.05$ ) in group B. However, these values were compensated and returned towards pre-administration level by 24 h. Haematological studies revealed a non-significant decrease in Hb, PCV and TLC in group A and B while a significant ( $P < 0.05$ ) decrease in group C between 60 to 120 min post injection. DLC revealed

significant decrease ( $P < 0.01$ ) in neutrophil and lymphocyte count in all the groups at 60 min post injection. Among biochemical parameters serum glucose showed a significant ( $P < 0.01$ ) increase between 60 to 120 min in all the groups. ALT showed a significant ( $P < 0.05$ ) increase between 60 to 120 min in group A and B which became highly significant ( $P < 0.01$ ) in group C. AST showed a significant ( $P < 0.05$ ) increase between 60 to 120 min in group C. The BUN and serum creatinine values showed a significant ( $P < 0.05$ ) increase in group C between 30 to 120 minutes post injection. However, the values were compensated and returned towards preadministration level by 24 hrs. Serum total protein showed a non significant decrease in all the treatment groups. Post injections ataxia and motor incoordination was recorded only in group C. Salivation was present only in group C and was significantly profuse between 30 to 60 min interval. Group B and C showed longer duration of analgesia compared to group A. Group C animals showed late recovery as compared to other two groups. In group A and B decrease in heart rate was recorded between 30 to 75 min interval whereas, in group C this was highly significant ( $P < 0.01$ ) between 15 to 90 min interval. Respiration rate decreased in all the three groups but it was more pronounced in group C animals. However, the values returned to near normalcy by 180 minutes.

AN-16

### Studies on the Comparative Efficacy of Meloxicam and Ketorolac as Pre-Emptive Analgesics in Canine

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Eighteen apparently healthy clinical cases of canine, presented to Department of Veterinary Surgery and Radiology, College of Veterinary Science and Animal Husbandry, Kumarganj (INDIA) for different minor surgical interventions e.g. neuterization, entropion/ ectropion, ear hematoma and dewclaw removal, were divided into three equal groups. Two groups were treated as treatment groups (M and K) and the third group was treated as control (C). Animals of group M and K were preemptively administered meloxicam (@ 0.2 mg/kg body weight IM) and ketorolac tromethamine (@ 0.5 mg/kg b.wt. IM) respectively. Operations were carried under general anaesthesia using xylazine-ketamine combination (1:1 ratio) @ 1 ml/10 kg b.wt. for induction and 0.5 ml/10 kg b.wt. for maintenance after preanesthetic medication with atropine (0.04 mg/kg b.wt. IM). The comparative efficacy and safety of meloxicam and ketorolac was evaluated on the basis of clinical, hematological and biochemical parameters at 0, 1, 2, 4, 8, 12 and 24 hrs. In present study, it was found that preemptive administration of both ketorolac and meloxicam are effective in controlling postoperative pain and both are also safe for liver, digestive tract and renal system. However, meloxicam was found more effective and provided longer duration of postoperative analgesia (nearly 24 hours) than ketorolac (nearly 8 hours).

AN-17

### Diazepam as Adjunct in Xylazine – Ketamine Anaesthesia in Marsh Crocodiles for Diagnostic and Surgical Procedures

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Twelve adult Mugger crocodiles (*Crocodylus palustris*) were selected and divided in to group I and group II with six crocodiles in each group. Group I was administered xylazine and ketamine and group II was administered xylazine diazepam and ketamine. Each group was further subdivided in to subgroup A and B. Subgroup A of group I and II were administered xylazine and ketamine at the dose rate of 0.75 mg/kg body weight and 10 mg/kg body weight (lower dose) respectively while those in subgroup B of group I and II were administered xylazine and ketamine at the dose rate of 1 mg/kg body weight and 20 mg/kg body weight (higher dose) respectively. Diazepam was administered in group II at the rate of 0.6 mg/kg body weight. The mean time of sedation, induction, mean duration of anaesthesia and mean recovery time were recorded. The mean heart rate, respiratory rate, haemoglobin %, PCV, total proteins, serum glucose levels was also evaluated preoperatively, intraoperatively, and postoperatively. It was concluded that higher dosage of xylazine –ketamine provided adequate duration of anaesthesia for short surgical procedures when compared to lower

dosage of xylazine-ketamine. Also addition of diazepam to existing xylazine-ketamine combination did have any significant effect on quality or duration of anaesthesia.

## AN-18

### Effects of Butorphanol-Medetomidine/Acepromazine Premedication on Thiopental-Halothane General Anaesthesia in Buffaloes

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The study was aimed to compare the effects of Medetomidine and Acepromazine premedication on thiopental-halothane general anaesthesia in buffaloes. Four male buffalo calves of 1-2.5 yr of age and weighing 200-300 kg were used. Each animal received three different treatments, randomly at an interval of 10 days; and based on the treatment, the animals were grouped as I, II and III. The animals of group I, II and III received butorphanol (0.05 mg/kg IV), butorphanol (0.05 mg/kg IV) + medetomidine (2.5 µg/kg IV), and butorphanol (0.05 mg/kg IV) + acepromazine (0.05 mg/kg IV) respectively. In all the animals, anaesthesia was induced with 5 % thiopental sodium given to effect and maintained with halothane in 100 % oxygen. Different treatments were compared based on clinico-physiological, haematobiochemical and haemodynamic parameters at different intervals for at least up to 60 min. Sedation and analgesia were significantly higher in group II than groups I and III. Muscle relaxation in groups II and III was significantly more than that in group I. Palpebral, corneal pedal and pin prick reflexes were maximally depressed in group II. In groups II and III, significantly lower doses of thiopental sodium were required for induction as compared to group I, but no significant difference was observed in the concentration of halothane required for maintenance of anaesthesia among different groups. No significant difference was recorded in recovery time among different groups. In groups I and III increased heart rate was recorded after premedication up to 5 min after anaesthetic induction, whereas in group II, significant bradycardia was observed up to 30 min post-induction. Respiratory rate did not change significantly in group I, while it reduced significantly in groups II and III from 5 min after premedication up to 10 min post-anaesthetic induction. Hyperglycemia was consistently seen in groups II and III at different intervals. No significant change in serum urea nitrogen, creatinine, and lactate dehydrogenase was observed in different groups. The systolic blood pressure (SBP) increased from 5 min after premedication up to 5 min after anaesthetic induction in group I. In group II, significant reduction in SBP was noticed from 5 min after premedication up to the end of observation period; whereas in group III, significant reduction in SBP was noticed from 15 to 45 min post-anaesthetic induction. Almost similar trend was observed in diastolic and mean blood pressure values. CVP did not show any significant change in groups I and III throughout the observation period, however, in group II, significant increase was observed from 5 min after premedication up to 45 min of anaesthetic induction. Reduction in haemoglobin oxygen saturation was insignificant in groups I and III, whereas in group II, it was significantly reduced from 5 min after premedication up to 5 min post-induction. It can be concluded that administration of medetomidine or acepromazine significantly reduces the dose of thiopental required for anaesthetic induction. Butorphanol-medetomidine combination results in better sedation and analgesia than butorphanol-acepromazine combination, but it produces relatively more cardio-pulmonary side effects.

## AN-19

### Post Operative Analgesic Effect of Epidural Bupivacaine alone or with Buprenorphine in Ovariohysterectomy in Dogs

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A clinical study was conducted on twelve healthy bitches to evaluate the analgesic efficacy of epidural bupivacaine alone or bupivacaine with buprenorphine after propofol anaesthetic induction and maintenance for the postoperative pain management following ovariohysterectomy. The animals were randomly divided into two groups of six animals each. Premedication was done with atropine

sulphate 0.04 mg/kg body weight i.m. followed by diazepam 0.3 mg/kg body weight i.v. The general anaesthesia was induced and maintained with propofol i.v. at 4mg/kg and 2 mg/kg body weight respectively. Bupivacaine (0.5 mg/kg body weight) alone was administered epidurally at lumbosacral space in group I animals and bupivacaine (0.5 mg/kg body weight) and buprenorphine (0.05mg/kg body weight) were administered in group II animals. Postoperative pain assessment by visual analog scale as well as numerical rating scale. It was concluded that epidural bupivacaine with buprenorphine analgesics was superior than epidural bupivacaine alone in the management of postoperative pain following ovariohysterectomy in dogs.

AN-20

#### **Evaluation of Atropine + Midazolam + Ketamine Anaesthetic Combination for Salphingectomy and Vasectomy in Dogs**

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The present study was conducted on 12 healthy animals. The animals were divided in two groups. Group 1 (male, n = 6) on which vasectomy was performed and group 2 (female, n = 6) on which salphingectomy was performed. Following atropinization (0.045 mg/ kg i/m), a single bolus of midazolam ( 0.04 mg / kg i/v) was administered immediately followed by a bolus of ketamine (15 mg/kg i/v). The physiological observations of the anesthetic combinations revealed increase in heart rate in both the groups of animals. The respiratory rate fluctuated within normal physiological limits at all intervals of study in both groups. The rectal temperature was decreased in both the groups. The clinical evaluation revealed that the anesthetic combination produced quick, calm and quiet induction with good muscle relaxation and sufficient duration of surgical anesthesia to perform salphingectomy and vasectomy.

AN-21

#### **Dynamic Lung Compliance and Airway Resistance in Dogs Undergoing Surgery Under Controlled Ventilation – A Clinical Study**

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Dogs of different breed, age, sex and body weights which had undergone surgeries in the Small Animal Ophthalmology Unit and Small Animal Soft Tissue Surgery Unit of Madras Veterinary College Teaching Hospital were included in this study. After induction of anaesthesia with propofol, all dogs were maintained with 1.5% isoflurane in 100% oxygen under controlled ventilation using a microprocessor controlled small animal anaesthetic-delivery-system-cum-ventilator (ADS 1000, Engler Engineering Corporation, USA). The parameters like machine flow rate, breaths per minute (BPM) and peak inspiratory pressure (PIP) were set in this machine in such a way that the patients were ventilated efficiently to an optimum tidal volume (TV) with an inspiratory time (IT) between 1 and 2 seconds. The BPM was kept constant at 10 in all cases. Machine flow rate and PIP were adjusted observing an appreciable and optimum thoracic expansion, so that all dogs were ventilated to a tidal volume of around 20 ml/kg with an inspiratory time of 1-2 seconds and a SpO<sub>2</sub> of 100%. The dynamic lung compliance and the airway resistance of each dog were calculated using the values of tidal volume, inspiratory flow rate and the peak inspiratory pressure. The results are clinically and statistically compared to the different body weights, age, clinical condition and thoracic radiographic findings.

AN-22

#### **Induction Dose of Propofol in Xylazine/Acepromazine-Tramadol/Tramadol-Diazepam Premedicated Dogs**

*Sooryadas, S., C. Ramani, S. Ayyappan, B. Justin William and R. Sureshkumar*

Madras Veterinary College, TANVASU, Chennai- Tamilnadu

Dogs of different breed, age, and gender operated in the Small Animal Ophthalmology and Orthopaedic Units of the Madras Veterinary College Teaching Hospital for various surgical conditions

were evaluated for the induction dose of propofol given IV "to effect". Dogs anaesthetized by the same person were alone included, and were divided into three groups. Group I included dogs which received Xylazine @ 1 mg/kg IM, followed 10 minutes later by Propofol. Group II included dogs which received Acepromazine @ 0.02 mg/kg and Tramadol @ 2 mg/kg IM, followed 15 minutes later by Propofol. Group III included dogs which received Tramadol @ 2 mg/kg IM, followed 15 minutes later by intravenous Diazepam @ 0.25 mg/kg and immediately followed by Propofol. Dogs in all the groups received Atropine @ 0.04 mg/kg IM, ten minutes prior to their respective premedication. After induction, all dogs were maintained with isoflurane in oxygen. The dose (mg/kg) of propofol needed for induction sufficient for intubation, in each group, is statistically analyzed and presented.

AN-23

### Comparative Anti-nociceptive Efficacy of Tramadol and Nimesulide Alone and Their Combination in Ovariohysterectomized Dogs

*S.H. Dar, M. S. Bhadwal and R.N. Choudary*

Faculty of Veterinary Sciences and Animal Husbandry, SKUAST-Jammu

The study was conducted on 20 healthy female dogs which were subjected to ovariohysterectomy. They were randomly divided into four groups of 5 animals each. Premedication was done with atropine @ 0.04 mg/kg, SC and diazepam @ 0.3mg/kg, IV. In all the groups, ovariohysterectomy was performed through mid-ventral incision under general anaesthesia induced and maintained with 5% thiopentone sodium IV. In Group I, Inj. tramadol was administered @2mg/kg, IM, q.i.d, group II, was administered Inj. nimesulide @4mg/kg, IM, s.i.d, in group III, Inj. tramadol and Inj. nimesulide were administered in combinations with dose, route and schedule as used in group I and group II, while as in group IV, dose rate was reduced as tramadol @1mg/kg, IM s.i.d and nimesulide @2 mg/kg, IM, s.i.d were administered in combination. All drugs were administered immediately after completion of surgery. Post-operative pain assessment was made using Melbourne Pain Scale and Dynamic and Interactive Visual Analogue Scale at pre-operative stage and 2, 4, 8, 14 and 20 hours post-operatively. Mean total pain score in both the scales were significantly lower when both combinations of tramadol and nimesulide were used than tramadol and nimesulide alone. Mean total pain score in both scales was same for tramadol and nimesulide used alone. However no significant difference was observed in mean total pain score in both the combinations at any stage of the study. All the treatments were effective in controlling post-operative pain.

AN-24

### Ketamine with or without Medetomidine in Cats

*Bhupen Sarma and Bitupona Deuri, Lalit Deori and Liptu Ghosh*

College of Veterinary Science, Assam Agricultural University, Guwahati- Assam

Ten cats of 3-4 years age group weighing 4-5 kg of either sex brought for spaying were included in this study. They were divided into two groups, consisting of 5 cats in each group. Group I received Ketamine @ 10mg/kg i/m and the group II were injected with Medetomidine -Ketamine mixture @ 100microgram/kg and 10mg/kg i/m. Following injection of the anaesthetics, induction time, duration of anaesthesia and recovery time were recorded in both the groups. Heart beat, respiration and rectal temperature were recorded at 0, 15, 45, 60, 90 and 120 mins of anesthetic injection. The cats induced at 12.8 + 3.25 min and 12.8 + 0.52 min respectively in group I and II. The cats were under anaesthesia for a duration of 42.6 + 4.8 min and 150 + 13.46 min and recovery was recorded at 70.4 + 5.30 min and 70.4 + 14.25 min respectively. The heart rate increased gradually from 138 + 11.55 to 151.6 + 11.55 per min in group I, whereas in group II, heart rate reduced from 154.2 + 10.56 to 96.15 per min during 120 min duration of the study. The respiratory rate declined from 38.5 + 7.45 to 26.2 + 6.7 at 30 min of group I and 41.6 + 6.2 to 29.6 + 3.5 at 60 min in group II. Reduction of rectal temperature was recorded in group I from 100.9 + 0.43 to 99.42 + 0.43 and in group II from 101.22 + 0.14 to 99.28 + 0.38. Induction and recovery was smooth in group II. In this group balanced anaesthesia was produced with good muscle relaxation whereas, muscular rigidity was recorded in group I, pupils were completely dilated in group I.

and partially dilated in group II. Urination following recovery was recorded in group II. Medetomidine- Ketamine produced anaesthesia of ideal quality permitting surgical operations of longer durations; while the anaesthesia produced by Ketamine alone was not sufficient for longer durations and had additional disadvantage of muscular rigidity.

AN-25

#### **Oxidative Stress Response during Surgery under Ketamine/Propofol Anaesthesia in Acepromazine-Xylazine Premedicated Horses**

*P. Sankar, B. Justin William, Capt. G. Dhanan Jaya Rao, S. Prathaban and R. Suresh Kumar*  
Madras Veterinary College, TANVASU, Chennai- Tamil Nadu

The study was conducted in twelve clinical cases of horses for diagnostic and surgical procedure warranting general anaesthesia. The cases were randomly divided into two groups: group I and group II each consisting of six cases. Xylazine @ 0.5mg/kg and Acepromazine @ 0.03 mg/kg body weight were used as pre-anaesthetic in both the groups. Ketamine @ 2.20 mg/kg body weight and 0.50mg/kg/min was used as induction and maintenance agent in group I and Propofol @ 2.0 mg/kg body weight and 0.15mg/kg/min was used as induction and maintenance agent in group II. A non significant difference in the neutrophil, lymphocyte, eosinophil, and monocyte were observed in both the groups. The magnitude of blood glucose was higher in group I compared to that of group II. A non significant reduction in total serum protein was observed after sedation, after induction, during maintenance and after recovery in both the groups. Group I showed an increase in Plasma cortisol level, when compared to that of group II.

AN-26

#### **Anaesthetic Evaluation of Ketamine/Propofol in Acepromazine- Xylazine Premedicated Horses**

*P. Sankar, B. Justin William, Capt. G. Dhanan Jaya Rao, S. Prathaban and R. Suresh Kumar*  
Madras Veterinary College, TANVASU, Chennai- Tamil Nadu

The study was conducted in twelve clinical cases of horses for diagnostic and surgical procedures warranting general anaesthesia were randomly divided into two groups, group I and group II, each consisting of six cases. Xylazine @ 0.50mg/kg and acepromazine @ 0.03mg/kg body weight was used as pre-anaesthetic in both the groups. Ketamine @ 2.20 mg/kg body weight and 0.50mg/kg/min was used as induction and maintenance agent in group I and Propofol 2.0 mg/kg body weight and 0.15mg/kg/min was used as induction and maintenance agent in group II. The mean time for sedation in group I and group II were 5.16±0.30 minutes and 5.10±0.21 minutes respectively. The mean quality of sedation in group I and group II were 2.27 ±0.21 minutes and 2.67 ± 0.21 minutes respectively and the mean time for induction was 1.83± 0.17 minutes and 1.17 ±0.17 minutes respectively. The induction was smooth in all horses (100%) in group II. In group I smooth induction was observed in 83.33% and rough induction in 16.67% of the cases. The total dose of xylazine administered including the incremental doses in group I was 1.00 ± 0.00mg/kg/hr where as in group II xylazine was not administered. The calculated dose was 6.52 ± 0.13mg/kg/hr in group I and 11.86± 0.533 mg/kg/hr in group II. The score for the quality of muscle relaxation was 2.50± 0.22 and 2.33 ±0.21 in group I and group II respectively. The score for reflex status in group I and group II were 1.00±0.36and 0.67±0.31 respectively. The mean time for recovery in group I and group II were 32.00±2.87 minutes and 14.00±1.05 minutes respectively. The quality of recovery was smooth in 66.66% of group I and 83.33% of group II. The quality of recovery was rough in 33.34% of group I and 16.67% of group II. The number of attempts for unassisted standing was 4.67±0.21times in group I and 1.50±0.22 times in group II. None of the animals in any groups showed any intra and post operative complication.

AN-27

#### **Clinical Study on Evaluation of Various Preanaesthetic in Canine**

*P. M. Khodwe, S.P.Mehesare, D. B. Pawshe, K.M. Khan S. D. Chepte,*  
Post Graduate Institute of Veterinary and Animal Science, Akola -Maharashtra

The present study was conducted on 18 clinical cases of dogs of either sex which were randomly divided into three equal groups. The animals were fasted for 24 hrs. before anesthesia. Atropine sulphate @ 0.04mg /kg, b. wt. was administered subcutaneously 20 min. before the experiment in all

the animals of different groups. In group I Midazolam @0.4mg /kg b. wt I/V administered 10 min prior to thiopentone sodium @20mg/kg b. wt I/V. In group II Haloperidol was administered @ 0.8 mg /kg b. wt. I/V 10 min. prior to thiopentone sodium @ 20mg /kg b. wt I/V. In group III Diazepam was administered I/V 10 min prior to thiopentone sodium @ 20mg /kg b.wt. I/V. Physiological observations such as induction time, duration of anaesthesia and recovery time was observed in each animal from all the groups. Clinical observations like rectal temperature, heart rate, and respiratory rate were recorded at 0, 5, 10, 15, 20, 25, 30min interval and after recovery. The blood samples were collected at same intervals from each animal for hematological and biochemical studies. The average induction of anaesthesia in group I, II and III was  $1.33 \pm 0.03$ ,  $1.11 \pm 0.03$  and  $1.08 \pm 0.01$  min respectively, whereas the average duration of the anaesthesia was  $24.33 \pm 0.44$ ,  $27.5 \pm 0.94$  and  $41.66 \pm 1.68$  min for the respective group. The average recovery took place at  $99.16 \pm 1.93$ ,  $82.66 \pm 1.2$  and  $76.66 \pm 1.20$  min. in group I, II and III respectively. Clinical parameters revealed significant decrease in rectal temperature and respiratory rate, whereas heart rate increased significantly in all the group of animals. A non significant fluctuation was observed in DLC, TLC, Hb, and PCV. A significant increase in blood glucose concentration was recorded in the animals of all the groups, whereas no change in other biochemical parameters i.e. SGOT, SGPT, BUN and serum creatinine were observed. It may be concluded that thiopentone sodium in combination with different pre-anesthetic produces satisfactory general anaesthesia without any complications.

## AN-28

### Reversal Effect of $\alpha_2$ - Agonist (Xylazine HCL) Using Antagonist (Yohimbine HCL) in Dog

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Post Graduate Institute of Veterinary and Animal Science, Akola - Maharashtra

The present study was conducted on 36 clinical cases of dogs of either sex which were randomly divided into three groups viz., group I, group II and group III. Each group was again subdivided into two groups A and B such that group IA, group IB, group IIA, group IIB, and group IIIA, group IIIB. Group A was considered as a control group and group B was considered as a treatment group. In control group IA, IIA, and IIIA Xylazine was administered @ 1mg/kg, 1.5mg/kg and 2.0 mg/kg b .wt. I/M respectively and after completion of surgery Yohimbine HCL was administered @ 0.1mg/ kg b. wt. I/M in treatment groups only. Clinical and haematobiochemical parameters were studied at 0, 5, 10, 15, 20, 30 min. and after complete recovery. Clinical parameters in control group revealed significant decrease in heart rate, respiratory rate and rectal temperature and in treatment group significant increase in heart rate, respiratory rate and rectal temperature was observed. Hematological parameters such that Hb, TLC, and PCV decreased significantly in control group whereas in treatment group significant increase was observed. Biochemical parameters showed significant increase in blood glucose, SGOT, SGPT, BUN and serum creatinine in all the control groups, whereas in treatment group significant decrease was observed. From the present investigation it can be concluded that Yohimbine HCL can effectively reverse the Xylazine induced sedation.

## AN-29

### Studies on effect of Propofol and Etomidate in combination with Isoflurane and Sevoflurane in goats

*Aubid Hussain Bhatt, N. S Jadon, Arup Kumar Das & V. K. Sharma*

COVS, GB Pant University of Agriculture and Technology, Pantnagar- Uttrakhand

The study was conducted on 24 healthy goats of either sex with the objective to develop a safe anaesthetic protocol using propofol and etomidate in combination with inhalation anaesthetics (isoflurane & sevoflurane). All the animals were subjected to intramuscular administration of atropine @ 0.25 mg / kg body weight & intravenous administration of diazepam @ 0.5 mg / kg body weight. The animals were divided into four groups viz. A, B, C & D. The animals of group A, B and C, D were subjected to intravenous administration of propofol (@ 4 mg / kg b. wt.) & etomidate (@ 1.5 mg / kg b. wt) respectively followed by maintenance with inhalation anaesthetic agents, isoflurane (2-3 %) in animals of group A & C and sevoflurane (1-2 %) in animals of groups B & D. The efficacy of different anaesthetic combination was assessed by determining various clinicophysiological, cardiopulmonary



& haematobiochemical parameters before (0 min.) and after an interval of 5, 10, 15, 30, 45, 60 and 90 minutes of anaesthesia. Electrocardiographic studies were also made to evaluate the efficacy of different anaesthetic combination. On the basis of different clinicophysiological, cardiopulmonary, electrocardiographic and haematobiochemical observations made in this study, the superiority of the anaesthetic combination in order to merit was grouped as diazepam with etomidate and sevoflurane, diazepam with etomidate and isoflurane, diazepam with propofol and isoflurane and diazepam with propofol and sevoflurane. The combination of etomidate and sevoflurane provides more cardiopulmonary stability and has least deleterious effect on different body system.

8N-30

#### **Vaporizer Setting for Isoflurane and its Economics for Maintenance of Anaesthesia for Gelding in Horses**

*S. Senthil Kumar, S. Kathirvel, A. Kumaresan, K. Jayakumar, S. Dharmaceelan, L. Nagarajan and N. Rajendran*

Veterinary College and Research Institute, Namakkal-Tamil Nadu

The study was conducted in six healthy horses weighing between 340 and 440 Kg that underwent gelding at Veterinary College Teaching Hospital, Namakkal. All the animals were administered xylazine and ketamine i.v at the dose rate of 1.1 and 2.2 mg/kg body weight respectively to induce anaesthesia and maintained with isoflurane. The fresh gas flow rate and vaporizer setting were altered to maintain uniform surgical plane of anaesthesia and were recorded at 1 minute interval. The mean vaporizer setting required to maintain surgical plane of anaesthesia was calculated. The quantity of isoflurane utilized was calculated employing Avogadro's principle. It was concluded that a vaporizer setting of  $2.4\% \pm 0.94\%$  (Mean  $\pm$  SD) was required to maintain anaesthesia for 30 minutes at a fresh gas flow of 12.5 ml/kg body weight/minute. It was calculated that  $0.65 \pm 0.20$  ml (Mean  $\pm$  SD) of isoflurane (Costing Rs.6.00) per minute was required to maintain anaesthesia for horses weighing  $393.33 \pm 45.01$  Kg.

**XXXIII Annual Congress of ISVS  
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**AWARD  
SESSION**

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**Department of Veterinary Surgery & Radiology  
Centre of Advanced Studies  
College of Veterinary Science  
Guru Angad Dev Veterinary and Animal Sciences University,  
Ludhiana- 141004, Punjab (India)**

**AW-1 Surgical Treatment of Lameness Caused by Solar Keratoma in a Mare – A Case Report***P. D. S. Raghuvanshi*

Apollo College of Veterinary Medicine, Jaipur- Rajasthan

A 6 year-old marwari breed mare was presented for consultation with a history of persistent left hind limb lameness. This report describes a keratoma in the sole of a mare leading to chronic lameness. Dark focal area was evident when the hoof was tested with pain, the hoof testers were applied over the sole of anterior quarter. When physically examined, the mare was unshod and walking well. Lameness occurred when the animal was trotted on a hard surface. There was focal discoloured (dark) convex section of sole medial to whiteline in this area was not distorted nor were any tract. Again pain was elicited by hoof testers but the area was also sensitive to pressure. The complete surgical removal of keratoma was difficult but usually resulted in resolution of lameness without regrowth of the mass. The hoof was recovered eventually after 8 months.

**AW-2 External Immobilization with Designed Metallic Splint for Unilateral Horn Fracture Repair in Bullocks***A. S. Patil*

Veterinary Hospital, University of Agricultural Sciences, Dharwad- Karnataka

The horn fractures occur as a result of trauma due to fighting or an accident. The application of bamboo sticks was tedious as the bamboos had to be fastened regularly and there was no good stability at the fracture site. Wounds at the base of horn prevented Plaster of Paris cast application. So in the present study an external metallic splint was designed (using iron rings, iron bar, nuts and bolts) and employed for immobilizing both the simple and compound unilateral horn fractures in thirty two Bullocks (clinical cases) and maintained until clinical union i.e. for 7- 14 weeks depending on the type and severity of fracture. Additional support with circlage wires was given in cases of spiral or vertical fractures. Injections of Streptopenicillin, Ketoprofen, Chlorphenamine maleate and Carbazochrome were administered for 7 days. All the animals recovered uneventfully and no complications were recorded even upto two years of follow up period in some cases. The designed splint provided good stability at the fracture site, allowed for regular dressing of the wound at the base of the horn, was of low cost, light weight (0.4-0.7 Kg) and could be easily prepared and used at field level.

**AW-3 Studies on Incidence and Management of Various Congenital Defects in Ruminants: 109 Cases***A. S. Patil*

Assistant Professor, Veterinary Hospital,

Veterinary Hospital, University of Agricultural Sciences, Dharwad- Karnataka

A total of 109 ruminants with 24 different congenital defects were presented to the hospital over a period of four years. These animals were presented either for correction of the defect or the defects were identified during the course of treatment for other ailments. The data collected was classified based on species, sex, system affected and need for surgical intervention. Overall there was an incidence of about 0.21% (i.e. 109 out of 50238 cases) of which highest incidence was seen in cattle followed by buffalo, goats and sheep. Among these animals 59 were males, 45 were females and 5 were hermaphrodites. On system wise distribution, musculoskeletal disorders were highest (39), followed by Uro-genital system (34), gastrointestinal tract (20), sensory organs (10), nervous system (2) and miscellaneous (monsters- 4). Surgical intervention was performed in 70 affected animals and 8 mothers. 31 cases did not warrant surgical intervention either because of their non interference with normal functions of the animal or the condition was lethal. Highest incidence was observed with Umbilical hernia followed by Artesia Ani, variation in number of teats, Contracted tendons, Cryptorchid, Fetal monsters, etc. very rare cases of bilateral convergent strabismus, hydrocephalus monster in a Nilgai, Congenital melanoma, Bilateral Fetal Hydronephrosis, Carpel flexion, Recto-vaginal fistula (with Atresia vagina) were also recorded. Most of the congenital defects are inherited so

breeding is avoided in such animals. Instead of culling, surgical intervention in most of such cases is essential and is successful either in ending the suffering of affected animals during their life time or saving the life of the dam.

AW-4

#### **Condylar Plates and 'T' Plates for the Repair of Supracondylar Femoral and Radial Fractures in Dogs – Review of Twelve Cases**

*Shiju Simon, M., S. Ayyappan, R. Ramesh, Sooryadas, S., B. C. Das, and R. Suresh Kumar*  
Madras Veterinary College, TANUVAS, Chennai-Tamil Nadu

Eight cases of distal radial fractures and four cases of supracondylar femoral fractures presented to the Small Animal Orthopaedic Unit of the Madras Veterinary College Teaching Hospital were subjected to open reduction and internal fixation. Confirmative diagnosis of the fractures was made by radiographic evaluation of lateral and craniocaudal views. A pre-operative plan was prepared using a small animal preoperative planning guide developed by the AO/ASIF (Small animal group) using plain radiographs. Radial T plates and condylar plates were developed based on radiographic templates. Open Reduction and Internal Fixation (ORIF) with 2.7mm T plates were used for distal radial fractures and 3.5mm condylar plates were used for supracondylar femur fractures. In one supracondylar fracture, additional stability was provided by insertion of 3mm intramedullary steinmann pin and in another case 2.5 mm K wire was applied as cross pin. The surgical techniques, implants, functional outcomes and implications are discussed.

AW-5

#### **Medial Patellar Desmotomy in Standing Animals**

*Jaspal Singh*

CVH Haryana, Distt. Hoshiarpur, Punjab

Upward fixation of patella is a frequent problem in cattle and buffaloes and some very rare cases also come in equine. Mostly the surgeons perform medial patellar desmotomy after casting the animal. Casting could be dangerous in pregnant animals, chances of fracture are there, more manpower is needed, furious animals don't let casting. I have done desmotomy in about 25 cattle and 35 buffaloes and three horses, successfully in standing posture. In Equine xylazine is given i/v @ 1.1 mg./kg. Wait for some time for the sedative effect to come. After extending the affected leg, a little caudally and laterally, local anesthetic is given at the operative site and the desmotomy is done in standing animal. In Cattle and Buff. the forelimbs are tied together. The affected leg is extended a little caudally and laterally. After aseptic preparation at the operative site, about 5ml local anesthetic (lignocaine 2%) is injected. Wait for three to five minutes for the anesthetic effect. Insert the disposable bistoury blade mounted on no.3 scalpel handle between anterior and the medial patellar ligament, direct the cutting side of the blade towards the medial ligament and cut the latter.

AW-6

#### **Management of Long Bone Fractures under Field Conditions by Transfixation in Large Animals**

*K. S. Chauhan*

Civil Veterinary Hospital, Nawanshahr, Punjab

Long bone fracture healing was evaluated in 27 clinical cases in large animals comprising of 3 metacarpal, 8 metatarsal, 5 tibial, one radius ulna and one case each of metacarpal and metatarsal fracture with dislocation of fetlock joint, following early immobilization by transfixation under field conditions. 10 of these cases were of compound fractures and 2 cases were of comminuted fractures. Local analgesia was used before Steinmen's pins (4-5) fixation in the proximal and distal segments of the bones. Aluminium splint and POP cast was used to immobilize the fracture segments. Wounds in compound fractures were dressed through windows. Pins were removed 3-4 months after the intervention. Animals started partial weight bearing immediately after the intervention. Complete weight bearing was observed after 5-6 months in simple fractures. It was further delayed by 1-2 months in compound and comminuted fracture cases. In case of tibial fracture, Thomas splint use was cost effective and animal adapted to it very well. In 3 compound fracture cases, wounds surfacing

after pins removal, healed following bone chip removal. In compound fractures, the callus formation was more than that in the simple fractures with perceptible deviation towards the window in compound fractures. Temporary disuse atrophy of muscles of affected limbs was noticed. Weight bearing on the contra lateral limb was reflected by a temporary bend in pastern joint. Upward migration of transfixation pins along the length of the proximal fractured segment was observed. Pin loosening and discharge at the pins exit points was minimal. Pin wounds healed within 5-7 days after pin removal. Early immobilization by transfixation was found to be rewarding in management of long bone fractures in large animals.

#### Hand Works of Veterinary Surgeon in Rural Area

**Balappanavar B.R.**

Department of Animal Husbandry and Veterinary Science, Gadag - Karnataka

Present study describes various surgical procedures on large, small and wild animals done under field conditions. Large animal surgeries consisted of surgical management of omasal impaction in bovines (n=9), urolithiasis in bullocks (n=14), use of bamboo splint for repair of unilateral horn fracture in bullocks (n=8), use of Netlon prosthetic mesh for umbilical herniorrhaphy in a calf and caesarian section in cows (n=22) and buffaloes (n=4). In wild animals treatment of tibial fracture using intramedullary pin in a black buck and resection of soft tissue tumour in a python were undertaken successfully. Small surgeries consisted of fractures repair, treatment of pyometra, neoplasms, ovariohysterectomies and castration under the animal birth control (ABC) programme. General public was made aware to various conditions in animals which can be managed by surgery.

#### Low Flow Isoflurane Anaesthesia with Xylazine/Acepromazine and Glyceryl Guaicolate - Ketamine Induction and its Economics in Cattle

**S. Senthil Kumar**

Veterinary College and Research Institute, Namakkal-Tamil Nadu

The study was conducted in 18 cattle randomly divided into three equal groups. In group I and II animals, xylazine and acepromazine were administered intravenously as a preanaesthetic adjunct at the dose rate of 0.05 and 0.04 mg/kg respectively. In all the animals, Glyceryl Guaicolate was administered at 50 mg/kg and anaesthesia was induced with ketamine at 3mg/kg and maintained using isoflurane. The fresh gas flow was set at 10 litres per minute for the first 3 minutes and thereafter reduced to 10 ml/kg/minute with a vaporizer setting of 2%. The fresh gas flow and vaporizer setting were altered between 5 to 20ml/kg/minute and 1 to 5% respectively to maintain uniform plane of anaesthesia and were recorded at 1 minute interval. The movement of calibrated ascending bellows of the ventilator was used to record the tidal volume. The calculated mean fresh gas flow rate required to maintain anaesthesia for a vaporizer setting of 2% was 9.96, 13.30 and 10.45 ml/kg/minute in group I, II and III respectively. The quantity of isoflurane required to maintain anaesthesia, was calculated employing Avogadro's Principle, was 0.2988 ml, 0.399 ml and 0.3135 ml per minute for a cattle weighing 300 kg in group I, II and III respectively. Assuming the cost of isoflurane as Rs. 2500.00 per 250 ml, it would cost Rs. 2.98, Rs. 3.99 and Rs. 3.13 per minute to maintain anaesthesia for a cattle weighing 300 kg in group I, II and III respectively. Hence it was concluded that, Xylazine - Glyceryl Guaicolate - Ketamine required the minimal fresh gas flow to maintain anaesthesia and the tidal volume in cattle during anaesthesia ranged between 4 to 5 ml/kg body weight in all the group.

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**SMALL ANIMAL  
POSTER SESSION**

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**Department of Veterinary Surgery & Radiology  
Centre of Advanced Studies  
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## SAP-1

**Laparoscopic Diagnosis of Splenic Tumor in a Dog and its Surgical Management***S. K. Maiti, A. Dutta, S. Khimta, B. Bhadane and N. Kumar*

Indian Veterinary Research Institute, Izatnagar- UP

A 12 year old Labrador was presented with symptoms of anorexia, vomiting and abdominal distension. A mass was palpable in the cranial abdomen. Plain radiograph of lateral abdomen revealed a soft mass in the abdomen. Laparoscopic examination was performed after establishing capnoperitoneum (10mm of Hg CO<sub>2</sub>) revealed a large splenic mass with multiple neoplastic nodules and blood filled cavernous areas creating asymmetric splenomegaly which occupied almost 80% of abdominal cavity. Splenectomy was performed under xylazine-ketamine anaesthesia. Uneventful recovery was recorded and the animal survived more than one year. Histopathology confirmed haemangiosarcoma.

## SAP-2

**Chemotherapeutic Management of Canine Mammary Tumours***S. K. Maiti, S. Khimta, D. Kumar, B. Bhadane, N. Kumar, A.K. Sharma and M. M. S. Zama*

Indian Veterinary Research Institute, Izatnagar- UP

Eighteen (18) dogs with spontaneous mammary tumours were used for this study. The dogs of different breeds and ages were randomly selected. Mammary tumours of equal sizes were included and randomly divided into three groups of six animals each. In the group A, Cyclophosphamide @ 50mg/M<sup>2</sup>BSA daily for four days in a week I/V repeated once weekly for four weeks. In the group B, Doxorubicin @ 60-75mg/M<sup>2</sup>BSA I/V once in every two weeks were administered. In the group C, Methotrexate @ 20mg/M<sup>2</sup>BSA I/V at weekly interval for 3-4 weeks were administered. Two animals treated with Cyclophosphamide showed complete regression and partial regression in another two animals, whereas no recordable response was observed in other two animals. Transient signs of side effects like vomiting, anorexia and alopecia was seen in four animals. In the group B, four animals showed complete regression and partial regression in another two animals treated with Doxorubicin, side effects were negligible. Among the animals treated with Methotrexate, three animals showed complete regression and two animal's showed partial regression. Side effects were moderate with anorexia, vomiting and haematuria. Non-responsive cases were subjected to surgical therapy as per owner's choice/permission. Of the three chemotherapeutic agents evaluated Doxorubicin gave reasonably best result in dogs with success rate of 66%.

## SAP-3

**Incidence of Tumours with Special Reference to Male Mammary Tumours in Dogs***S. K. Maiti, S. Khimta, B. Bhadane, D. Kumar, N. Kumar, A. K. Sharma and M. M. S. Zama*

Indian Veterinary Research Institute, Izatnagar- UP

A total of 98 tumour cases were recorded in canines during April'08-March'09 at the Institute Referral Polyclinic. Canine mammary tumour (CMT) was the most predominant tumour - 70 (71.42%) in dogs followed by skin and other tumour-16 (16.34%) and CTVT-12 (12.24%). The incidence of tumours was highest in the age group of 6-10 years. The majority of the affected breed was German Shepard followed by Spitz and mongrel. Majority of the animals were multifarious, non-spaying and non-pregnant. Number of gland involved in CMT cases varied from one to all, however, caudal abdominal (4<sup>th</sup>) and inguinal (5<sup>th</sup>) were mostly affected. Size of neoplasm varied from 1-20 cm, however, majority were recorded with diameter > 5cm. Out of 70 cases of mammary tumour recorded, 26 cases had multiple growths and 44 cases had solitary growth. Pedunculated growths were 28 and remaining 42 growths were sessile. Thirty-three mammary tumours were ulcerated and inflamed while the remaining was intact and subcutaneous. Estimation of both sex hormone (estrogen & progesterone) revealed that they played a vital role on the incidence of mammary tumour in canine. Incidence of mammary tumour in the male dog was four out of 70 cases (2 in German Shepard, 1 in Spitz & 1 in Doberman, average age was 9.5 yrs). Male mammary tumours (solitary as well as pedunculated) were developed vary rapidly within a very short span of period. Lateral radiographs of thorax of four animals revealed radio-opaque soft tissue lesions scattered in the lungs, even extended to the ribs and sternum, showing the strong indication of systemic metastasis in these cases.

**SAP-4 Successful Repair of Midshaft Femoral Fracture by Intramedullary Pinning in a Doberman Dog**

*Kashi Nath, S. K. Tiwari, R. Sharda, M. O. Kalim, Sanat Naik and K. K. Gurmita*  
College of Veterinary Science & A. H. Anjora, Durg -Chhattisgarh

A Doberman dog aging one and half years was presented to the department with the complaint of an automobile accident leading to non weight bearing of the right leg from the last 3 days. Clinical examination revealed swelling on the right thigh region and a crepitating sound on palpation. Radiography revealed mid shaft right femoral fracture. The dog was premedicated with atropine sulphate (0.65mg) and xylazine (20mg) intramuscularly. This was followed by ketamine administration @ 5mg/ kg body wt. I/V. Threaded Steimann's pin was used for retrograde intramedullary pinning as per standard surgical technique. Post operatively I/V injection of Ceftriaxone 1gm for 7 days, Meloxicam (10mg) I/M for 4 days, Dexamethasone (4mg) I/V for 2 days were given. Antiseptic dressing was done with silversulphadiazine ointment and povidone iodine liquid for two weeks. The pin was removed after 30 days post operation. The recovery was uneventful and uncomplicated in a period of 30 days.

**SAP-5 Intestinal Intussusception in an Alabai Pup and its Surgical Management**

*S. K. Tiwari, R. Sharda, Kashi Nath, M. O. Kalim, K. K. Gurmita and C. Tandekar*  
College of Veterinary Science & A. H. Anjora, Durg -Chhattisgarh

A 2 months old Alabai pup was presented to the department with the complaint of abdominal straining and prolapse of intestinal mass through anus from last 15 days. On clinical examination the animal was dull depressed and severely dehydrated. The abdomen was almost empty and there was an upward sausage like mass at upper flank region on abdominal palpation. Probing through anal wall and the prolapsed mass was successful without any resistance. The prolapse was reduced and purse string sutures were applied thrice by local Vets but it was not successful. Based on this case was tentatively diagnosed was a case was intestinal intussusception. The laparotomy was performed under atropine-diazepam- propofol anaesthesia. The intussusception mass was exteriorized and was dipped in normal saline. The ilio-caecal segment of intestine was involved in the intussusception mass. The ileum was slowly extruded from the caecum. There was damage to the wall of ileum. Therefore, enterectomy followed by end to end anastomosis was done using standard surgical technique. The laparotomy wound was closed in routine manner. Post operatively Dextrose saline 300 ml I/V for 3 days, Ceftriaxone 250mg I/V for 6 days, Meloxicam 0.5 ml for 3 days, and Aciloc 0.5 ml I/ M for 5 days was given. Dressing was done with Wisprec ointment and Topicure spray. The pup was given liquid diet for 7 days. The pup recovered uneventfully in a time span of eight days.

**SAP-6 Successful Surgical Management of an Extensive Case of Pyometra in a Pomeranian Bitch**

*S. K. Tiwari, S. Roy, Kashi Nath, R. Sharda, M. O. Kalim, Sanat Naik and K. K. Gurmita*  
College of Veterinary Science & A. H. Anjora, Durg - Chhattisgarh

A 9 years old Pomeranian bitch was presented to the department with the complaint of continuous sanguineous to mucopurulent discharge from the vulva for the last 1 month. The colour of vaginal discharge was reddish brown with offensive smell. The clinical signs observed were anorexia, polyuria, polydipsia, vomiting with extensive abdominal distension. Radiography revealed a large fluid filled area in the abdomen. The case was tentatively diagnosed of pyometra. For minimising toxemia and dehydration, fluid therapy in the form of Dextrose saline and Ringers lactate solution along with Ceftriaxone @ 20 mg/kg I/V were given prior to surgery for 3days. Then ovariohysterectomy was performed under atropine-diazepam- ketamine anaesthesia by standard surgical procedure. The laparotomy wound was closed in routine manner. Post operatively Ringers lactate 150 ml, Dextrose saline 150 ml I/V for 3 days, Ceftriaxone @20 mg/kg I/V injection of for 5 days, Meloxicam 1.5 ml for 4 days, and Aciloc 1.5 ml I/ M for 5 days was given. Dressing was done with Topicure Gel and Topicure spray. The bitch was given liquid and semisolid diet for 7 days. On 9<sup>th</sup> day, skin sutures were removed. The bitch recovered uneventfully without any complication.



- SAP-7** **Basal Cell Carcinoma Involving Ventral Abdomen in a German Shepherd Dog and its Surgical Management**  
*S. K. Tiwari, Kashi Nath, M. O. Kalim, Shailesh Kumar, Sanat Naik and Chhatrapal Tandekar*  
 College of Veterinary Science & A. H. Anjora, Durg - Chhattisgarh
- A 9 year old male German Shepherd dog weighing 40 kg was presented to the department with the complaint of an overgrowth in abdominal region from the last one year. This growth increased in size extensively from the last 15 days. Clinical examination revealed presence of a large hard mass in the ventral abdominal region. Rectal temperature, heart rate and respiration rate were within physiological limits. Considering it to be a case of tumour, radical surgery was performed to treat the case. The dog was premedicated with atropine sulphate @0.04 mg/Kg I/M and diazepam @ 1 mg/Kg body weight IV. General anaesthesia was induced with Propofol @ 6mg/Kg body weight IV. An elliptical incision was given all around the base of the tumour which was extended deeply by blunt dissection. After removal of all the growth, the site was cauterized using electrocautery. Suturing of wound was done in routine manner. Subcutaneous suturing was also done to minimize the dead space. Skin was sutured with silk no. 2 in cross mattress pattern. Post operatively, IM injection of ceftriaxone 500mg for 5 days, Vitamin B complex 1ml for 5 days, Meloxicam 2 ml for 3 days were given. Daily dressing of the wound was done with silver sulphadiazine ointment for 8 days. Neck collar and abdominal bandage was applied for 8 days to prevent self mutilation. Healing was uneventful on follow-up of 8 days.
- SAP-8** **Gastric Dilatation in an Eight Month Old Alsatian**  
*Tripathi, S. D., Vinod, K. and Gaikwad S. V.*  
 K. N. P. College of Veterinary Science, Shirval, Satara- Maharashtra
- An eight month old male Alsatian was brought to B.S.D.P.H.A. at night with history of restlessness, distended abdomen and vomiting. The dog was initially treated with carnicide liquid orally 20 ml, injection perinorm and soap water enema was given. However no improvement was noted in the next one hour. Hence attempt was made to pass stomach tube after diazepam sedation @ 1 mg/kg intravenous, but the stomach tube could not be passed. Then gastrotomy was performed and the stomach contents consisting of undigested chapatti and milk was removed. The operation was done under diazepam sedation @ 1 mg/kg intravenous and thiopentone sodium general anaesthesia (2.5%) @ 11 mg/kg intravenous. The dog made an uneventful recovery and was discharged on the eighth post-operative day.
- SAP-9** **Intussusception in a Two Month Old Doberman Puppy**  
*Tripathi, S. D., Bendhale K. and Gaikwad S. V.*  
 K. N. P. College of Veterinary Science, Shirval, Satara- Maharashtra
- Two month old male Doberman pup was brought to the BSDPHA with history of hemorrhagic enteritis, arched back, purulent nasal and ocular discharge and dehydrated. On clinical examination distended intestinal loops were palpable. The pup was operated for intussusception under 2 % lignocaine local anaesthesia and diazepam sedation @ 0.2 mg/kg intravenous. A slow drip of Ringer's Lactate was maintained during the operative procedure. A 15 inch long intestinal loop was resected and end to end anastomosis was done. The dog survived for 24 hours after surgery. The details of the case will be discussed in the seminar.
- SAP-10** **Management of Femoral Condylar Fracture by Combined Intramedullary Nailing and Cross Pinning in a Mongrel Pup- A Case Report**  
*Samar Halder, Asit Kumar Maji and Samit Kumar Nandi*  
 WBUA & FS, K.B. Sarani, Kolkata- West Bengal
- A 5 month old mongrel pup was brought to university clinics following RTA with complaint of non-weight bearing lameness in right hind limb. Clinical and radiological examination revealed a 'ready to

be compound femoral condylar distracted fracture in right hind limb. The fracture was immobilized by combination of intramedullary nailing (2.5 mm) and cross-pinning (1 mm). Radiological evaluation of fracture healing was studied at regular interval. After satisfactory radiological and clinical evidence of healing, the pins were removed 8<sup>th</sup> week post-operatively.

- SAP-11** **Closed Pyometra with Bilateral Ovarian Follicular Cyst in a Queen Cat- A Rare Case Report**  
*Samar Halder, Asit Kumar Maji and Hiralal Hembram*  
 WBUA & FS, K.B. Sarani, Kolkata- West Bengal

An Indian marble cat with a history of off-fed, recurrent vomition and oliguria was brought to university clinics. Clinical examination revealed distended abdomen with palpable well defined mass. On radiological examination, no radioopaque urolith was found but a well defined mass of pathological radio-density was appreciated. In exploratory laparotomy, a closed cervix pyometra with distended uterine body adhered with urinary bladder, corrugated hyperplastic uterine horn with bilateral large follicular ovarian cyst were found. Pan-hysterectomy was done under xylazine-ketamine anaesthesia. Routine postoperative care was taken. The animal recovered subsequently.

- SAP-12** **Cystolith with Multiple Mammary Tumour and Bilateral Polycystic Ovary in a Labrador Bitch- A Case Report**  
*Asit Kumar Maji and Samar Halder*  
 WBUA & FS, K.B. Sarani, Kolkata- West Bengal

A ten year old Labrador bitch having oliguria, swelling and lameness of hind limb was brought to university clinics. On clinical examination, the bitch was having distended urinary bladder with multiple mammary tumour and crepitus at both hip joints. Radiological findings also revealed presence of cystolith and hip dysplasia with sign of remodeling changes. Cystotomy and panhysterectomy were performed for the treatment of cystolith and controlling of growth of mammary tumour respectively by modified lower oblique right flank incision. Incidentally, bilateral polycystic ovaries were found. Restoration of urination and control of further growth of mammary tumour were achieved. Biochemical estimation of calcium (11.45mg %), phosphorus (3.611mg %), alkaline phosphatase (94.92 I.U./Litre) and estradiol were made two months post-operatively. Conservative therapeutic management of hip dysplasia was advocated. The bitch recovered well and is in active life till this reporting.

- SAP-13** **Osteosarcoma of the Humeral Head and Neck in a 3 Years Old Labrador Dog- A Case Report**  
*Asit Kumar Maji, Samar Halder and Dipak Kumar De*  
 WBUA & FS, K.B. Sarani, Kolkata- West Bengal

A 3 years old Labrador male dog was reported to the university clinics with a history of swelling at shoulder joint and non-weight bearing lameness of the left forelimb which was refractory to therapeutic treatment using NSAIDs and chymotripsin preparation since 4 months. Clinical examination revealed severe soft tissue swelling at the left shoulder joint extended upto the level of mid humerus. Radiological study showed typical osteolysis of the humeral head and neck region (sunburst appearance) with severe soft tissue involvement. Radiography of the thorax appreciated metastasis at the lungs. The owner was not interested to palliative treatment. The dog was euthanased as per the willingness of the owner. Histopathology of the tumour revealed pleomorphic tumour cells producing and being embedded in osteoid, a feature characteristic of osteosarcoma.

- SAP-14** **Studies on Epidemiological Aspects of Canine Mammary Gland Tumours in Gujarat**  
*M. A. Dhami and P. H. Tank*  
 COVS & AH, Anand Agricultural University, Anand- Gujarat

Epidemiological factors like age, breed, sex, parity, breeding soundness and site and nature of involvement of mammary gland were studied in relation to occurrence of mammary tumours in 29 bitches over one year at College Hospital. Out of 29 canine mammary tumour cases, 13 (44.83 %) were

found in dogs aged 4 to 8 years, 12 (41.38 %) in dogs aged 8 to 12 years and 4 (13.79 %) in dogs aged more than 12 years, but no case was seen in dogs less than 4 years old. Breed wise higher occurrence was found in German Shepherd (36.50 %) and Pomeranian (31.75 %) as compared to the other breeds, and that too mainly in females (96.56 %). There was an increasing frequency of canine mammary tumours from cranial thoracic to inguinal pairs with the highest incidence in caudal abdominal (31.03 %) and the least in cranial thoracic pair (3.45 %). The involvement of inguinal, cranial abdominal and caudal thoracic glands was 27.59, 20.69 and 17.24 per cent, respectively. Most of the patients had multiple involvements of glands. Out of the 29 bitches operated for mammary tumours, 22 (75.86 %) were intact and rests 7 (24.14 %) were neutered. All the neutered bitches were spayed after the age of 4 years.

**SAP-15****Epidemiology of Canine Mammary Gland Tumours in Gujarat**

*M. A. Dhami, P. H. Tank, A. S. Karle, H. S. Vedpathak and A. S. Bhatia*

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Last three years retrospective information was retrieved by scrutinizing the data bank of the College Hospital. During this period 8337 canine cases were registered. Amongst them 2070 cases were referred to Department of Surgery for further surgical treatment. Out of 2070 canine cases, 158 cases (7.63 %) had various neoplastic condition and amongst them 63 cases (39.87 %) were of mammary gland tumours. The overall incidence of canine mammary gland tumours was 0.75 per cent of the total canine cases. The highest occurrence of canine mammary tumour cases was found in the dogs aged 8 to 12 years (49.21 %) followed by those aged 4 to 8 years (33.33 %). It was least (4.76 %) in younger dogs less than 4 years and intermediate (12.70 %) in older dogs above 12 years of age. Breed-wise higher occurrence was found in German Shepherd and Pomeranian as compared to other breeds.

**SAP-16****Retrieval of Motorcycle Keys from the Stomach of a Labrador Dog-A Case Report**

*B. P. Shukla, Rayees Ahmad and Pooja Arya*

College of Veterinary Sciences & A.H., Mhow

A ten months old chocolate coloured Labrador Retriever male dog was brought to Pets Polyclinic, Indore with the history of ingestion of Herohonda keys with the key ring. As per the owner dog was very playful, was in the habit of picking up things and running here and there and during this act he swallowed the key ring. The condition of the dog was not good, frequently vomiting blood tinged fluid. Temperature of the dog was recorded 105F. X-ray examination revealed clearcut image of key with ring inside the stomach. The decision of performing gastrotomy was immediately taken up. General anaesthesia was induced by Atropine Sulphate @0.03mg/kg b.wt. and xylaxine hydrochloride @1mg/kg b.wt./M as premedicant followed by Ketamine hydrochloride @ 10mg/kg b.wt. The stomach was explored and taken out for incision following laparotomy. The stomach was incised at least vascularized area and the key with key ring was taken out. Stomach was sutured with 2 rows of continuous Cushing sutures with Vicryl no. 2/0 thread. Peritoneum and muscles were sutured by 2 rows of simple continuous sutures using no. 1 chromic catgut. Subcutaneous sutures were given by 1.0 chromic catgut and skin sutures were applied by silk in simple interrupted fashion. Postoperatively Inj. Monocef 500mg I/V twice a day for 6 days and Inj. Tremadol 2ml I/M for 6 days was given. Food and water were withheld for 3 days and during this period R.L (500ml) and 5% DNS(500ml) was given once a day for 3 days. The dog recovered nicely and on 10<sup>th</sup> day sutures were also removed.

**SAP-17****Surgical Management of Entero- Vesicocele in Dog – A Case Report**

*B. P. Shukla, R. Jain, Pooja Arya and Rayees Ahmad*

College of Veterinary Sciences & A.H Mhow

A female dog of 12 years old was brought to the TVCSC Veterinary College Mhow with the huge pendulous swelling/growth between the thighs. The swelling was protruding 6 inches from the body wall and the dog was having difficulty in passing urine and stool. On palpation hernial ring could not

be accessed because of voluminous contents. Sonography was done and the presence of urinary bladder was established in the contents. After inducing general anaesthesia with Atropine Sulphate @ 0.02 mg/kg b.wt, Xylazine hydrochloride @ 1mg/kg b.wt. and Ketamine hydrochloride @ 10mg/kg b.wt, an elliptical incision was given gently directly over the hernial sac. After cutting the skin and subcutaneous tissue, the fully distended urinary bladder and loop of large intestine was found. An incision was given cranially on the mid ventral region to increase the length of hernial ring and the bladder was completely evacuated by manually squeezing the bladder once twist was straightened. The contents were freed from adhesions and repositioned back in the abdominal cavity and the herniorrhaphy was done with the help of no.2 Vicryl Vest over paint sutures. Muscle and skin were sutured in routine manner. Antibiotic course for 6 days was given and the animal recovered uneventfully.

SAP-18

### **Surgical and Medical Management of Some Common Eye Diseases in Pet Animals**

*Sarbani Hazra and Himangshu Palui*

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Common eye disorders encountered in small animal practice are corneal ulcerations, corneal opacities, corneal pigmentations, cataract, cherry eye, uveitis, and extra ocular tumors. Identification of the condition and its treatment may sometimes require improvisations by the surgeon. This article reports a series of clinical presentations of ocular disorders in a variety of pet animal including dogs, birds and their surgical and medical management. We conclude from our increasing clinical experience that in the near future we may endeavor to face greater challenges in the field of veterinary ophthalmology.

SAP-19

### **Perineal Herniorrhaphy with Cystopexy in Male Dog**

*Basanta Saikia, Bedanga Konwar and Hitesh Bayan*

COVS & A.H, Central Agricultural University, Selesish, Aizawl- Mizoram

A twelve year old male German shepherd dog was presented to the department of Surgery and Radiology with the history of weakness, loss of appetite, constipation, anuria and a fluctuating swelling on the left ventrolateral part of the perineal region. Diagnosis was made by clinical observation, per rectal examination and palpation of the swelling. Urethral catheterization and evacuation of bladder confirmed that the hernial content was urinary bladder. Reconstruction of pelvic diaphragm was done by apposing levator ani, coccygeus muscle and external anal sphincter with black braided silk. For that surgical procedure the animal was controlled in ventral recumbency with hind quarter elevated. Cystopexy was performed through midline incision by controlling the animal in dorsal recumbency and the urinary bladder was replaced into the abdominal cavity. The recovery was uneventful.

SAP-20

### **Cross Pinning for Epiphyseal Fracture Repair in Two Pups**

*A. S. Patil and B. R. Balappanavar*

COA, University of Agricultural Sciences, Dharwad- Karnataka

Two male pups (a spitz and a mongrel) were presented to Hospital, with a complaint of non weight bearing lameness following an accidental fall. Clinical and radiographic examination revealed avulsion fracture of tibia and fracture of the fibula at its upper third in spitz pup and distal humeral epiphyseal fracture in mongrel pup. Both the pups were anaesthetized with 2.5 per cent Thiopentone following Xylazine sedation. Cross pinning was done to stabilize the fractures using two K-wires without involving the concerned joints. Post operatively injections of Ceftriaxone sodium and Meloxicam were administered for 5 days. Modified Thomas splint was applied and maintained for 6 weeks as external immobilization. The pins were removed at 4<sup>th</sup> week post operatively to avoid premature closure of the growth plate. The patients were bearing weight on the operated limb without any deformity by 12<sup>th</sup> week. Cross pinning was employed in the present case mainly to avoid involvement of stifle joint and the technique provided good stability at the fracture site.

**SAP-21 Use of Clover Leaf Plate for the Management of Comminuted Fracture of Tibia in a German Shepherd Dog**

*G. D. Singh, Surbhi, H. P. Aithal, P. Kinjavdekar, Amarpal, A. M. Pawde, M. M. S. Zama and H. C. Setia*

Indian Veterinary Research Institute, Izatnagar- UP

A German shepherd dog, aged 4 years and weighing 30 kg was presented with lameness in left hind leg. Radiographic examination revealed comminuted fracture at the proximal third of tibial diaphysis. As the animal was heavy (30 kg) and the proximal end of tibia was wide, it was decided to treat by application of clover leaf plate. The fracture was reduced under general anaesthesia using atropine and diazepam, and thiopental. A clover leaf plate with 11 holes. Five 2.7 mm screws were fixed in the proximal bone fragment in different directions and four screws were fixed in the distal bone fragment using standard technique. The fracture fixation was very rigid and stable. The animal started bearing full weight on the limb in the immediate postoperative period. Complete radiographic fracture healing with bridging periosteal callus was observed by day 60 and good remodeling of bone by 5 months postoperatively. The results indicate that clover leaf plates can provide stable fixation of tibial diaphyseal fractures, especially in heavy weight dogs.

**SAP-22 Ophthalmic Affections in Canines: Incidence, Therapeutic and Surgical Management**

*Nisha Joy, P. V. Parikh, D. B. Patil, M. J. Sheth, S. K. Jhala and N. H. Kelawala*

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A retrospective analysis of the ophthalmic records from 2004-2009 was done to elicit incidence, distribution and pattern of ocular affections in canines. A total of 443 canine ocular cases were reported which constituted 13.80% of total surgical case load (3210). The incidence was more during summer months (68.45%, 305 cases) with more number of cases in dogs (32.05%, 142 cases) between 5-10 years age. Breed wise incidence was maximum in spitz (60.73%, 269 cases) followed by german shepherds (11.06%, 49 cases). Sex wise incidence was more in males (60%, 266 cases). Anatomical categorization of the ocular affections revealed maximum cases involving lens (30.70%, 136 cases) followed by cornea (21.00%, 93 cases), eyelid (14.68%, 65 cases), retina (12.65%, 56 cases), conjunctiva (9.26%, 41 cases), anterior chamber (glaucoma - 5.87%, 26 cases), and globe (2.94%, 13 each). The standard medical & surgical management of various ocular affections reported were analysed.

**SAP-23 Ovariohysterectomy in a Pregnant Queen Suffering from Dog Bite Injury**

*P. B. Kankonkar, J. N. Mistry, S. R. Chaudhary, P. B. Patel, D. N. Suthar, J. B. Patel, J. J. Parmar, B. G. Kag, D. D. Rishi, S. Parmar and S. Sharma*

COVS & AH, S. D. Agricultural University, Sardarkrushinagar - Gujarat

A two years old female cat was presented with a history of trauma due to attack by a dog three hours ago. The cat was in lateral recumbency, non-responsive to any external stimuli, lowered body temperature and in a state of shock. On close examination two superficial bite wounds were noticed at the shoulder region. Lateral and ventro-dorsal radiographs did not reveal any spinal abnormality or fractures; however, presence of two fetuses was noticed. Dexamethasone @ dose rate of 3mg/kg B. wt. i/v, Ceftriaxone @ 250 mg i/m, Doxapram @ 20 mg T.D. i/v along with 150ml Normal Saline Infusion revived her from shock. From the next day onward cat was administered Methylprednisolone acetate @ 20 mg T.D.,(b.i.d) i/m and the dose was gradually tapered over a period of 6 days. Neuroxin was administered @ of 1 ml i/m for two days followed by oral supplementation and antibiotic Ceftriaxone @ 250 mg i/m once in a day for six days. Owner was advised for hot water fomentation on the spine and limbs thrice daily till improvement. Clear vaginal discharge and mild straining was noticed, hence midline ovario-hysterectomy was conducted under diazepam, ketamine general anaesthesia on the third day of treatment to relieve the animal's discomfort. The cat made an uneventful recovery from surgery but maintained lateral recumbence. She started crawling ten days after the initiation of treatment and started walking from 25 days onward. She made an uneventful recovery.

SAP-24

**Management of a Chronic Wound over the Stifle in a Dog by Interpolation Flap***L. Nagarajan and M. Gokulakrishnan and P. Vijayakumar*

Veterinary University Peripheral Hospital, TANUVAS, Chennai

**A** eleven month old male Labrador was presented to the Veterinary University Peripheral Hospital, Madhavaram, Chennai with a fifteen days old wound on the right stifle. The wound measured 6.5 cm in length and 3.8 cm in width and had mild purulent foul smelling discharge. Chronic granulation tissue was also noticed on the wound. The infection was controlled with antibiotic for five days. Under general anaesthesia, a subdermal plexus flap from right flank was elevated and interpolated over the wound. There was necrosis at the tip of the flap on the 5<sup>th</sup> post operative day. But the rest of the wound flap exhibited good 'take'. The necrotic area was left to heal by second intention. The outcome was excellent with good cosmetic appearance.

SAP-25

**Ultrasound Assisted Biopsy of Liver in a Dog***S. B. Akhare, V. S. Panchbhai, B. M. Gahlod, S. V. Upadhye, M. S. Dhakate, M. V. Kamble & E. Taksande*

Nagpur Veterinary College, Nagpur- Maharashtra

**A** twelve year Lhasa Apso female dog weighing 8 kg was presented to hospital with a complaint of anorexia and distended abdomen. Abdominal palpation revealed fluid in the abdomen suspected for ascites. The ultrasound examination revealed huge intraperitoneal mass. Liver showed infiltrative lesions. The ultrasound guided biopsy and FNAC sample of the liver was collected. The hematological parameters were recorded at scheduled interval. Histopathological examination revealed fatty liver changes. However, histopathology of the liver sample collected on post mortem revealed a case of bile duct adenocarcinoma.

SAP-26

**Ultrasound Assisted Fine Needle Aspiration Cytology of Prostate Gland in a Dog***S. B. Akhare, B. M. Gahlod, V. S. Panchbhai, B. P. Dandge, S. V. Upadhye, M. S. Dhakate, Shalaka Salvekar & Prachi Taksande*

Nagpur Veterinary College, Nagpur- Maharashtra

**A** seven years German shepherd male dog weighing 28 kg was presented to the hospital with a history of inappetance from 15 days, oligourea and weakness. On palpation of the abdomen, urinary bladder was distended. The ultrasonographic examination revealed calculi in urinary bladder and enlarged prostate gland with fluid filled cavity. The ultrasound guided, fine needle aspiration biopsy of the prostate gland was collected. Cytological examination revealed a case of prostatitis – inflammatory enlargement. Prostate gland showed sheets of detached prostatic acinar cells and varied inflammatory cells, majority of the macrophages and round cells indicating active stage of inflammation.

SAP-27

**Intra-Abdominal Actinomycetoma in a Cat***L. Ranganath and Ramesh Rathod*

Veterinary College, KVAFSU- Bangalore

**A**n eighteen month old queen cat was presented to the Veterinary College Hospital, Bangalore with a history of anorexia, vomiting, not passing motion since one week and not responding to the medical treatment. Clinical examination revealed high fever with elevated heart rate and respiratory rate. On palpation a hard mass was felt at cranial abdomen and plain radiography of lateral abdomen revealed irregular radio-opaque mass. On exploratory laparotomy extramural mass was found adherent to jejunal part of intestine. Mass was excised by careful separation. Histopathology confirmed the actinomycosis surrounded by areas of abscess.

SAP-28

**Hemi-Laminectomy for the Treatment of Posterior Paralysis in a Dog***K. M. Srinivasa Murthy, Ramesh Rathod and L. Ranganath*

Veterinary College, KVAFSU- Bangalore

A 3 month old boxer pup was presented to the Veterinary College Hospital, Bangalore with a history of not bearing weight on hind limbs and neurological examination revealed spinal abnormalities at the lumbar region. Radiograph of lateral lumbar spine revealed healing fracture with callus compressing the spinal cord at fourth and fifth lumbar vertebra. It was decided for Hemi-laminectomy. Under general anesthesia hemi-laminectomy of fourth and fifth lumbar vertebra was performed on right side and the callus compressing the cord was removed. Post operatively prednisolone at 1mg/kg and Cefazolin at 20 mg/kg given intramuscularly twice daily for 7 days. Progressively animal regained the sensation on hind limbs and returned to normal gait.

SAP-29

**A Case of Lateral Patellar Displacement and its Surgical Correction***K. M. Srinivasamurthy., Mohammed Arif Basha K., Ashish Holey and L. Ranganath*

Veterinary College, KVAFSU- Bangalore

A four month old non-descript male dog was presented to Veterinary College hospital with a history of abducted stifle and adducted hock while walking on left limb and difficulty in walking. Physical examination revealed lateral displacement of patella which was confirmed by radiography. It was decided to reposition the patella by deepening of trochlear groove and repositioning of tibial tuberosity. Under general anesthesia the stifle arthrotomy was done through craniolateral approach. The shallow trochlear groove was deepened keeping the articular surface intact and tibial tuberosity was repositioned in alignment with the trochlea of femur by tibial osteotomy. The tibial tuberosity was fixed in position by a cortical screw. Post operatively Cefazolin at dose rate of 20 mg/kg bid for 7 days was given. The animal recovered uneventfully by 40 days post operatively.

SAP-30

**Hematoma of Spleen and its Surgical Management***V. Mahesh and L. Ranganath*

Veterinary College, KVAFSU- Bangalore

A nine month old female Neapolian mastiff dog was presented to the Veterinary College Hospital, Bangalore with the history of anorexia for last five days with persistent vomition and refractory to the treatment. On palpation of the abdomen a large mass was found. Ultrasonography revealed hyperechoic areas in the splenic parenchyma suggestive of abnormality. On exploratory laparotomy, splenomegaly with rupture at one end was found, so further splenectomy was performed. Histopathology confirmed splenic hematoma.

SAP-31

**A Review of Intestinal Obstruction in Dogs***L. Ranganath, V. Mahesh and Dayamon D. Mathew*

Veterinary College, KVAFSU- Bangalore

Twelve clinical cases were presented to the Veterinary College Hospital, Bangalore with the history of chronic vomition, anorexia and dyschezia. No radiolucent foreign bodies causing intestinal obstruction was seen on survey radiography however, 12 hr barium contrast radiographs showed delayed intestinal transit time, suggestive of intestinal obstruction. Animals were subjected to exploratory laparotomy. The enterotomy was performed to remove foreign bodies. The foreign bodies consisted of cotton socks (2 cases), stone and bone pieces (2 cases), corn cob (2 cases), mango kernel (3 cases) wire sponge (one case), cotton (one case) and tumor- lymphoma (one case). All the patients were subjected for enterotomy and foreign bodies and lesions producing intestinal obstruction were successfully removed.

SAP-32

**Inguinal Hernia in Two Dogs****V. Mahesh, Ashish Holey, S. Prabhudeva and L. Ranganath**

Veterinary College, KVAFSU- Bangalore

A non-descript female dog of 5yrs age and one more non-descript male dog of 7 yrs age were presented to the Veterinary College Hospital, Bangalore with the history of large swelling at the ventral abdominal region and increasing in size for last three months. Physical examination revealed a soft, doughy, irreducible mass in the inguinal region. Clinical signs revealed no major systemic or functional abnormalities except the gradual increase in the size of the mass and causing discomfort while walking. It was diagnosed as inguinal hernia with uterus as its content in female dog and intestinal loops in male dog. Both the animals were subjected for inguinal herniorrhaphy with uneventful recovery.

SAP-33

**Surgical Management of Intestinal Lymphoma Causing Obstruction in a Dog****L. Ranganath and V. Mahesh**

Veterinary College, KVAFSU- Bangalore

A 1 ½ year old Labrador Retriever male dog weighing about 30 kgs was presented to the Veterinary College Hospital, Bangalore with the history of chronic vomiting, progressive deterioration in health for the past 15 days. On physical palpation a palpable abdominal mass was found. The plain radiograph did not give clear picture of intestinal obstruction but 12 hr barium contrast radiograph showed delayed intestinal transit time, suggestive of intestinal obstruction. Animal was subjected for exploratory laparotomy. On exploration of abdomen hard mass involving the jejunal part of intestine was found. The intestinal resection and enteroanastomosis was performed. The histopathology confirmed the mass as lymphoma. Animal recovered uneventfully with no recurrence of tumor for the study period of 12 months.

SAP-34

**Surgical Treatment of Perineal Lipoma in a Bitch****Prem Singh, Praveen Kumar, Subhash Chander, S.K. Chawla and Krishan Kumar**

College of Veterinary Sciences, CCS HAU- Hisar

A nine years old bitch was brought to TVCSC, CCSHAU, Hisar with the history of swelling in the perineal area for the last four years. Initially the swelling was small in size but gradually its size increased and it assumed such a big size that it started putting pressure over the urinary passage and rectum. There was difficulty in walking. On examination, the swelling was hard at its base and soft toward the periphery. The blood examination revealed mild anemia and slight increase in total and differential leukocyte count. The radiograph of the swelling showed the presence of radiodense material toward the base and soft tissue density around it, occupying the entire cavity. The ultrasonography showed hyperechoic image of the swelling in the centre and hypoechoic image in rest of the area indicating a solid structure without any cavity. The mass was surgically removed under xylazine ketamine general anaesthesia. It was firmly attached and somewhat calcified. Histopathological examination showed it to be a case of lipoma. The bitch made an uneventful recovery. The radiography and ultrasonography proved to be very useful in differentiating perineal lipoma from perineal hernia and other swellings.

SAP-35

***In Vitro* Antimicrobial Sensitivity of Organisms Isolated from Pus and Vaginal Samples in Canine Hosts****Anshu Sharma, Neelesh Sindhu and Rajesh Chhabra**

College of Veterinary Sciences, CCS HAU- Hisar

Selection of an effective antimicrobial agent for a surgical infection requires knowledge of the microbial pathogens involved and understanding of *in vitro* antimicrobial sensitivity. In present study, a total of 68 clinical samples of pus and vaginal swabs from canine hosts received in Veterinary College Central Laboratory were subjected to cultural examination. Of these, 63 samples were found



culturally positive with mixed infection in 22 samples. On further characterization, out of 92 isolates obtained, common pathogens found were *Staphylococcus intermedius* (24), *Staphylococcus aureus* (8), *Staphylococcus epidermidis* (5), *E. coli* (8), Streptococci (9), *Corynebacterium pyogenes* (1), *Pseudomonas aeruginosa* (4), *Proteus* spp. (1), *Klebsiella* spp. (3) and *Bacillus* spp. (1). Antimicrobial sensitivity testing of isolates with 23 antibiotics revealed majority of Gram positive isolates showing higher sensitivity towards Amoxycillin, Amoxycylav, Cephalexin, Ceftriaxone, Cefuroxime, Chloramphenicol, Ciprofloxacin and Enrofloxacin whereas Gram negative bacteria were found sensitive towards Cephalexin, Ceftriaxone, Chloramphenicol, Kanamycin, Gentamycin and Neomycin. Ceftriaxone and Chloramphenicol were found most sensitive against all isolates.

**SAP-36** **Surgical Management of Potential Foreign Body Syndrome in a Dog**  
*K. S. Chaudhari, S. D. Tripathi, S. S. Raut, A. R. Chauhan, L. B. Sarkate, G. S. Khandekar and S. R. Sonawane*

Bombay Veterinary College, Parel- Mumbai

A three year old male mongrel dog was presented at the OPD of Bombay Veterinary College, with the history of vomiting and anorexia since last three days. Clinical examination and lateral plain radiographical examination revealed presence of sewing needle in the abdomen, respectively. The owner was unaware of ingestion of sewing needle by the dog. End to End anastomosis was performed under general anaesthesia and linear foreign body removed. Post-operatively the dog was administered antibiotics and anti-inflammatory drugs and supportive therapy. The skin sutures were removed on tenth post-operative day and the dog made an uneventful recovery. A case of potential foreign body syndrome and possible peritonitis was reported and its successful surgical management was highlighted. The details will be discussed during the presentation.

**SAP-37** **Successful Treatment of Colon Fistula in a Bitch**

*Mrunali Kamble, V. D. Aher, V. D. Kale, S. U. Raut*

College of Veterinary & Animal sciences, Parbhani- Maharashtra

A non-descript female dog of about 6 years age was reported in TVCSC, Parbhani with history of stab injury about 8-10 days back on ventral abdomen, and the bitch was passing faeces through the wound. Laparotomy was performed under general anaesthesia. Laprotomy revealed colonic fistulation. The adhesions were separated, colonic perforation repaired and the laprotomy incision was closed after repairing the fistulous tract. The bitch showed uneventful recovery.

**SAP-38** **Surgical Management of Obstipation in Two Dogs**

*D. U. Lokhande, P. B. Adsul, L. B. Sarkate, N. C. Desai, K. R. Bendale, D. R. Bhalerao and V. Kadapatti*

Bombay Veterinary College, Parel, Mumbai

Two dogs were presented in the Department of Surgery and Radiology, Bombay Veterinary College, with the history of chronic constipation (obstipation). These were treated successfully by performing colotomy. The dogs were earlier treated medically for constipation for two and three months respectively. Second dog also had a history of pelvic fracture as a puppy. Plain radiograph showed narrowing of the pelvic inlet due to malunion of the pelvic fracture. Colotomy was performed in both the cases successfully to remove the impacted faeces. The dogs were advised to be given diet with high fiber and oral stool softeners to prevent recurrence. The dogs are healthy till date.

**SAP-39** **Sertoli Cell Tumour in a Cryptorchid Dog**

*Christie Aguiar, Milind Hatekar*

PET AID, Veterinary Clinic & Diagnostics- Pune

An 11 year old dog of 13kg was presented to the clinic with complaints of anorexia, sparse hair coat,

thickening of skin with hyperpigmentation. On routine physical examination, left testicle was found enlarged approximately 9cm dia, intra abdominally. Hyperestrogenism was evident with gynacomastia and pendulous prepuce. The right contra lateral testicle was atrophied in the scrotal sac. Hemogram showed all values within normal limits. Orchidectomy was performed under general anaesthesia. Histopathology revealed sertoli cell tumour manifested by clinical signs of feminization.

## SAP-40

#### **Haemato-Biochemical and Clinico-Physiological Response to Lumbar Epidural Anaesthesia using Bupivacaine alone and in Combination with certain Analgesics in Buffalo calves**

*M. O. Kalim, S. K. Tiwari, R. Sharda, Kashi Nath, R. K. Sonawane, Sanat Naik and C. Tandekar*  
CO VS & A H, Anjora, Durg- Chhattisgarh

Fifteen clinically healthy non-descript male buffalo calves were used to evaluate the efficacy of bupivacaine alone and in combination with fentanyl and medetomidine for lumbar epidural analgesia. Haemato-biochemical and clinico-physiological parameters were recorded after administration of bupivacaine alone (group A), bupivacaine with fentanyl (group B) and bupivacaine with medetomidine (group C) animals @ 0.15mg/kg body wt., 0.15mg/kg body wt. + 2gm/kg body wt. + 0.15mg/kg body wt. + 15gm/kg body wt. respectively. Haematological studies revealed a non-significant decrease in Hb, PCV and TLC in group A and B whereas a significant ( $P < 0.05$ ) decrease in group C. DLC showed a significant decrease ( $P < 0.01$ ) in lymphocyte and increase in neutrophil count in all the groups. Among biochemical parameters blood glucose and ALT showed a significant ( $P < 0.05$ ) increase in group A and B which became highly significant ( $P < 0.01$ ) in group C. AST, BUN and serum creatinine increased in group C only. Thereafter, these values were compensated and returned to normal by 24 hrs. The onset of analgesia in group C was shorter as compared to group A and B. Depth of analgesia and area of desensitization at thorax and flank in group A and B was found moderate between 30 to 60 min interval whereas in group C complete analgesia was found between 30 to 60 min post injections. Ataxia and motor incoordination was recorded only in group C. Salivation was present only in group C and was significantly profuse between 30 to 60 min interval. Group B and C showed longer duration of analgesia compared to group A. Group C animals showed late recovery as compared to other two groups. In group A and B decrease in heart rate was recorded between 30 to 75 min interval whereas, in group C this was highly significant ( $P < 0.01$ ) between 15 to 90 min interval. Respiration rate decreased in all the three groups but it was more pronounced in group C animals. However, the values returned to near normalcy by 180 minutes.

## SAP-41

#### **Mesenteric Abscess in a Bitch – A Case Report**

*N. V. V. Hari Krishna, V. Devi Prasad, Makkena Sreenu, V. S. C. Bose, R. Thangadurai*  
NTR- COVS, Sri Venkateswara Veterinary University, Gannavaram - A.P.

An 8 years old bitch was presented to the clinics with a history of dullness, inappetance, abdominal pain and discomfort. Anamnesis revealed pyometra and subsequent ovariohysterectomy four years back. It showed same symptoms every month for 1-2 days while recovering. Abdominal palpation and ultrasonography confirmed a fluid filled sac attached to intestinal segments. Mid mid ventral celiotomy under Xylazine and ketamine anaesthesia was done to excise it. The sac contained one and half liters of sanguinopurulent fluid and histopathology showed inflammatory and suppurative changes. The bitch recovered uneventfully following postoperative care.

## SAP-42

#### **Surgical Treatment of Perineal hernia in a Dog**

*Mithilesh Kumar and Premlata Kumari*  
Bihar Veterinary College, Patna

A 6 year old male dog was presented to clinical complex with the history of swelling right lateral to the anus. Clinical examination revealed a hernial ring of 5 cm diameter with reducible contents. Surgery was done to replace hernial contents. Post-operative care with parenteral antibiotic regimen, analgesic, fluid therapy and regular dressing led to uneventful recovery.

## SAP-43

**Surgical Management of Cystadenoma in Three Albino Mice***Saroj Sahu, S. Samantara, Indramani Nath and R. Behera*

Department of Veterinary Surgery and Radiology, Orissa Veterinary College

Three domesticated white albino mice with large swelling on the right ventral abdominal wall were presented to the Surgery Department of Orissa Veterinary College for the correction of the condition. The bodyweight of the mice was measured and found to be 20gm, 24gm, 29gm. The mice tranquilized with 10 - 15 mg of ketamine hydrochloride injected intramuscularly. The condition was suspected for tumour. A lateral radiograph of the mice showed muscular density attached to the abdominal wall without any metastasis. After proper aseptic preparation of the surgical site the mass was excised. The bleeders were ligated with no.1/0 chromic catgut and skin was sutured with nylon in an interrupted pattern. The mice was given oral antibiotic with drinking water for a period of 5 days. The stitch were removed on the 10<sup>th</sup> post-operative day. The animals recovered uneventfully. Histo-pathology revealed the mass as cystoadenoma.

## SAP-44

**Progressive Retinal Atrophy (PRA) in Canines***S. K. Jhala, K. H. Katudia, D. B. Patil, P. V. Parikh, M. J. Sheth, Nisha Joy, K. R. Mistry and C. G. Joshi*

COVS &amp; AH, Anand Agricultural University, Anand- Gujrat

A total of 110 dogs belonging to different age groups were presented with history of vision loss during 2007 to 2009. All animals were subjected to evaluation of menace responses, pupillary light reflexes and indirect ophthalmoscopy after pupillary dilatation. In twenty six dogs the appearance of fundus and clinical signs were compatible with PRA. Menace reflex was absent in 12 cases, while pupillary light reflexes were sluggish in 14 cases and absent in 12. Out of 26 PRA cases, the incidence was more in spitz (19) and females (17). Bilateral involvement was more (19) than unilateral (7). Age wise the incidence was more in the age group of 5 - 10 years (18), followed by > 10 years (6) and 2-5 years (1). In 13 cases cataract along with PRA was diagnosed. Ten dogs with PRA having pedigree information were subjected to genetic tests. The coding sequence of progressive rod cone degeneration (PRCD) gene was screened for disease causing mutations by PCR followed by restriction fragment length polymorphism (PCR-RFLP) analysis. This gave positive results in cocker spaniels (3) and labrador (1). All pomeranians (6) were negative for this mutation.

## SAP-45

**Dental and Ophthalmic Camps - An Effort to Enhance Clinical Output***D. B. Patil, P. V. Parikh, S. K. Jhala, Nisha Joy, B. G. Prajapati, P. D. Prajapati, A. H. Pitroda, A. S. Bhatia, S. M. Patel, M. G. Maradia and N. H. Kelawala*

COVS &amp; AH, Anand Agricultural University, Anand- Gujrat

In an effort to bring esoteric and specialized technical services to pet animals, exclusive dental (02) and ophthalmic (01) camps were held at Vadodara and Rajkot. In the exclusive ophthalmic camps 36 dogs were treated, while in the dental camps more than 50 dogs were subjected to ultrasonic dental scaling and polishing.

## SAP-46

**Unilateral Nephrectomy for Polycystic Kidney in Two Dogs***S. Thilagar and A. Key Onn*

Madras Veterinary College, TANUVAS, Chennai

Twelve years old, intact male, terrier dog weighing 17 kg and 2 years old Terrier cross breed-dog weighing 12 kg were presented to the Veterinary Teaching Hospital University Putra Malaysia. The dogs had symptoms of intermittent Hematuria and Stranguria. Further, urine analysis revealed presence of Protein (3-4+) RBC (4+) Bacteria (2-3+). Radiographic examination revealed space occupying lesion in the kidney. Serum Biochemistry revealed elevated plasma protein and band neutrophil. Based on the symptoms the physical examination findings, hematology result and other diagnostic findings, the cases were tentatively diagnosed as Polycystic kidney. Under inhalation

general anesthesia, Unilateral nephrectomy was performed. On laparotomy and histopathological study, the cases were confirmed as Polycystic kidney of left and right. The dogs made an uneventful recovery.

**SAP-47****Surgical Management of Epulis in a Male Labrador**

*Zope, A. N., Zambre, P. C., Ulemale, A. H. and Tripathi S. D.*

KSNP- College of Veterinary Science, Shirval, Taluka, Khandala, Satara -MS

Epulis is a connective tissue tumour found in the oral cavity 6 month old male Labrador was brought to TVCC, KNPCOVS-Shirval with history of difficulty in eating and a lump in the mouth. On clinical examination it was diagnosed as Epulis. The mass was removed under general anaesthesia. Preanesthetic triflupromazine was used at the dose rate of 1 mg/kg intravenous 10 minutes before anaesthesia. Haemorrhage was controlled by means of electrocautery. The pet recovered uneventfully in the next 10 days.

**SAP-48****Extragenital Transmissible Venereal Tumor in Dog and its Management**

*A. K. Sharma, K. K. Singh, Hemant Kumar, L. L. Dass and Sanjit Kumar*

College of Veterinary Science and Animal Husbandry, Kanke, Ranchi

Four years old male Spitz dog weighing 12 kg was presented at the department of Veterinary Surgery & Radiology with a complaint of nasal discharge, open mouth respiration, excoriation /ulceration of the affected area and swelling of the upper nasal area. Difficulty in respiration and swelling was initiated since last one year, but the condition got aggravated since last six months. The heart rate, respiration rate and rectal temperature were normal. Physical examination revealed soft subcutaneous mass on maxilla extending from outside with excoriation and pulpiness of the tissue edge by pressure. Diagnosis was made confirmed by cytological examination of localized tissue by FNAC as non-aspiration technique and impression smear of soft tissue. The animal was treated using vincristine sulphate @1ml/50kg body weight at weekly interval. It is concluded that these tumors can easily be diagnosed by microscopic examination and treated effectively with vincristine sulphate.

**SAP-49****A Rare Case of Pelvic Fractures in Dog and its Surgical Management**

*A. K. Sharma, Shivendra Kumar and L. L. Dass*

College of Veterinary Science and Animal Husbandry, Kanke, Ranchi

A Spitz bitch of 1.5 years and weighing 8 kg was brought to the department of Surgery and Radiology, Ranchi Veterinary College, Ranchi, which had suffered a severe accidental fall from a height of second floor of building over the roof of a running car since last 2 days prior to the presentation in the clinic. As a sequel to this, the dog evinced inability to bear weight on left hind limb. The affected limb appeared to be shorter as compared to contralateral limb. Based on clinical examination and radiography of pelvic bone in dorsoventral, lateral and ventrodorsal view it was found to be a complete fracture of ilium and ischium but the acetabulum was intact. The caudal portion of ilium along with acetabulum was displaced medially and cranially towards the cranial portion of ilium. The ilium and ischium were successfully repaired by DCP.

**SAP-50****Surgical Management of Cervical Mucocele in Two Dogs**

*T. P. Balagopalan., R. M. D. Alphonse., N. Aruljothi, and B. Ramesh Kumar*

Rajiv Gandhi College of Veterinary and Animal Sciences, Pondicherry

A four year old boxer bitch and 9 year old Dachshund male dogs were presented to the Teaching Hospital, Rajiv Gandhi college of Veterinary and Animal Sciences, Pondicherry, with history of soft non painful swelling at the base of the neck which was not responding to conventional line of treatment. Aspiration of the swelling revealed viscous, slightly brown tinged fluid. The condition was diagnosed as cervical mucocele. Under general anaesthesia with Xylazine - Ketamine combination the mucocele was drained through an incision at the dependant portion. The extensive cavity was flushed and closed after fixing a Penrose drain tube percutaneously for drainage. The tube was

protected by a loose bandage at the cervical region and povidone iodine was infused daily for week period until the quantity of the saliva become scanty. Amoxicillin – Cloxacillin was administered IM for five days and dressed the sutured site was dressed using betadine cream. The cutaneous sutures and the drain tube were removed on 10<sup>th</sup> day and the animals recovered uneventfully.

## SAP-51

**A Case Report of Urethral Prolapse in a Bulldog**

*R. Jayaprakash, B. C. Das, Shiju Simon and R. Suresh Kumar*

Madras Veterinary College, TANUVAS, Chennai

Urethral prolapse is uncommon in dogs, usually diagnosed in young intact brachycephalic breeds and most commonly reported in young English bull dog. A twelve month old uncastrated bulldog weighing 17 kg was brought to the Small Animal Surgery Out Patient Unit of Madras Veterinary College Teaching Hospital with the history of intermittent blood dripping from penis and licking the preputial orifice for past 10 days. The dog was undergoing treatment for transmissible venereal tumor (TVT) prior to presentation. Clinical examination revealed dull, depressed and severely anemic dog. Examination of penis revealed a small mass around the tip of the penis and confirmed to be urethral prolapse. Plain radiographs of thorax and abdomen revealed no abnormality, apart from early non-significant lumbosacral spondylosis. Patient was stabilized with blood transfusion preoperatively, urethra was catheterized with infant feeding tube for surgical excision of prolapsed urethral mass and for suture of the urethra with 8-0 Vicryl. Wound healed and dog recovered uneventfully.

## SAP-52

**Management of Unstable Iliac Fracture Using Plate in a Dog: A Case Report**

*Md. Shafluzama, B. C. Das, A. Arun Prasad, Shiju Simon, and R. Suresh Kumar*

Madras Veterinary College, TANUVAS, Chennai - TamilNadu

A one and a half year old castrated male whippet dog weighting 17 kg was presented to the Small Animal Orthopaedic Out Patient Unit with the history of non weight bearing in left hind limb after road traffic accident which occurred one day earlier. Clinical examination revealed acute pain in left lumbar area. Diagnosis of an unstable oblique overriding iliac midshaft fracture was confirmed by radiographic evaluation of pelvis on the ventrodorsal view. Open reduction and internal fixation was accomplished using a 2.7 mm 8 holes dynamic compression plate (DCP) applied as a buttress. Mild weight bearing was observed on 1<sup>st</sup> postoperative week and gradual functional limb weight bearing was noticed by 3<sup>rd</sup> postoperative week. The dog recovered uneventfully by 8<sup>th</sup> postoperative week. The technique and implications of plating are discussed.

## SAP-53

**Management of Unilateral Unstable Diaphyseal Femur and Olecranon Fractures Using IMP and Lag Screw in a Dog: A Case Report**

*B. C. Das, A. Arun Prasad, S. Ayyappan, Capt. G. Dhananjaya Rao, B. Justin William Md. Shafluzama and R. Suresh Kumar*

Madras Veterinary College, TANUVAS, Chennai - TamilNadu

A 2 year old uncastrated male non-descript dog weighting 14.6 kg was presented to the Small Animal Orthopaedic Out Patient Unit of Madras Veterinary College Teaching Hospital, Chennai with the history of fracture on right forelimb and right hind limb after a road traffic accident. The dog was active and alert and clinical examination revealed non weight bearing lameness, pain and crepitation in midshaft of right femur and right olecranon. Radiographic evaluation revealed an unstable transverse mid-diaphyseal fracture of right femur and right olecranon fractures by lateral and craniocaudal orthogonal views. Haematological parameters (Hb, PCV, RBC, and WBC) were within normal range of value. A preoperative plan was made using a small animal preoperative planning guide developed by AO/ASIF (Small animal group) using plain radiographs. Open reduction and internal fixation was accomplished using a 5.0 mm Steinmann pin for femur fracture and 3.5 mm cancellus screw stabilization for olecranon fracture. Mild weight bearing was observed on 1<sup>st</sup> postoperative week in femur and 2<sup>nd</sup> postoperative week in olecranon fracture and bridging callus was

noticed at 5<sup>th</sup> post operative week in both fracture sites with improved weight bearing and the dog recovered unevenfully.

## SAP-54

**Tear Staining due to Nasolacrimal Duct Obstruction in Dogs – A Review of Thirteen Cases**

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Thirteen dogs presented to the Small Animal Ophthalmology Unit of the Madras Veterinary College Teaching Hospital with tear staining were studied. All dogs were subjected to direct and indirect ophthalmoscopic examination, Schirmer tear test, Applanation Tonometry and florescent dye passage test. Though florescent dye passage test were negative for all cases, none of the dogs had absence of lower puncta. Intra ocular pressures were normal. Nasolacrimal duct obstruction was confirmed as reason for epiphora and tear staining in all cases. Under general anaesthesia nasolacrimal duct flushing was done followed by topical ocular medication and all dogs recovered unevenfully.

## SAP-55

**Sweat Gland Adenocarcinoma and Haemangioma in a Dog**

*Mala Shammi, M. Shiju Simon, S. Sooryadas, B. C. Das and R. Suresh Kumar*

Madras Veterinary College, TANUVAS, Chennai - TamilNadu

A nine year old female intact German Shepherd Dog weighing 24.5 kg was presented to the Small Animal Surgery Unit of the Madras Veterinary College Teaching Hospital with the history of a progressive swelling on the right knee and lateral aspect of the neck region since four months. Bleeding was reported two days prior to presentation from the swelling on the neck. Clinical examination of the swelling on the knee revealed a solid, firm and raised lesion. The mass on the neck was ulcerated. Thoracic radiograph revealed no metastasis. Haematology revealed reduced haemoglobin while serum biochemistry results were normal. Fine needle aspiration revealed sweat gland adenocarcinoma of the right knee and haemangioma of neck swelling. Surgical correction was resorted to solve the condition. The animal was anaesthetized using propofol and maintained with 1.5 – 2 % isoflurane in 100% Oxygen. Both masses were excised as per the standard procedure. Post operatively antibiotics, antihistaminic and analgesic were administered. Animal had an uneven recovery and the details will be discussed.

## SAP-56

**Uterine Leiomyoma in a Bitch and its Surgical Management**

*Mala Shammi, M. Shiju Simon, H. Puskin Raj, R. Sivashanker, L. Sivasudarsan and R. Suresh Kumar*

Madras Veterinary College, TANUVAS, Chennai - TamilNadu

A ten year old female intact spitz weighing 15.5 kg was presented to the Small Animal Surgery Unit of the Madras Veterinary College Teaching Hospital with the history of anorexia, progressive distention of abdomen, straining while urination and bloody vaginal discharge. On clinical examination the animal appeared dull and abdominal palpation revealed a firm mass inside. Abdominal lateral view radiography revealed a space occupying mass on the caudal abdomen and thorax revealed no metastasis. Haematology revealed elevated white blood cells while serum biochemistry results were normal. Surgical correction was resorted to solve the condition. A caudal midventral coeliotomy was performed under general anaesthesia and uterus was exteriorized. On the body of the uterus a single, firm and round mass was noticed. Panhysterectomy was performed and the mass was around a small football size. Histopathological examination confirmed leiomyoma.

## SAP-57

**Incidence of Pelvic and Pectoral Limb Fractures in Dogs – A Review of 809 Cases**

*Shiju Simon, M., R. Ganesh, S. Ayyappan, G. D. Rao, A. Arun Prasad, R. Suresh Kumar and M. Manonmani*

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This survey was conducted to study the incidence of pelvic and pectoral limb fractures in dogs during

September 2007-August 2009. A total of 809 cases of both limb fractures were reviewed. The incidence was highest in young animals over one and half month to 6 months (36.25 percent). Majority of the fractures were recorded in non-descript dogs (40.17 percent) followed by spitz (22.99 percent). Male dogs were affected more (58.22 percent) than female dogs of all the age groups. Among the various bones of the both limb, the incidence was highest in femur (28.05 percent) followed by radius and ulna (26.69 percent). Right side fracture was found to be more than the left. The occurrence of oblique/transverse fractures were more (42.59 percent) than overriding (30.21 percent) and comminuted fractures (18.12 percent). The incidence of midshaft was more followed by distal and proximal fractures.

**SAP-58****Retrospective Study of Spinal Affection in Dogs – A Survey of 249 Cases**

*Shiju Simon, M., R. Ganesh, S. Ayyappan, G. D. Rao, A. Arun Prasad, R. Suresh Kumar and M. Manonmani*

Madras Veterinary College, TANUVAS, Chennai - TamilNadu

A survey was conducted to analyse the incidence of spinal affection in dogs reported to Radiology Unit of the Madras Veterinary College, from September 2007-August 2009. Based on survey radiography, a total of 249 cases of spinal affection were recorded and classified based on sex, breed, age and location. The incidence of spondylosis were more (56.62 percent), followed by vertebral fracture (25.70 percent), stenosis of intervertebral space (8.43 percent), luxation/subluxation (4.41 percent), disc calcification (3.61 percent) and hereditary (hemivertebra 1.20 percent). The incidence of spinal affection was more in male than female dogs of all the age groups. Majority of the spondylosis were recorded in Alsatian dog (16.04 percent) and the incidence was highest in older dogs over ten years of age (27.30 percent). Based on the location of the spondylosis, lumbar vertebra was found to be more (38.15 percent). Majority of the vertebral fractures were recorded in non-descript dogs (11.64 percent) and the incidence was highest in younger dogs over four months to one year (10.04 percent). Based on the location of the vertebral fractures, thoracic vertebra was found to be more (14.05 percent). Stenosis of the intervertebral space was found to be more in Alsatian dogs over eight year and the location recorded was between T13 to L2 and L5 to L7. Luxation/subluxation was more on lumbar vertebra (3.21 percent) and disc calcification was mostly recorded in Dachshund breed above seven years of age.

**SAP-59****Rehabilitation of Paraplegic Dogs Using Indigenously Developed Ambulatory Carts – A Review of Four Cases**

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Four cases of paraplegic dogs presented to the Small Animal Orthopaedic Unit of Madras Veterinary College Teaching Hospital with the history of Grade IV spinal trauma (paraplegia, loss of deep pain sensation and loss of bladder control) were considered for rehabilitation. These cases were unresponsive to medical management and the owners were unwilling to subject the cases to spinal surgery. Indigenously developed ambulatory carts using locally available materials were fitted to improve the quality of life of the animals. The clinical significance, cart design and the outcome of the rehabilitation are discussed.

**SAP-60****Axial Skeleton Tumours in Dogs- A Review of Twelve Cases**

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Twelve cases of tumours involving the axial skeleton were diagnosed in dogs presented to Small animal Orthopaedic unit, Madras Veterinary college teaching hospital. Of these, six involved maxilla, two involved mandible and one each involved the nasal bone and frontal bone. Of the other two cases, one involved the thoracic vertebrae and one was diagnosed involving the left tenth rib. Bone biopsy and histopathological evaluation of the tumours revealed to be osteosarcoma, chondroma and

chondrosarcoma, nasal adenocarcinoma and squamous cell carcinoma. The clinical signs, radiographic, computed tomography findings (one case) and prognosis is discussed.

## SAP-61

### Haemato-Biochemical Changes Following Circular External Skeletal Fixation for Long Bone Fracture Repair in Dogs

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The study was conducted in four clinical cases of radius-ulna and two cases of tibia fibula fractures in dogs of either sex presented to Madras Veterinary College, Hospital. In all the animals the fractured bone was treated with circular external skeletal fixators. The haemato- biochemical parameters were studied in day 0 and on the 7<sup>th</sup>, 15<sup>th</sup>, 30<sup>th</sup>, 45<sup>th</sup> and 60<sup>th</sup> post-operative days. There was a significant decrease in haemoglobin and erythrocyte count in all the animals on the 7<sup>th</sup> post-operative day and then the values gradually returned towards normal. There was a non-significant increase in the values of total leukocyte count from pre operative day upto 7<sup>th</sup> post-operative day and then the values gradually returned towards normal level. There was no significant change in serum-calcium, phosphorus and alkaline phosphatase level during different stages of fracture healing. It was concluded that circular external skeletal fixation would influence haemato-biochemical parameters in dogs non-significantly. This report details about phasic variations of different blood parameters and their effect on osteogenesis.

## SAP-62.

### Surgical Excision of Ulcerative Neoplastic Growth at Stifle Joint in a Dog

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A 8.5 years old non-descript dog referred with the history of ulcerative neoplastic growth at the cranial aspect of right stifle joint. On physical examination, limping noticed while walking along with abnormal gait. Before surgical excision, lateral thoracic radiograph was examined to rule out metastasis. Under general anesthesia, the ulcerative neoplastic mass was excised and the skin wound was left as such for second intention healing. The exercise of animal was restricted for 3-4 weeks.

## SAP-63

### Retrospective Studies on the Incidence of Long Bone Fractures at Orthopaedic Unit of Madras Veterinary College Hospital, Chennai

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A retrospective study on the incidence of long bone fractures was carried out between July 1999 to June 2002. Total number of fracture cases reported during the said period was 1270. Out of 1270 fracture cases 19 (1.5%) were compound fractures. Out of 19 cases of compound fractures nine cases were of Radius and ulna fracture (47.36%), five cases were fractures of tibia-fibula (26.31%), three cases of Humerus fracture (15.78%) and two cases of femur fractures (10.52%). The incidence of compound fracture of Humerus and femur was less in comparison to Radius-ulna and Tibia-fibula due to heavy musculature around these bones. Further, the predisposition of fracture was more in females (69%) than the males (31%). Most of the reported cases of fractures were due to road traffic accident and fall from height.

## SAP-64

### Management of Intestinal Obstruction due to Unusual Foreign Bodies in Dogs

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Two male Pomeranian dogs aged 4 years and 6 years and with sickness history of 3 and 15 days respectively, were referred to University Veterinary Hospital with the complaint of non responsive vomiting, and greatly reduced water and food intake. Both the dogs showed variable degree of dehydration and loss of condition. Sonography of abdomen revealed hyper-echoic mass with acoustic



shadow in both the cases with a normal hepato-biliary echotexture. Radiographic imaging revealed presence of opaque spherical mass in the first case and opaque irregular mass in second, in the cranial abdomen. On Laparotomy of both cases under general anaesthesia revealed obstruction in the distal part of duodenum. It was managed by enterotomy leading to retrieval of a plastic crazy ball (dia. 1") and part of ceramic kettle lid of a toy from both the cases respectively. Eventless healing occurred was reported in both the cases.

**SAP-65 Unusual Scrotal Tumour in a Dog – A Report**

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A mongrel dog aged about 7 years having large hard swelling around the scrotum since 8 months was presented to the University Veterinary Hospital. The tumor was involving whole of the scrotum but testicular involvement was absent. Gross and histopathologically the tumor appeared to be benign. The case was managed by bilateral orchidectomy and total scrotal ablation. The testes were healthy without any adhesion or gross pathology of parenchyma, adnexa or tunics.

**SAP-66 Agenesis of External Acoustic Meatus in German Shepherd Dog – A Report**

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A German shepherd dog aged 9 months was having congenital absence of right external ear opening. On development of swelling and pain the owner reported with the pet at the university veterinary clinic. Clinical and sonographic examination and paracentesis of the swollen area was done. Exploration and reconstruction of the canal was decided and carried out under general anaesthesia. The lateral wall of the canal was opened leading to discharge of thick paste like sebum. Removal of a slice of the lateral cartilage suture apposition of the edges led to almost anatomical normalcy. Post operative care included NSS irrigation and antibiotic instillation, apart from a course of broad spectrum antibiotic and analgesic. A peculiar anatomical defect and its successful reconstruction leading to eventless recovery is reported.

**SAP-67 Scrotal Trauma and Scrotal Ablation in German Shepherd Dogs**

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Five German Shepherd dogs were presented with pendulous, maggot infected scrotum, complete anorexia and swollen hind limbs. Among these two dogs, which were subjected to medical and local wound treatment became futile. The other dogs which were subjected to Scrotal Ablation under general anesthesia recovered spontaneously. Since German Shepherd dogs are more hairy, scrotum is more soft and prone for maggot infestation frequently. Due to this swelling of scrotum, edema of dependent parts and even hind limb is very common. Scrotal Ablation is the suitable surgical method to treat such cases.

**SAP-68 A Case of Gastric Tumour- Adenocarcinoma in a Dog**

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A seven year old male, non-descript dog was brought to Madras Veterinary college, Surgery unit with the history of chronic vomiting for the past 6 months immediately after taking food. It was anaemic and dehydrated. Positive contrast radiographs revealed distended stomach with obstruction in the pyloric region. On the left of pyloric antrum, gastrotomy revealed growth involving entire circumference of pyloric antrum. Maximum resection of growth was done. On the right side,

pyloromyotomy was done to dilate the lumen. Histo-pathologically, it was diagnosed as adenocarcinoma. Postoperatively, intense fluid therapy was given for a week and dietary management was advised. The case was followed for a period of six months, which revealed no further obstruction of the pylorus.

**SAP-69****A Rare Case of Squamous Cell Carcinoma of Tongue**

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An eleven year old, male Lhasapso was referred for treating dental plaque. Ptyalism, halitosis, and dental plaque were noticed. The lesion on the tongue was an incidental finding. The base and middle portion of rostral surface of tongue had ulcerative lesions of about 3 cm length and was perforated in the middle. The sublingual region had friable, cauliflower-like appearance on the surface, approximately 4cm in diameter. Fine needle aspiration biopsy result was confirmative of squamous cell carcinoma. On radiographic evaluation, no metastasis was noticed. According to World Health Organisation TMN staging system for tumors of oral cavity, the clinical stage for tumor was III and the survival rate for 1 year is 35%. Also, the surgical excision would involve base of the tongue in such cases and prognosis was poor. Thus, the dog was euthanised on humanitarian grounds as requested by the owner.

**SAP-70****The Relationship of Different Stages of Cataract to Intraocular Pressure Using Tonopen-Vet in Dogs**

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Dogs presented with visual deficit due to different stages of cataract were studied for the distribution of intraocular pressure, as measured by applanation tonometry (Tonopen-Vet). Cataractous eyes without any signs of glaucoma, receiving no topical or systemic medications were selected for the tonometric measurements. The cataracts were staged based on the degree of opacification, clinical vision, presence of "Y" suture and visibility of ocular fundus as tapetal reflection, by indirect ophthalmoscopy. The tonometric results were grouped under different stages of cataract like incipient, immature, mature and hypermature cataracts. The results are compared statistically and presented.

**SAP-71****Fortified Antibiotic Drops for the Management of Chronically Infected Corneal Ulcers in Dogs - A Review of Eight Cases**

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Eight dogs of different breed, age and gender presented to the Small Animal Ophthalmology Unit of Madras Veterinary College Teaching Hospital with corneal ulcer unresponsive to routine topical antibiotic eye drops were subjected to detailed ophthalmological examination, followed by antibiotic sensitivity testing of the ulcer bed. Results revealed culture sensitive to amikacin, but resistant to the routine topical antibiotic eye drops. Fortified amikacin eyedrops were prepared in artificial tears and administered thrice daily for varying periods. Condition of the affected eyes improved gradually, judged by the reduction in the ulcer size and fluorescein stained areas. All ulcers showed good healing compared to those ulcers in which routine eye drops were applied. The importance of fortified antibiotic eye drops in ocular therapeutics is highlighted here.

**SAP-72****Phacoemulsification as a Novel Option for Removal of Luxated Lens in Dogs - A Report of Three Cases**

*C. Ramani, Sooryadas, S., Kavitha, V., M. Shiju Simon and R. Sureshkumar*  
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Three dogs of different breed, age and gender was presented to the Small Animal Ophthalmology

Unit with complaint of visual deficit. Luxation of lens was identified on ophthalmological examination. In order to prevent progressive damage to the eyes, surgical removal of the luxated lenses were resorted to. Contrary to the conventional intracapsular cataract extraction technique, the luxated lens materials were extracted by bi-manual phacoemulsification followed by capsular bag extraction. The technique of ICCE using phaco and the importance of small corneal incision is highlighted here.

## SAP-73

#### **Anterior Chamber Centesis as an Emergency Relief Procedure for Aphakic Glaucoma in Five Dogs**

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Five dogs of different breeds, age and gender presented to the Small Animal Ophthalmology Unit of Madras Veterinary College Teaching Hospital with lens instability and subjected to intracapsular cataract extraction (ICCE) were noticed with severely elevated intraocular pressure (IOP) of the range 59 to 72 mm Hg on subsequent follow-up visits at 14<sup>th</sup>, 15<sup>th</sup>, 16<sup>th</sup>, 18<sup>th</sup> and 20<sup>th</sup> post-operative days respectively. The IOPs were measured using applanation tonometry (Tonopen-Vet). As an emergency relief procedure, aqueous humour centesis was done for all affected eyes, to decompress the anterior chamber and reduce the IOP. The eyes were then maintained on topical medications until definitive surgical procedures. Anterior chamber centesis was found very effective in reducing the severely elevated IOP, on an emergency basis, enabling effective planning of definitive surgical procedures.

## SAP-74

#### **Intraocular Pressure Changes in Dogs Induced with Propofol Following Xylazine or Tramadol-Acepromazine/Tramadol-Diazepam Premedication for Ocular Surgeries**

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Dogs of different breed, age and gender operated for various surgical conditions in the Small Animal Ophthalmology Unit of Madras Veterinary College Teaching Hospital were examined for intraocular pressure (IOP) at specified intervals of the anaesthetic administration and also following recovery. They were grouped into three based on the anaesthetic combinations given. Group I dogs received Atropine-Xylazine-Propofol combination. Group II dogs received Atropine-Acepromazine-Tramadol-Propofol combination. Group III dogs received Atropine-Tramadol-Diazepam-Propofol combination. Dogs of all groups were maintained with isoflurane. IOPs were recorded before atropine, 10 minutes after atropine, 10 minutes after Xylazine, 15 minutes after Acepromazine-Tramadol, 15 minutes after Tramadol and immediately following intravenous diazepam, immediately after induction with Propofol and after recovery. The results are statistically analysed and presented.

## SAP-75

#### **A Rare Case of Multiple Congenital Recto Vaginal Fistulae in Basset Hound.**

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Abnormal embryonic development of cloacal region in puppies is responsible for congenital abnormalities of rectum and anus. A Basset Hound pup was presented with history of Atresia ani and passage of faeces through the vulva. The anal sphincter was present normally. The pup had signs of vulvar irritation, tenesmus and perianal dermatitis. Animal was anorectic and had abdominal enlargement. Provisionally it was diagnosed to have atresia ani with rectovaginal fistula. Abdominal radiography was carried out to determine the terminal position of the rectum which was within the pelvic cavity. Positive contrast radiography of rectum and vagina was attempted but did not reveal enough. Under General anesthesia ventral incision was made over the anal dimple preserving the anal sphincter. The distal portion of the rectum was identified and bluntly dissected from the surrounding tissue. The distal rectal pouch was brought out of the sphincter muscle. The fistula was corrected surgically through a transverse incision between the anus and the vulva. However multiple fistulae were observed one behind the other which was intricate to close surgically. The rectum was transected

cranial to the fistulous opening and the affected segment was removed and terminal rectum sutured to the anus. Fecal incontinence and mild wound dehiscence was observed post operatively during recovery period.

SAP-76

### Post-Operative Behavioural Changes Used as Indicators of Pain in Ovariectomized Dogs

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Department of Veterinary Surgery and Radiology SKUAST-J

The present study was conducted in 5 clinically healthy animals to investigate post-operative behaviour changes for assessing post-operative pain after elective ovariectomy. Premedication was done with atropine @ 0.04 mg/kg, SC and diazepam @ 0.3mg/kg, IV. In all the groups, ovariectomy was performed through mid-ventral incision under general anaesthesia induced and maintained with 5% thiopentone sodium IV. Animals were approached for recording of behaviour changes at 2, 4, 8, 14 and 20 hours after surgery. Pain scores reduced progressively with the period of time. Among various behaviours, response to manipulation of wound was the most indicative of pain during post-operative periods, whose mean value was frequently  $\geq 1.40$ , which was followed by postural changes.

SAP-77

### Surgical Excision of an Extensive Growth in a Non-Descript Dog

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An adult, non-descript, male, dog was referred to TVCC at KNPCOVS, Shirval with history of extensive hard swelling on the left side of the face since last two months and inappetance. On clinical examination, the swelling was found to be a large tumorous mass in close proximity of the jugular vein and carotid artery. The mass was excised under 5% thiopentone sodium general anaesthesia at the dose rate of 11 mg/kg body weight intravenous and sedation with triflupromazine hydrochloride at the dose rate of 1 mg/kg body weight. The dog recovered uneventfully over the next two weeks and no reoccurrence has been observed till todate and animal is healthy, without any clinical symptoms of pain or loss of functionality.

SAP-78

### Cystic Calculi in 3 Bitches

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Three female dogs were presented to BSPCA hospital during three month period with the history of difficult urination and blood in urine. On clinical examination bladder was fully distended. Radiographs revealed calculi in the bladder obstructing neck of bladder. Hematobiochemical tests revealed increase in creatinine and blood urea nitrogen in all 3 cases. One case showed increase in neutrophils. Emergency cystotomy was performed in all cases under general anesthesia using propofol @ 4 mg/kg. Microscopic examination of stones showed 2 Struvite and 1 calcium oxalate stones. Post operatively dogs with struvite stone were treated with broad spectrum antibiotics cefotaxim (50 mg/kg), also daily catheterization and flushing was done with betadine. Dog with calcium oxalate stone was treated with sodium bi-carbonate and change of diet was advised.

SAP-79

### Surgical Management of Obstructive Cystolith in a 6 Years Old Cat

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A 6 years old male cat was presented at BSPCA hospital, Parel with history of not passing urine since

two days and fed on dry cat food daily. Radiograph showed single stone obstructing neck of bladder with distended bladder in abdominal cavity. Emergency cystotomy was performed under general anesthesia using siquil (2mg/kg) and ketamine (20 mg/kg). Totally congested bladder was emptied by cystocentesis and small stone was removed. Chemical analysis of stone revealed calcium oxalate crystals.

**SAP-80****Foreign Bodies in Canines – Case Report of 3 Dogs**

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Three dogs were presented at BSPCA hospital with the history of ingesting foreign body and vomiting. Immediate radiography of abdomen showed presence of foreign body in pylorus. Dogs were operated for emergency laparotomy under general anesthesia using propofol @ 4 mg/kg. Two sewing needle and one playing ball were removed successfully. Post operatively dogs were maintain on fluids for three days then started with liquid diet and discharged after 10-12 days.

**SAP-81****Successful Hernioplasty of Bilateral Perineal Hernia using Synthetic Prolene Mesh**

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A ten year old Doberman dog was presented to private clinic with history of swelling on perineal region, difficult urination and no history of castration. On clinical examination there was a hard swelling at right perianal region suggestive of prostate involvement and soft swelling at left perianal region. Hematobiochemical analysis revealed low hemoglobin and increased creatinine. Dog was stabilized by fluids and iron preparation for 4 days. Hernioplasty was done under general anesthesia using synthetic prolene mesh. Prostate enlargement was found on right side which was replaced inside pelvic cavity. Mesh was sutured with levator ani muscle and coccygeus muscle. Dog was kept on liquid diet and fluids for 7 days. Other side was operated after 10 days by same technique.

**SAP-82****Femoral Head Osteotomy in a Dysplastic Labrador**

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An 8 month old inbred Labrador dog of 22 kg was presented with lameness of the left limb and weakness of rear limbs since 3 months. The lameness was evident as intolerance to exercise, with short painful steps while running. It was treated with analgesic medication with Carprofen (Rimadyl) and Megaflex (for 1 month) Radiographically, the femoral head appeared displaced from the acetabulum and the laxity was evident by reduction of the Norberg angle. The acetabulum appeared shallow with minute osteophytes on its rim, suggestive of early arthritis. Hemogram and other physical parameters were within normal range. Femur head arthroplasty was done under halothane anaesthesia. Post operative Thomas splint was applied and aggressive rehabilitation was advised. Dietary control to maintain body weight below 20 kg was advised. Hence FHO was performed to relieve the pain caused due to rubbing of the two painful articular surfaces onto each other causing lameness.

**SAP-83****Leiomyoma of Intestine in a Spitz Dog- A Case Report**

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A female Spitz of about one year age was reported with the history of constipation and dark brown faeces since 10-15 days. The dog was refractory to the medicinal management. Plain radiograph revealed gas filled distal intestinal loop with calcified shadows within the walls. Exploratory laparotomy revealed thickened ileum walls about six inches with corrugated mucous membrane. The

part was resected out and end to end anastomosis was performed. The dog was clinically normal for about one year of follow-up observation.

SAP-84

#### **Autogenous Vaccination for the Treatment of Venereal Granuloma in Canines**

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Total 41 dogs of either sex suffering from venereal granuloma as confirmed from clinical symptoms and histopathological studies were treated with sub-mucosal resection of the granulomatous growth followed by the autogenous vaccination prepared in 4% formal saline. Hematological parameters studied at the regular intervals revealed lymphocytosis and relative neutropenia. Biochemical parameters revealed increased total serum proteins and serum globulin. Recurrence was noted in 10 cases after three months period. The ELISA for assessing the antibody production was also studied.

SAP-85

#### **Effect of Vincristine Sulphate on Venereal Granuloma in Canine -A Histopathological Study of 68 Cases**

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Total 68 dogs of either sexes which were suffering from venereal granuloma as confirmed from clinical symptoms and histopathological studies were treated with vincristine sulphate at the dose rate of 0.025 mg/kg body weight at weekly interval till the complete regression of the granuloma. The histopathological study of granulomatous tissue was undertaken before initiation of vincristine therapy and at the scheduled intervals to study the effect of drug on the histological changes. The biopsy sample on day '0' showed uniform round to polyhedral cells with round nucleus bearing prominent nucleoli. Mitotic figures were frequently observed. The biopsy samples at scheduled intervals of day 7, 14, 21, 28 and 35<sup>th</sup> day revealed gradual reduction in number of neoplastic cells with increase in relative population of lymphocytes, and neutrophils. At 35<sup>th</sup> day the biopsy samples revealed proliferation of prominent fibrous connective tissue with negligible number of neoplastic cells within the fibrous connection tissue. The presence of lymphocytes during the regression stage confirmed the cell mediated immune response. The chemotherapy induced necrosis of the neoplastic cells was evident by the presence of scavenging neutrophils on day 14<sup>th</sup> in the biopsy specimen. The investigation confirmed that the tumour regression as a result of chemotherapy was observed during histopathological studies of biopsy samples collected at scheduled intervals of the chemotherapy.

SAP-86

#### **Some Observations on Extra-Genital Venereal Granuloma in Canine**

*S. V. Upadhye, V. S. Panchbhai, M. S. Dhakate, S. B. Akhare, Gauri Khante, Rohini Tembhumne, Mrinal Kamble, and Prachi Taksande.*

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Total 177 cases of venereal granuloma were presented for the treatment during the period 2006 to 2009. Out of these, primary extra-genital venereal granulomas were four whereas the extra-genital metastasis was observed in 11 cases. The primary extra-genital growths were observed at sites such as oral cavity (02), nasal cavity (01) and inguinal canal (01). The diagnosis was confirmed histopathologically after taking the biopsy samples from the growth directly. In one case, the ultrasound guided biopsy sample was obtained. The cases responded to surgical resection or chemotherapy with vincristine sulphate.

- SAP-87** **Uterine Fibroid in a German Shepherd Dog**  
*Gauri Khante, S. V. Upadhye, M. S. Dhakate, B. M. Gahlod, Ankur Sharma, Prachi Taksande and Shalaka Salvekar*  
 Nagpur Veterinary College, Nagpur- MS

A German shepherd nulliparous bitch of about 6 years age was reported to the SPCA Hospital with the history of vaginal bleeding and mucopurulent discharge through the vagina for one month. Clinical examination revealed two hard fluctuating masses in the pelvic cavity. Per vaginal examination revealed normal vaginal canal. Hysterectomy was performed. Two hard tumour masses were observed bilaterally in the lumen of the uterine horns. Histopathology confirmed the fibroid, a tumour frequently encountered in canine internal genitalia.

- SAP-88** **Surgical Management of Inflammatory Myofibroblastic Mesenteric Tumor in a Female German Shepherd Dog**  
*C. B. Devanand, M. K. Narayanan, K. Rajankutty, K. S. Raghavan and P. Reshmi*  
 College of Veterinary & Animal Sciences, Mannuthy, Thrissur, Kerala

An eight month old female German Shepherd Dog was presented to the University Veterinary Hospital, Kokkalai, Thrissur with the history of vomiting, reduced food intake, straining while defaecating and at times with diarrhoea since one week. The dog was subjected to detailed clinical examination. On palpation presence of hard round masses were detected in the abdominal cavity at the ventral aspect. Radiographic examination could not reveal any enteric foreign body. Ultrasound scanning of abdomen could cast shadow of mixed echogenic mass of varying sizes in the lower abdomen extending towards the anterior quadrant. The haematological values were within the normal physiological range. On laparotomy under atropine -xylazine premedication and ketamine anaesthesia and maintenance with diazepam and midazolam, it could be confirmed as lobulated enlarged masses on the mesentery extending over 10 inch length of mesentery having adhesions with omentum and exerting pressure on the adjacent intestinal loops. The affected portion of mesentery and intestinal segments were sectioned and enteroanastomosis was performed after ligating the blood vessels. Postoperatively parenteral antibiotics and fluids were administered for five consecutive days and the dog gradually regained normal food and voiding habits by one week and had an uneventful recovery. On histopathological examination the resected portion of mass, the condition was diagnosed as inflammatory myofibroblastic tumor of mesentery.

- SAP-89** **Surgical Management of Unicornual Pyometra in a Bitch**  
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 College of Veterinary & Animal Sciences, Mannuthy, Thrissur, Kerala

A five and half year old non-descript bitch was presented to the University Veterinary Hospital, Kokkalai, Thrissur with the history of off-feed and vomiting. On palpation the abdomen was tensed and painful. Ultrasonographic examination revealed anechoic pockets in uterus indicative of pyometra. The dog was treated with dextrose saline, augmentin and polybion for three days prior to the surgery. Panhysterectomy was performed through midventral laparotomy under atropine-xylazine premedication and ketamine-midazolam anaesthesia. The right uterine horn was distended with seropurulent semifluidy content and the other was normal. The bitch was maintained on parenteral fluids and antibiotics for three consecutive days postoperatively followed by oral medications for succeeding five days. The animal had an uneventful recovery.

- SAP-90** **Applied Anatomy of Mandible in Dog**  
*Anuradha, Neelam Bansal, and Varinder Uppal*  
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Applied anatomy is one of the foundations of clinical and surgical practices because it enables the surgeon to visualize details of structures relevant to the case at hand. The foramina of skull are of

clinical importance in regional anesthesia around head. So the present study was elucidated on 20 mandibles of dog to provide information on some of clinically important parameters of lower jaw. The measurements were done with metric rule and results were presented in mean  $\pm$  SE. The study revealed that length and height of mandibles were  $13.58 \pm 0.002$  and  $5.3 \pm 0.021$  cm, respectively. The distance from lateral alveolar border to mental foramen and from mental foramen to base of mandible were  $1.38 \pm 0.008$  and  $0.99 \pm 0.004$  cm, respectively. The parameters from mandibular foramen to caudal mandibular border, height of condyloid fossa, and infraorbital canal to root of alveolar teeth were  $10.56 \pm 0.026$ ,  $2.88 \pm 0.127$  and  $0.72 \pm 0.002$  cm, respectively. These parameters will form a baseline for performing nerve blocks and surgery on alveoli and teeth of lower jaw in small animals.

## SAP-91

**Management of Corneal Dystrophies in Pugs – A Report of 6 Cases**

*D. B. Patil, P. V. Parikh, Nisha Joy, S. K. Jhala, Kurush Mistry and B. G. Prajapati*  
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Six clinical cases of pugs (1 month - 3 years) were diagnosed and treated for corneal dystrophies. History of trauma was ruled out in all the cases. On presentation, two cases had unilateral corneal opacity and ulcer in four. In four cases of ulcers history revealed initial corneal opacity which led to ulceration even after medical therapy. All animals were subjected to routine ophthalmic examination along with fluorescein staining and indirect ophthalmoscopy. Staining was positive in 4 cases and on gross examination under illumination loose epithelial lips were present on the ulcer edges. In all the cases treatment were initiated using topical anti-inflammatory drugs, antibiotics and cycloplegics along with autologous serum. This was found to be effective after prolonged therapy. In one case of melting ulcer with signs of endophthalmitis, punctate keratectomy was performed. Vitreocentesis followed by microbial culture was negative. Later evisceration was done. In another eye of the same pug topical acetylcysteine and treatment for glaucoma was found effective.

## SAP-92

**A Retrospective Study of Hip Joint Affections in 765 Dogs**

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Radiographs taken on pelvis in ventro-dorsal view during the period of 2004-2009 in Madras Veterinary College were reviewed in this study. Of the 1089 cases suspected on clinical examination to have the hip joints affections, 73% (765) cases were found to have canine hip dysplasia (CHD), osteoarthritis, dislocation or subluxation or a combination of any of these conditions. Of these, the incidence of CHD was highest (42.05%), followed by osteoarthritis (16.62%). CHD was mostly from Labrador Retriever (32.33%). German Shepherd dogs topped the list in osteo-arthritis, both bilateral CHD and osteo-arthritis and both bilateral CHD and sub-luxation which were 31.03%, 30.30%, and 39.13% respectively. Similarly, dislocation was mainly in non-descript breeds (40.29%). Also, most number of cases of hip dysplasia and subluxation were observed between 3-6 months; hip dislocation between 1-2 years and osteo arthriris after 6 years of age. In all the conditions, male dogs were most frequently affected.

## SAP-93

**Surgical Management of Deep Cervical Plasma Cell Tumor in a Spitz**

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A three year old male spitz was presented to Surgery unit of Madras Veterinary College teaching hospital with the history of severe dyspnea and open mouth breathing. Physical examination revealed highly inflamed and ulcerated tonsils bilaterally occluding the glottis and fist sized growth on the left side of the neck, below the angle of mandible. Radiograph showed narrowing of cranial part of trachea. Surgery was performed under general anesthesia with isoflurane. Capsulated tumour mass of about 7cm diameter was positioned deep within the muscles of neck, bordered by jugular vein and carotid artery laterally. These blood vessels were carefully isolated and tumour was exteriorized along with the capsule after ligating the blood vessels supplying the tumour. Normal respiratory pattern was



observed immediately after removal of the mass. Histo-pathological results were suggestive of plasma cell tumour. The animal made an uneventful recovery. The other details about the case will be discussed.

**SAP-94 Surgical Correction of Congenital Stenosis of Preputial Orifice in Puppies – A Review of Three Cases**

*Mohd. Shafiuzama, M. Shiju Simon, S. Sooryadas, C. Niranjana and R. Suresh Kumar*  
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Three cases of congenital stenosis of preputial orifice presented to the Small Animal Surgery Unit of the Madras Veterinary College Teaching Hospital with the history of inability to void urine since birth and the swelling behind the umbilicus were included in this study. On clinical examination, all cases revealed stenotic prepuce, which were swollen and distended. Under general anaesthesia, craniodorsal triangular shaped openings were made on the prepuce to maintain the patency. Puppies made an uneventful recovery. Congenital preputial stenosis is rare and the details will be discussed.

**SAP-95 Incidence of Pyometra in Bitches - A Survey of 278 Cases**

*Mohd. Shafiuzam, M. Shiju Simon, C. Niranjana, R. Ganesh, R. Suresh Kumar and B. C. Das*  
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Survey radiography was undertaken to analyse pyometra in bitches reported to Radiology Unit of the Madras Veterinary College, from September 2007-August 2009. A total of 278 cases of pyometra were reviewed in this study. Breed and age wise incidence was highest in spitz (39.08 percent) and above seven years of age (58.24 percent). The pyometra occurred even in bitches below three years of age (12.94 percent) in which repeated priming of uterus with progesterone was minimum. The details will be presented and discussed.

**SAP-96 Diagnosis and Surgical Management of Intestinal Obstruction in Canines**

*Tarunbir Singh, M. Raghunath, J. Mohindroo, N. Singh, V. Sangwan and A. Gopinathan*  
COVS, GADVASU- Ludhiana

The present report comprised of 12 dogs of different breeds suffering from intestinal obstruction. Inappetance, inability to pass faeces, melena and progressive deterioration of the general condition were the common clinical findings in most of the animals. The disease was more common in young animals with 11 suffering animals belonging to age below 6 months. Disease was more common among male dogs (11/12). Mongrel dogs were the commonly affected. Among various affections intussusception with or without rectal prolapse were most commonly found (9/12). The diagnosis of the conditions were made on the basis of clinical history, visual examination, abdominal palpation, radiographic examination and Ultrasonographic examination. Surgical management was performed for relieving obstruction was performed in 11 animals. One animal was euthanized as owner did not want to get it treated. Foreign bodies were removed by performing enterotomy. Intussuscepted mass was relieved either by gentle pulling or in delayed cases where intussusception led to necrosis and severe adhesions, enterectomy followed by end to end anastomosis was performed. All the animals recovered during the follow up period.

**SAP-97 Management of Traumatic Wound in Dogs Using Natural Non-Immunogenic Sterile Biological Skin Cover**

*D. K. Dwivedi, Ankur Sharma, N. K. Singh, H. R. Bhardwaj, Nasir Altaf Zargar and Aditya Sharma*

F. V. Sc & AH, SKUAST-Jammu

In present study a sterile collagen in sheet form derived from Bovine sources was used as a temporary skin substitutes to cover the traumatic skin loss in a dog. Before the application the denuded areas were thoroughly cleaned for external contamination, followed by effective debridement. The surrounding

area was clipped properly and painted with povidone iodine solution. The collagen sheet was selected as per the dimensions of wound. The sheet was taken out from the preserving medium and then rinsed in normal saline solution before application. The sheet was firmly applied and ensured no any air bubbles for an effective adhesion. The collagen sheet peels off after 12 days and epithelialisation begins. The report details about anesthesia, technique of application, post-operative care and its outcome.

**SAP-98****Efficacy of Low level laser therapy on healing of clinical open wounds in dogs: haematological & biochemical studies**

*M. Singh, M. K. Bhargava, A. Shahi, A. P. Singh, S. Jawre, R. Singh and M. Swami*  
COVS & AH, Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur- M.P.

The present study was carried out in 30 dogs. The dogs were randomly divided in to 5 groups, each group consist of 6 animals. The various types of wounds including chronic fibrosed, deep laceration, maggotised, dog bite and accidental traumatized wounds were treated by conventional treatment in group I and by low level laser therapy using 2 min.:10 Hz: 1.2 Joules, 4 min.:10 Hz:2.4 Joules, 2 min.:30 Hz: 1.2 Joules, and 4 min.:30 Hz:2.4 Joules of energy respectively in groups II, III, IV and V dogs respectively. The estimation of haematological & biochemical attributes in blood showed non significant variation in the values of haemoglobin, packed cell volume, total leucocyte count, neutrophil, lymphocyte, monocyte, eosinophil count & total protein, whereas, non significant increase in the values of blood glucose, serum albumin, alkaline phosphatase, & creatinene kinase in all the five groups of animals at different time intervals. The comparison between the control & treatment groups of animals showed significantly high value of Hb, TEC & lymphocyte, whereas low value of neutrophil count in treatment groups of animals. Non significant variation was observed in the values of PCV, TLC, monocyte, eosinophil, blood glucose, total protein, serum albumin, alkaline phosphatase & creatine kinase. The above observations indicate that low level laser therapy had no vital effect on the normal haematological & biochemical constituents of the body.

**SAP-99****Radiographic, Sonographic and Laparoscopic Identification of Uro-Genital Organs in Dogs**

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The present study was under taken on eight female dogs, aged 2-8 years. These animals were subjected to radiographic, sonographic and laparoscopic examination to study the normal features of both the kidneys, ureter, urinary bladder, ovaries, uterine horn and body of uterus. Clinical parameters rectal temperature, respiration & heart rate showed non significant variation at different intervals during the period of observation. In plain radiographic examination both the kidneys, ureter and bladder were visualized poorly, while on double contrast radiographic examination they could be visualized clearly. Ultrasonographically kidney, urinary bladder, ovaries and uterus could be visualized and it was possible to measure the size of these organs and internal architecture could also be observed. During laparoscopic examination left kidney was visualized more easily as compared to right kidney. The visualization of shape, size, colour and peripheral blood circulation of kidney, ureter, urinary bladder, ovaries, uterine horn and uterus was possible by laparoscopic examination.

**SAP-100****Radiographic, Ultrasonographic and Laparoscopic Diagnosis of Benign Prostatic Hyperplasia in Dogs**

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The present study was conducted on clinical cases of 34 male dogs, irrespective of breed and age, showing the sign of urogenital disorders. After physical examination temperature, pulse rate and respiration rate were recorded. Radiographic ultrasonographic and laparoscopic examination was performed in all the animals followed by urine analysis and haemato-biochemical examination. Benign prostatic hyperplasia was diagnosed in eleven cases (32.35%) of different breeds out of 34

cases. The age of the affected animals was between 7-12 years. Lateral radiographs revealed faint image of prostate in the abdominal cavity. Ultrasonographically, the prostate was visualized as hypoechoic to normoechoic, uniform mass surrounded by hyperechoic capsule and ventro-dorsal and anterior-posterior measurements were 2.24 to 6.89 cm and 2.23 to 5.26 cm respectively. One case of benign prostatic hyperplasia was associated with cystitis. Laparoscopically, the prostate was visualized as bilobed, pale yellow in colour and enlarged symmetrically. The urine was dark yellow in colour with thick consistency containing epithelial cell cast, WBC, RBC and protein. Haematological values were within normal limit, whereas increase in BUN was observed in all the cases while serum creatinine was high in three cases. For diagnosis of cases of benign prostatic hyperplasia ultrasonography was found best followed by laparoscopy and radiography.

**SAP-101 Successful Repair of an Open Grade IV Diaphyseal Femur Fracture with Interlocking Nailing and Autogenous Cancellous Bone Grafting**

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An open, grade IV diaphyseal femur fracture in a 3 year old, female, pointer dog was repaired with static intramedullary interlocking nailing along with seven full circlage wires. Many irreducible bone wedges were discarded and the gap between the fractured ends was filled with autogenous cancellous bone graft collected from iliac crest which acted as a source of osteogenesis. The dog showed complete weight bearing on 10<sup>th</sup> post operative day and complete bone union with cortical and medullary continuity was observed on 120<sup>th</sup> post operative x-rays and dog made an uneventful recovery. Highly unstable fractures could also be successfully treated with interlocking nailing and autogenous cancellous bone grafting.

**SAP-102 Ultrasonographic and Laparoscopic Diagnosis of Bilateral Hydronephrosis in a Dog - A Case Report**

**D. K. Tiwari, S. Jawre, A. Shahi, M. K. Bhargava and R. Singh**

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A 6 year old male Labrador weighing about 30 Kg was brought to the TVCSC with the history of urinary incontinence, dull and depressed from 3 days. On physical examination of the animal was dull, depressed and the abdomen was found tense and turgid. The rectal temperature was elevated with decreased pulsation. The haemato-biochemical analysis revealed increased BUN and creatinine. Lateral radiograph showed faint radiolucent homogeneous soft tissue density of right and left kidneys. On ultrasonographic examination, the texture of both the kidneys was found altered with mild dilatation of medulla showing anechoic areas, suggestive of hydronephrosis, which was confirmed by laparoscopic examination in which both the kidneys were seen slightly rounded and turgid, showing typical mosaic like appearance. The animal was treated by Inj. Intacef tazo @ 10-15 mg/kg b.wt., Inj. Aciloc 2ml, Inj. Lasix 2ml I/M along with 200ml of Inj. Isolyte - M I/V for 10 days. Animal recovered completely within 20 days.

**SAP-103 Laparoscopic Guided Biopsy of Liver and Spleen in Dogs**

**D. K. Tiwari, S. Jawre, M. K. Bhargava, A. Shahi, V.P. Chandrapuria, R. Singh and M. Swami**

COVS & AH, Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur- M.P.

Clinical cases of six dogs irrespective of breed, age and sex brought to TVCSC with liver and splenic disorders were selected for the present study. The complete physical examination of all the animals was carried out to ensure their physical status. The laparoscopic guided biopsy tissue was collected from the liver and spleen of these animals by inserting the laparoscope from midline and biopsy forceps through lateral abdominal approach, to diagnose the affections of these two organs. The biopsy samples from liver and spleen were collected from their edges during laparoscopic examination by using 5 mm oval cup biopsy forceps. The biopsy cups were opened and then closed around the sample area. The cups were held tightly closed for approximately 30 seconds before pulling out the sample

away from sampling organ. The bleeding from the biopsy site was checked by the using bipolar electric cautery. On the basis of present study, it was concluded that laparoscopy is a simple, effective and safe technique for obtaining biopsy specimens, which constitutes an important method for diagnosis of disease of these organs.

**SAP-104****Use of MRI to Diagnose Cervical Stenosis in a Pug Puppy**

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Indian Veterinary Research Institute, Izatnagar, Bareilly- UP

This paper presents a difficult a convoluted clinical case in which MRI was used to make a diagnosis. A six month old male puppy was referred for second opinion and to assist diagnosis to surgery unit of Referral Veterinary Polyclinics, IVRI, Izatnagar with a history of ataxia. On clinical examination painful gait and reluctance for movement was observed. The results of plain radiography of cervical spine and forelimbs were not of much value. Symptomatic treatment with NSAID and electroacupuncture was instituted despite which pain and lameness persisted. The unrewarding results of treatment compelled for MRI, and the image revealed stenosis at C1 - C2 level.

**SAP-105****Surgical Management of Vaginal Hyperplasia and Prolapse in a Bitch**

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A two year old female pug was presented with a history of Type 3 Vaginal prolapse. The bitch was treated by a local veterinarian but was unsuccessful. On clinical examination the mass was found to be doughnut shape, ulcerated and edematous. The animal was prepared for surgery following premedication with Atropine and Xylazine @ 0.04mg/kg and 10mg/kg intramuscularly. Anesthesia was induced with a combination of ketamine and diazepam @ 5mg/kg and 0.5mg/kg intravenously. The dog was kept in ventral recumbency with the hind quarters elevated. The external urethral orifice was identified and catheterized. A circumferential incision was made around the hyperplastic vagina and the prolapsed portion was amputated. The proximal and the distal edges of the wound in the mucous membrane after amputation were sutured with 1-0 catgut in a simple continuous pattern taking care not to include the urethra in the suture line. A tamponade was kept in place for 2 hours to arrest bleeding. The recovery was uneventful.

**SAP-106****Management of Acquired Megacolon in the Dog with a New Surgical Method**

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Megacolon is a disorder characterized by recurrent constipation and obstipation associated with dilatation and hypomotility of the colon. Causes of megacolon prolong distention, neurologic trauma, behavioral abnormalities, pelvic fracture and improper diet. Treatments in sever cases provided by subtotal colectomy. In this report four dogs with megacolon had a history and clinical and radiographic evidence of a large colon, which was confirmed by exploratory coeliotomy via midline approach. Colotomy was performed in all cases and then descending colon was sutured to left psoas major and psoas minor muscles. RESULTS: Two dogs were completely treated two months after surgical method and obtained normal function and performance. At that time (2 months after surgery) radiographic assessment with barium sulfate was carried out, and colon was attached to those muscles near the lumbar vertebrae. One dog died 3 days after surgery and another one died 15 days; after that on necropsy, finding showed acute diffuse peritonitis in the first case, and no any certain sign could be ascertained in necropsy of second died dog. CONCLUSION: Although there are different procedures in surgical treatment of megacolon, the present mentioned method can also be used successfully with them in megacolon cases.

**SAP-107 Fracture Immobilization of Humerus in a Cross Bred Rabbit***J.K. Das, I. Nath, T.K.Pattanaik, R.K. Rout*

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One cross bred rabbit of 3 month old was presented to TVCC with a problem of not able to walk and swollen leg. It was confirmed on radiological exam of complete fracture of humerus at midshaft of Rt side. 2 mm intra-medullary pin was introduced at the fractured site after exposing the fractured ends in retrograde manner and then it was fixed. Modified Thomas splint was applied to prevent rotation. It was kept for 15 days and was removed. After slight physiotherapy; the animal was able to move.

**SAP-108 Prognostication of Canine Cataract Surgery***V. P. Chandrapuria, Vikas Kumar, A. Shahi, , Brijesh Choudhuri, S. Jawre, M. K. Bhargava and R. Singh*

College of Veterinary Science and Animal Husbandry, Jabalpur

The present study was conducted on 12 healthy clinical cases of cataract dogs, divided in to two groups with 6 dogs in each. In group I, ECCE was performed whereas in group II, IOL was implanted following ECCE. A prognostic index was prepared on the basis of pathological changes and type of cataract to evaluate the suitability of various surgical procedure for canine cataract. The temperament of the patient and sincerity of owner for postoperative care and the technical know- how of the surgeon have direct correlation with the outcome of the case. The senility, immature cataract and the pre-existing ocular pathology showed poor prognosis following surgery. B. mode USG is found satisfactory for evaluating pathology of anterior segment of eye which directly governs the prognosis of the case. The pre operative ophthalmic examination that is Schirmer Tear Test, Tonometry and neuro opthalmic especially obstacle and dazzle response have positive correlation with favorable outcome of the surgery and can be used at prognostic index. It may concluded that ECCE have a better prognosis to provide navigated vision in senile patient, how ever IOL certainly have better prognosis and can be in precious animal.

**SAP-109 Management of Perineal hernia and Rectal Prolapse in a Lhasa Apsoo Dog***Sonu Jaiswal, H. N. Singh, Mrigesh Chaudhary and Vineet Kumar*

NDUAT- Kumarganj, Faizabad- UP

A 10 years old Lhasa Apsoo dog was dog was operated 10 days before for left-sided perineal hernia at College Clinics NDUAT, Kumarganj, Faizabad but now it was presented for right sided perineal hernia along with rectal prolapse. The rectum was replaced manually and the hernia was corrected by opening the hernial sac and repairing the pelvic diaphragm defect. Routine postoperative care along with application of a truss was provided. The dog was kept on fluid therapy up to 7 days and then soft laxative diet was started for next 10 days. After that the owner was advised to give a less protein and fiber rich diet for rest of the life of that dog. No complication was reported up to 6 months after operation.

**SAP-110 Management of Recurrent Maxillary Sinusitis in a German Shepherd dog***Sonu Jaiswal, H. N. Singh, Vineet Kumar and Mrigesh Chaudhary*

NDUAT, Kumarganj, Faizabad- UP

A 6 years old German Shepherd dog was presented for recurrent left-sided maxillary sinusitis. According to the owner, a swelling on left lateral aspect of nose forms and ruptured, discharging a mucous like secretion, after dressing it heals and again reoccurs after some time. It was diagnosed as maxillary sinusitis after clinical and radiological examination. On examining the oral cavity it was found that the left upper first premolar tooth was loose and a sinus tract lateral to the tooth connecting to the maxillary sinus was present. For management of the condition the extraction of affected tooth and regular flushing of the sinus with antibiotic solution was performed. After 10 days the gums covered the alveolar defect and the facial defect also healed. After that no reoccurrence was reported.

**SAP-111 Omentalization – An Effective Technique for the Treatment of Benign Prostatic Enlargement in a Dog**

*A.K. Gupta, M. S. Bhadwal, R. B. Kushwaha and U. Sharma*

F. V. Sc. & A. H., SKUAST-J, R.S. Pura, Jammu

Omentalization of the prostate was performed, in a 10 year old German shepherd dog, after debulking the prostatic parenchyma through two ventral longitudinal incisions lateral to the urethra after exposing the prostate through a ventral mid line laparotomy. Castration was also performed and antibiotics were administered for three weeks. The animal was presented with the history of recurrent fever, urinary tract infection, dysuria, haematuria and constipation for the last six months. The mass palpable in the caudal abdomen was diagnosed as cystic prostatic enlargement by plain and contrast radiography and ultrasonography. The animal improved dramatically following the surgery.

**SAP-112 Perineal Hernia and its Surgical Management in Dogs**

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Perineal hernia was diagnosed in five male dogs (3 GSD, Spitz & ND) aged between 5-12 years with the history of constipation and swelling in perineal region for varied periods. Swelling was lasting from 20 days to 2 years. Hernial contents were reducible on palpation in all four dogs. Unilateral perineal hernia (right side-2, left side-1) was more common than bilateral (2). All five dogs were kept on laxative medicine a day before operation and enema was given on day of operation. Herniorrhaphy was done by standard procedure under xylazine-ketamine anaesthesia. Hernial contents were omental fat (2), rectal diverticulum (1) and intestine (2). Castration was also done in 3 dogs following herniorrhaphy. Post-operatively, broad spectrum antibiotics, analgesic, laxative tab. and anti-septic dressing was done for 5-7 days. Four dogs showed uneventful recovery whereas; recurrence was reported in one dog.

**SAP-113 Surgical Management of Traumatic Proptosis in Dogs**

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Proptosis secondary to trauma (fight-2, hit-1) was diagnosed in right (1) and left (2) eyes of three dogs (one each in ND, Spitz & Pekingese) aged 1.5 months to 3 years. Protrusion of eye ball, peri-orbital swelling, conjunctivitis, blepharitis and keratitis were common clinical findings. Protruded eye ball was washed with normal saline solution. Lateral canthotomy was done under xylazine-ketamine anaesthesia and eye ball gently replaced in the orbit. Tarsorrhaphy was done using fine nylon suture material. Post-operatively, eye drops (pyrimon or sofracort-3 drops t.i.d) from medial canthus, tab. diamox, prednisolone and nimulase were given for 7 days. Sutures were removed on 12<sup>th</sup> day in one dog and on 14<sup>th</sup> day in two dogs. Non-descript dog and Pekingese dogs showed recovery with full vision whereas; resorption of eye ball with loss of vision was noticed in Spitz dog.

**SAP-114 Pyometra and its Surgical Management by Ovariohysterectomy in Bitch- A Report of 6 Cases**

*A. K. Gupta, M. S. Bhadwal, R. B. Kushwaha, Sharad Kumar and Utsav Sharma*

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Pyometra was diagnosed in 6 bitches with age of 2-12years presented to the clinics with the history of vaginal discharge for varying period. The all bitches had the history of varying degree of vaginal discharge, dullness and depression, reduced appetite and vomiting. In most of the cases, discharge was foul smelled. In 5 cases, pyometra were open whereas in one bitch it was closed. Ovariohysterectomy was performed via mid ventral approach under xylazine-ketamine anaesthesia. Post-operatively, broad spectrum antibiotic, analgesics and fluid therapy were given for 5-7 days. Four cases were recovered without any complication. The outcome of two bitches was not known.

- SAP-115** **Linear Foreign Body Induced Intussusception and its Surgical Management in a Pup**  
*K. Jayakumar, N. Rajendran, S. Dharmaceelan, S. Kathirvel, S. Sethilkumar, A. Kumaresan and J. Chandran*

Veterinary College and Research Institute, Namakkal- Tamilnadu

A two month old Doberman male pup was presented to the teaching hospital with the history of emaciation, lethargy, absence of defecation, acute onset of vomiting and anorexia since six days. Physical examination revealed abdominal distention, abnormal mass of bunched intestines and abdominal pain. Survey radiograph revealed intestines were pleated together. Contrast radiograph demonstrated the obstructing foreign body in the pyloric region and extended to the small intestine and delayed transit time with stasis of contrast agent in stomach and intestine. Under general anaesthesia complete exploration of abdomen revealed intussusception mesenteric tear along with of adjacent loop and mesenteric tension was up to pyloric region. Through gastrotomy, the twitched rope was cut and removed at the pyloric region. The gastrotomy incision was closed with two rows of inversion suture. The manual reduction of intussusceptions mass was carried out. The remaining portion of the rope was removed through single enterotomy and it was closed with simple interrupted suture. The portion of the intestine with mesenteric tear was resected and end – end enteroanastomosis and omentalization was carried out as per the standard surgical technique. Post operatively the pup was maintained with intravenous fluids, antibiotics and analgesic. After 24 hours of surgery liquid food was allowed then solid food were gradually introduced. The pup recovered uneventfully.

- SAP-116** **Surgical Management of Vaginal Fibroid in a Bitch**  
*A. Kumaresan, K. Jayakumar, S. Dharmaceelan, S. Kathirvel, S. Senthil Kumar and N. Rajendran*

Veterinary College and Research Institute, Namakkal- Tamil Nadu

A bitch aged 7 years was referred to the VCRI teaching hospital with the history of protruding mass on the vaginal passage and straining during urination and defecation. The Vaginal examination revealed the presence of several hard masses in the vaginal passage. The patency of urethra was confirmed by catheterization. Rectal examination revealed difficulty in passing the finger. The preliminary screening of hematology and thoracic X-ray were normal. Abdominal X-ray revealed multiple soft tissue density in the perineal region. The mass was completely excised after episiotomy. The tissue sample subjected for histopathological examinations revealed fibroma.

- SAP-117** **Surgical Management of Inguinal Hysterocele in a Bitch**  
*A. Kumaresan, S. Dharmaceelan, S. Kathirvel, S. Senthil Kumar, K. Jayakumar and N. Rajendran*

Veterinary College and Research Institute, Namakkal- Tamil Nadu

A female spitz aged 6 years was brought to the Veterinary College and Research Institute Hospital, Namakkal with the history of gradually developing growth in the inguinal mammary gland region and the animal mated 40 days before. On clinical examination, swelling was hard suggestive of mammary tumour. Then the case was subjected for radiological examination which revealed the presence of foetal skeleton outside the abdominal cavity. An elliptical skin incision was made on the swelling. The mass was identified as hysterocele and a dead foetus was removed through hysterotomy. Uterus was closed with two rows of inversion suture using 2-0 catgut and the hernial ring was closed with overlapping pattern with polyamide size No 1. The muscle and skin was closed as per the standard surgical procedure. The animal recovered uneventfully.

- SAP-118** **Ultrasonographic Anatomy of the Canine Stifle**  
*Mehraj u din dar, D. B. Patil, P. V. Parikh, Akhilesh Kumar, Nisha Joy and S. K. Jhala*  
 College of Veterinary Science and Animal Husbandry, AAU, Anand- Gujarat

Ultrasonographic examination of the stifle joint was conducted in twelve dogs of either sex, between

2 to 12 years and 10–15 Kg body weight. Fourteen stifle joints were scanned with 7.5 MHz real time B-mode linear scanner. It was easy to visualize femoral and tibial condyles, patellar ligaments, menisci, infrapatellar fat and joint space. It was difficult to visualize the cranial and caudal cruciate ligaments and also to differentiate between menisci and infrapatellar fat body. In one dog with 30 Kg body weight using 10 MHz transducer, it was easy to visualize the stump of ruptured cranial cruciate ligament. Six stifles were scanned with 15 MHz real time B-mode linear scanner during intra articular injection of saline and it became easy to visualize cranial cruciate ligament and also to differentiate between infrapatellar fat body and menisci.

**SAP-119 Lateral Patellar Luxation and its Surgical Treatment in a Dog: A Case Report**

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A six months non-descript male dog was presented with a history of lameness from both limbs. The animal was walking with semi flexed hocks posture. The condition developed slowly after the age of five months. Clinical examination revealed frequent lateral luxation of both patellas during flexion and return to normal position during extension of hock joints. Radiological examination could not reveal any skeletal abnormality in both limbs along with normal quadriceps mechanism. The congenital shallow trochlear ridges were diagnosed as the reason of luxation. Recession sulcoplasty of right femur along with overlap suturing of medial retinaculum was performed. Post-operatively the stifle joint was immobilized with adhesive crape bandage along and post operative therapy with antibiotics, steroid and non steroid anti inflammatory medication was continued for seven days. The dog started weight bearing on operated limb after 7th day of operation. Post operative physiotherapy and light exercise were found very effective.

**SAP-120 Radiographic and Ultrasonographic Study of Hepatobiliary System in Normal Dogs**

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The study was conducted on 6 clinically healthy, adult, non descript dogs of either sex between 2-8 years of age and weighing approximately 10-30 kg. Haemato-biochemical examination was performed prior to radiographic and ultrasonographic examination to ensure the good physical status of animals. On radiographic examination, normal liver was seen as a roughly triangular area of increased density with no clear demarcation of its margins. By ultrasonographic examination, the normal echotexture, morphometric measurements and anatomical location were studied for liver, gall bladder and hepatic vasculature. The liver was seen having a homogenous, coarse grained texture with smooth margins, measuring  $79.1 \pm 2.3$  mm. Gall bladder was visualized as a pear shaped anechoic structure with mean length and width of  $29.9 \pm 2.3$  mm and  $23.9 \pm 1.7$  mm respectively. The wall of gall bladder was seen as fine echogenic line, measuring  $1.6 \pm 0.23$  mm. The hepatic arteries were not identified ultrasonographically, however hepatic and portal veins were visualized clearly.

**SAP-121 Extra genital forms of Venereal Granuloma in dogs**

*V. Sangwan, P. Verma, J. Mohindroo, A. Kumar, M. Raghunath, N. Singh, S. K. Mahajan, S. Deshmukh, K. Singh, T. Singh, A. Gopinathan and N. S. Saini*

COVS, GADVASU, Ludhiana

The present study compiles 16 cases of extragenital venereal granulomas with or without the involvement of genitalia. These included the body parts: Skin (10), nasal cavity and gum (1), hard palate (1), tongue (1) and subcutaneous (3). All the cases were confirmed on cytology of the impression smear or fine needle aspiration biopsy. All the animals were successfully treated using vincristine sulphate in prescribed doses and route.



**Uterine Torsion Corrected With Unilateral Hysterectomy (Cornuectomy) in a Gravid Bitch***Anand Patil*

Veterinary Hospital, Belgaum- Karnataka

A Great Dane bitch aged four years was presented to the Veterinary Hospital Belgaum with complaint of dystocia. Radiography indicated the presence of four-five fetuses and ultrasound showed no fetal heart activity. Mid-ventral exploratory laparotomy revealed an enlarged dark reddish-black tubular structure with fluid filled sacculations suggestive of left uterine horn torsion at the bifurcation level. Initially the affected horn was exteriorised and incised to evacuate tarry coloured foul smelling fluid followed by one dead fetus. Later the right uterine horn which was comparatively healthy was incised to retrieve three dead fetuses. The left uterine horn which was showing beginning of tissue necrosis was excised at the level of uterine bifurcation. The incisions on the uterus and abdomen were closed in a routine manner. The bitch recovered uneventfully after a post-operative period of ten days. After providing sexual rest for one year the bitch was bred and four healthy puppies delivered normally. Unilateral cornuectomy of the uterus had no adverse effects and postoperative mating revealed pregnancy without complications and normal parturition. It is concluded that in the case of pathological changes in one uterine horn during a caesarean section unilateral hysterectomy (cornuectomy) seems to be an alternative to ovariohysterectomy to continue the breeding life of the bitches.

LARGE ANIMAL  
POSTER SESSION

**XXXIII Annual Congress of ISVS  
and International Symposium  
2009**

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**LARGE ANIMAL  
POSTER SESSION**

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**Department of Veterinary Surgery & Radiology  
Centre of Advanced Studies  
College of Veterinary Science  
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## LAP-1

**Cesarian Section in a Buffalo***Tripathi, S. D., Kale V. D. and Gaikwad S. V.*

K. N. P., COVS, Shirval, Satara- Maharashtra

A female buffalo was brought to BSDPHA with history of inability to parturate since last 24 hours, restlessness and anorexia. On pervaginal examination a dead, edematous fetus in breech position was palpable. Emergency C-section was performed under 2 % lignocaine local anesthesia and incision was taken parallel to the milk vein on the left side. The fetus was removed and the structures were sutured in the normal routine manner. The buffalo made an uneventful recovery and was discharged on the 15<sup>th</sup> post-operative day.

## LAP-2

**Epidemiological Status of Surgical Affections of the Buffalo Horn at Hospital Population and Ambulatory Villages***H. K. Mahida, P. H. Tank, M. A. Dhami, F. Karlette Anne, D. O. Joshi, A. S. Karle and H. S. Vedpathak*

COVS &amp; AH, Anand Agricultural University, Anand- Gujarat.

To know the epidemiological status of surgical affections of the horn in buffaloes, last six years' retrospective information on surgical conditions of horn were retrieved by scrutinizing the data bank of the College Hospital as well as three villages viz., Chikhodra, Bedva and Sarsa covered under Ambulatory Clinical Services of the college. Amongst various horn pathologies recorded, the overgrown horns / misshapen horns were observed to be the highest (49.6 per cent) followed by avulsion of the horn (29.3 per cent), horn injury (9.5 per cent), septic horn / maggotted wound (6.6 per cent), fracture of horn (3.7 per cent) and broken horn (1.2 per cent). The prevalence rate of the surgical affections of horn was higher in the buffaloes ageing more than five years. The avulsion of the horn was the major affection amongst the total observed horn pathologies in Surti buffaloes. The septic horn and/or maggotted wound of the horn was more prevalent in Mehsani buffaloes.

## LAP-3

**A Comparison of Thermocautery and Cryosurgery as Disbudding Methods in Buffalo Calves***H. K. Mahida, P. H. Tank, M. A. Dhami, K. B. Vala and A. A. Vagh*

COVS &amp; AH, Anand Agricultural University, Anand- Gujarat

Fourteen clinically healthy buffalo calves of either sex, with age varying between 01 to 04 weeks were selected to comparatively study the two methods of disbudding viz., thermocautery (Group – I; 6) and cryosurgery (Group – II; 8). The buffalo calves between the age group of 01 to 04 weeks were found suitable for both the methods of disbudding. Cryoguard protected horn bud were cryofrozen to -40°C. The cryosurgical disbudding did not lead to any open wound at the site and so also the cryofrozen horn buds remained at the site which later sloughed off progressively providing a natural biological covering to the underlying granulating bed till the completion of the healing. The cryosurgical disbudding was found to be cost-effective, practically surgeon convenient and clinically feasible as well as advantageous and so also less stressful to the subject as compared to the thermocautery disbudding in buffalo calves.

## LAP-4

**A Modified Method of Surgical Amputation of the Horn in Buffaloes***H. K. Mahida, P. H. Tank, M. A. Dhami, A. A. Vagh, K. B. Vala, A. S. Karle and H. S. Vedpathak*

COVS &amp; AH, Anand Agricultural University, Anand- Gujarat

Eighteen clinical cases with horn pathology requiring amputation of horn were grouped according to breed as, Surti, Mehsana, and Jaffarabadi. They were subjected to surgical amputation executing a modification in the procedure so as to facilitate the primary closure. Amputation of the horn was performed under mild xylazine sedation and cornual nerve block. Buffaloes were restrained either in standing or in the lateral recumbency. The restraint under lateral recumbency was felt to be more surgeons friendly as the direct access and better visualization of the site was feasible. A parallel secondary incision just above the primary one beneath the upper edge not only helped in reducing the

tension over the suture-line but additionally facilitated the primary closure of the surgical wound. Modification in surgical methodology enabled majority of the operative sites to heal by first intention and almost all the buffaloes to recover potentially without any complications.

## LAP-5

### **The Occurrence of Compound Fractures in Domestic Animals: a Review of 624 cases recorded during a three year period (April 2006 to March 2009)**

*H. P. Aithal, P. Kinjavdekar, Amarpal, A. M. Pawde, K. Pratap, Pankaj Kumar and Rauoof Ahmad*  
Indian Veterinary Research Institute, Izatnagar, Bareilly- UP

During a three year period from April 2006 to March 2009, a total of 624 cases of long bone fractures were recorded at IVRI polyclinic in different species of animals. Among them, 121 cases (19.39%) were of compound fractures. Among different species of animals, maximum compound fractures were recorded in dogs (38.84%), followed by cattle (28.93%), goats/sheep (13.22%), horses (9.92%) and buffaloes (3.31%). When the occurrence was calculated among the total number of fracture cases of a particular species presented, compound fractures were most frequent in horses (54.55%), followed by cattle (48.61%), buffaloes (19.05%), goats/sheep (16.16%) and dogs (12.40%). In dogs, maximum compound fractures were recorded in adult animals aged more than 1 year; non-descript breed was most commonly affected, followed by Spitz. Road traffic accident was the most common cause of fractures; male dogs were more commonly affected than females. Among the different bones, the compound fractures were most frequent in the metatarsus (69.23%), followed by the metacarpals, tibia/fibula and radius/ulna. In cattle, road traffic accident was the most common cause of compound fracture, in all cases fracture was comminuted in nature; and most of animals were females. Among different long bones, the metatarsus recorded most compound fractures (73.68%), followed by metacarpals and tibia. In buffaloes, only four cases of compound fractures were recorded one each in the radius/ulna, tibia/fibula, metatarsus and metacarpus. In horses, Compound fractures were mostly recorded in adult animals, though young animals were also affected. Road traffic accident was the most common cause. The compound fractures were maximum in metacarpus (80%), followed by metatarsus, tibia and radius/ulna. In goats/sheep, compound fractures were seen in all age group animals, and were more frequent in young animals. Among different long bones, the metatarsus recorded highest percentage (40%) of compound fractures.

## LAP-6

### **Surgical Correction of Peculiar and Rare Affections of Oro - Nasal Cavity in Bullocks**

*A. S. Patil and B. R. Balappanavar*

College of Agriculture, University of Agricultural Sciences, Dharwad- Karnataka

Five cattle were presented to the Veterinary Hospital over a period of time with peculiar conditions (Avulsion of chin - bullock, Ranula - cow, Tongue laceration- cow, Nasal Polyp- Bullock and Transaction of nasal septum - Jersey bull) affecting the oral cavity. All of these cases were successfully corrected by surgical intervention under Xylazine sedation and local anesthesia using 2% Lignocaine hydrochloride. Post operatively injections of Streptopenicillin, Ketoprofen, B- Complex, and Vitamin A, D, & E were given for 5 days along with regular dressing of the wounds. The above conditions required adequate skills and post operative management for uneventful recovery in all the animals.

## LAP-7

### **Surgical Correction of Peculiar and Rare Affections of the Perineum in Bovines**

*A. S. Patil and B. R. Balappanavar*

College of Agriculture, University of Agricultural Sciences, Dharwad- Karnataka

Three bovines were presented to the Veterinary Hospital over a period of time with peculiar conditions (Recto-vaginal Fistula with Atresia Ani - Jersey Calf, Recto-vaginal Fistula with Atresia Vulvae - Buffalo Calf and Rectal Tear with Intestinal Evisceration Through Anus- Bullock) affecting the perineum. All of these cases were successfully corrected by surgical intervention under Xylazine sedation and Epidural anesthesia using 2% Lignocaine hydrochloride. Post operatively injections of Streptopenicillin, Ketoprofen, Dicyclomine HCl, and Vitamin A, D, & E were given for 5 days along with regular dressing of the wounds. Cremaffin was also administered to all the animals for ten days.

All the animals recovered uneventfully. The above conditions required adequate skills and post operative management for recovery without complications in all the animals.

**LAP-8 Surgical Management of Peculiar Neoplasms in Bullocks**

*A. S. Patil and B. R. Balappanavar*

College of Agriculture, University of Agricultural Sciences, Dharwad- Karnataka

Six bullocks were presented to the Veterinary Hospital over a period of time with peculiar spontaneous neoplasms (Huge Prefemoral lymph node tumor, Huge Melanoma over fore head, Huge Fibroma over fore limb, Melanoma over ear pinna, Fibroma over dewlap, and Testicular Seminoma) located at different regions of the body. All of these cases were successfully surgically excised under Xylazine sedation and local infiltration anesthesia using 2% Lignocaine HCl. Post operatively injections of Streptopenicillin, Ketoprofen, B- Complex, and Vitamin A, D, & E were given for 5 days along with regular dressing of the wounds. All the animals recovered completely and there was no recurrence up to six months of follow up period. The above conditions required adequate skills and post operative management for uneventful recovery.

**LAP-9 Studies on Incidence and Management of Various Neoplasms' in Cattle: a Review of 104 cases**

*A. S. Patil and B. R. Balappanavar*

College of Agriculture, University of Agricultural Sciences, Dharwad- Karnataka

A total of 104 cases suffering with different neoplasms were presented to the hospital for treatment during the period 2006-2008. Analysis of 104 cases revealed 89 cases were found in males and 15 in female cases comprising of 20% cross bred and 80% of indigenous animals. Incidence of eye cancer was highest followed by Horn cancer, Melanoma, Osseous tissue tumors, Papillomas, Interdigital fibromas, Lymphoid tumors, Testicular tumors, Fibromatous tissue tumors, Perianal tumors, Tumor neck, Parotid gland tumors and keloids. Their recorded incidence was classified based on Sex, Age and Breed of the animal affected; system affected, malignancy and treatment opted is discussed. Most of the neoplasms were treated surgically (72%), some by additional chemotherapy (16%) and few with poor prognosis were advised culling (12%). Samples were sent for histopathology and results were classified accordingly. Death occurred in 3 cases during the course of treatment. Recurrence was reported in a total of 8 cases after a few months.

**LAP-10 Surgical Management of Rare Congenital Abnormalities in New Born Buffalo Calves**

*R. N. Chaudhary and Prem Singh*

CCSHAU, Hisar- Haryana

The reports consist of three cases. The first case was a calf with exposed distal end of metatarsus in left hind limb since in-utero. The exposed metatarsus was longer in length than normal one in the contralateral limb. The excess length of metatarsus was cut off from the distal end and the bone was replaced in fetlock joint. Skin sutures were placed and POP was applied for false joint formation. The second case was a calf with large wrinkled skin hanging from the ventral abdomen with no abdominal viscera inside it. The excessive skin was enclosing an enlarged urachus which was separated from abdominal cavity by a thin membrane lining the urachus. There was complete defect in the ventral abdominal musculature from xiphoid to pubis. The excess skin enclosing urachus was excised and defect was repaired. The third case was of a conjoint twin, both united by ventral abdominal area. The partially developed trunk and absence of neck in one calf was making the twin to appear to be a single calf with eight limbs. Under sedation and local anesthesia twins were separated after lying the normally developed calf in dorsal recumbency. The major vessels were ligated and created defect was repaired in standard way. All the three calves survived successfully.

## LAP-11

**Modified Cross Pin Technique (double crossing) for Fixation of Femoral Fracture in a Buffalo**  
*Jasmeet Singh, R. Udehiya, H. P. Aithal, P. Kinjavdekar, Amarpal, A. M. Pawde and M. M. S. Zama*

Indian Veterinary Research Institute, Izatnagar-UP

A 2-year-old buffalo weighing about 150 kg was presented with lameness in right hind leg with swelling in the femoral region following a road traffic accident 3 days before. Radiograph revealed comminuted mid-shaft femoral fracture. As the animal was relatively large, it was decided not to go for intramedullary nailing to avoid extensive tissue damage, and immobilize the bone fragment by relatively less traumatic cross pinning technique. The patella along with the medial ligament was glided medially and the femoral condyles were exteriorized. Then two K-wires (2.5 mm in diameter) were introduced from the distal femoral condyles, one each from the antero-medial and antero-lateral aspect, in a crossed manner, into the distal bone fragment. The pins were then progressed alternatively up to the level of fracture site. Subsequently two more K-wires were introduced in similar manner from the postero-medial and postero-lateral aspects of the distal femoral condyles and were progressed up to the fracture site. Once all the four wires were brought up to the level of proximal end of distal bone fragment, the bone fragments were reduced and the wires were progressed one by one into the proximal bone fragment. The K-wires were progressed proximally to come out of the trochanteric fossa. The case did not turn up for follow up examination, but it is reported to have regained near normal functional recovery within two months.

## LAP-12

**Rush-Pin Fixation by Close Method for Treatment of Proximal Tibial Fracture in Goat: a case report**

*Rauoof Ahmad, Abhishek Saxena, H. P. Aithal, P. Kinjavdekar, Amarpal, A. M. Pawde and M. M. S. Zama*

Division of Surgery, Indian Veterinary Research Institute, Izatnagar (UP)

A 10-month-old Barbari goat, weighing 35 kg was presented with lameness in left hind leg with swelling at the stifle following a road traffic accident. Radiography revealed comminuted fracture at the proximal metaphyseal region of tibia. Epidural analgesia was achieved by injecting 3 mL of Lignocaine HCl at the lumbosacral epidural space. The tibial region including the stifle was prepared for aseptic surgery. A small nick incision was given at the proposed site of pin insertion on the dorsal surface of medial condyle, medial to the middle patellar ligament half way between the tibial crest and the medial tuberosity. Similarly, another nick incision was made at the dorsal surface of the lateral condyle just lateral to the middle patellar ligament. Then the fracture fragments were reduced by traction and guide holes were drilled in the proximal bone fragment both from the medial and lateral sides. Care was taken to see that the guide holes were drilled in inclined position, but did not cross at the proximal bone fragment. Subsequently, two Rush pins (2.5 mm and 3.5 mm, 20 cm and 22 cm long) were driven from the medial and lateral side, respectively, through the pre-drilled holes, along the length of bone while the bone fragments were held in traction. While passing the pins into the distal bone fragment, the left hand was used to firmly hold and secure the bone fragments at the fracture site. Subsequently proper placement of pins was confirmed by radiography. Fracture reduction and alignment were very good. Animal started bearing weight on the limb from the very next day. On 30<sup>th</sup> day, complete periosteal bridging callus was noticed with the bone fragments and the pins held in proper position, and the Rush pins were removed. In conclusion, the results of this study suggest that Rush pins can be used by close method in cases of proximal tibial fractures to provide stable fixation in relatively large goats.

## LAP-13

**Traumatic Reticulo-Peritonitis in Camel - A Case Report**

*D. N. Suthar, J. N. Mistry, B. N. Suthar, P. B. Patel and S. R. Chaudhary*  
 COVS & AH, S. D. Agricultural University, Sardarkrushinagar- Gujarat

A 10 years old male Kuchchhi camel (*Camelus dromedaries*) was presented to Teaching Veterinary Clinical Complex, Sardarkrushinagar with the history of complete anorexia since one month and not

responding to routine medicinal therapy. Clinical examinations of patient revealed moderate pyrexia, suspended ruminal motility and alterations in routine haematological and biochemical parameters suggesting foreign body syndrome. A metal detector (Ferroscope) was used to check ventrolateral parts of chest and abdomen to detect the presence of any ferromagnetic foreign body and it showed positive at the level of fore stomach. The case was diagnosed as traumatic reticulo-peritonitis and laparo-rumenotomy was performed in sternal recumbancy under sedation and local infiltration analgesia. Some metallic foreign bodies along with few pieces of bones were removed. Then the incision of rumen, muscles and skin were closed in routine manner. Routine post operative treatment was followed. The animal was under observation for one month and found uneventful recovery.

**LAP-14 Clinical Survey of Foreign Body Syndrome in Camels (*Camelus dromedarius*)**

*D. N. Suthar, J. N. Mistry, B. N. Suthar, P. B. Patel and K. B. Patel*

COVS & AH, S. D. Agricultural University, Sardarkrushinagar- Gujarat

Total 485 camels suffering from impaired appetite were examined with metal detector and out of them 30 cases were found positive. Amongst those, 27 adults males were stall fed and three (Two adult females and one male calf) were maintained entirely on grazing. Out of 30 metal positive cases, about 40 per cent animals were from the age group between 10-12 years. This is the pick period for male camels being used for draft purpose (camel cart) and owners generally preferred to offer more amount of concentrate feed which might be the causative factor.

**LAP-15 Surgical Management of Diseases of Udder of Cattle and Goat in Central Kashmir (A retrospective study of five years)**

*D. M. Makhdoomi, Mohmad Arif Khan, Hina Waiz and B. A. Moulvi*

Sheri Kashmir University of Agricultural Sciences and Technology, Srinagar, Kashmir

The Present study was conducted in central district of Kashmir province, a semi hilly topographic area with a cattle population of 2.7 and that of goat 0.76 million. The data was collected at central Veterinary hospital Budgam, and three dispensaries each from three tehsils. The retrospective data from the year 2004 to 2009 was with regard type of affection, nature of affection treatment provided, whether adequate or in adequate, and analyzed on percentage basis. In goats and cows the affections included. Diseases of teats and skin, physiologic disorders, traumatic, structural disorders and inflammation of mammary gland. Frost bite and gangrenous mastitis was only noted in goats.

**LAP-16 Thoracic Esophageal Obstruction in a Calf**

*Ashish Holey, Ramesh Rathod, V. Mahesh and L. Ranganath*

Veterinary College, KVAFSU, Bangalore- Karnataka

A six month calf was presented to veterinary college hospital, Bangalore with history of complete anorexia, slight tympany and salivation. Calf could not swallow water and it regurgitated it from nostrils. Physical examination of throat and neck region failed to reveal presence of any obstruction. Stomach tube could not be passed beyond and thoracic region, suggesting obstruction at thoracic part of esophagus. Under paravertebral nerve block rumenotomy was done. A mango kernel was removed through the cardia with the help of long forceps. After the removal of foreign body, the rumen and laparotomy wounds were closed in routine manner. Postoperatively Dicrysticin 1gm was administered intramuscularly for 7 days. After 10 days animal made an uneventful recovery with normal swallowing.

**LAP-17 Surgical Management of Caecal Dilatation and Torsion in a Holstein-Friesian Cow – A Case Report**

*K. M. Srinivasamurthy, V. Mahesh, Ramesh Rathod and L. Ranganath*

Veterinary College, KVAFSU, Bangalore- Karnataka

A four year old female Holstein-Friesian cow was presented to the Veterinary College Hospital,

Bangalore with a history of anorexia since five days, reduced milk yield, passing scanty dung and calved 5 months back. Animal was kicking at the abdomen with signs of colic. Per rectal examination revealed mucus coated scanty dung. In the right paralumbar fossa swelling was noticed, upon auscultation and percussion tympanic resonance was heard. Under sedation and Paravertebral nerve block right flank laparotomy was performed. On exploration dilated caecum with torsion at caecocolic junction was found. Typhlotomy at antimesenteric border was done to remove gas and ingesta. The torsion was corrected. The cow improved in its condition and observed total recovery by 10 days.

**LAP-18****Surgical Repair of Rectal Fistula Associated with Intestinal Obstruction in a Buffalo**

*T. P. Patel, D. N. Suthar, J. N. Mistry, S. R. Chaudhary, D.V. Joshi, P. B. Patel, P. B. Kankonkar, J. B. Patel, C. N. Patel, J. J. Parmar, G. R. Mestry, and B. G. Kag*  
COVS & AH, S.D. Agricultural University, Sardarkrushinagar- Gujarat

A 8 years old Mahesani buffalo was presented to Teaching Veterinary Clinical Complex, Sardarkrushinagar, with a history of off feed unable to pass the faeces and intestinal loop was seen from anal opening since 3 days. On clinical observation intestinal loop was found protruded from a vertical 10 c.m. long tear of ventral rectal floor. On the basis of history, clinical and rectal examination the case was diagnosed as grade IV rectal tear associated with intestinal obstruction in buffalo. Animal was restrained in standing position, under caudal epidural anesthesia using 2 % lignocaine hydrochloride, evacuation of feces from the rectum was performed and site prepare for surgery. First, intestinal anastomosis was performed after resecting the necrosed loops then rectal tear was repaired using chromic cat gut # 2. Systemic antibiotics and anti-inflammatory agents were administered postoperatively and uneventful recovery was noticed.

**LAP-19****Successful Reductive Surgical Procedure in a Critically Injured Bilateral Mandibular Fracture in a Cow**

*Mrunali Kamble, V. D. Aher, V. D. Kale and S. U. Raut*

College of Veterinary & Animal sciences, Parbhani- Maharashtra

A case of non-descript cow was presented at TVCSC, Parbhani for the treatment of bilateral mandibular fracture. As the case was critically injured it was the necessity to go through surgical procedure of repairment for bilateral mandibular fracture. By adopting standard surgical and anaesthetical procedure gone for bilateral bone plating. After the course of antibiotic and necessary medication the case was recovered and started green feeding after 12 days but it was extremely normal after 30 days.

**LAP-20****Rupture of Achillis Tendon and its Successful Surgical Treatment in a Bull**

*Mrunali Kamble, V. D. Aher, V. D. Kale and S. U. Raut*

College of Veterinary & Animal sciences, Parbhani- Maharashtra

A bull of 4 ½ years age was presented at the TVCSC, Parbhani with the history of cutting off left hind deep digital flexor tendon, due to which he was not able to perform the mounting in routine breeding work. After the thorough examination it was decided to be treated surgically for its repairment and to make him liable for routine work. The freshening of both the separated ends of tendon has been done with disinfectant and liberal use of normal saline. Adopted the standard surgical and anaesthetical procedure and brought that separated ends of ruptured tendon together with the use of Connell pattern of suture by using silk material. Continuously the course of antibiotic, Vit B-Complex and the analgesic has been used for 7 days. The stay of the animal at TVCSC could be managed upto 10 days. The bull with bandage has been shifted to the owners custody. The bull can show its normal capacity after 60 days.



- LAP-21** **Traumatic Foreign Body in two Calves.**  
*K. S. Chaudhari, M. G. Thorat, V. M. Salunke, S. S. Pitlawar and G. U. Yadav*  
 College of Veterinary and Animal Sciences, Udgir, Latur- Maharashtra
- Two calves (one cow calf, 4 months old and one buffalo calf 2½ months old) were referred to Teaching Veterinary Clinical Complex, COVAS, Udgir with the history of ingestion of foreign body (sewing needle). Radiological examination revealed sewing needle in the abdomen of both calves. Rumenotomy performed in lateral recumbency as per standard procedure in both the calves and sewing needles removed from the rumen. Cow calf recovered uneventfully within 8 postoperative days, but buffalo calf died on 3<sup>rd</sup> postoperative day, as it was brought with the further history of emaciation & ingestion of sewing needle few days before. The details will be discussed during the presentation.
- LAP-22** **Congenital Anomaly of Rectum and Anus and its Surgical Correction in Buffalo Calves**  
*G.R. Mestry, J.N. Mistry, P.B. Patel, S.R. Chaudhary, D.N. Suthar, J.B. Patel, A.P. Lahane, T.P. Patel and P.B. Kankonkar*  
 COVS & AH, S.D. Agricultural University, Sardarkrushinagar- Gujarat
- Out of total 10 clinical cases of congenital anomaly of anus and rectum, 7 cases of atresia ani, 2 cases of atresia ani et recti and 1 case of recto-vaginal fistula in buffaloes calves were presented during September, 2008 to August, 2009 in the TVCC, Sardarkrushinagar with the history of unable to defecate and signs of colic. On clinical examination it was noticed that calves were not having anal opening. The signs of tenesmus and abdominal pain were observed. The cases were diagnosed as atresia ani of anus and planned for surgery. The buffalo calves were restrained in lateral recumbency and the surgical site was prepared for aseptic surgery. Local infiltration anaesthesia was performed using injection 2% lignocaine hydrochloride solution at the proposed site of incision. A circular incision was made upon the bulge of the anus and the circular piece of incised skin was removed. Muonium came out immediately. The patency of opening was maintained by application of interrupted sutures by black braided silk # 2 between rectal mucosa and skin to make a permanent anal orifice. Post-operatively, the surgical wound was cleaned and dressed regularly with liquid povidone iodine and ointment Acrilin was applied daily till recovery and injection gentamycin 3ml and Melonex 2ml were administered intramuscular daily for 3 days. The sutures were removed on the 10th post-operative day.
- LAP-23** **Upward Fixation of Patella in Buffaloes – A field study of 108 cases (2005-2008)**  
*S D Bhardwaj and Sushma Chhabra*  
 Department of Animal Husbandry- Punjab.
- The survey of 108 cases in buffaloes presented for treatment from 2005 to 2008 revealed that though prevalent throughout the year, this condition was more commonly encountered in winters 69.44%(n=75). All the animals presented were female buffaloes. Heifers (41.67%) and primiparous buffaloes (33.33%) were more commonly involved. 91.66%(n=99) affected animals were 1-5 years of age and the condition was comparatively less encountered in animals of less than 1 years and more than 5 years of age. In 42.59% (n=46) cases symptoms were noticed in advanced stages of pregnancy (7m). In 80.55% (n=87) of the cases, only one limb was involved. All the cases were treated surgically by Medial Patellar Desmotomy by employing closed method through a stab incision using a bistoury knife. Except three, none of the unilateral cases, that were treated on the affected limb only, reported any problem with unaffected limb thereafter
- LAP-24** **Cryotherapy for Fibro-Osteoma in a Bullock**  
*V. S. C. Bose, Makkena Sreenu, N. V. V. Hari Krishna and V. Devi Prasad.*  
 NTR- COVS, Sri Venkateswara Veterinary University, Gannavaram- A.P.
- A seven year old ongole bullock was presented to the clinic with a complaint of growth of cricket ball

size on fore head above the left orbit since two months. As per history the tumor is gradually increasing in size and ulcerated. Clinical examination and manipulation revealed of growth revealed high vascularity. Application of Liquid nitrogen over the tumor mass with swab technique after protecting the eye for 3 times at 1<sup>st</sup>, 4<sup>th</sup> and 11<sup>th</sup> day was carried out. The tumor regressed completely without recurrence in due course.

LAP-25

### **Unusual Rapid Recovery of Posterior Paresis following Epidural Administration of Methylprednisolone Acetate in a Khillar Bullock**

*Balappanavar B. R., Patil Anil & Kalburgi S. D.*

Department of Animal Husbandry & Veterinary Services, Gadag District, Karnataka

A five year old Khillar bullock was presented to the Veterinary Hospital with history of a fall on slippery floor and unable to get up. The animal was recumbent, but feeding, defecation and urination were normal. On clinical examination there was no fracture of bones in hind limbs or fore limbs. The animal could not bear weight on hind limbs even when assisted. The animal was already treated with corticosteroids and B complex vitamins. On clinical examination, swelling at the lumbo - sacral junction and pain on palpation were noticed. Medical treatment was undertaken. Injection Depomedrol (methylprednisolone acetate) 4ml epidurally along with Nandrolone @ 2ml intramuscular injection were given. The animal stood for 15-20 minutes 24 hours after first injection. The animal showed remarkable improvement following second day of injection. The treatment was repeated at weekly intervals. The animal started walking slowly after 2<sup>nd</sup> injection on 2<sup>nd</sup> week. The animal was bearing weight normally after 3<sup>rd</sup> injection of Depomedrol and animal recovered completely by one month. The case was followed up till one year with no signs of lameness.

LAP-26

### **Netlon Prosthetic Mesh for Umbilical Herniorrhaphy in a Calf**

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Department of Animal Husbandry & Veterinary Services, Gadag - Karnataka

A six months old calf was presented to the Veterinary Hospital with the swelling in the ventral aspect of abdomen involving the umbilicus. On clinical examination, the swelling was soft, fluctuating, reducible and painless. The case was diagnosed to be umbilical hernia. The herniorrhaphy was taken up under Triflupromazine HCl sedation and local ring block infiltration with lignocaine HCl. The animal was restrained in dorsal recumbency. An elliptical skin incision was given around the swelling and the fascia was separated bluntly. The hernial ring and sac with contents were felt. The adhesions of the sac were removed and the omentum with small intestine were freed and released into the abdomen. The hernial sac was then excised. The hernial ring was 6-8 cms in diameter and the hernial ring closure was difficult; therefore, it was decided to use prosthetic material. The presterilized Netlon mesh was cut according to the requirement, placed inside the hernial ring and anchored with Vicryl No. 3 (polyglycolic acid) at four corners. The entire periphery of the mesh was anchored to hernial ring with interrupted mattress sutures. The skin was closed routinely. Postoperatively antibiotics and NSAIDs were administered for 5 days. Sutures were removed on 10<sup>th</sup> day. The case was followed up to one year. No complications were observed.

LAP-27

### **External Splints and a Sling for the Treatment of Bilateral Frontal Bone Fracture at the Base of Both the Horns in a Bullock**

*Balappanavar B. R. and Bhat S. N.*

Department of Animal Husbandry & Veterinary Services, Gadag - Karnataka

An eight year old Hallikar bullock was presented with a history of an accident. On clinical examination both the horns were delineated backward and were moving separately along with frontal bones on either side. However skin was intact. Soft swelling was noticed near the frontal region of forehead along with acropitus. Under xylazine sedation and corneal nerve block anesthesia with lignocaine, the animal was restrained physically. The horns were brought to the normal position and were kept in place with the help of bamboo sticks as external splints in a crisscross pattern. A sling was

tied to bamboo splints to pull both the horns in anterior direction and tied it to the rope around Nose Bridge. Additional support was given at the base of horns posteriorly with thick, clean, folded cloth. The animal was kept with two ropes tied on either side to prevent mutilation of the external splints. The loosened splints were tightened once a week and were kept in place for 1 month. Inj. Dicrysticyn 2.5 gm and injection Vetalgin were given for 5 days. Animal recovered uneventfully.

## LAP-28

**Urinary Obstruction due to Penile Trauma – A Report of two Cases**

*J. K. Das, Indramani Nath, T. K. Pattanaik, K. C. Patel*

Orissa Veterinary College, Bhubaneswar

A stray bull aged about 6yrs was presented to the Surgery Department with a complaint of urinary incontinence since one month. On examination a hard mass was felt involving the penis and the penile sheath. Prepucectomy was conducted and penis was freed from the fibrosed mass after which there was free flow of urine. Then it recurred after 2 months. Again the sheath was swollen with infiltration of urine. The bull was sedated with 5mg of Xylazine hydrochloride. Ischial urethrotomy was conducted. A polythene catheter was introduced and there was flow of urine. Bull was revived with 10mg of yohimbine hydrochloride and immediately stood up. The local wound dressing was done with povidone iodine and fly repellent spray. From that day the bull was marked to urinate normally through the urethrostomy site. A bullock inflicted injury in its penile region by another bullock. The bullock developed urinary incontinence. Prepucectomy was conducted and the penis was freed and fixed to the skin. The bullock urinated normally.

## LAP-29

**Incidence of Diaphragmatic Hernia in Buffaloes**

*M. J. Z. Khan, P. B. Patel and J. N. Mistry*

College of Veterinary Science and Animal Husbandry, SDAU, Sardarkrushinagar

Incidence of diaphragmatic hernia during January, 1999 to December, 2008, was recorded from the case register of Department of Veterinary Clinics. During this period, total 371 cases were diagnosed and record was analyzed for history, age of onset, season of occurrence, parturition stage of animals and severity of condition. All the cases were recorded in female buffaloes (mostly adult than young stock). Majority of the affected buffaloes (312, 84.09 %) were in the age group of 4 - 9 years. Maximum numbers of affected buffaloes were in 2<sup>nd</sup> lactation followed by 1<sup>st</sup> lactation and 3<sup>rd</sup> lactation. 80.3 % cases were recorded during the period between August to February which was the breeding and immediate post-partum season for buffaloes. Among these 371 cases, 208 (56.1 %) were at various stages of pregnancy while remaining 163 (43.9 %) were non-pregnant/ lactating animals. Out of 208 pregnant buffaloes, 136 were in third trimester, 64 in second trimester and remaining 8 were in first trimester of pregnancy. Out of 161 lactating buffaloes, majority of the cases (120, 75 %) were reported within three month after parturition. Most of the diaphragmatic hernia affected buffaloes had invariably history of progressive weakness, recurrent tympany with or without regurgitation of feed materials, anorexia, suspended rumination, scanty pasty faeces or diarrhoea, brisket edema, dehydration, sunken eyes, dry patchy skin with rubbed off hair and reduction in milk yield.

## LAP-30

**Assessment of Clinical, Haematological and Antioxidant Related Biochemical Parameters in Buffaloes Suffering from Diaphragmatic Hernia**

*M. J. Z. Khan, M. M. Pathan, P. B. Patel, J. N. Mistry and D. V. Joshi*

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In the present study, 12 adult female buffaloes, clinically suffering with diaphragmatic hernia were included. Clinical and haemato-biochemical parameters were estimated prior to rumenotomy (at 0 hour) and prior to herniorrhaphy (at 24 hours) and then at 48, 72 and 96 hours after rumenotomy. Post-operative values of clinical parameter, i.e. rectal temperature, respiration rate, heart rate and ruminal motility were significantly higher than pre-operative value. Ruminal fluid pH at the time of laparorumenotomy was  $7.17 \pm 0.24$ . Haematological parameters like haemoglobin, packed cell volume, lymphocyte and eosinophil count were decreased significantly at 24, 48, 72 and 96 hours after

rumenotomy. Whereas, leukocytosis and neutrophilia were observed at 24, 48, 72 and 96 hours after rumenotomy. Antioxidant related biochemical parameters i.e. malondialdehyde, superoxide dismutase and glutathione peroxidase were significantly higher at 24, 48, 72 and 96 hours after rumenotomy, which indicated higher oxidative stress and lower anti-oxidant status along with compromised cardiovascular and respiratory functions following herniorrhaphy and also due to post surgical stress.

**LAP-31****Avulsion of Horn in a Cattle**

*Gaikwad, S. V., Tripathi, S. D., Zope, A. N., Aguiar, C. and Shellar, R.R.*

KSNP- COVS, Shirval, Taluka, Khandala, Satara - MS

Avulsion of horn is very common in cattle due to fights or due to horn getting caught up in tree trunks. Adult, crossbred cattle was brought to TVCC, KNPCOVS-Shirval with a broken and avulsed horn and severe bleeding from the stump. The condition was treated by means of flap method. The details of the case will be discussed during the conference.

**LAP-32****Management of Burn in Bovines: A Clinical Study**

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College of Veterinary & Animal Sciences, Udgir, Latur -M.S.

Six Cases (3 bullocks, 1 cow, 1 buffalo & 1 cow calf) of 6 months to 14 years of age having second & third degree burn were presented to Dept. of TVCSC, COVAS, Udgir with the history of accidental burn during summer season. The animals were housed in temporary shed made up of fodder & crop wastes. The animals were having symptoms of first, second & third degree burn. The signs like thirst, dehydration, sloughing of some skin, dryness of skin, congested mucus membranes and toxemia were observed in all the animals. The rectal temperature was 102-104°F, Heart Rate 64-80/min Respiration rate 18-28/min & severe dehydration. All the animals were treated with Streptopenicillin 10 mg/ kg IM, ketoprofen 1ml/45 kg BW, inj. Chlorpheniramine Maleate 2-10 ml IM. B-complex 5-10 ml, RL 1-3lit per day IM for 5-7days. The cleaning of wounds with wokadine and dressing with zinc oxide, boric acid and glycerin combination was performed for 15-20 days. 5 animals were recovered & survived normally where as 1 animal was died.

**LAP-33****Clinical Studies on the Use of "Triphala" Eye Drops for Management of Surgical Affections of Eye in Bovine**

*B. Ramesh Kumar, R. M. D. Alphonse, T. P. Balagopalan, R. Sripriya, Dolly Singh and P. K. Sehgal*

Rajiv Gandhi College of Veterinary and Animal Sciences- Pondicherry

A clinical study using "Triphala" eye drops containing three herbs prepared by Bioproducts Division of Central Leather Research Institute, Chennai was conducted at Dept. of Veterinary Surgery and Radiology, Teaching Veterinary Hospital, Rajiv Gandhi College of Veterinary and Animal Sciences, Pondicherry for management of surgical affections of eye in bovine between April 2006 to March 2007. The eye drops were prepared from Triphala powder (IMPCOPS Ltd., Chennai). Twelve clinical cases affected with various surgical conditions of eye such as Conjunctivitis, Keratitis, Hyphema and Hypopyon were selected for the study. The clinical symptoms exhibited by the animals were recorded before treatment. Clinical samples such as tear drops, sterile swabs for cultural examination and blood smears were collected before treatment and after treatment for biochemical, microbial and hematological examinations. The treatment consisted of washing the eye with Triphala eye wash in all the cases and instillation of the "Triphala" eye drops on the surface of the cornea or subconjunctival injection of the drops in the affected eye. The clinical symptoms exhibited by the animal were monitored for the progress if any and clinical samples were collected periodically (3<sup>rd</sup>, 5<sup>th</sup>, 8<sup>th</sup>, 11<sup>th</sup> and 21<sup>st</sup> days) and sent for analysis. All the animals showed uneventful clinical recovery with restoration of vision after 21<sup>st</sup> day. The organisms isolated were Staphylococcus aureus and Pseudomonas aeruginosa which were susceptible to Triphala eye drops and their growth inhibited by the plant

extract in vitro. In conclusion the "Triphala" eye drops proved effective for clinical treatment of common surgical affections in the eye in bovine with suppression of microbial eye infection.

LAP-34

#### **Surgical Management of Unusual Papilloma of Udder in a Cow**

*N. Aruljothi, T. P. Balagopalan, and B. Ramesh Kumar*

Rajiv Gandhi College of Veterinary and Animal Sciences- Pondicherry

A six year old cross bred cow, in early lactation was presented to the Teaching Hospital, Rajiv Gandhi college of Veterinary and Animal Sciences, Puducherry, with history of extensive wart like growths at the base of the right udder. On clinical examination 20-25 cm long and about 10 cm wide conglomerate papillomatous lesions were noticed at the base of the udder. Surgical removal of the extensive lesion was done under sedation with Xylazine and local infiltration using 2% Lignocaine hydrochloride around the site. The cutaneous wound was sutured after fixing a corrugated drain sheet. Streptopenicillin (5g) was administered IM for five days and dressed the sutured site using cetrimide cream. The skin sutures were removed on 10<sup>th</sup> day and the animal recovered uneventfully.

LAP-35

#### **A Rare Case of Atresia Ani with Hamartoma in a Calf**

*Shiju Simon, M. R. Sivashanker, H. Pushkin Raj, B. Justin William and R. Suresh Kumar*

Madras Veterinary College, TANVASU, Chennai- Tamilnadu

A three day old male Holstein Friesian calf was presented with the history of anorexia and not voiding meconium since birth. Clinical examination revealed imperforate ani with the presence of two pedunculated masses distal to it. Surgical correction was resorted to treat the condition with epidural analgesia using 2% Lignocaine HCl. The calf was positioned in ventral recumbency with raised pelvis and the perineal area was aseptically prepared. Then the abdomen was compressed and a bulge at the anal area was noticed. A circular incision of the skin was made on the bulged part and the cul-de-sac was exteriorized. The patency was established and the meconium and gas were voided. The rectal wall was sutured circumferentially along with the skin using 1-0 braided silk in simple interrupted pattern. The two pedunculated masses were then excised after ligation at its base. Histopathological examination of the excised mass revealed hamartoma.

LAP-36

#### **Management of Unilateral Mandibular Fracture in a Goat using K-Wire**

*Mahesh Kumar and D. K. Dwivedi*

Mobile Veterinary Clinics Ranchi, Jharkhand

A 1.2 year old male goat was presented with a history of trauma and slight swelling around the mandible. The animal was unable to masticate the feed material. On deep digital palpation of the mandible severe pain noticed. Radiograph confirmed unilateral complete fracture of the horizontal ramus of mandible. Under general anesthesia, the fractured mandible was immobilized using 1.8mm diameter k-wire. The animal was observed upto 60<sup>th</sup> post-operative day and the k-wire was withdrawn after 1month after radiographic evidence of clinical union. The report details about anesthesia, fracture fixation, post-operative care and clinical outcome.

LAP-37

#### **Use of POP and PVC Pipes Combination for Fracture Healing in Large Animals**

*Doddamani Jahangir and Desai Tatyasab*

Veterinary College, KVA & FSU, Bidar- Karnataka

Bullocks having simple fracture were treated using application of plaster of Paris and moulded PVC pipes. The animals were sedated and placed in lateral recumbency with full extension of the fractured limb. Gauze bandage was used for padding in the form of roll gauge and applied to the whole limb. 08 mm iron rods were used as splints and POP was applied in routine manner. PVC pipes were moulded, applied and tied to the whole length of the limb. Post operatively animals were given homeopathy medication along with vitamin d 3 and anabolic steroids. The animals showed good weight bearing and mobility.

**LAP-38 Diaphragmatic Hernia with Double Hernial Ring along with Herniation of a part of Liver in a Buffalo – A Case Report***M. J. Z. Khan, P. B. Patel and J. N. Mistry*

College of Veterinary Science and Animal Husbandry, SDAU, Sardarkrushinagar

This paper presents a rare case of diaphragmatic hernia with two distinct hernia rings treated uneventfully surgically in a buffalo. A buffalo was presented to the college clinic with the history of anorexia, recurrent tympany and calved two month back. The condition was tentatively diagnosed as diaphragmatic hernia. During rumenotomy, the ruminal content was found to be frothy and alkaline (pH 7.6) in nature. Penetrating metallic foreign bodies were recovered from the herniated portion of reticulum. On diaphragmatic herniorrhaphy, two distinct hernial rings were visible. One was about 18 cm long and located at the right hemidiaphragm through which about 3/4<sup>th</sup> of reticulum along with a lobe of liver and omentum get herniated into the thoracic cavity. And the second ring was about 6 cm long, located at the centre of diaphragm, through which a part of omentum gets herniated. The herniated part of reticulum, liver and omentum were firmly adhered with diaphragm and floor of thoracic cavity due to fibrosis of surrounding tissues. Herniorrhaphy was done through post-xiphoid trans-abdominal approach, keeping the animal in supine position without using intermittent positive pressure ventilator under sedation with xylazine hydrochloride. Animal recovered uneventfully.

**LAP-39 Correction of a Large Ventral Hernia in an Advanced Pregnant H.F. Cross***G. S. Khandekar, Zope, A. N., Zambre, P. C., Chauhan A. R., Shelar, Nale, Jadhav, Y.B. and Tripathi, S.M.*

Bombay Veterinary College, Parel, Mumbai

An advanced pregnant H.F. cow was referred to the TVCC at KNPCOVS, Shirval with extensive ventral hernia. The cow was restrained in dorso-ventral recumbency under xylazine sedation with provision of soft bedding. The hernia was corrected under 2% lignocaine local infiltration. Herniorrhaphy was undertaken with use of Vicryl No. 2 and No. 1. The skin was sutured with thick nylon. Pressure body bandage was applied almost for one month and sutures removed after 25 days. The cow recovered uneventfully and delivered a healthy calf.

**LAP-40 Surgical Management of Fibroma in a Camel (*Camelus dromedarius*)***R. Sureshkumar, B. Justin William, R. Sivashankar, A. Arunprasad and H. Pushkin Raj*

Madras Veterinary College, TANVASU, Chennai

A six year old intact female camel (*Camelus dromedarius*) weighing 586 kilograms was referred to the Large Animal Surgery Unit of Madras Veterinary College Teaching Hospital, Chennai with the ailment of progressive growth at the ventral part of the base of the neck. On clinical examination the animal was found to be apparently healthy and the haematobiochemical parameters were within clinical limits. The mass on palpation was found to be hard, pedunculated and ulcerated with maggot infestation. Radiographs of the lateral and craniocaudal views of the mass revealed the features of soft tissue involvement. FNAB and tissue biopsy of the mass were suggestive of fibroma. Surgical treatment was planned and the animal was anaesthetised with xylazine @ 1 mg, butorphenol @ 0.01 mg and ketamine @ 2 mg per kg body weight intramuscularly and the tumor mass of about 1.75 kilograms was excised. Postoperatively, antibiotics and analgesics were administered and the wound was periodically dressed. Uneventful recovery was noticed and the case will be discussed in detail.

**LAP-41 Surgical Treatment of Bifida Mandibula in a Buffalo Calf***Rajender Singh and Praveen Kumar*

Government Veterinary Hospital, Barwala, Panchkula- Haryana

Haryana A two day old male buffalo calf was brought with the history of growth at the lower jaw since birth. The extra teeth were embedded into the grown mass. There was difficulty in suckling milk by the calf. Calf was unable to take water and feed. On examination, the growth was firmly attached to lower

jaw on right lateral side. The tongue was also bifurcated. The values of blood examination report were within normal range. Radiograph of the head showed development of an extra mandible with incisor teeth along with normal mandible. The calf was prepared for surgery. Xylazine was used for sedation and Lignocaine hydrochloride was used for local analgesia. The mass along with teeth was excised from its base. The tongue was left as such. The postoperative care of the case include fluid therapy, a course of antibiotics, anti-inflammatory drugs, B-complex and daily antiseptic dressing till healing. The calf made an uneventful recovery and was able to suck milk, take water and feed. Radiography proved to be very useful in differentiating this congenital abnormality from odontoma or other growths.

**LAP-42****Effect of Non-Penetrating Foreign Body on Haemato-biochemical parameters in goats**

*R. G. Shirao, S. P. Mehesare, M. G. Thorat, R. V. Raulkar, and K.M. Khan*

Post Graduate Institute of Veterinary and Animal Science, Akola - Maharashtra

The present investigation was carried out on 12 animals divided into two groups comprising six animals in each. The first group 'A' comprised of animal having presence of non-penetrating foreign bodies 2 to 5 per cent of body weight. The second group 'B' comprised of animals having non-penetrating foreign bodies more than 5 per cent of body weight. These two groups were subjected to haemato-biochemical study before laparo-ruminotomy and on 1<sup>st</sup>, 7<sup>th</sup>, 14<sup>th</sup> and 30<sup>th</sup> post operative day. Haematological parameters showed significant increase in TLC and DLC and biochemical parameters revealed increase in SGOT, SGPT, Blood glucose, BUN and Serum creatinine level in both affected A and B group of animals. All the haemato-biochemical parameters were within the normal range on 30<sup>th</sup> of operation. From the overall investigation it is suggested to perform laparo-ruminotomy for removal of non penetrating foreign bodies to achieve normal Haemato-biochemical profile of animals.

**LAP-43****Successful treatment of ruptured uterus in a Goat: A Case Report**

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Post Graduate Institute of Veterinary and Animal Science, Akola - Maharashtra

A four year old pregnant doe was presented in the Teaching Veterinary Clinical Complex with the history of automobile accident a month before and since then having a pendulous abdomen. It was off feed since two days with scanty reddish vaginal discharge. Teats were engorged adding to the gravity of pendulous abdomen. Neither hernial ring nor gravid uterus was evident on abdominal palpation. The case was diagnosed as a ruptured uterus. Following routine pre surgical formalities right flank laparotomy was performed in left lateral recumbency. Two dead fetuses were removed from the abdominal cavity. Uterus was found already ruptured and empty. The uterine content deposited in the abdominal cavity was drained out. The uterine opening was sutured with single row of Cushing sutures using chromic catgut no. 1-0. The peritoneum and muscles were sutured with continuous sutures using chromic catgut no 1. Skin was sutured with interrupted sutures. Antibiotic coverage was given for five days. The goat recovered uneventfully. Skin sutures were removed on complete healing

**LAP-44****Vegetative Valvular Endocarditis in a Cow**

*Adarsh Kumar, Sheikh Imran and M. S. Kanwar*

DGCN College of Veterinary and Animal Sciences, CSKHPKV, Palampur, HP

This case report describes the clinical and echocardiographic findings taken from a case of vegetative valvular endocarditis in a 5-year-old Jersey cow in her 6<sup>th</sup> month of gestation. A field veterinarian referred the case with history of recurrent fever, progressive brisket edema, and reduced milk yield. During the physical examination, systolic murmur and positive jugular refill test were detected. 2-dimensional right parasternal echocardiography indicated vegetative tricuspid valve lesion, and thus confirmed the diagnosis. Bacterial endocarditis is one of the few treatable heart conditions of cattle. So early diagnosis and appropriate therapy improve the diagnosis. The cow was treated with inj. Streptopencillin 2.5 gm intramuscularly, twice daily for 21 days. 15 days post treatment; the cow

showed marked reduction in generalised edema along with improvement in demeanor and feed intake. 50 days later, she had regained her normal production level.

#### LAP-45 **Ultrasonographic Diagnosis of Ovarian and Uterine Abnormalities in Buffaloes- A Field Study**

**Anand Patil**

Veterinary Hospital, Belgaum- Karnataka

The present study was conducted on 768 buffaloes, presented at various Infertility Camps organised by the Animal Husbandry Department in different villages of Belgaum district. Animals which were repeat breeding even after routine treatments were subjected to ultra sonography using a 6 MHz-8MHz dual frequency linear transducer rectal probe. A special hood covering the animal, restrained within the trevis along with the ultrasound machine inside, was found to be suitable to provide ambient lighting for easy interpretation of the images. Uterine abnormalities like endometritis (n= 251), pyometra (n= 81) and sub-clinical endometritis (n=36) were characterized by distended lumen filled to varying degrees with partially echogenic, diffuse, flaky reflections. Ovarian related problems were diagnosed in 246 buffaloes. Follicular cysts (n= 62) appeared as a uniformly nonechogenic ovarian structure with a thinner wall whereas luteal cysts (n= 111), appeared as nonechogenic structure with grey patches within the antrum or along the inner cyst wall and a comparatively thicker wall. No specific conclusions could be drawn in 92 buffaloes. It is concluded that the non-invasive nature of ultrasonography makes it an excellent clinical tool in large animal practice, even at the field level.

#### LAP-46 **Ultrasonographic Detection of Early Pregnancy in Buffaloes in Organised Dairy Farms -A Field Study**

**Anand Patil**

Veterinary Hospital, Belgaum- Karnataka

The present study was undertaken in 482 buffaloes from various organised dairy farms in Belgaum District (Karnataka) for early detection of pregnancy by ultrasonography using a 6 MHz-8MHz dual frequency linear transducer rectal probe. Pregnancy was confirmed in less than one month in 48 animals. Compartmentalization of the embryonic vesicle seen as hypo echoic images of the fluid sac, interrupted in places by hyper echoic folds projecting in the hypo echoic lumen was the characteristic feature of the image during this stage of gestation. However, 25 animals were wrongly diagnosed in this stage. Days 31 to 45 of gestation seemed to be the most suitable period during which 236 buffaloes were confirmed for pregnancy. The embryonic vesicle increased to such an extent that it could not be missed on ultrasonic scanning along with peculiarity of compartmentalization. A flickering echo of the heart beat confirmed the presence of an embryo in one of the compartments. Pregnancy was confirmed in 173 animals during days 41 to 80 of gestation which was marked with ossification of fetal bones. It is concluded that Days 30 post-insemination/ natural service was the safest period for detection of early pregnancy by ultrasound in buffaloes in organised dairy farms.

#### LAP-47 **In-Vivo Biocompatibility Evaluation of Glutaraldehyde and Glyoxal Cross-Linked Pericardium of Caprine Origin**

**Naveen Kumar, A. K. Sharma, Amit Kumar, S. K. Maiti, Rukmani Dewangan, Himani Singh and R. V. S. Pawaiya**

Indian Veterinary Research Institute, Izatnagar, Bareilly- UP

The present study was carried out to evaluate the in-vivo biocompatibility of glutaraldehyde (GA) and glyoxal (GO) cross-linked pericardium of caprine origin. Cross-linking was carried out at room temperature for 24 h with 0.6% and 1% solution in phosphate buffer saline, respectively. The uncross-linked pericardium was used as control. The caprine pericardium was collected from local abattoir. The tissue was washed with normal saline solution. The specimens were cut into 1020mm size pieces and cross-linked with above mentioned chemicals. In-vivo studies included subcutaneous implantation of the cross-linked grafts. The immuno-reactivity of cross-linked and uncross-linked



structure simulating the tongue was seen protruding out from the buccal cavity. On physical examination to the buccal cavity it was observed that one cylindrical slender structure of 10 inches long attached to the pharyngeal region back to the soft palate. It was clamped with the Doyne intestinal clamp at the root and was rotated at 360° angle, and then it was dropped out with slight pressure. The site was cauterized with LN2. Then NSS swab and glycerin was applied. On histopathological exam, it was revealed as benign outgrowth. Then animal was relieved from the problem uneventfully. Another case of CBJ cow aged about 4 years 2<sup>nd</sup> calver presented during ambulatory clinic at Vety Dispensary Banki in Cuttack district with a problem of regular discharge from vulval region. On PR exam it was examined for no sign of endometritis/pyometra/carrying stage with both horns were SPR. On PV examination the hand was inserted in to the vagina. On keeping the hand downward one large pocket was seen just above the vaginal canal but inside the vaginal opening. It was repeatedly flushed with povidone Iodine with NSS(30ml to 250ml) for five days and then with cephalixin I.U. for 5 days. Subsequently the discharge was cleared up and no problem thereafter is seen. A third case of 8 days old female indigenous calf was presented at the surgery dept with a problem of abnormal curvature of vertebral column and not able to walk. On radiological exam it was revealed, the pelvis is somewhat fused and the vertebral column is unusually curved and the most peculiar feature was only 1" - 2" distance in between the two acetabulum. Externally it was applied with one locally made girdle and was applied for one month. After this it became somewhat fit to walk and to rise

**LAP-51****Atresia of Anus and Vulva in a kid –a case report**

*R. Thangadurai, N. V. V. Hari Krishna, V. Devi Prasad, M. Sreenu, V. S. C. Bose*  
NTR-COVS, Sri Venkateswara Veterinary University, Gannavaram –A.P

A female kid with atresia of anus and vulva was presented to the department of surgery to TVCSC complex, NTR College of veterinary sciences, Gannavaram. It had an appendage hanging at the normal ischeorectal fossa which was excised first. The atresia ani was opened at the site and with 18 gauge needle guide, the area of vulval lips was incised and muco- cutaneous sutures was placed on either sides to reconstruct the vulval lips under local anaesthesia.

**LAP-52****Surgical Management of Rumens Impaction due to a Bagful of Palm Kernel in a Buffaloe –A Case Report**

*R. Thangadurai, V. Devi Prasad, N. V. V. Hari Krishna, V. Devi Prasad, M. Sreenu, V. S. C. Bose*  
NTR-COVS, Sri Venkateswara Veterinary University, Gannavaram –A.P

A murrah buffaloe aged 7 years and pregnant about 8 months was brought to TVCSC complex, NTR College of veterinary sciences, Gannavaram, A.P. with a history of anorexia, distended abdomen salivation, lowering of head. Attempts to pass stomach tube indicated oesophageal obstruction at cardia, Rumenotomy was conducted in routine manner and removed a palm kernel from the cardia and more than 100 kernel recovered from the rumen.

**LAP-53****Surgical Removal of Gingival Tumour with the Involvement of Rostral Mandible in a Cow**

*R. B. Kushwaha, A. K. Gupta, M. S. Bhadwal and A. K. Tripathi*  
F.V.Sc. & A.H, SKUAST-J, R S Pura- Jammu

A 2 year old cross bred cow brought to the clinics with the history of swelling in the lower jaw with the involvement of gum for last 2 months. Cow had difficulty in prehension, drooling of saliva, quidding and reduced appetite for the same period. Clinical examination of jaw revealed swollen gum with loosely attached incisor which placed apart. Swollen gum is not hard and felt tensed with fluid like consistency inside. Incisors were movable and appeared to be dislodged from their respective alveoli Lower lip was tensed and closely attached with labial surface of gingival. Lower jaw palpation revealed gritting sensation. Radiograph of lower jaw showed osteolytic changes in rostral mandible with loss of structures, floating incisors tooth and downward deviation. Sedation was achieved by xylazine Hcl 0.5 ml intravenously and mandibular alveolar nerve was blocked for surgical removal.

graft material was assessed by ELISA. The serum samples were collected before implantation and on day 15, 30 and 90 post-implantation. Evaluation of tissue reaction around the grafts was done by gross and histopathological observations. The values of absorbance were significantly higher ( $P < 0.05$ ) in cross-linked groups as compared to pre-implanted values. However, the values decreased significantly ( $P < 0.05$ ) on day 30 and 90. Gross observation and on day 15 and 30 revealed that the biomaterials were covered with white fibrous connective tissue which was denser on day 30. On day 90, the implanted tissue was quite deeply seated but, GO cross-linked tissue was present superficially. The uncross-linked graft was completely absorbed on day 90 whereas, cross-linked graft showed partial absorption. Histologically, uncross-linked and GA cross-linked graft showed intense host reaction around the graft on day 15 which, reduced at day 30. The GO cross-linked graft showed very thin fibrous tissue mantle and the graft consisted mainly of neutrophils with slight fibroplasia. In GA cross-linked graft on day 90, the inflammatory cells were accumulated around the graft in an organized manner whereas; in GO cross-linked graft the reaction was more pronounced as compared to day 30.

LAP-48

#### **Use of Sterile Collagen Particles for Surgical Wound Management in a Buffalo Calf**

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In present study a buffalo calf 10 months old with laparotomy wound in left flank was selected. Laparotomy wound with disruption of skin sutures and maggot infestation noticed. Regular aseptic dressing of wound was done using turpentine oil and maggots were removed. Then the collagen particles were made into a solution with normal saline solution to ensure that collagen particles were penetrated into the wound cavity. Then the wound was covered with a non adherent dressing material. The process was repeated for 5 days. By this time granulation tissue generation started effectively. Then secondary wound closure was performed. These sterile collagen particles enhanced wound healing by creating conducive environment. So, this collagen particles acts as a potent wound healing facilitator. This report details about the technique of application, post-operative management and its outcome.

LAP-49

#### **Seabuckthorn (*Hippophae* sp.) Oil as a Topical Dressing Agent in Infected Cutaneous Wounds in Bovine: A Clinico-Haematological Study**

*Naresh Kumar, A. C. Varshney, S. P. Tyagi and Amit Kumar*

COV & Animal Sciences, CSK HPAU, Palampur- Himachal Pradesh

The study was conducted on 10 male calves, by creating six equidimensional (3cmx3cm) full thickness cutaneous wounds at thoracolumbar region. 9 animals were equally divided into 3 groups e.g. Group I (liquid paraffin, negative control), Group II (5% povidone-iodine ointment, positive control), Group III (Seabuckthorn (*Hippophae* sp) seed oil, test) for conducting infected wound healing study and 1 animal was kept for normal wound healing study. The wounds were inoculated with *Staphylococcus aureus* inoculate having  $2.1 \times 10^8$  organisms/ml. The treatment was started after two days and the efficacy of different treatments was monitored at 0, 3, 7, 14, 21 and 28 days. The paper includes the details of clinico-haematological observations of the study which indicated mild anti-microbial properties of seabuckthorn seed oil and its utility in management of infected cutaneous wounds in bovine.

LAP-50

#### **Three Unusual Congenital Anomalies and Trial for Reconstruction Therapy in Ruminants**

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A one month old male indigenous calf was presented at the Teaching veterinary clinical complex of Orissa Veterinary College, having a long slender organ protruding from buccal cavity. On taking to history, it was alright at the time of birth and was suckling udder with slight problem which was overlooked. From last three days it developed problem in suckling and subsequently one tubular

Mouth was washed with KMnO<sub>4</sub> and normal saline solution. A crescent shaped incision with incisors tooth in between was made to remove the incisor tooth, gum tissue and osteolytic portion of rostral mandible. Lingual and labial incised edge was apposed together in horizontal mattress pattern using nylon. Post-operatively, Dicrysticin-2.5 gm i.m., Melonex-15 ml i.m. was given for 5-7 days. Owner was advised to wash the mouth with KMnO<sub>4</sub> after each feeding and application of magnesium sulphate and glycerin paste over gum for 7 days.

**LAP-54 Actinobacillosis in Cattle and Buffaloes: A review of 39 clinical cases**

*A. K. Gupta, R. B. Kushwaha, M. S. Bhadwal and A. K. Tripathi*

F. V. Sc & A.H, SKUAST-J, R S Pura- Jammu

The study was conducted in 39 clinical cases of cattle (26) and buffaloes (13) presented to clinic with the history of submandibular growth for varied period from Sept. 07 to Aug. 09. The hospital incidence was 2.47% in cattle and 1.24% in buffaloes (total=3.71%; 39/1050). Most of them were aged up to 4 years and presented in first half of calendar year. Feed and water intake was not affected in majority of the cases. Duration of growth in most of the cases was 15 days to 2 months (7-4 months). Location of growth was bilateral in 6 cases, unilateral in 25 cases (13 right sides and 12 left sides) and central in 8 cases. In 21 cases, growth was intact (15 in cattle & 6 in buffaloes) and in remaining cases (11 cattle & 7 buffaloes), growth was ulcerated or ruptured with oozing of yellow to cream coloured thickened pus. Intact growth was bit movable whereas ulcerated growth had thickening of skin round it. On the basis of nature and location of growth, thick yellowish discharge and respond to KI therapy, cases were diagnosed as actinobacillosis. Intact growth (abscess) was drained surgically, whereas ulcerated and granulamatus growth was excised surgically. All the animals were administered with either Dicrysticin (streptopenicillin)-2.5 gm or Fortified Procaine penicillin-20-40 lacs and Melonex-7.5-15 ml i.m. and KI @ 20-25 mg/kg orally for 7-10 days. All of them were responded well to oral KI therapy.

**LAP-55 Urethral Obstruction in Canine and Ruminants: A clinical study of 17 animals**

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The study was conducted in 17 animals with the history of retention of urine for varied period. Urethral obstruction was recorded in four dogs, five goats, two sheep, three buffalo calves, and two calves and in one bullock. In two dogs, obstruction was complete whereas; one goat had incomplete obstruction. In dogs, calculi were present both in urethra and urinary bladder. Most of the dogs had the history of dribbling of urine before complete obstruction. Pre-scrotal urethrotomy (4) and left paramedian cystotomy (2) was done under xylazine-ketamine anaesthesia. Amongst the ruminants, most of the animals were young and had the retention of urine for 1-7 days. The incidence was high in peak winter and peak summer. All ruminants were uncastrated. Four ruminants (Buffalo calf -2, bullock-1 and goat-1) had ruptured urinary bladder with typical water belly abdomen. Two calves and a sheep had ruptured urethra with ventral swelling over penis. In remaining six animals, both urethra and urinary bladder were intact. Tube cystostomy technique with ammonium chloride orally in fresh cases or in failure of urethrotomy was found effective in the treatment of urethral obstruction with or without ruptured urinary bladder or urethra. Bullock was managed by cystorrhaphy via left flank approach and post-scrotal urethrotomy and indwelling catheterization.

**LAP-56 Fractures and their Management in Animals: A Review of 77 Clinical Cases**

*R. B. Kushwaha, A. K. Gupta and M. S. Bhadwal*

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Fractures and their management were studied in 77 clinical cases of different species of animals presented to clinics from September, 07 to August, 09. Species of the animal, age, sex, breed, duration of fracture, cause of fracture, limb and bone involved, type of fracture, technique applied and outcome were recorded. Total hospital incidence of fractures in animals was 7.33% (77/1050). The species wise incidence was 3.52% in canine, 1.43% in cow, 0.67% each in buffaloes, caprine and equines, 0.095%

each in camel and sheep and 0.19% in avian. In canine, Spitz (13) and German shepherd (8) breeds of dogs were affected more than others breeds. Overall, males were affected more (43) than females (32). However, females were affected more in cattle, buffaloes and goat. Younger age groups were more prone to fracture than older age groups. Fall from height and road traffic accident (RTA) were the common cause for fractures. The fractures were reported throughout the years. In canine, cattle, buffaloes and goats, hind limbs were more involved than fore limbs. Seven animals (cow-3, dog-3 and bird-1) had bilateral fractures. In canine, the fracture was more in femur followed by radius-ulna, tibia and humerus. In cows, most of the fracture was occurred in tibia. In equine, metacarpal fracture was higher than others bone. Mandibular fracture was noticed in 2 cows and a camel. The position of fracture in bone was distal one third (39), midshaft (28) and proximal one third (10). The fracture line was transverse in 43 cases, oblique in 34 cases and comminuted in 4 cases. Most of the fractures were closed than open in most of species but in cows, it was equal. The fracture was complete in all animals except in dogs, where incomplete fracture was observed in 3 cases. Plaster of paris and splint was the main technique for fracture immobilization followed by internal immobilization. In canine most of the fracture (19) was managed by intramedullary pinning only. However, in other species, plaster of paris was the principal technique for fracture management. Common complication of POP was wetting, cracks formation, slippage and loosening whereas; pin migration was most complication seen with intramedullary pinning. Healing of fracture occurred in 52 cases (67.53%) and 23 cases (29.87%) did not turn up for follow-up. Two cases were euthanized.

**LAP-57****Ultrasonographic Diagnosis of Traumatic Pericarditis due to a Linear Foreign Body in a Cow***M. S. Bhadwal, A. K. Gupta, R. B. Kushwaha and S. Kumar*

F. V. Sc. &amp; A. H., SKUAST-J, R.S. Pura, Jammu

Ultrasonography was used to detect a linear foreign body in a cow suffering from congestive heart failure. The foreign body was seen as linear hyperechoic image at the level of elbow on both sides of the diaphragm, through the 6<sup>th</sup> intercostal space on the right side and 4<sup>th</sup> intercostal space on the left side, moving with each respiration and heart beat. No reticular motility was observed. Pericardiocentesis yielded copious yellowish-watery fetid pus. The animal, in 8<sup>th</sup> month of gestation, had anorexia for 10-12 days, brisket oedema since 7 days and was reluctant to move or lie down. The animal died two days later and necropsy confirmed the ultrasonographic findings.

**LAP-58****Bilateral Mandibular Fracture in Bullock and its Successful Repair***Aher V. D. and Kale V. D.*

COVAS, Parbhani- Maharashtra.

An eight years old nondescript bullock was presented to Teaching Veterinary Clinical Complex, Veterinary College Parbhani with the history of fighting with another bull. Horn of another bull was strucked to horizontal ramus of mandible leading to its bilateral fracture. Clinical and radiographical examination revealed complete fracture of both the horizontal ramus of the mandibles. Hence repair of the mandible with bone plating was decided. Neuroleptic anesthesia was achieved with parenteral administration of Inj. Xylazine @ 0.1 mg/kg and Inj. Pentazocin @ 0.5 mg/kg in combination. Infiltration of 2% lignocaine hydrochloride was required during surgery. Under aseptic precaution incision taken on fracture site on horizontal ramus of right side first. Fractured ends of mandible were made fresh & stainless steel bone plate was fixed with the screw. The muscles & skin was closed in routine fashion. The same procedure followed on the left ramus of mandible also. The bullock was maintained on fluid therapy for five days. Administration of antibiotic and anti-inflammatory drugs for 5 postoperative days was followed. Skin sutures were removed on 10<sup>th</sup> postoperative day. The bullock was recovered uneventfully after one month.

LAP-59

**An Unusual Subconjunctival Hard Abscess and its Surgical Correction***Kale V. D., Aher V. D. & Shaikh Noor*

COVAS, Parbhani- Maharashtra.

Four months old Red Kandhari cow calf was presented to Teaching Veterinary Clinical Complex, Veterinary College Parbhani with complaint of continuous lacrimation through right eye. Clinical examination revealed groundnut size pink hard swelling on palpebral conjunctiva of lower eyelid and inflammation of conjunctiva. Paracentesis could not reveal pus hence the case diagnosed for tumour and decided to remove by surgical intervention. Anesthesia achieved with retrobulbar, supraorbital & auriculopalpebral nerve blocks. Under aseptic precaution tumour swelling was undermined which was deeply situated. Meanwhile undermining growth ruptured & pus came out. Hence the whole abscess along with its membrane removed. Pus sample send for antibiotic sensitivity test which revealed sensitive for Enrofloxacin, Gentamycin & Ciprofloxacin. The wound was closed as in routine procedure. Postoperatively Inj. Gentamicine was administered subconjunctively & intramuscularly. The case was recovered uneventfully after 15 days.

LAP-60

**Surgical Management of Foreign Body in Hoof of Bullock***Chepte S. D., Kale V. D., Aher V. D. & Raut S. U.*

COVAS, Parbhani- Maharashtra.

Ten years old non-descript bullock was presented to Teaching Veterinary Clinical Complex, Veterinary College Parbhani with the history of lameness by right fore limb. Clinical examination reveled bullock reluctant to bear the weight on hoof over hard floor. Radiological examination of hoof reveled foreign body in the interdigital surface of medial hoof. Hence removal of foreign body by surgical intervention was decided. Neuroleptic analgesia was achieved by intravenous inj. of xylazine @ 0.1mg/kg body weight and inj. pentazocine @ 0.5 mg/kg body weight. Ring block analgesia was also achieved by local infiltration of 2% lignocaine hydrochloride. The foreign body was searched by incising with B.P. blade. The hoof was undermined with chisel. Small necrotic foreign body tract was visualized. Along the way of tract the foreign body was deeply sutured which removed by grasping with allis forcep. The foreign body was a part of sewing needle. The foreign body tract was irrigated with antiseptic and filled with antibiotic. The whole cavity and tract was sealed with dental cement. Antibiotic and NSAID were administered for three postoperative days. The bullock showed recovery without any complication.

LAP-61

**Tympani associated with intussusception in a bullock- A case report.***V. M. Salunke, K. S. Chaudhari, S. S. Pitlawar and A. D. Sangame*

College of Veterinary and Animal Sciences, Udgir- Maharashtra.

A 6 years old non-descript bullock was presented with the history of anorexia, regurgitation, cud dropping, distension of abdomen and absence of defecation. Clinical examination revealed increased rectal temperature and respiration, tachycardia, dry muzzle and sunken eyes. Per rectal examination revealed distended rumen, pasty faeces in rectum and sausage shaped intestinal loops. Plane lateral radiograph of reticulo-thoracic region showed non penetrating foreign body in reticulum. Hence the case was diagnosed as Non-potential foreign body syndrome associated with intussusceptions. Rumenotomy was performed to remove the bloat and from the same incision affected part of intestine explored and intussuscepted part resected out and end to end anastomosis performed using Cushing's followed by Lembert's suturing pattern. The abdominal was closed as per standard procedure. Postoperatively the bullock administered with Inj. Dicrysticin DS 5gm, inj. Multivet 10 ml, Inj. Nimovet 15 ml IM for 5 days. Inj. Ringer's Lactate 2 litres and Inj. D5 2 litres intravenously infused BID. Also Bolus Ecotas 2 BID for 5 days administered orally. On 4<sup>th</sup> postoperative day bullock has offered dry roughages and water in little quantity and slowly increased. The bullock showed uneventful recovery on the 8<sup>th</sup> postoperative day and on 12<sup>th</sup> postoperative day the skin sutures were removed. An unusual case of bloat with intussusceptions was reported in bullock and managed successfully with surgical treatment.

LAP-62

**Surgical Management of Mandible Fracture in a Calf***V. M. Salunke, K. S. Chaudhari, S. S. Pitlawar and A. D. Sangame*

College of Veterinary and Animal Sciences, Udgir- Maharashtra.

A day old Deoni female calf presented to TVCC, COVAS, Udgir with the history of hanging lower jaw. There was history of forced traction on the jaw of the calf during parturition. The case was diagnosed as bilateral mandible fracture at horizontal ramii. Hence the calf was prepared for mandibular repair under light sedation with Inj. Siquil and local analgesia with Inj. Lignocaine HCL. K-nail was implanted in both the horizontal ramii of mandible and stainless steel wire applied. Postoperatively the calf was maintained on hand feeding. Within 10 days of surgical treatment the calf started suckling the mother and showed uneventful recovery. K-nail and SS wire removed after 4 months. Thus a case of mandibular fracture in a calf, a complication of forced traction during parturition was reported and managed successfully with surgical treatment.

LAP-63

**Factors Influencing the Outcome of Surgical Management of Intussusception in Bovine***S. Peer Mohammed, N. Rajendran, S. Dharmaceelan, S. Kathirvel, S. Sethilkumar, A.**Kumaresan, K. Jayakumar and J. Chandran*

Veterinary College and Research Institute, Namakkal- Tamilnadu

Six cases of bovine were admitted to the teaching hospital with the history of not passing dung, colic signs, anorexia and bilateral distension of the abdomen. The rectal examination was performed and tentatively diagnosed as intussusception. All the animals were premedicated with 5% guaifenesin in 5% dextrose at the dose rate of 50 mg/kg body weight intravenously to effect. The general anaesthesia was induced with ketamine hydrochloride at the dose rate of 4mg/kg and maintained with 2% isoflurane. Through right flank laparotomy, enterectomy and end-to-end enteroanastomosis was carried out in all the animals as per the standard surgical technique. Under general anaesthesia the exteriorization of affected portion was ease and no mesenteric pain was evinced during ligation and resection. There was reduction in operating time because of patient co-operation. There was no struggling and the operation environment was pleasant for intussusception repair. Enteroanastomosis with Vicryl No.1 using simple interrupted suture pattern and omentalization with loose tacking was ideal for success of intussusception repair apart from other principles of intestinal surgery. Hence it was concluded that general anaesthesia with isoflurane, one layer simple interrupted suture pattern for anastomosis and omentalization with loose tacking greatly influenced the successful outcome of intussusception repair in bovine.

LAP-64

**Surgical Management of Diaphragmatic Abscess in a Pregnant Heifer***N. Rajendran, S. Dharmaceelan, S. Kathirvel, S. Sethilkumar, A. Kumaresan, K. Jayakumar and J. Chandran*

Veterinary College and Research Institute, Namakkal- Tamilnadu

An eight month pregnant Holstein-Friesian heifer was admitted with the history of recurrent tympany, scanty pasty faeces, loss of appetite and suspended rumination for the past ten days. Clinical examination revealed bilateral distension of abdomen, ruminal hyper motility. Rectal examination revealed dung with mucous shreds, papple shaped rumen, distended rumen beyond the midline and foetus occupied the right and ventral part of the abdomen. Plain radiography revealed diaphragm border was clear. Exploratory laparo-rumenotomy revealed frothy ruminal contents and dorsal displacement of the reticulum to the level of cardia. A penetrating safety pin was removed from left ventro-lateral wall of reticulum and a valley ball sized fluctuating mass was palpated ventral to the reticulum. Exploratory puncture from 9<sup>th</sup> intercostals space revealed pus and it was confirmed as diaphragmatic abscess. The general anaesthesia was induced with guifenesin and ketamin hydrochloride and maintained with 2% isoflurane. Through the post xiphoid incision the abscess was lanced and 7 liters of pus was sucked out with suction apparatus and chest drain tube was fixed for drainage and daily flushing. Daily flushing of the abscess cavity with warm saline containing tincture iodine through intravenous infusion tube passed through chest drain tube. Post operative antibiotic,

- LAP-69** **Successful Surgical Repair of an Enterocutaneous Fistula in a Mare**  
*V. Sangwan, J. Mohindroo, K. Singh, M. Raghunath and S.K. Mahajan*  
 COVS, GADVASU, Ludhiana- Punjab

A 2 yr old and one month pregnant mare was presented to the department with a draining intestinal fistula from 2 days in ventral abdomen. History and clinical examination diagnosed it to be Richter's hernia which had developed into an enterocutaneous fistula. The fistula was repaired under general anaesthesia by an enbloc resection of the antimesenteric end of the affected jejunum. Standard post-operative care as of intestinal surgery revealed uneventful recovery, though the animal aborted the carrying fetus. Fifteen month follow up found the animal to be sound and had delivered a healthy foal also.

- LAP-70** **Descent of Testis in Buffalo Foetii**  
*Manjinder Kaur, Neelam Bansal and Varinder Uppal*  
 College of Veterinary Sciences, GADV ASU, Ludhiana

The present study was conducted on the testis of 18 buffalo foetii ageing 4 from 8.0 - 90.0 cm CRL to observe the sequence of descent of testis during fetal life in buffaloes. The fetuses were collected and their body length was measured as a curved line in centimeters with a calibrated inelastic thread along the vertebral column between the most anterior part of frontal bone to the rump. The abdominal and pelvic cavities were opened to examine the location of testis. It was found that both the testis were present in the intra abdominal region at 8.0 cm CRL and were placed to the latero-ventral aspect on the caudal end of kidneys. At 18.2 cm CRL the testis migrated into the inguinal region and then started descending toward the scrotum at 36.5 cm CRL. This process continued and the testis were found to be fully descended into the scrotal sac by 75.0 cm CRL of prenatal life.

analgesic and cutaneous wound care were given. The drain tube was removed when the pus discharge has ceased. The cutaneous sutures were removed on 12<sup>th</sup> post operative day. The animal recovered uneventfully and calved on 02.10.2009.

**LAP-65 Management of Miscellaneous Affections under Field Conditions**

*Ram Swaroop*

Veterinary Hospital, Bogdhar, Sirmour- Himachal Pradesh

Seven no. of miscellaneous affections i.e. Ventrolateral abdominal hernia (Equine), Periocular tumour (Bovine), Uterine inertia (Canine), Glaucoma (Caprine), Navel ill (Bovine), Sarcoid (Equine), and Hyphema (Bovine) were diagnosed in the hilly terrain of place Bogdhar, Distt. Sirmour (H.P). Surgical and medicinal management of these affections will be discussed.

**LAP-66 Bilateral Medial Deviation of Eyeball in a Crossbred Cow**

*R. S. Bisla and S.S. Chaudhri*

CCS- HAU, Regional Research Station, Karnal- Haryana

An adult crossbred cow in 1<sup>st</sup> lactation was presented for treatment of bulging of eye balls of both sides with impaired vision. Hematological parameters were found within normal limits without any evidence of blood protozoan disease (s). The animal was having normal feeding, urination, defecation and production. The rectal temperature, heart rate and respiration rate were normal. Clinical examination revealed medial deviation of both eye balls without any other neurological disorder. The animal was treated with antibiotics, steroids, anti inflammatory, topical instillation of antibiotics and atropine eye drops for seven days without any response. The photographs of the conditions will be shown during presentation. Suggestions are invited for diagnosis and treatment.

**LAP-67 Surgical Repair of Compound, Non Union Metatarsal Fracture with Autogenous Cancellous Bone Grafting and Bone Plating in a Heifer Cow**

*M. Raghunath, N. Singh, Tarunbir Singh, A. Gopinathan, Krishan Atri and J. Mohindroo*

COVS, GADVASU, Ludhiana

A one and half year old heifer cow with a compound comminuted fracture of right metatarsal was presented after two and half months of injury to the teaching hospital with healed skin wounds and nonunion of metatarsal with a gap of 8-10 cm. between the rounded fractured ends. Large gap between the rounded fractured ends warranted a stable internal fixation with a source of osteogenesis. Hence a 4.5mm, broad, 12 holed, DCP plate was used for fracture stabilization with five screws each in proximal and distal ends. Autogenous cancellous bone graft harvested from the iliac shaft was filled at the fracture gap as a source of osteogenesis. External support was provided with an aluminum U splint. The animal started partial weight bearing on 2<sup>nd</sup> post operative day and complete weight bearing was noticed on 10<sup>th</sup> post operative day. One month followup radiographs revealed intact fracture fragments and implant, complete bone union with cortical continuity was noticed on 120<sup>th</sup> postoperative day after which the implant was removed and the animal made an uneventful recovery.

**LAP-68 Successful Repair of Persistent Urachus in a Cloned Buffalo Calf (Garima) - A Case Report**

*N. S. Saini, M. Raghunath and Chandan Singh*

COVS, GADVASU, Ludhiana

World's second buffalo calf developed by NDRI Karnal, was having an enlarged umbilical cord and was passing urine through its opening. The calf was weighing 45Kg. and the quantity of urine passing through umbilicus was increasing day by day. The condition was diagnosed as persistent urachus and umbilical abscess. The calf was sedated with inj. Diazepam @ 0.2mg/kg. and under local infiltration anesthesia the persistent urachus and the umbilical abscess were surgically corrected. The cloned calf recovered well postoperatively and started passing urine through normal passage without any post operative complications.