

XXIII ANNUAL CONGRESS  
OF  
INDIAN SOCIETY FOR VETERINARY SURGERY  
AND  
**NATIONAL SYMPOSIUM**  
ON  
RECENT TRENDS IN THE DIAGNOSTIC AND  
SURGICAL MANAGEMENT OF URINARY SYSTEM  
AFFECTIONS IN VETERINARY PRACTICE

**SOUVENIR & ABSTRACTS**

9<sup>TH</sup> TO 11<sup>TH</sup> DECEMBER 1999



DEPARTMENT OF SURGERY  
MADRAS VETERINARY COLLEGE  
TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY  
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XXIII ANNUAL CONGRESS  
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TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY  
CHENNAI - 600 007, TAMIL NADU.

INDIAN SOCIETY OF VETERINARY SCIENTISTS  
AND  
NATIONAL SYMPOSIUM  
ON  
RECENT TRENDS IN THE DIAGNOSTIC AND  
SURVIVAL MANAGEMENT OF ANIMAL DISEASES  
AT POLYMER UNIVERSITY PRACTICE

SOLVEMER & ABSTRACTS

1981-82

DEPARTMENT OF VETERINARY  
MADRAS VETERINARY COLLEGE  
TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY  
CHENNAI - 600 095 TAMIL NADU

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*Mohan Verghese Chunkath, I.A.S.,*  
*Secretary to Government*  
*Animal Husbandry and Fisheries Department*  
*Secretariat*  
*Chennai-600 009*


Dated 1.12.1999

### MESSAGE

I am happy to learn that the Tamilnadu Veterinary & Animal Sciences University is organizing a National Symposium on Recent Trends in the Diagnostic and Surgical Management, Urinary System Affections in Veterinary Practice, and XXIII Annual Congress of Indian Society for Veterinary Surgery from 9<sup>th</sup> to 11<sup>th</sup> December 1999. The theme chosen for the symposium is an important one in the present day context.

I am quite sure that the symposium will be of great help to the Scientists, farmers and development of livestock in the country. I am aware of the contribution made by the Tamilnadu Veterinary & Animal Sciences University for the development of livestock and the services rendered to the farming community in the country in general and Tamilnadu in particular.

I congratulate Tamilnadu Veterinary and Animal Sciences University for organizing the Symposium and offer my good wishes for the successful conduct of the Seminar.

  
(MOHAN VERGHESE CHUNKATH)



**Dr. R. Prabaharan, Ph. D.,**  
Vice-Chancellor

# TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY

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tanvvas@md2.vsnl.net.in  
Website : www.tanuvas.com

## MESSAGE

I am pleased to know that the Department of Surgery, Madras Veterinary College is organizing the XXIII Annual Congress and National Symposium of Indian Society of Veterinary Surgery from 9<sup>th</sup> to 11<sup>th</sup> December, 1999. The theme - the importance of Urinary System affections in farm animals - aptly depicts the current needs of the discipline in animal industry.

Our country depends on the economical returns of the livestock industry to a larger extent and in recent years, the advances in surgical technology has started ensuring the longevity of not only the production but also the life of the animal.

I am confident that the deliberations of the congress will reflect the role of the livestock in the next millennium, as India has a vital task in the development of the global livestock industry.

I wish the delegates a pleasant stay and greater benefit from the Annual Congress and National Symposium and disseminate the same to their professional colleagues.

Dated: 01-12-1999  
Place: Chennai-600 051

(R.PRABAHARAN)  
Vice-Chancellor

**Dr. (TMT). R. LEELAVATHY, M.V.Sc.,**  
DIRECTOR



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Date : .....

### MESSAGE

It is gratifying to note that the Indian Society for Veterinary Surgery has programmed to conduct its **XXIII National Congress from December 9<sup>th</sup> to 11<sup>th</sup> at Chennai**. With rapid strides being made in almost all branches of science and technology, this branch has witnessed tremendous progress for the past two decades and more. It is no wonder that the field of Veterinary Surgery also has kept its pace along side other noteworthy disciplines in the field of Veterinary Science. It is only but fitting that the Indian Society for Veterinary Surgery has chosen Chennai as its venue for the conduct of this moment Congress, heralding the advent of the 21<sup>st</sup> Century and the millennium as well. It is of topical importance that the Theme chosen for this symposium to be organised by the Indian Society of Veterinary Surgery "**Recent trends in the diagnostic and Surgical Management of Urinary System Affections in Veterinary Practice**" and will go a long way by spurring the delegates, to this conference to make further significant contributions with their considered deliberations.

My best wishes for the around success of the Conference.

Sd

**(Dr.R. LEELAVATHY)**

Phone : Office : 4338714, Residence : 4938325 Fax : 044-4323784. E.Mail - anh.@tn.nic.in



Dr. R. Natanam, M.V.Sc., Ph. D.,  
REGISTRAR

**MESSAGE**

I am happy to know that the Department of Surgery, Madras Veterinary College is conducting the XXIII Annual Congress and National Symposium on "Recent trends in the diagnostic and surgical management of urinary system affections in Veterinary Practice" during 09<sup>th</sup> - 11<sup>th</sup> December 1999. It is heartening that Chennai is hosting the last ISVS Congress of the century.

The theme definitely is indicative of the advances being made in the field of Surgery, which in recent years holds an important role in the augmentation of production as well as reducing mortality and economic losses thereby benefiting the farm animal owner.

I am sure the delegates will have a nice stay at Chennai and will actively participate in the scientific deliberations and return to their place of work with enriched scientific knowledge to ultimately benefit the farm animal and its owner.

**(R. NATANAM)  
REGISTRAR**



TAMIL NADU VETERINARY AND  
ANIMAL SCIENCES  
UNIVERSITY

*Dr. R. Kadirvelu*, M.V.Sc., Ph.D.,  
DEAN

Date : 06-12-99

**MESSAGE**

I am pleased to learn that the 23rd Annual conference of Indian Society for Veterinary Surgery, and a National Symposium is being organised between December 9th - 11th 1999 at the Department of Surgery, Madras Veterinary College, Chennai.

The theme gives a focus for future research activities as well as indicates the need to train in surgical skills of Veterinarians in the management of disorders of urinary system. This is a special occasion and such scientific gathering is not only important but essential for exchange of scientific ideas between institute personnel, apart from helping to motivate the students and young scientists to further their research pursuits.

I am very confident that the deliberations and recommendations that come out of the symposium would be very useful for building up the National economy through livestock sector.

I am sure that the participants from different parts of the country will enjoy their stay in this Southern City and its hospitality.

I wish the 23rd Annual Conference of Indian Society for Veterinary Surgery and the National Symposium all success.

  
(R.KADIRVEL)



## TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY

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**Prof. A.M. Shanmugam, M.V.Sc., Ph.D.,**

Director of Research

Date : 06-12-99

### MESSAGE

I am happy to know that the Department of Surgery of Madras Veterinary College is conducting the XXIII ISVS Congress and National Symposium during the 09-11th December 1999.

The faculty of Surgery is known for their enthusiastic and dynamic technical activities round the year.

The theme reveals the importance that is required in the surgical management of urinary system affections and is rightly being organized by the Department of surgery which has expertise and infrastructure facilities to the international standards in this specialization.

I am sure that the participants will interact, share their technical knowledge and benefit from the National congress and symposium.

  
6.12.99  
**DIRECTOR OF RESEARCH**



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## Tamil Nadu Veterinary and Animal Sciences University

Prof. V. SUNDARARASU, M.V.Sc., Ph.D.,  
DIRECTOR  
CENTRE FOR ANIMAL PRODUCTION STUDIES

Madhavaram Milk Colony,  
Chennai-600 051.

### MESSAGE

I am glad to know that Department of Surgery, Madras Veterinary College has taken initiative to organize XXIII National congress and Symposium on "Recent Trends in the Diagnostic and Surgical Management of Urinary System Affections in Veterinary Practice", under the Auspices of Indian Society of Veterinary Surgery from 09-11th December 1999.

I am sure that meaningful deliberations will take place during this Congress with the participation of eminent persons, scientists and industrialists and interested entrepreneurs.

In the light of the above, it is most befitting that a Souvenir is also being brought out containing scientific papers on the prospects of "recent trends in diagnostics and surgical management of urinary affections" thereby alleviating the sufferings of our precious livestock and pet animals.

I wish this congress and symposium to be a great success.

  
6/12/99  
DIRECTOR

CENTRE FOR ANIMAL PRODUCTION STUDIES



# TAMILNADU VETERINARY AND ANIMAL SCIENCES UNIVER

Dr. R. MANICKAM, M.V.Sc., Ph.D.

Director

Centre for Animal Health Studies

Dt:03.12.99

## MESSAGE

*I am happy that the Indian Society for Veterinary Surgery is holding its XXIII Annual Congress and National Symposium on "Recent Trends in the Diagnostic and Surgical Management of Urinary System Affections in Veterinary Practice" from 9-11<sup>th</sup> December, 1999 in the Department of Surgery, Madras Veterinary College, Chennai.*

*The topic chosen for the symposium is the need of the hour and outcome of the deliberations will be very useful in solving the surgical problems relating to Urinary system in the new millennium.*

*I wish the Annual Congress and National Symposium a grand success.*

  
3/12/99  
(R. Manickam)



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## Tamil Nadu Veterinary and Animal Sciences University

**Dr. F.R. SHERIFF, M.V.Sc., Ph.D.,**  
Director of Extension Education

Madhavaram Milk Colony,  
Chennai-600 051

### MESSAGE

I am extremely happy that XXIII Annual Congress of Indian Society for Veterinary Surgery is organising a **National Symposium on Recent trends in diagnostic and surgical management of urinary system affection in veterinary practice** from December 9<sup>th</sup> to 11<sup>th</sup> 1999 at Madras Veterinary college, Tamil Nadu Veterinary and Animal Sciences University, Chennai. I congratulate Dr. W.P. Archibald David, Professor and Head and his dedicated team members for bringing the veterinary surgeons from different parts of India together for this Symposium.

Our Scientific achievements should be shared among scientists periodically. This will help us to achieve excellence in our skill by exchange of latest innovations. Equipping ourselves with recent improvements will help each of us to serve our livestock better. I hope that the symposium would serve as an important forum for the exchange of knowledge on recent trends.

I wish the symposium a success.

**(F.R. SHERIFF)**

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## Tamil Nadu Veterinary and Animal Sciences University

Madras Veterinary College Campus  
Chennai - 600 007, India.

Dr. P. Dhanapalan, M.V.Sc., Ph.D.,  
Director of Clinics


D7:01-12-1999

### MESSAGE

*It gives me immense pleasure to know that Madras Veterinary College, Chennai is holding the XXIII Annual Congress of Indian Society for Veterinary Surgery along with National Symposium on "Recent trends in the Diagnostic and Surgical Management of Urinary system affections in Veterinary Practice" from December 9-11<sup>th</sup>, 1999.*

*The Livestock population in this country plays the vital role in the Agricultural Economy. Hence, their health status is an important criteria. I hope the delegates attending the conference will recommend suitable technology applicable to farm and pet animals to improve the livestock health status thereby economic status.*

*I extend my best wishes to the organizers of the Convention and Symposium.*

  
/11/12/99  
(P.DHANAPALAN)  
DIRECTOR OF CLINICS

## PROGRAMME

09.12.99

THURSDAY

- 0730 – 0830hrs. **BREAKFAST** SPONSOR: FARM CURE INDIA,
- 0830 – 1000hrs. **REGISTRATION**
- 1000 – 1130hrs. **INAUGURATION**
- 1200 – 1300hrs. TECHNICAL SESSION – I  
*THEME PAPER*  
Chairman : Dr.P.E. Kulkarni  
Rapporteur: Dr.M.S.Vasanth
- 1300 – 1400hrs. **LUNCH** SPONSOR:SOUTH INDIA CORP.
- 1400 – 1530hrs TECHNICAL SESSION – II  
*LARGE ANIMAL SURGERY*  
Chairman :Dr.P.A.Deore  
Rapporteur:Dr.S.M.Usturge
- 1530 – 1600hrs **TEA**  
*POSTER SESSION*
- 1600 – 1800hrs TECHNICAL SESSION – III  
*ANAESTHESIOLOGY*  
Chairman : Dr.Amresh Kumar  
Rapporteur: Dr.M.K.Bhargava
- 1830 – 2030hrs **CULTURAL PROGRAMME**
- 2030 – 2130hrs **DINNER** SPONSOR: THE LAKSMI MILLS

**10.12.99**

**FRIDAY**

- 0730 0830hrs **BREAKFAST** SPONSOR: **CHETTINAD STUD AND AGRICULTURAL FARM,**
- 0830 1030hrs **TECHNICAL SESSION - IV**  
**SMALL ANIMAL SURGERY**  
Chairman : Dr. K.N.M.Nayar  
Rapporteur: Dr.L.Ranganath
- 1030 1100hrs **TEA**
- 1100 1300hrs **TECHNICAL SESSION - V**  
**ORTHOPAEDIC SURGERY**  
Chairman : Dr.K.G.Avachat  
Rapporteur: Dr.T.P.Balagopalan
- 1300 1400hrs **LUNCH** SPONSOR: **JAYAMARI ENTERPRISES & Mrs. LAKSMI SRINATH**
- 1400 1700hrs **FIELD VISIT**
- 1930 2030hrs **DINNER** SPONSOR: **VISHAL SURGICALS & EQUIP.**

**11.12.99**

**SATURDAY**

0730 – 0830hrs

**BREAKFAST**

**SPONSOR: INTAS**

0830 – 0930hrs

**TECHNICAL SESSION – VI**

**RADIOLOGY AND IMAGING TECHNIQUES**

Chairman : Dr.A.P.Singh

Rapporteur: Dr.V.D.Aher

0930 – 1030hrs

**TECHNICAL SESSION – VII**

**EXPERIMENTAL SURGERY**

Chairman : Dr.S.K.Chawla

Rapporteur: Dr. Amarpal

1030 – 1100hrs

**TEA**

1100 – 1200hrs

**TECHNICAL SESSION – VIII**

**AWARDS SESSION**

Chairman : Dr. G.V. Lakshmi pathy

Rapporteur: Dr. H.P. Aithal

1200 – 1300hrs

**PLENARY SESSION**

1300 – 1400hrs

**LUNCH**

**SPONSOR: TARAPORE , BAGDI  
AGENCIES & ESQUIRE  
SURGICALS**

1400 – 1530hrs

**GENERAL BODY MEETING**

1530 – 1600hrs

**TEA**

11/19/01

10/11

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# LARGE ANIMAL SURGERY

Chairman: Dr. P.E.KULKARNI

Rapporteur: Dr. M.S.VASANTH

## 1. VAGUS INDIGESTION IN A BULLOCK

*G.U.YADAV, V.D.AHER, A.U.BHIKANE AND A.P.BHOKERE*

College of Veterinary and Animal Sciences, Udgir.

A bullock of 10 years age was presented with a history of sudden distension of abdomen and colicky symptoms followed by straining, suspended defecation, rumination and anorexia for last 8 days. There was a history of heavy beating to the bullock. Clinical examination revealed a body temperature of 99F, pulse 62/min., respiration, 14/min. and the ruminal motility was 1-4/5 minutes and was very weak. On palpation rumen was atonic and impacted. Per rectal examination revealed impacted and distended rumen. Rumenotomy and parenteral administration of nervine stimulant caused complete recovery of the animal. The details about diagnosis and treatment schedule will be discussed.

## 2. VARICOSE VEINS OF LOWER LIMB IN A SHE BUFFALO

*T. MADHAVA RAO*

Dept. of Surgery, Teaching Veterinary Clinical Complex,  
College of Veterinary Science, Rajendra Nagar, Hyderabad -30.

A 5 year old Murrah she buffalo was presented with the history of anorexia, pyrexia since 2 days and lameness of left hind limb for the past few years. On routine clinical examination, the varicosity of the lower limb peripheral veins including saphenous vein was noticed. The veins of the limb were markedly dilated, irregular, and appeared tortuous. On palpation of the varicose veins at isolated sites, whirring sensation was felt. The development of varicose veins might be attributed to the trauma resulted due to metatarsal fracture 3 years back. Compression bandage and the use of NSAID for 3 days provided temporary relief from pain.

## 3. SURGICAL MANAGEMENT OF INTUSSUCEPTION IN A NON-DESCRIPT BULLOCK

*V.D.AHER, A.U.BHIKANE AND A.P.BHOKRE*

College of Veterinary & Animal Sciences, Udgir.

A non-descript bullock aged about 7 years was referred with symptoms of bilateral abdominal distension, anorexia and cessation of defecation since one week. Signs of colic were observed on the first day only. Examination of

animal confirmed intestinal obstruction hence, a right flank laparotomy was performed. The part of the intestine, which had undergone intussusception, was resected and end-to-end anastomosis was performed. The laparotomy wound was closed in routine manner. The animal showed uneventful recovery and was discharged on ninth post-operative day.

#### **4. CLINICAL STUDIES ON REPAIR OF DIAPHRAGMATIC HERNIA IN BOVINES IN WESTERN MAHARASHTRA REGION**

*N.L.NARALE, M.N.ATHWALE AND A.P.BHOKRE*  
Marathwada Agricultural University, Parbhani.

A total of 916 clinical cases of ruminal disorders in bovines were screened for incidence of diaphragmatic hernia from the year 1994-97. The study revealed a high incidence of TRP (22.27%) followed by DH (21.40%). Majority of cases (77.98%) of DH was associated with the presence of foreign bodies in reticulum. In all, 16 cases of DH were available for repair. The repair was undertaken in two-stage operation. Firstly, exploratory laparorumenotomy followed immediately by herniorrhaphy under sedation with xylazine and local analgesia. The trans-abdominal approach was used for repair of DH. Closure of the rent in diaphragm was done with No.6/0 nylon or Vetafil No.1.1 mm using continuous lockstitch pattern. Out of 16 cases operated, 12 (75%) recovered uneventfully while 4 deaths (25%) were recorded. Three deaths occurred during herniorrhaphy owing to severe dehydration, debility and anaemic condition while one animal succumbed to severe jaundice. The DH repair immediately after laparorumenotomy was having definite advantage as the empty rumen enabled better visualization at repair site. Suturing of diaphragm with No.6/0 nylon was economic than Vetafil and caused no untoward effect.

#### **5. SURGICAL MANAGEMENT OF URINARY OBSTRUCTION DUE TO BALANOPOTHITIS IN LARGE RUMINANTS**

*B.V.SHIVAPRAKASH, S.M.USTURGE, D.DILIP KUMAR  
AND B.N.NAGARAJA*

Veterinary College, Bidar, Karnataka.

Nine cases of ruminants were treated at different hospitals and farms during 1992. Ninety-nine for urinary obstruction with symptoms for the causes other than urolithiasis. Four bullocks, three bulls and one each was a bull calf and a buffalo calf. The bull calf had no swelling whereas, few bullocks had a large swelling extending upto umbilical region. All the animals had phimosis with adhesions in the prepuce canal. Distended bladder and fever was also noticed. Diagnosing the cases as balanoposthitis, modified circumcision



operation was attempted. A long V shaped incision on the ventral aspect of prepuce was made and extended posteriorly until glans penis was located. Adhesions within the prepuccial canal and necrotic tissue around the penis were made free and catheter was passed into the urethra to establish patency. Urine accumulated subcutaneously was removed through the same incision on either side of the prepuccial canal. The V shaped incision was kept open for drainage and the animals were made to pass the urine through circumcision opening for the rest of the life. In one bullock where prepuccial canal was reconstructed, swelling did not reduce and circumcision opening was re-established. The edges of the V shaped incision were closed separately for drainage. Seven animals recovered completely, one bull calf died due to secondary complications on the same day and one bull was reported to be dead three weeks following surgery for the reasons, which were not traced. The results suggested that modified circumcision operation could be employed for the treatment of urinary obstruction complicated with balanoposthitis.

## **6. KERATO-CONJUNCTIVITIS IN A SHE BUFFALO - A CASE REPORT**

*T.MADHAVA RAO, M.RAMREDDY AND K.G.SOLMON RAJU*  
College of Veterinary Science, Rajendranagar, Hyderabad-30.

A six year old she buffalo was presented with a complaint of bilateral corneal opacity, chemosis involving right eye, and, lacrimation since 2 days. The rectal temperature was 103°F. Clinical examination of the right eye revealed opacity of the cornea, (Nebula), and the oedematous palpebral conjunctiva protruding out of the orbit and the conjunctival mucous membrane was severely congested. Periorbital swelling was also noticed. Cataract of left eye was also noticed. The condition was treated with subconjunctival injection of gentamicin 20 mg and prednisolone 10 mg and chloromycetin eye drops (3-4 drops) 4 times daily for 5 days. The cornea became transparent, chemosis subsided and lacrimation controlled and the eye became normal at 6 days following treatment.

## **7. INDIGESTION AND MECHNAICAL OBSTRUCTION DUE TO INGESTION OF PLASTIC MATERIAL AND DETERGENT - A REPORT OF TWO CASES**

*T.MADHAVA RAO, K.G.S.RAJU AND M.RAMREDDY*  
College of Veterinary Science, Rajendranagar, Hyderabad-30.

A six year she buffalo was presented with a complaint of ingestion of plastic packet containing detergent powder, and anorexia since 3 days. Clinical examination revealed frothy bloat. An eight year old advanced prègnant she buffalo was presented with a complaint of ingestion of biscuit effluents, and anorexia since 5 days. Dyspnoea was noticed. On percussion of left paralumbar fossa, the rumen contents were found to be impacted and the rumen

motility was 0/3 minutes. Rumenotomy was performed and in both the animals, lumps of plastic ropes (20 and 25 Kg.) were recovered from rumen, and reticulum obstructing the reticular-omasal orifice of the affected animals. Frothy rumen contents from the first animals and impacted rumen contents with biscuit effluents from the latter animal were removed. Bolts (3), nails (3), hair pins (1), 4 cm & 6 cm wires (2), and stones (5) were also recovered from the second animal. The first animal recovered uneventfully. Antibiotic and fluid therapy was continued for 3 days in the second animal and on 4 the day, the animal died due to pleurisy and abscessation of lungs.

### **8. BENIGN MELANOMA ON THE PLANTAR ASPECT OF THE DEWCLAW OF A COW - A CASE REPORT**

**K.V.SYAM, T.SARADA AMMA, S.SENTHILKUMAR AND S.SOORYADAS**

Dept. of Surgery, C.O.V.A.S., Mannuthy.

A ten year old crossbred cow was presented with a history of difficulty in walking for a couple of weeks due to a progressively growing pedunculated mass attached to the plantar aspect of the lateral dewclaw of the left hind limb. A small mass was present at the site for about eight years, but had started growing rapidly in the recent past causing difficulty in ambulation. The mass was dissected out surgically under local infiltration and low epidural analgesia. Histopathological examination revealed it to be a benign melanoma. Following surgery, the animal had an uneventful recovery and no recurrence was reported since then.

### **9. VENTRAL HERNIA IN ADVANCED PREGNANCY AND THEIR SURGICAL MANAGEMENT**

**S.M.USTURGE, B.V.SHIVAPRAKASH, D.DILIP KUMAR AND B.N.NAGARAJ**

Dept. of Surgery and Radiology, Veterinary College, Bidar.

Two cows in advance pregnancy had ventral hernias. The first cow was a Deoni cow of six years age, which had ventral hernia in right lateral paramedian area. The hernial sac was containing uterus and intestine. The foetus was dead. It was treated by hysterectomy and herniorrhaphy. The second cow was a crossbred (H.F. & Deoni) animal aged 5 years and was having hernia on left lateral paramedian area. The hernial sac was containing voluminous intestine and foetus was dead. The hernia was reduced and hysterectomy was performed to remove dead foetus. Herniorrhaphy was done. Both the animals showed uneventful recovery.

## **10. MANAGEMENT OF EXTRA-RETICULAR ABSCESS IN BUFFALOES – A REPORT OF TWO CASES**

*R.BHATIA, S.S.SINGH, J.MOHINDROO, T.P.SINGH AND B.S.NANHAR*  
P.A.U., Ludhiana.

A buffalo with a history of recurrent tympany and anorexia for last 25 days was presented. Rumenotomy revealed extra-reticular abscesses. One of the abscesses was at the anterolateral wall of the reticulum where it is usually found. But the other abscess was occupying ventrolateral wall of the rumen for a length of 6". This was drained into rumen and the other into reticulum. Postoperative antibiotic therapy was given for a week. The animal recovered uneventfully. Another buffalo with a same history when operated for rumenotomy was found to have extra-reticular abscesses at diaphragm. The animal was, 2 days later, opened from paracostal post xiphoid region to excise out the abscesses. But the abscesses ruptured during manipulations and got drained into the abdominal cavity. Abdominal cavity was flushed with 5 liters of saline and suction apparatus. Post-operatively antibiotic therapy was given for a week. The animal recovered uneventfully.

## **11. SURGICAL MANAGEMENT OF URETHRAL CALCULI THROUGH RETROGRADE CATHETERISATION BY PREPUCIOTOMY – A RECORD OF FIVE CASES**

*S.K.DAS, S.S.NAYAK, AND J.MOHANTY*  
Dept. of Surgery, Faculty of Veterinary Science and A.H., Bhubneswar.

Retrograde catheterisation of the bovine urethra was been carried out in five calves. The glans penis was exteriorized for manipulation through a 2cm.prepuciotomy incision. Flushing of the urinary calculi by retrograde catheterisation was attempted. Dislodgment of the obstructed calculi from the urethral passage and its flushing towards the bladder was done successfully. Catheterisation and flushing of the bovine urethra was considered to constitute the best approach to avoid urethrotomy and urethrostomy procedures.

## **12. IMPORTANCE OF URETHRAL RECESS IN URETHRAL CATHETERISATION PROCEDURES IN BOVINE PRACTICE**

*S.DAS, S.NAYAK AND J.MOHANTY*  
Dept. of Surgery, Faculty of Veterinary Science and A.H., Bhubaneswar.

Urethral recess is an oval pouch situated near the ischial arch at the junction of the pelvic urethra and bulbospongiosus muscle. A flap of tissue extending from the upper wall of the pelvic urethra acts as a valve preventing the passage of the catheter into the bladder. Contrast radiographic study on

fresh uro-genital tract specimen in calves and bullocks was been carried out. The shape, size and depth of the recess were clearly depicted.

### **13. SURGICAL MANAGEMENT OF PERVIOUS URACHUS IN FOALS**

**B. SRIDHAR**

Senior Veterinary Officer, Hyderabad Race Club, Hyderabad.

Surgery was performed for the treatment of pervious urachus in two thoroughbred foals. Case 1 was a 10 day old foal. The clinical signs were leakage of urine from the umbilical region since birth, high fever (104° F) injected mucous membrane and anorexia in the later stages had been noticed by the referring equine practitioner who was managing the case with application of Tincture of Iodine over umbilical region. As there was no improvement, the case was referred. At this stage surgery was taken up. Case 2 was a 20 day old foal. The foal started leakage of urine suddenly following a gallop with its mother in the paddock. Surgery was undertaken with xylazine and ketamine. The patent pervious urachus was ligated and the stump was closed with continuous Cushings sutures using vicryl No.1 and the abdomen closed. Antibiotics at eight hourly interval and oral B complex with electrolytes were administered.

### **14. MANAGEMENT OF SINUSITIS IN THOROUGHBRED RACE HORSES – A RETROSPECTIVE STUDY OF 32 CASES**

**Dr. B.Sridhar**

Senior Veterinary Officer, Hyderabad Race Club, Hyderabad.

Sinusitis is inflammation of paranasal sinuses. Quite a number of persistent unilateral nasal discharge cases in thoroughbred racehorses especially younger horses are due to sinusitis. Radiographs of the head region of 32 cases showed increased radiodensity and presence of fluid lines in the maxillary sinuses. All the cases were managed by trephining and flushing the sinuses with 2lit. of Ringer's lactate and benzyl penicillin for 5 days.

### **15. OSTEOCHONDROSIS IN THOROUGHBRED RACE HORSES - A RETROSPECTIVE STUDY OF 146 CASES**

**B.SRIDHAR**

Senior Veterinary officer, Hyderabad Race Club, Hyderabad.

Osteochondrosis refers to a disturbance of cellular differentiation in the growing cartilage (articular/epiphyseal). There is a failure of endochondral ossification and persistence of hypertrophied cartilage. This failure leads to fragmentation of articular cartilage in weight bearing joints leading to lameness. Early diagnosis and prompt treatment are necessary to prevent degenerative joint disease (osteo-arthritis), which renders the horse unfit for

training and racing. There are two kinds of manifestation of osteochondrosis in horse viz., Osteochondrosis dessicans (OCD) and subchondral bone cyst (SBC). The commonest is OCD. SBC is occasionally seen in elbow and stifle joints. At the Equine Hospital, Hyderabad Race Club, over a period of 10 years the following 146 cases of OCD have been diagnosed and treated.

## **16. PHYSIO-BIOCHEMICAL ALTERATIONS IN PERITONEAL FLUID FOLLOWING STRANGULATED INTESTINAL OBSTRUCTION IN CALVES**

*ARVIND SHARMA, MOHINDER SINGH, A.C.VARSHNEY AND S.K.SHARMA*  
Dept. of Surgery and Radiology, College of Vety. and Animal Sciences,HPKV.

Strangulated intestinal obstruction of ileum, approximately 15 cm distal to the jejuno-ileal junction was created experimentally in five male cow calves. Peritoneal fluid samples were collected by ventral paracentesis abdominis at 0, 24, 48 and 72 hrs post induction for physio-biochemical analysis. The normal straw colour of the peritoneal fluid changed to yellow, deep yellow and reddish and clotting of the peritoneal fluid was recorded during all stages of observations in the post obstruction period. Mild increase in nucleated cell counts, total protein and sodium was observed, whereas marginal decrease in peritoneal fluid potassium and an increase in chloride concentration was recorded following strangulated intestinal obstruction when compared to base values in all the animals.

## **17. SURGICAL AFFECTIONS OF PENIS AND PREPUCE IN BULLS AND THEIR MANAGEMENT A REVIEW OF 14 CASES**

*MOHINDER SINGH, S.K.SHARMA, A.C.VARSHNEY, ADARSH KUMAR,  
S.P.TYAGI AND RAKESH SHARMA*  
Dept. of Surgery and Radiology, College of Veterinary and Animal Sciences, HPKV.

Fourteen bulls in the age group of 3-10 years were presented to the College Veterinary Clinic during the last 12 years with the signs of stranguria and paraphimosis. Diagnosis revealed spiral deviation of penis (12 cases) and prolapse of prepuce (2 cases). Trauma at the time of mating / mounting or during semen collection was the major cause of these conditions. Incidence was encountered more frequently in young bulls during rainy season. All the affected cases, did not respond to the routine conventional treatment. Therefore, penectomy was performed in deviation of penis, whereas, the prepuccial prolapse was corrected by surgical excision under pudendal nerve block and chloral hydrate narcosis. Post operatively, all the animals except one showed uneventful recovery.

## **18. DEEP ACUTE ULCERATIVE KERATITIS IN AN ELEPHANT**

*V.RAMASWAMY, C.VENKATESAN AND K.RAMANUJAM*

Veterinary College and Research Institute, Namakkal-2.

A 22 year old female, temple elephant was referred with traumatic injury in the left eye. The animal showed symptoms of profuse lacrimation, photophobia, acute ocular pain with blepharospasm and the vision was completely impaired. Examination of the affected eye, under xylazine sedation (.05 mg/kg/IV) revealed stromal oedema diffuse corneal opacity and a deep corneal ulcer at center with grayish-white plaque. Combination of antibiotic therapy with sub-conjunctival injection of atropine sulphate and placentrex was given in acute stage. The refractory corneal ulcer later became a corneal scar, which was treated using homeopathy medicine for about a month. The vision was restored slowly and the animal recovered completely.

## **19. SUCCESSFUL REPAIR OF ILEO-CAECAL INTUSSUSCEPTION IN A PREGNANT COW BY LEFT FLANK APPROACH**

*C.VENKATESAN, V.RAMASWAMY, RAMPRABU AND G.VIJAYAKUMAR*

Veterinary College and Research Institute, Namakkal-2.

A five months pregnant, Jersey cross cow, aged about 4 years was presented in the college clinics with a history of total anorexia, suspended rumination and complete cessation of defecation. Animal was recumbent with bilateral distension of the abdomen. On the basis of clinical, haematological and per rectal findings, it was tentatively diagnosed as gastrointestinal tract obstruction. Exploratory laparotomy was conducted on the left flank. The rumen was highly distended and further exploration could not be made. Hence, rumenotomy was performed and a large quantity of ruminal contents was removed and no foreign body was detected. After closure of the rumen, right side of the abdominal cavity was explored, which revealed a hard lumpy mass among the intestinal segments. It was exteriorized and was found to be ileo-caecal intussusception. Enterectomy and end to end entero-anastomosis was performed.

## **20. SURGICAL MANAGEMENT OF OESOPHAGEAL RUPTURE IN A CALF**

*M. KANTHAMMA*

Veterinary Asst. Surgeon, Veterinary Polyclinic, Kurnool - 518 002, A.P.

A 30 day old calf was presented to the hospital with a history of having swallowed a large sized sewing needle about two days back. The calf was showing frothy salivation, protrusion of tongue, dyspnoea and a swelling in the

caudal cervical region. The animal showed total anorexia and inability to swallow. A lateral radiograph of the oesophagus showed no radio-opaque foreign bodies. A contrast radiograph with barium sulphate revealed a tear in the oesophagus. Under local infiltration anaesthesia using 2% Lignocaine Hcl (Xylocaine - Astra IDL ) oesophagus was sutured in two layers of closely placed simple interrupted sutures using 2/0 chromic catgut.

## **21. CLINICAL EVALUATION OF DETOMIDINE AS A SOLE ANALGESIC FOR CASTRATION IN EQUINE**

*M.B.ADSUL, L.B.SARKATE, AND D.U.LOKHANDE*

Dept. of Surgery, Bombay Veterinary College, Parel, Mumbai.

Five healthy horses of 2 to 5 years of age group presented for gelding were used for the evaluation of detomidine. Detomidine was administered intramuscularly at the dose rate of 40 ug/kg.body weight 15 minutes prior to surgery. Castration of each horse was performed in standing position. The onset of sedation and analgesia, duration of analgesia, signs of sedation, and recovery time was noted. Besides the above parameter, the blood glucose level before the administration of detomidine, during the peak period of analgesia and following recovery were monitored. The onset of deep sedation and profound analgesia was observed within  $8.80 \pm 0.48$  minutes and it persisted for  $68.00 \pm 4.87$  minutes. The horses appeared calm and quite with dropping of head, closing of eyes, full relaxation of penis and complete descending of both the testicle in the scrotum. Full dilatation of pupil, complete drooping of head, relaxation of anal sphincter and lack of response to pin prick were seen in four out of five horses. Moderate degree of pain while incision of skin and emasculation was observed in two horses. All the horses maintained standing position throughout the period of emasculation and during the recovery period. Complete recovery from sedation and analgesia took place within  $162 \pm 8.0$  minutes.

## **22. CAPPED ELBOW IN A WHITE TIGRESS**

*L.B.SARKATE, D.U.LOKHANDE AND R.P.BARAHATE*

Department of Surgery, Bombay Veterinary College, Parel, Mumbai.

A small swelling on the elbow joint was observed in a four year white tigress of Sanjay Gandhi National Park, Borivili, Mumbai on 29<sup>th</sup> November. Injections of anti-inflammatory analgesics and steroids for 5 days did not show any improvement. The tigress was tranquilized with xylazine for examination. The swelling appeared soft, cold and painless. Needle puncture revealed presence of clear fluid. The swelling was diagnosed as capped elbow.

### **23. PERINEAL HERNIA IN A BUFFALO**

**L.B.SARKATE, S.V.VISHWASRAO AND C.L.BADGUJAR**

Dept. of Surgery, Bombay Veterinary College, Parel, Mumbai.

A six year lactating Murrah buffalo was presented with a history of reduction in milk yield, straining and frequent micturition and passed small quantity of faeces since one month. Physical examination on the right side of anus and vulva revealed a soft, cold and painless swelling of approximately a child's head size. Per-rectal examination showed distension of bladder and rectum. A tentative diagnosis of perineal hernia was made and herniorrhaphy was advocated. Owner permitted surgical intervention 21 days following admission of the patient. Two elliptical incisions were made from dorsal border to the distal end of the swelling and muscle and fascial tissue was separated bluntly. The hernial ring was made free from adhesions and the bladder was emptied. The rectum and the bladder was pushed back into the pelvis and the hernial ring was freshened till capillary bleeding. Taking 5 – 6 interrupted suture, using strong plastic suture material closed the hernial ring. The subcutaneous tissue and fascia was sutured by interrupted suture with chromic catgut No.2. The wound healed completely on 14<sup>th</sup> post-operative day. Post-operatively the buffalo did not show any signs of straining and recovered completely.

### **24. PARTIAL AMPUTATION OF UDDER IN A SHE BUFFALO**

**L.B.SARKATE, BHAGAT AND D.U.LOKHANDE**

Dept. of Surgery, Bombay Veterinary College, Parel, Mumbai.

A Surti buffalo of 9 years age, suffering from chronic mastitis with a big fibrous tissue mass between the right anterior and posterior quarters of udder was presented for surgical treatment. The suspended right half of the fibrous tissue mass of udder was almost touching the ground. The mass was increasing day by day both in diameter and length. The mass was richly supplied by the blood vessels and was cold and painless to touch. The owner reported bleeding from growth due to trauma while sitting. The buffalo was anaesthetized by injecting xylazine (0.04 mg/kg) and ketamine (1 mg/kg) intravenously. Two elliptical incisions were made from cranial to caudal part of the growth and the hard fibrous tissue mass was carefully dissected by ligating the blood vessels and finally the two quarters were amputated from the base. The weight of the growth was 5.1 kg and was very hard to cut. The pieces of growth were collected and processed for histopathological study. Microscopic examination of tissue section revealed severe fibrous tissue hyperplasia, with the presence of neutrophils and macrophages



## 25. STUDIES ON THE EFFECT OF PELVIC PLEXUS BLOCKADE IN THE MANAGEMENT OF CYSTITIS IN BUFFALOES

*RAJU SHARDA, AMERSH KUMAR AND N.S. JADON*  
G.B.P.U.A.T., Pant Nagar, Udham Singh Nagar, U.P.

Twelve clinically healthy 12-18 months old male buffalo calves weighing 80-130 kg body weight were randomly divided into three groups of four animals each. Cystitis was experimentally created in all groups of animals. Animals of group I served as experimental control treated with antibiotics for 5 days whereas in group II pelvic plexus block was given using warm solution of lignocaine hydrochloride along with antibiotics and pelvic plexus blockade alone was given in animals of group III. There was a significant elevation of heart rate and temperature with marked neutrophilia and leucocytosis after cystitis. Significant increase was recorded in the value of creatinine, BUN, blood glucose and urinary GGT with decrease in total protein, albumin and sodium. Initial polyurea was followed by oliguria with haematuria in all groups of animals. It can be concluded that pelvic plexus blockade using 0.5% solution of lignocaine hydrochloride along with antibiotics resulted in early abolishing of symptoms of cystitis, lesser haematological and biochemical alternations with effective recovery in animals.

## 26. SURGICAL REMOVAL OF A FAECOLITH IN A PONY

*B. RAMESH KUMAR, B. JUSTIN WILLIAM, R. JAYAPRAKASH*  
*AND W.P. ARCHIBALD DAVID*  
Dept. of Surgery, Madras Veterinary College, Chennai.

A 7 years old female pony was brought to the Madras Veterinary College Hospital with the symptoms of colic and cessation of passage of dung. The animal showed distention of abdomen. Medical treatment for colic was attempted for 3 days and proved unsuccessful. Hence, the animal was subjected to exploratory laparotomy through mid ventral approach. Premedication and general anesthesia was induced using atropine sulfate, xylazine and ketamine. The animal was maintained under halothane-oxygen mixture using Narcovet 'E' anaesthetic apparatus. The animal was positioned on dorsal recumbency and laparotomy was performed through mid ventral approach between umbilicus and prepubic region. On examination of the visceral organs an obstruction was noticed at the ileo-colic junction with signs of necrosis of intestinal wall. Enterectomy and entero-anastomosis of the affected segment was performed by routine manner. Detailed examination of the obstruction site revealed the presence of a faecolith in the lumen of the intestine. The abdominal cavity was thoroughly lavaged with povidone iodine solution and the laparotomy incision was closed by routine manner. The animal was under fluid and antibiotic therapy for 5 days postoperatively and cutaneous

sutures were removed on the 10<sup>th</sup> postoperative day. It made an uneventful recovery after 15 days and discharged.

## **27. AN UNUSUAL FISTULA – A SEQUELAE TO VULVAL RETENSION SUTURES IN A BUFFALO**

*L.NAGARAJAN, C.RADHAKRISHNAN, B.JUSTIN WILLIAM  
AND S.R.PATTABIRAMAN*

Dept. of Surgery, Madras Veterinary College, Chennai.

A crossbred Murrah buffalo was presented with a swelling, lateral to the vulval commissure. Purulent material oozed out from the vagina on palpation of the swelling. Clinical examination revealed a long fistulous tract of about 15" in length from the vaginal floor upto the base of the udder. The edges of the fistulous opening on the vaginal floor was scarified and sutured with 1/0 chromic catgut. A counter opening was made at the base of the udder at the end of the fistulous tract. The fistulous tract was regularly cleaned with povidone iodine and packed with povidone iodine gauze. Streptopenicillin 2G. i/m was administered for ten days followed by dressing on alternate days with povidone iodine. The fistulous tract healed completely after a period of 45 days.

## **ANAESTHESIOLOGY**

**Chairman: Dr. A. KUMAR    Rapporteur: Dr. M.K. BHARGAVA**

### **1. CENTBUCRIDINE HYDROCHLORIDE ALONE AND IN COMBINATION WITH XYLAZINE AS AN EPIDURAL ANALGESIC IN COW CALVES: BIOCHEMICAL STUDIES**

*S.VERMA, M.K.BHARGAVA, S.K.PANDEY AND V.P.CHANDRAPURIA*

Dept. of Surgery & Radiology, College of Vety. Sciences & AH, Jabalpur.

In the present experiment six apparently healthy male calves aged 6-12 months weighing 70-100 kgs were used. Each calf was subjected to four treatments at an interval of 8 days. In treatment I & II Centbucridine hydrochloride was administered 0.3mg and 0.8mg/kg B.Wt respectively at the lumbo-sacral space. In treatment III and IV xylazine at 0.05 mg / kg body weight was administered simultaneously after centbucridine as in treatment II and I. The blood samples collected at 0 hour prior to treatment and subsequently at 1,3,6,12,24,48,72,96 and 120 hrs post-treatment were subjected to different biochemical studies. The glucose levels revealed significant increase in treatment III & IV. Serum protein level was significantly high in treatment I. Significant increase at various intervals was observed in the value of serum glutamic oxalic transaminase and icterus index in all the four

treatments, whereas serum alkaline phosphatase revealed significantly higher values in treatment II III & I. Blood urea nitrogen indicated significant increase.

## **2. STUDIES ON POTENTIATION OF EPIDURAL CENTBUCRIDINE HYDROCHLORIDE WITH ANALGESICS IN DOGS: CLINICAL AND HAEMATOLOGICAL ATTRIBUTES**

**SHOBHA BANNARIA, M.K. BHARGAVA AND S.K. PANDEY**

Dept. of Surgery and Radiology, College of Vety. Sciences & AH, Jabalpur

Six healthy nondescript adult dogs weighing 10-15 kgs. were used for the experiment. Atropine Sulphate was administered @ 0.05mg/kg b.wt. intramuscularly to each animal in each treatment. In treatment I atropine was followed by Centbucridine hydrochloride @ 1mg/kg b.wt. epidurally, whereas treatment in II & III Centbucridine hydrochloride was followed by epidural administration of xylazine @ 0.75 mg and pentazocine @ 2.0 mg/kg.b.wt. respectively. The rectal temperature, pulse and respiration rate were recorded at 0 hour prior to treatment and at 20,40,60 minutes and then at one hour interval upto 6 hours post treatment. The blood samples for haematological studies were collected at 0,1,3,6,12,24,48,72,96 and 120 hours post treatment. The time for onset of anaesthesia was  $11.66 \pm 1.30$ ,  $6.16 \pm 0.54$  and  $10.5 \pm 1.17$  minutes, whereas, the duration of anaesthesia was  $78.50 \pm 4.67$ ,  $166.66 \pm 17.96$  and  $97.16 \pm 10.95$  minutes in treatment II III & I respectively. The time for complete recovery from anaesthesia was  $188.66 \pm 7.59$ ,  $251.33 \pm 13.31$  and  $190.83 \pm 9.07$  minutes in treatment II III and I respectively. Rectal temperature showed significant increase in all the treatments. Significant increase in pulse and respiratory rate in treatment III, and I while in treatment II. a non-significant increase was recorded. However, Hb concentration showed significant decrease in treatment I. TLC showed significant increase in treatment II and III. Significant increase in neutrophil count was recorded in treatment I. Lymphocyte count showed decreasing trend while eosinophil count revealed significant decrease in all the three treatments.

## **3. ANTOGONISM OF XYLAZINE INDUCED CLINICO-PHYSIOLOGICAL DEPRESSION BY ATIPAMEZOLE AND YOHIMBINE IN BUFFALO CALVES**

**S.K. TIWARI AND AMRESH KUMAR**

G.B.P.U.A.T., Pant Nagar, Distt. - Udham Singh Nagar (U.P.)

Administration of xylazine (@ 0.10 mg/kg I/M) in 36 buffalo calves produced a significant ( $P < 0.01$ ) depression of heart rate, respiration rate and ruminal movements with optimum sedation & analgesia. These parameters were completely neutralised by atipamezole (@ 50 ug/kg I/V) with MAT, MST and MWT of  $0.89 \pm 0.11$ ,  $1.66 \pm 0.15$  and  $1.76 \pm 0.15$  min. and yohimbine

with MAT, MST and MWT of  $2.80 \pm 0.40$ ,  $5.62 \pm 0.22$  and  $5.84 \pm 0.25$  mins. All the physiological parameters returned to their normal levels within 5 to 30 minutes after reversal.

#### **4. ANTAGONISM OF DETOMIDINE INDUCED SEDATION, BRADYCARDIA AND RUMINAL TYMPANY IN BUFFALO CALVES**

*S.K.TIWARI AND AMRESH KUMAR*

G.B.P.U.A.T., Pant Nagar Distt.- Udham Singh Nagar (U.P.)

Intramuscular administration of detomidine @ 50mic gm/kg caused significant decrease in heart rate, respiration rate and ruminal movements with profound sedation and analgesia in 36 buffalo calves. These effects were effectively antagonized by atipamezole (@50micgm/kg I/V) and yohimbine (@0.125mg/kg I/v) given 20 minutes after administration of detomidine with the mean arousal time (MAT) of  $0.90 \pm 0.07$  min., mean standing time (MST) of  $1.68 \pm 0.13$  min. and mean walking time (MWT) of  $1.92 \pm 0.19$  with atipamezole and MAT of  $2.26 \pm 0.27$  min., MST of  $3.68 \pm 0.23$  min. and MWT of  $4.02 \pm 0.59$  min. with yohimbine. Atipamezole induced reversal was more effective and complete without any re-sedation as compared to yohimbine.

#### **5. LUMBOSACRAL EPIDURAL ANALGESIA WITH XYLAZINE AND KETAMINE IN BUFFALO CALVES**

*K.PRATAP, P.KINJAVDEKAR AND AMARPAL*

Division of Surgery, I.V.R.I., Izatnagar-243 122(UP)

The experimental study was carried out in ten buffalo calves weighing between 100 and 150 kg. The animals were divided into two groups (A&B) of five animals each. In group A, ketamine @ 3mg/kg and in animals of group B, ketamine @ 3mg/kg and xylazine @ 0.05mg/kg.were administered epidurally using 18G spinal needle. Animals were observed for HR, RR, RT, onset, depth, extent and duration of analgesia, sedation and motor inco-ordination at different intervals up to 120 min. Blood samples were also collected at 0,30,60 and 120 min. after administration of drugs. An early onset was recorded in animals of group B. The analgesia was good at perineum and moderate at tail in animals of group B than group A. Sedation, motor inco-ordination were more pronounced and duration of analgesia was also more in group B. The results of the study indicated that xylazine and ketamine combination produced good surgical analgesia of hindquarters in buffalo calves when used epidurally.

## **6. INFLUENCE OF YOHIMBINE AND ATIPAMEZOLE ON HAEMODYNAMICS AND ECG AFTER SUBARACHNOID ADMINISTRATION OF MEDETOMIDINE IN GOATS**

*P.KINJAVDEKAR, G.R.SINGH, AMARPAL, A.M.PAWDE,  
H.P.AITHAL AND O.P.GUPTA*

Division of Surgery, I.V.R.I., Izatnagar-243 122(UP)

The study was conducted in four adult goats. Four random trials each of yohimbine (0.25mg/kg I.V.) and atipamezole (0.05 ugm /kg IV) were conducted after spinal administration of medetomidine in all the animals. Clinico- physiological parameters were recorded at different intervals before and after administration of the drug and antidote. All the animals showed sedation and depression after medetomidine administration, became alert within 2 to 5 min after reversal. Bradycardia and bradypnoea were recorded up to 45 min after medetomidine injection. Tachycardia and tachypnoea were recorded immediately after reversal in both groups. The decrease in MAP and increase in CVP was seen following medetomidine administration and higher values were recorded after yohimbine reversal. The decrease in CVP was seen immediately after reversal. The PR interval and QT intervals increased after medetomidine administration. The results of the present study showed that in the given dose rate both yohimbine and atipamezole produced equal reversal of sedation.

## **7. AMPUTATION OF THE LIMB IN A SPOTTED DEER (AXIS AXIS) UNDER XYLAZINE-KETAMINE ANAESTHESIA**

*K.V.SYAM, K.D.JOHN MARTIN, T.P.BALAGOPALAN,  
S.R.NAYAR AND K.N.M.NAYAR*

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A three year old (approximately) male spotted deer (Axis axis) weighing 40 kg was presented to the hospital following entrapment by the poachers. The right hind limb was badly mutilated and the portions below the fetlock were missing. The treatment was effected by amputation of the limb at a level two inches below the hock joint. Anaesthesia was induced using a combination of ketamine @ 2.5 mg/kg body weight. Anaesthesia was satisfactory with good analgesic and muscle relaxation for a period of 15 minutes. Symptoms during induction and period of anaesthesia and surgical procedure are discussed in detail.

## **8.COMPARATIVE STUDY ON EFFICACY OF PROPOFOL AND THIOPENTAL SODIUM AS INDUCTION AGENTS FOR PRODUCING GENERAL ANAESTHESIA IN CANINES**

*A.A.PATIL, L.B.SARKATE AND D.U.LOKHANDE*

Dept. of Surgery, Bombay Veterinary College, Parel, Mumbai- 400 012.

The efficacy of propofol and thiopental sodium as induction agents for producing general anaesthesia was carried out on six apparently healthy dogs. Complete cross over study was done injecting Propofol (2.5 mg/kg) intravenously in three dogs (P1 group) and thiopental sodium (10mg/kg) in another three dogs (T 1 group) on first day of experimentation. After a washout period of 72 hours, the dogs that received propofol in the first phase were given thiopental sodium and vice versa. The heart rate, pulse rate, respiratory rate, blood pressure and E.C.G were studied following the administration of thiopental sodium and propofol. Body reflexes such as eyelash, jaw, palpebral and pedal reflexes were monitored. Induction time, duration of anaesthesia and recovery time was noted in both the groups. Induction time did not differ significantly, but significant difference in the duration of anaesthesia and recovery was noted between the groups. Recovery from propofol was extremely smooth and fast. Similarly blood pressure did not differ significantly between the groups. The eyelash reflexes were present in three dogs of propofol group and two of thiopental groups.

## **9.COMPARATIVE STUDY ON THE ANAESTHETIC EFFECT OF VARIOUS DOSES OF PROPOFOL IN CANINES**

*A.A.PATIL, L.B.SARKATE AND D.U.LOKHANDE*

Dept. of Surgery, Bombay Veterinary College, Parel, Mumbai – 400 012.

Four doses of propofol viz. 2.5 mg/kg, 5 mg/ kg 7.5 mg/ kg and 10 mg/ kg were evaluated on 24 apparently healthy dogs of either sex, randomly divided into four groups and were administered intravenously over a period of 20 seconds. The following parameters such as eyelash, jaw, palpebral and pedal reflexes were studied. Response to pain stimuli and muscle relaxation, induction, duration and recovery time of anaesthesia was recorded. Induction was comparatively rapid in group II, III and IV. There was significant difference in induction time between the groups. The induction was excellent in group II and unsatisfactory in group I. A highly significant difference in recovery time was observed between the groups. There was no significant difference in recovery time. The eyelash, jaw, palpebral and pedal reflexes were totally absent in group III and IV while jaw and pedal reflexes were present in group I.

## 10. STUDIES ON ANAESTHETIC PROPERTIES OF PROPOFOL IN CANINES

*A.A.PATIL, L.B.SARKATE AND D.U.LOKHANDE*

Dept. of Surgery, Bombay Veterinary College, Parel, Mumbai - 400 012.

The study on anaesthetic properties of propofol was conducted on 24 apparently health dogs of either sex, randomly divided into four groups. The anaesthetic was administered at the following doses 2.5 mg/kg, 5 mg/ kg, 7.5 mg/ kg and 10-mg/-kg bodyweight. The anaesthetic was administered without premedication and the heart, pulse, respiratory rate, blood pressure and E.C.G were studied following induction. Highly significant difference in heart, pulse and respiratory rates were observed between the groups.

## 11. EVALUATION OF PROPOFOL AS A GENERAL ANAESTHETIC IN CANINE SURGERY A CLINICAL STUDY

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Propofol as a sole induction and maintenance agent was evaluated on 10 canine clinical cases. Propofol was used as a single dose agent for minor surgeries such as docking, teeth extraction and was used also as maintenance agent in castration, spaying and leg amputation at a dose rate of 0.4 mg / kg per minute. Induction was quick and smooth in all the cases. The quality of anaesthesia and degree of muscle relaxation was excellent in all the cases. No untoward reaction such as vomiting, convulsions or excitement was seen during surgery. All the dogs recovered completely within 15- 20 minutes.

## 12. DOSE SPARING EFFECT OF EPIDURAL KETAMINE ON THIOPENTAL ANAESTHESIA IN DOGS UNDERGOING TIBIAL FRACTURE REPAIR

*HANS RAJ, AMARPAL AND G.R.SINGH*

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Sixteen clinically healthy adult dogs of either sex were randomly divided into four equal groups. Epidural, normal saline 2 ml per animal ( group I), epidural lignocaine 4 mg /kg body weight (group II), epidural ketamine 3 mg/ kg body weight (group III) and epidural pethedine 2 mg/ kg body weight (group IV) were given 10 minutes before the induction of anaesthesia with thiopental sodium in all the dogs. The mean values for total dose and mean duration of surgery did not differ significantly among the various groups. The dose of thiopental to induce and maintain the anaesthesia for each minute of surgery was worked out to be 0.60, 0.51, 0.48 and 0.50 mg /kg in all the groups respectively. The per kg dose of thiopental per minute of surgery was

minimum in group III and hence maximum dose sparing effect of epidural ketamine was observed in the group.

### **13. POTENTIATION OF THE EFFECTS OF ROMIFIDINE WITH LIGNOCAINE AFTER SUBARACHNOID ADMINISTRATION IN GOATS**

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Division of Surgery, I.V.R.I., Izat Nagar, U.P.

The study was conducted in 10 adult goats divided randomly into two groups. In group A, Romifidine at the dose rate of 50 ug/ kg and in group B a combination of romifidine at the dose rate of 50 ug / kg and lignocaine 2 mg / kg were administered simultaneously into the lumbosacral subarachnoid space. The clinical, haematological, biochemical and haemodynamic changes were recorded at different interval upto 120 minutes. The onset of analgesia was 5 min. in group A and within 1 min. in group B. In group B complete analgesia was seen from 5-60 min. at tail, and 5-90 min. at perineum. The analgesia at hind limb was moderate to complete from 5- 75 min. and mild to moderate analgesia persisted till the end. Marked reduction in MAP and increase in CVP was recorded in both groups at different intervals. ECG changes included bradycardia, increased QT intervals in both groups. Plasma glucose increased and plasma protein decreased in both groups. The addition of lignocaine potentiated the analgesic effect of romifidine, with no marked increase in the cardiopulmonary effects.

### **14. SYNERGISTIC INTERACTION BETWEEN SPINALLY ADMINISTERED KETAMINE AND ROMIFIDINE IN CAPRINES (*Capra hirachus*)**

*H.P.AITHAL, AMARPAL, P.KINJAVDEKAR, A.M.PAWDE AND K.PRATAP*  
Division of Surgery, I.V.R.I., Izat Nagar, U.P.

Ten adult goats of either sex weighing 15-20 kgs were randomly divided into two groups. Romifidine at the dose rate of 50 ug/kg in group I and a combination of romifidine at the dose rate of 50 ug/kg and ketamine 2.5 mg/kg in group II were administered at lumbosacral subarachnoid space. Clinico - physiological parameters viz. analgesia, sedation, motor inco-ordination, salivation, HR, MAP, CVP, ECG, RR and RT were studied upto 120 minutes. Haematological parameters were also measured at 0, 30, 60 and 120 min. The onset of analgesia was faster in group II; complete analgesia of tail, perineum and hind limb was recorded upto 45 min. in group II. Motor inco-ordination was mild in Group I and severe in group II. An increase in CVP and marked decrease in MAP was recorded in all the animals. ECG changes included bradycardia, increased PR and QT intervals and increased amplitude of T wave in both groups. Hyperglycemia and a slight fall in plasma



protein were seen in both groups. The study showed synergistic interaction between spinally administered romifidine and ketamine.

### **15. HISTOPATHOLOGICAL STUDIES ON SPINAL CORD AFTER SINGLE AND REPEATED EPIDURAL INJECTIONS OF KETAMINE IN DOGS**

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Division of Surgery, I.V.R.I., Izat Nagar, U.P.

The study was conducted to evaluate the microstructural changes in spinal cord after epidural administration of ketamine. Nine adult healthy dogs were used in three groups: A (4 animals), B(3 animals) and C (2 animals). In group A, ketamine was administered once at the lumbosacral epidural space at the dose rate of 2.5 mg/ kg body weight. In group B, 3 injections at 24 hr intervals and in group C no injection was administered. Lumbosacral spinal cord segment was collected after euthanising the animals at 1 hr, 24 hr, 3 days and 5 days(one animal each) in group A ; and at 24hr, 3 days and 5 days after 3<sup>rd</sup> injection in group B for histopathological examination. H & E stained sections were studied and compared with control group animals . The histopathological examination of the spinal cord of group A revealed very few inflammatory cells in the grey matter adjacent to neurons at 1 hr after injection. No specific changes in spongy appearance of outer membrane were noticed at any interval. The dorsal and ventral neurons appeared normal as in control animals. The group B animals also had similar changes. The study revealed that single or repeated injections of ketamine epidurally does not produce any significant microstructural changes in the spinal cord.

### **16. ROMIFIDINE FOR SPINAL ANALGESIA IN GOATS: COMPARISON OF TWO DOSE RATES**

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Division of Surgery, I.V.R.I., Izat Nagar, U.P.

The study was conducted in 10 healthy adult goats divided into two equal groups. In group I, romifidine at the dose rate of 50 ug/kg and in group II 75 ug/kg body weight was given spinally at lumbosacral space. The onset of analgesia, extent and depth of analgesia at various body regions, sedation, motor inco-ordination, HR, RR, MAP, CVP and ECG upto 120 min. were recorded. Blood samples were also collected at 0, 30, 60 and 120 min. after the administration of the drugs. The onset of analgesia at perineum was recorded in 8 min. in group I and in 6 min. in group II. Analgesia was better and persisted for a longer duration in group II. Sedation was mild to moderate and motor inco-ordination was slightly more in group II. Slight salivation was seen in both the groups. HR decreased significantly in both groups. Significant decrease in MAP and increase in CVP was recorded initially in both groups. ECG changes were also observed in both groups. Changes in biochemical

parameters included hyperglycemia, hypoproteinemia and insignificant change in plasma urea nitrogen and creatinine in both groups. The study revealed that romifidine at the dose of 50 ug/kg and 75 ug/kg. produced mild to moderate hindquarter analgesia and increase in the dose did not increase the analgesia but duration of analgesia could be prolonged.

### **17. EFFICACY OF PRE-EMPTIVE EPIDURAL ANALGESIA WITH BUPIVACAINE IN THE MANAGEMENT OF POST-TRAUMATIC PAIN IN GOATS**

*REKHA PATHAK, AMARPAL, P.KINJAVDEKAR, K.PRATAP AND G.R.SINGH*  
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Acute pain and inflammation was induced by injection of turpentine (0.15 ml) in left hock joint in twelve non descript goats of either sex divided into three groups. Pre - traumatic bupivacaine hydrochloride 1 mg / kg (group A), post- traumatic bupivacaine 1 mg/ kg (group B ) and normal saline (4 ml) pre as well as post - traumatic (group C) were given epidurally at lumbosacral space to compare the utility in pain and stress management. Pre - traumatic drug was administered 30 min. before the injection of turpentine, whereas, posttraumatic drug was administered 2 hrs. after turpentine injection. All the groups also received diclofenac sodium 1 mg / kg i/m from day 1 to 5 after turpentine injection. Analysis of clinical and haemato-biochemical data indicated that animals of group C showed severe post traumatic morbidity and stress response as evidenced by increased joint warmth, hyperalgesia, flexion angle, extension angle, post traumatic swelling, post traumatic pain, glucose, fibrinogen, cortisol, alkaline phosphatase, trypsin inhibitor and decreased lymphocytes. However, pre traumatic treatment with epidural bupivacaine resulted in suppression of pain and stress response as compared to groups B and C where post traumatic bupivacaine and normal saline was given respectively. It was concluded that pre traumatic epidural bupivacaine had pre-emptive effect and may be recommended to prevent the post operative pain and stress in animals undergoing hind quarter surgeries.

### **18. REVERSAL OF MEDETOMIDINE ANAESTHESIA WITH ATIPAMEZOLE IN DOGS**

*N. SUDHKAR, N.S.JADON AND AMARESH KUMAR*  
College of Veterinary Sciences, G.B.P.U.A.T., Pant Nagar, U.P.

Twelve mongrel dogs premedicated with atropine sulphate 0.04 mg / kg i/m were subjected to epidural administration of medetomidine 15 ug/ kg and mepivacaine 2 mg / kg was divided into two groups of six animals each. The animals of group I was kept as control while in the animals of group II sedation / analgesia induced by medetomidine was reversed by i/m administration of atipamezole 100 ug/ kg. The atipamezole was administered 10 min. after the administration of medetomidine / mepivacaine. The efficacy

of the drug was evaluated by observing clinical and physiological effects. The mean arousal time, mean standing time and mean walking time were  $3.1 \pm 0.22$  min,  $4.22 \pm 0.22$  mins.,  $4.22 \pm 0.35$  min. and  $6.2 \pm 0.25$  min. respectively. However, in the animals of group I, complete recovery time was  $75.5 \pm 0.50$  min. Medetomidine- mepivacaine induced significant bradycardia, respiratory depression, reduction in respiratory minute volume, hypothermia and increased central venous pressure (cardio- respiratory effects) were effectively reversed after the administration of atipamezole within 4 - 5 mins. and their level reached near pre-administration levels by 7 - 8 min.

### **19. COMPARISON OF PARENTERAL AND EPIDURAL EFFECTS OF DETOMIDINE, MEDETOMIDINE ALONG WITH KETAMINE IN PUPS**

**BHAT VASHALI, A.KUMAR, V.K.SHARMA, K.U.RAJESH AND N.S.JADON**  
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Eighteen mongrel pups, 2-4 months old were randomly divided into groups A and B of 9 animals each, which were further divided into 3 sub groups (A1, A2, A3) and (B1, B2, B3) of 3 animals each. All the animals were premedicated with atropine sulphate at the dose rate of 0.04 mg / kg body weight i.m. Animals of sub group of A were given normal saline, detomidine (70 ug/kg) + ketamine (9 mg / kg) and medetomidine (20 ug/ kg) + ketamine (6 mg / kg) respectively by i.m. route. The animals of sub group B were given the same treatment epidurally. Induction time, duration of anaesthesia, recovery time, clinico-physiological effects and body reflexes were evaluated at 0, 5, 10, 15, 20, 30, and 60 minutes during surgical anaesthesia. Various surgical operations on neck and abdominal organs were performed. Parenteral administration of detomidine + ketamine showed an induction time of  $4 + 2$  min., duration of surgical analgesia  $30 + 5$  min., recovery time  $115 + 10$  min. respectively. While medetomidine + ketamine showed  $5 + 2$  min,  $40 + 5$  min, and  $120 + 5$  min respectively. Epidural administration of detomidine + ketamine showed an induction time of  $5 + 2$  min. duration of analgesia  $35 + 5$  min and recovery time  $95 + 5$  min. While medetomidine + ketamine showed  $6 + 2$  min.  $45 + 2$  min. and  $100 + 5$  min. respectively. Transient but significant effects on the heart and respiratory rates were observed at 10 - 60 minutes. Mild hypothermia was observed upto 60 min. No untoward effects like vomiting, salivation were observed in any stage of anaesthesia. Various operations on abdomino-pelvic region were performed without any untoward effects with smooth recovery in all animals. The study revealed that epidural administration of medetomidine + ketamine 20 ug + 6 mg/ kg was better in comparison to parenteral administration of detomidine + ketamine.

## **20. CLINICAL, PHYSIOLOGICAL AND HAEMATO - BIOCHEMICAL EFFECTS OF SEDIVET - KETAMINE ANESTHESIA IN ATROPINE AND TRIFLUPROMAZINE PREMEDICATED BUFFALO CALVES**

**A.K.SHARMA, NAVEEN KUMAR, M.HOQUE. O.P.GUPTA AND S.K.MAITI**  
Division of Surgery, I.V.R.I., Izat Nagar, U.P.

Eighteen clinically healthy male buffalo calves of 8 - 10 months old were randomly divided into 2 groups of 4 animals each. Animals of group I, received Sedivet at the dose rate of 10 ug / kg IV. In group II, atropine was given 0.2 mg / kg, IM, 10 minutes later triflupromazine was administered 0.3 mg/kg IM. After 15 minutes, Sedivet 10 ug / kg and ketamine 5 mg / kg were given IV for anaesthetic induction. The clinical effects studied included onset and duration of sedation / anaesthesia, recovery time, extent of muscle relaxation and absence or presence of various reflexes. Blood samples for haemato- biochemical studies were collected before, after 1, 24 and 48 hrs of medication. Biochemical parameters studied were serum glucose, urea, BUN, total proteins, A:G ratio, bilirubin and OCT. Heart rate and respiratory rate were significantly lower during maximum effect of drugs. Hypothermia was recorded in group II. RBC, WBC, PCV and Hb reduced at 1 hr in both the groups and were compensated by 72 hrs. Animals of group II achieved lateral recumbency within 12 - 20 sec. of medication and recovered within 42-55 min. The animals showed excellent analgesia and muscular relaxation. No complication was observed.

## **21. EPIDURAL MEDETOMIDINE WITH AND WITHOUT LOCAL ANESTHETICS IN DOG**

**N.SUDHAKAR, N.S.JADON AND AMARESH KUMAR**  
College of Veterinary Sciences, G.B.P.U.A.T., Pant Nagar, U.P.

Sixteen adult mongrel dogs were premedicated with atropine 0.04mg/kg IM were divided into four groups and subjected to epidural administration of medetomidine at the dose rate of 15 ug / kg., medetomidine and mepivacaine 2 mg / kg and lignocaine hydrochloride 2 mg / kg and mepivacaine 2 mg / kg alone. The sedative and analgesic effects of medetomidine with and without local anesthetic were recorded. The haemato-biochemical and physiological parameters were studied at various intervals. The study revealed that the combination of medetomidine and mepivacaine was most effective among the various combinations.

## **22. IMMOBILIZATION AND PULSE OXIMETRY IN BUDGERIGARS**

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Dept. of Wildlife Science, Madras Veterinary College, Chennai - 7.

Immobilization of seven budgerigars was carried out using ketamine and diazepam as immobilizing agents and the immobilizing effects were documented; pulse oximetry (NELLCOR - N 20 PA, USA) was used to measure the SPO<sub>2</sub> level in immobilized birds. The significant precautions and problems were also studied.

## **23. IMMOBILIZATION OF CHIMPANZEE WITH OTITIS**

*N.S.MANO HARAN, M.G.JAYATHANGARAJ AND N.KRISHNAKUMAR*

Arignar Anna Zoological Park, Vandalur, Chennai - 48

Subsequent to the clinical signs and report from animal keeper with regard to ear infection in an adult male chimpanzee weighing about 80 kg was immobilized at Arignar Anna Zoological Park, Vandalur. The effects of immobilization and the condition were studied in this rarely kept captive wild animal, in addition to the treatment aspects.

## **24. WOUND TREATMENT AND RENAL FAILURE IN A SLOTH BEAR**

*N.S.MANO HARAN, M.G.JAYATHANGARAN, G.PAUL FREDRIK AND N.KRISHNAKUMAR*

Arignar Anna Zoological Park, Vandalur, Chennai - 48

An adult sloth bear with anorexia was immobilized using xylazine and ketamine as immobilizing agents at appropriate dose rates. The animal was found to have wound at right forelimb region. The animal was treated with antibiotics and antihistamine, daily for five days; Subsequently, dysuria was also observed and haematological studies and serum analysis were carried out for selected biochemical parameters and required treatment procedures were undertaken for managing the renal problem identified.

## **PROPOFOL AS AN INTRAVENOUS GENERAL ANAESTHETIC IN DOGS**

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Dept. of Surgery, Madras Veterinary College, Chennai.

The study was taken up to evaluate the anaesthetic efficacy of propofol alone or in combination with pre anaesthetic atropine sulphate and triflupromazine in forty eight experimental dogs of either sex and were divided

into four groups. The first two groups were utilized for anaesthetic studies and group III and IV for toxicity studies. The mean induction dose required in group I was 5.55 mg / kg and 5.02 mg /kg in group II. Male dogs required more induction dosage. The induction of anesthesia took 1 min. In group I and 59 sec. In group II. The duration of surgical anesthesia was 4.30 min. In group I and 23.27 min. In group II. There was significant increase in pulse, heart rates and decrease in respiratory rate and CVP during anesthesia in both the groups. Histopathological studies revealed mild hyperemia and inflammatory changes were seen cephalic vein, liver, spleen, kidney, lungs, heart and brain.

## SMALL ANIMAL SURGERY

Chairman: Dr. K.N.M. NAYAR

Rapporteur: Dr. L. RANGANATH

### 1. TUBE DRAIN FOR CANINE AURAL HAEMATOMA

#### A CASE REPORT

N. ARUL JOTHI AND R.M.D. ALPHONSE

Rajiv COVAS, Pondicherry.

A sterilized 6 cm long intravenous set with holes made on the sides was used for a case of aural haematoma in six clinical cases. Surgical management to overcome the occluded fluid in the ears is discussed. Easy post-operative care and better cosmetic results was noticed compared to other surgical remedies.

### 2. USE OF CRYOSURGERY IN SURGICAL LESIONS

P.K. BOSE, T.B.SEN, P.K.SAMATHA, A. DUTTA, B.SINGH,  
S.SANKI, S.HALDAR, P.BHAGAT AND P.BISWAS

Dept. of Surgery, WB University of Animal Sciences.

A clinical case of transmissible venereal tumor of a 14 year old male mongrel originating from the inner mucosal lining of the prepuce cavity encircling the penis en masse was located. Cryosurgery was performed by cryosurgery apparatus (Appasamy - Cryosuper AA4) and nitrous oxide as cryogen to resect the tumor. Another case of anal furunculosis of right side of the anal region in a 12 year old male Lhasa Apso was also treated with cryosurgery using the same apparatus and cryogen. In both cases there was no haemorrhage during or after the procedure and both the animals had an uneventful recovery.

### 3. URETHRAL ATONY IN A BITCH

*T.B.SEN, P.K.BOSE, P.K.SAMANTHA, S.SANKI, B.SINGH AND A.DUTTA*  
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An 11 year old GSD bitch having urinary incontinence for a week with previous history of UTI few months' back was brought to the hospital. Clinical examination and survey radiographs did not reveal any radio opaque obstruction of the urinary tract, urolith or space-occupying lesion. Catheterisation was performed without any difficulty. Intravenous pyelography (IVP) was then decided upon. Contrast study revealed normal appearance of both the kidneys. However, the ureters were markedly dilated but regular in shape with smooth mucosal margins. Differential diagnosis along with history and clinical observations helped to reach the confirmatory diagnosis as urethral atony due to some infective cause. Neuro dynamic therapy and antibiotic therapy for a period of 15 days led to the uneventful recovery of the patient.

### 4. ALKALINE PHOSPHATASE : A PROGNOSTIC INDEX OF PYOMETRA IN BITCHES

*S.K.PANDEY*

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Alkaline phosphatase was estimated in 45 bitches suffering from pyometra which were placed for marsupialisation was followed 2 to 3 months. The level of alkaline phosphatase in these animals ranged between 15.00 to 25.00 Bodansky unit. All these animals were given prostaglandin F2 alpha at 0.2 mk/Kg IM once daily for 5 days along with ciprofloxacin at 30 mg/kg, betamethasone at 0.5 mg/kg for 8 days twice daily IM in the morning and orally in the evening and one capsule of liver extract capsule during the entire treatment period. All these animals were given DNS IV for first three days at 20 ml / kg and were reexamined after two weeks. The above treatment was repeated in animals where discharge recurred. All animals were put through ovariohysterectomy or marsupialisation immediately after second treatment. The postoperative therapy included ciprofloxacin for 8 days, betamethasone for 5 days, liver extract for 8 days and DNS for 3 days. However, where the alkaline phosphatase ranged between 6.00 to 8.60 Bodansky unit after treatment did not survive after ovariohysterectomy but marsupialisation was effective in 8 out of the 12 cases. The animals having dropped alkaline phosphatase level below 5.00 Bodansky unit survived ovariohysterectomy when performed after effective preoperative therapy.

## 5. MANAGEMENT OF SQUAMOUS CELL CARCINOMA OF PALATE USING ALKYLATING, CYTOTOXIC AND ANTIMETABOLITE DRUGS

*S.K.PANDEY*

Dept. of Surgery and Radiology, Veterinary College, Jabalpur (MP).

A GSD male aged about 5 years was suffering from squamous cell carcinoma of the palate. The mass was first noticed 6 months earlier and excised under diazepam (2mg/kg) ketamine (10mg/kg) anaesthesia. Animal was given 500 mg of ampicillin twice daily i.e. intramuscularly in the morning and orally in the evening for 10 days. The unsutured wound was dressed with chlorhexidine, which healed completely in 30 days. Histopathologically it was confirmed to be squamous cell carcinoma. The animal was given 300 mg of cyclophosphamide intravenously once in 8 days, 5 times a day along with 500ml of DNS on a day earlier and on the day of injection and on the day thereafter. The second phase of such five injections were undertaken after 30 days of last injection of first phase. One iron capsule was given daily during the entire period of treatment. The animal became normal. Nearly 7 ½ months later the animal showed a small nodule at the site of its previous occurrence, which rapidly grew to the present size within three months (Fig 1). The growth was once again excised as in the previous manner. Histopathological examination of the excised mass once again confirmed it to be a squamous cell carcinoma. Combined therapy consisting alkylating, cytotoxic and antimetabolite drugs were administered. Cyclophosphamide (300mg IV), Doxorubicin (10mg IV) and methotrexate (15 mg IM) were given as an alkylating, cytotoxic, antibiotic and antimetabolite drug once a week for 5 weeks. Five hundred ml of DNS 5% was given a day earlier, on the day and a day after the therapy to facilitate effective urinary output. The owner was asked to provide the animal with a liberal quantity of water during the treatment. The animal remained emaciated and the Hb content varied between 6.00 to 8.00 mg/dl of blood during the period of therapy. The animal was normal for the last 1-½ years with no recurrence of the growth.

## 6. PATHO-MORPHOLOGICAL CHANGES OF KIDNEY IN RENAL AFFECTIONS IN DOGS

*L.RANGANATH AND W.P.ARCHIBALD DAVID*

Dept. of Surgery, Madras Veterinary College, Chennai.

Renal affections are important causes of morbidity and mortality in dogs. Renal insufficiency becomes apparent only after the damage of 70% of the nephrons. With this background for early studies of renal damage through renal biopsy, the study was undertaken to record histopathological changes in kidney due to contrast drug administration (Urografen 76%) for intravenous pyelography studies, hydronephrosis, renal ischaemia, chemical nephrosis, (Acute renal failure) and Pyelonephritis. Chemical nephrosis was induced by



administering 2% mercuric chloride at 2 mg /kg body weight intravenously. For pyelonephritis, dogs with a history of renal disease were screened and based on clinical, laboratory and culture studies they were selected for the study. Hydronephrosis and renal ischaemia were induced experimentally in the left kidney by ligating the ureter and renal artery respectively. All the dogs were euthanised after 10 days. Kidneys were collected for gross and histopathological studies. The results are presented.

## **7. SQUAMOUS CELL CARCINOMA OF EYE IN A CROSS BRED DOG AND ITS SURGICAL MANAGEMENT**

*S.K.TIWARI, S.P.INGOLE AND R.K.SONEWANE*

Dept. of Surgery & Radiology, College of Vety. Science & A.H.,  
Anjora, Durg (M. P).

A cross dog aging 6 years was presented to the department with the complaint of an over growth over the right eye. There was a foetid discharge from the affected eye. The dog was premedicated with atropine sulphate (0.65 mg i/m) and detomidine (@ 40 ug/kg i/m), to achieve optimum sedation. Under general anesthesia using ketamine hydrochloride @ 5 mg/kg intravenously, the growth was completely removed along with the eyeball. The area was cauterized with electrocautery and dressed with nitrofurazone. Post-operatively, dextrose saline 300 ml i/v, ampicillin-cloxacillin 500 mg and dexamethasone (5 mg) were given. The animal recovered uneventfully in 10 days.

## **8. SURGICAL MANAGEMENT OF CONCOMITTANT CRANIOVENTRAL ABDOMINAL AND DIAPHRAGMATIC DEFECTS IN PUPS**

*T. SARADA AMMA, T.P.BALAGOPALAN, S.SOORYADAS,  
C.B.DEVANANDM, S.R.NAYAR AND K.N.M.NAYAR*

Dept. of Surgery, College of Vet. & Animal Sciences, Mannuthy.

Congenital cranioventral abdominal hernia associated with diaphragmatic defect was found in two German Shepherd puppies aged 12 weeks and belonging to the same litter. The pups were apparently healthy but for a soft, reducible swelling at the ventral midline just posterior to the xiphoid. On detailed examination, the condition was tentatively diagnosed as cranioventral abdominal hernia. Defect of the diaphragm close to the sternal attachment could also be palpated through the abdominal defect. Surgical correction under general anesthesia was resorted to. Skin incision at the site revealed a 5 x 2 cm sized abdominal defect and herniation of omentum and liver through a diaphragmatic defect (4 x 2 cm) close to its sternal attachment. herniorrhaphy of the diaphragmatic ring was performed and negative pressure was re-established. The abdominal hernial ring was sutured in simple

continuous pattern. Braided silk 2-0 size was used in both the cases. Both the pups had an uneventful recovery.

### **9. MULTIPLE SEROSAL CYSTS OF THE PERMETRIUM ASSOCIATED WITH PYOMETRA AND OVARIAN CARCINOMA - A CASE REPORT**

**T. SARADA AMMA, K.V.SYAM, T.P. BALAGOPALAN, S. SENTHILKUMAR, C.B.DEVANANA AND S.R.NAYAR**

Dept. of Surgery, College of Vet. & Animal Sciences, Mannuthy.

A case of pyometra in a twelve year old German Shepherd bitch associated with multiple serosal cysts of uterine wall and clear cell carcinoma of ovaries is presented. A female German Shepherd bitch, which had whelped twice but not bred for almost eight years afterwards, was showing distension of abdomen, anorexia and purulent foul smelling discharge from the external genitalia. Based on clinical and radiological examination the condition was diagnosed as pyometra and ovariohysterectomy was performed under general anesthesia. The uterine horns were distended occupying the major portion of the abdomen. The uterus contained about 400 ml of pus. Numerous cysts of varying sizes resembling bunches of grapes were observed at the terminal end of the right uterine horn. The cysts were attached to the perimetrium. Histopathological examination of the cyst wall revealed dilated endometrial glands indicative of adenomyosis. The ovaries were relatively larger in size and histopathological changes were suggestive of clear cell carcinoma.

### **10. DELAYED COMPLICATION FOLLOWING HYSTERECTOMY IN A BITCH WITH PYOMETRA - A CASE REPORT**

**T.P.BALAGOPLAN, K.V.SYAM, J.SHEJO AND K.N.M.NAYAR**

Dept. of Surgery, College of Vet. & Animal Sciences, Mannuthy.

An eleven year old German shepherd bitch had an unusual complication following panhysterectomy performed for pyometra. Animal was showing profuse bloody vaginal discharge, six months after panhysterectomy, which did not respond to routine medical treatment. Palpation revealed a lemon sized doughy mass at the posterior third of the abdomen. Exploratory laparotomy was carried out under general anaesthesia. A lemon sized doughy mass was observed at the uterine stump anterior to the cervix. The mass was extirpated along with cervix after proper ligation. The surface of the mass had omental adhesions and peripheral congestion. It was cut open and was found to contain liquid pus in a pouch anterior to cervix. Morphologically, the cut section of the mass showed brownish white tissue with areas of haemorrhage and necrosis. Histopathologically, there was mild hyperplasia of the lining epithelium and normal endocervical glands with diffuse infiltration of

lymphocytes and plasma cells. Animal recovered fully by seven days and sutures were removed on the tenth day.

## **11. SURGICAL AND CHEMO-THERAPEUTIC MANAGEMENT OF AMYELOBLASTIC FIBROSARCOMA IN A DOG**

*K.V.SYAM, T.P.BALAGOPALAN AND K.N.M.NAYAR*

Dept. of Surgery, College of Vet. & Animal Sciences, Mannuthy.

A 12 year old Lhasa Apso bitch was presented with a large gooseberry sized mass on the lower jaw. It was pedunculated with attachment between the canines. The mass was removed surgically under general anesthesia and the histopathological examination revealed it to be a case of Amyeloblastic fibrosarcoma. The surgical wound had an uneventful recovery. But on the 14<sup>th</sup> day, a small, soft, reddish swelling was noticed which grew rapidly. On the eighteenth day, it attained one-fourth the earlier size. Chemotherapy was started on the eighteenth day following surgery with Vincristine sulphate administered intravenous at the rate of 0.01 mg/kg body weight and repeated at weekly intervals for five times. The mass showed superficial ulceration and necrosis, which progressed further, and a complete regression of the mass was reported after a period of six weeks.

## **12. SURGICAL MANAGEMENT OF MULTIPLE URETHRAL AND URINARY BLADDER CALCULI IN TWO MALE DOGS**

*N.S.SAINI, P.S.BANSAL, V.K.SOBTI, A.K.ANAND, S.K.MAHAJAN  
AND P.BISHNOI*

CAS, Dept. of Surgery & Radiology, P.A.U., Ludhiana, Punjab.

Multiple urethral and urinary bladder calculi are reported in two male dogs. Radiography revealed urethra full of stones that were arranged in the form of a chain and also multiple stones in the urinary bladder. A calculi of 3.5 cm in diameter was also present in the urinary bladder of one dog. Differential leukocyte count revealed neutrophilia. Blood gas picture showed mild metabolic acidosis in one case. In both the cases hydro-repulsion of urethral stones was tried but it was only successful in one dog in which all the stones were extracted by performing cystotomy. In other case in which hydro-repulsion failed, calculi were removed by urethrotomy and cystotomy. Surgical management was satisfactory in both the cases and recovery was uneventful. No recurrence was reported. It is concluded that in cases of multiple calculi of urethra and urinary bladder, hydro-repulsion must be carried out to avoid urethrotomy in male dogs.

### **13. CLINICAL STUDY ON PERINEAL HERNIA IN DOGS WITH PARTICULAR REFERENCE TO PROSTATE AND URINARY BLADDER**

**P.S.SIMRAN AND D.C.DHABLANIA**

Dept. of Veterinary Surgery & Radiology, P.A.U., Ludhiana.

In 12 male dogs, perineal swelling and its extent, behaviour of urination and defecation, breed, ring size and contents were recorded. Serum was evaluated for SGOT, BUN, creatinine, Na<sup>+</sup>, Cl<sup>+</sup>, K<sup>+</sup>, ACP and PACP. Contrast radiography and sonography helped in visualizing the type of contents. Perineal approach was adopted for treatment and partial prostatectomy was performed in cases of prostatic enlargement. Five dogs ranged between 7-12 years had herniation of prostate and bladder. In Cocker there was a significant rise in leukocytes, SGOT, SGPT, BUN and Creatinine, whereas, it was within normal range in the remaining dogs. The ACP and PACP increase was directly proportional to prostatic enlargement, the enlarged prostates exhibited hyperplasia and adenocarcinoma was observed in a Cocker. Intense activity of ACP, SDH and LDH in the prostate was seen. The holding power of tissue and obliteration of hernial ring was moderately satisfactory which could be better managed with laxative food.

### **14. SURGICAL CORRECTION OF PERSISTANT RIGHT AORTIC ARCH IN A PUP**

**R. JAYAPRAKASH, L. NAGARAJAN, K. AMEERJAN AND A.P. NAMBI**

Dept. of Surgery, Madras Veterinary College, Chennai.

A 4 month old German Shepherd male pup was referred to the small animal outpatient unit of Madras Veterinary College hospital with symptom of persistent vomiting, after feeding, debility and progressive weakness. On the basis of history and clinical symptoms the case was tentatively diagnosed as congenital oesophageal affection. Later with the help of endoscopic visualization and contrast radiography, a confirmative diagnosis was made as persistent right aortic arch. No change in the ECG pattern was recorded. The animal was subjected to thoracotomy through the left 4<sup>th</sup> intercostal approach under propofol anesthesia with positive pressure ventilation, using Monal-D Ventilator. Opening the mediastinum approached the constricted oesophagus at the level and above the base of the heart. The ligamentum arteriosum was isolated, double ligated with 2/0 Vicryl and divided. The oesophageal stenosis was relieved by intraluminal bougienage, using Foley's catheter bulb and extramural dissection of constricting fibrous band. The intercostal incision was closed with circumcostal sutures using vetafil and the thoracic muscles and skin were closed routinely using catgut and silk respectively. The animal recovered completely from surgery and showed early clinical improvement during postoperative period.

## 15. COMPARATIVE EVALUATION OF SCROTAL AND POST SCROTAL URETHROSTOMY IN DOGS

*ARUN.KANAND AND S.S.SINGH*

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The study was undertaken in two parts: experimental and clinical. Experimental study (N-6) revealed that simple interrupted pattern using 4-0 polypropylene provided good apposition of the uro-epithelium with tunic albuginea and skin without excessive tension at the urethrostomy site. Post-operative haemorrhage occurred while urination for an average of five days in scrotal and for an average eight days in post scrotal urethrostomy. All dogs passed urine with full stream. All dogs learned to squat while urination and all animals had full control over micturition. Post-operative bacteriological examination upto two months showed no urinary tract infection. Histomorphological examination showed thickening of uro-epithelium at the junction of skin and urethra. Proliferation of stratified squamous epithelium over transitional epithelium was not seen thus, reducing the chances of stricture formation / stenosis of stroma.

## 16. SURGICAL MANAGEMENT OF TRAUMATIC DIAPHRAGMATIC HERNIA IN A DOG - A CASE REPORT

*T. SARADA AMMA, K.V. SYAM, T.P. BALAGOPALN, S. ANOOP,  
S. SOORYADAS AND K.N.M. NAYAR*

Dept. of Surgery, College of Vety. & Animal Sciences, Mannuthy .

Diaphragmatic hernia in a two year old female Pomeranian dog that met with an automobile accident and its surgical correction is presented. Animal was brought with inspiratory dyspnoea. Lateral radiograph of the thorax revealed loss of diaphragmatic margin and presence of abdominal viscera in the thoracic cavity. Surgical correction under general anesthesia was resorted to. Cranioventral midline laparotomy was performed. The liver, stomach and part of the spleen were intrathoracic, and diaphragm was seen torn from its sternal and coastal attachment. The thoracic and abdominal cavities were cleaned of blood, blood clots and debris. The diaphragm was sutured to the raw surface of peritoneum to reconstruct it in position by maintaining the animal in intermittent positive pressure ventilation. Though the animal made an uneventful recovery, it succumbed after twelve days. Postmortem examination revealed intact diaphragm with signs of biliary stasis and severe hepatitis.

## **17. INCIDENCE OF GASTRO-INTESTINAL TRACT OBSTRUCTION IN DOGS**

*D.DILIP KUMAR, K.AMEERJAN AND W.P.ARCHIBALD DAVID*  
Dept. of Surgery, Madras Veterinary College, Chennai.

Sixty dogs having gastrointestinal tract obstruction constituted the material. Doberman(20%) had the highest incidence, dogs below six months of age had 86.68% of incidence. Males (55%) had higher incidence than female dogs (45%). Upper GIT had 33.33% incidence whereas, lower GIT had an incidence of 66.67%. Bones (83.25%) were common causes of GIT obstructions. Marbles and stones constituted (16.75%).

## **18. LAPAROSCOPIC OVARIO-HYSTERECTOMY IN EIGHT BITCHES**

*C.C.WAKANKAR, VANITA KULKARNI AND V.M.CHARIAR*

Elective ovariohysterectomies were performed on eight normal healthy bitches by video assisted laparoscopic technique. One (10mm) pre-umbilical port served to house the Light Source and Camera, while 2-3 5mm ports housed instruments for intra-operative manipulation of abdominal organs. Pneumo-peritoneum was introduced and maintained throughout the surgery for visualization. The post-operative period was uneventful and all bitches recovered without incident.

## **19. PARTIAL CYSTECTOMY IN A BITCH**

*V.M.CHARIAR AND C.C.WAKANKAR*

A 2 year old female Spitz was presented with recurrent cystitis and haematuria, some tenderness on palpation of urinary bladder, was examined on ultrasound (Survey Radiograph revealed no abnormalities). On USG the bladder showed a circumscribed area of thickening and a free-floating lesion that fit the ultrasound description of a thrombus. At exploratory laparotomy the bladder showed some organizing changes on the serosal aspect and raised nodular lesions covering an area 4 cm x 4 cm on the mucosal aspect at the fundal region. A wide excision of full-thickness of the affected wall was performed and the bladder reconstructed. The dog made an uneventful recovery. Histology on the mass showed areas suggestive of malignancy and areas that were granulomatous in appearance.

## 20. COLLISION TUMOUR IN A DOG

*S. THILAGAR, S. AYYAPPAN, S. BALACHANDRAN AND  
B. MURALI MANOHAR*

Peripheral Veterinary Hospital, TANUVAS, Chennai.

A 4 year old Pomeranian dog was brought to the hospital with a history of alopecia and non-painful testicular swelling of 3 months duration. At physical examination, enlargement of the mammary gland, nipples, prepuce and hard swelling of the left testes were found. Tumor (tests) was surgically removed under general anesthesia and microscopically two concomitant tumors viz., Sertoli cell tumor and seminoma could be detected.

## 21. CHEMOTHERAPEUTIC TRIAL ON MAMMARY TUMORS IN CANINES

*K.P.RAVIKUMAR, M.S.VASANTH AND S.M.JAYADEVAPPA*

Dept. of Surgery, Veterinary College, Hebbal, Bangalore.

Eighteen clinical cases of mammary tumor in canines were used for the study. These animals were divided into three groups of six animals each. Vincristine Sulphate at 0.025 mg per kg body weight, intravenous, weekly interval for four weeks. Cyclophosphamide at 50 mg per Meter Square daily for four days in a week intravenously repeated once weekly for four weeks. and 5-fluorouracil at the dose rate of 150 mg/ meter square at weekly interval for four weeks, were given respectively for each group. Three animals treated with Vincristine showed complete regression and partial regression seen in three dogs, transient signs of vomiting and anorexia seen in 3 animals. Two animals showed complete regression and 4 animals showed minimal regression in Cyclophosphamide treated group. Side effects such as vomiting, cystitis and haematuria were seen. Among the animal treated with 5-fluorouracil 4 animals showed no regression and two animals showed only minimal regression. Side effects were severe with ataxia, vomition, and convulsions. Four animals died with in the period of study. Of the three agents evaluated Vincristine sulphate at 0.025 mg/kg gave reasonably good result in dogs with success rate of 50 percent.

## 22. INGUINAL HYSTEROCOELE ASSOCIATED WITH PYOMETRA IN A BITCH

*SARADA AMMA, T.SYAM, K.V.BALAGOLAN, T.P.SOORYADAS,  
S.SENTHILKUMAR AND K.N.M.NAYAR*

Dept. of Surgery, College of Vety. & Animal Sciences, Mannuthy.

An 8 years old Pomeranian bitch was presented with the history of discharge of pus from the external genitalia and loss of appetite and wasting since a week. On examination, a soft, cyst like swelling was observed at the left inguinal region. Clinical investigations suggested the condition as inguinal

hernia along with pyometra, which was subsequently confirmed radiographically. Laparotomy through midventral site was performed and found that a segment of left uterine horn was herniated in the inguinal canal. Also it was found that the segment proximal to the herniation was distended. Since the herniated segment could not be reduced through the hernial ring, the hernial swelling was incised to free the contents from adhesions and reduced back into the abdominal cavity. Ovario-hysterectomy was performed following standard techniques. Both the incisions were closed by standard pattern. The animal had an uneventful recovery and the sutures were removed on the 10<sup>th</sup> post-operative day.

### **23. INCIDENCE OF MAMMARY TUMORS IN CANINES**

*K.P.RAVIKUMAR, M.S.VASANTH AND S.M.JAYADEVAPPA*

Dept. of Surgery, Veterinary College, Hebbal, Bangalore.

Out of 8160 dogs presented to Veterinary College Hospital, Bangalore, from January 1997 to July '98, 68 dogs (0.83%) were affected with mammary tumor. The incidence of mammary tumor was highest in the age group of 6 to 8 years. The majority of the affected breed was German Shepherd (36.12%), followed by Pomeranian (16.67%), Doberman (16.67%), Dachshund (8.33%), Labrador (5.56%) and nondescript dogs (16.67%). Incidence in the male dogs was 13.88 percent. Of these, malignant tumors consisted of 72.22 percent benign tumors- 1.11 percent and non-neoplastic tumors- 16.67 percent. Histologically, mammary tumors constituted of acinaradenoma (5.56%), Papillary adenoma (2.78%), fibro-adenoma (2.78%), adenocarcinoma (44.44%), malignant mixed tumors (19.44%) and squamous cell carcinoma (8.33%).

### **24. COMPARATIVE EFFICACY OF SURGERY AND SURGERY WITH CHEMOTHERAPY FOR MAMMARY TUMORS IN CANINES**

*K.P.RAVIKUMAR, M.S.VASANTH AND S.M.JAYADEVAPPA*

Dept. of Surgery, Veterinary College, Hebbal, Bangalore.

Twelve clinical cases of mammary tumor in canines were used for this study. These animals were divided into two groups of six animals each. One group was subjected to surgical excision of the tumor and the other group was subjected to surgical excision followed by chemotherapy using Vincristine Sulphate at 0.025 mg / kg body weight intravenously at weekly interval for four weeks. The surgical excision gave satisfactory results with a success rate of 66.6 percent. Whereas surgical excision followed by chemotherapy was found to be most effective with a success rate of 83.33 percent. There was a significant decrease in TLC, accompanied by neutropenia, eosinopenia, lymphocytosis and monocytosis in animals subjected to surgical excision followed by chemotherapy.



## 25. EXTRA-UTERINE PREGNANCY IN A BITCH

*L.B.SARKATE, C.L.BADGUJAR AND D.U.LOKHANDE*  
Dept. of Surgery, Bombay Veterinary College, Parel, Mumbai.

A five year old non-descript bitch was presented at Bombay Veterinary College, Parel, with the history that she was crossed since 4 month back but not delivered the pups. Palpation of abdomen revealed hard mass in the abdomen, otherwise, the health of bitch was normal. Radiographic examination of abdomen revealed an ossified foetal mass about the size of tennis ball. The tentative diagnosis was made as uterine mummified foetus. The bitch was prepared for Surgery and a midline incision was taken for the removal of ossified mass from the uterus. The examination of uterus did not reveal any abnormally and both the uterine horns were normal. Then the growth was grasped with thumb and fingers and was brought to the line of incision. The hard osseous foetal mass was found attached to other mesentery of small intestine as well as on the serosal layer of an inch of small intestine. The mass was not richly supplied by blood vessels but was firmly adherent by thick fibrous membranes. The blood vessels of mesentery were ligated and the attachment of foetus from serous membrane was excised carefully and removed. The serous layer was sutured by 3-0 chromic catgut and the mesentery was opposed by taking 4-5 continuous sutures. The abdominal wound was closed as routinely. A streptopenicillin injection (250mg) daily was administered intramuscularly for 5 days.

## 26. MULTIPLE SEGMENTAL ENTEROTOMY FOLLOWING INTESTINAL OBSTRUCTION IN A MALE DOG - A CASE REPORT

*R.SURESH KUMAR, L.NAGARAJAN, W.P.ARCHIBALD DAVID  
AND K.AMEERJAN*

Dept. of Surgery, Madras Veterinary College, Chennai.

A 5 year old German Shepherd dog was admitted in the Madras Veterinary College Hospital with the complaint of off feed and absence of defecation for the past 2 weeks. On clinical examination animal was found to be dull dehydrated and recumbent with abdominal distension. Deep palpation of the abdomen revealed huge intra-abdominal mass, which was confirmed by radiography also. There was haemo-concentration with elevated haemoglobin and packed cell volume, but differential leukocytes count was normal. Since the symptomatic treatment with laxative and intravenous fluids could not evince any improvement. The case was referred for surgical intervention. Exploratory laparotomy was performed and it revealed multiple, huge extensive, linear intraluminal masses involving the segments of the small intestine. Which on enterotomy were found to be the congregated masses of foreign body materials comprising pieces of coir, nylon, rubber material, hair

etc., Multiple segmented enterotomy was performed and the obstructing masses were relieved. The wounds were closed in the routine manner after peritoneal lavage with normal saline. The recovery was uneventful.

## **27. EFFECTIVENESS OF POLYMETHYL METHACRYLATE AND SILICONE INTRA-OCULAR LENS IMPLANTATION FOR VISUAL REHABILITATION IN DOGS – A CLINICAL STUDY**

*C.RAMANI, K.AMEERJAN AND W.P.ARCHIBALD DAVID*  
Dept. of Surgery, Madras Veterinary College, Chennai – 600 007.

Twenty one dogs with bilateral cataract were studied. Extra capsular cataract extraction and PMMA implantation was carried out in nine dogs, cryo extraction and PMMA implantation in six, extracapsular cataract extraction silicone lens implantation in three and cryo-extraction silicone lens implantation in another three dogs. The parameters studied were visual function tests, direct ophthalmoscopy slit lamp biomicroscopy, tonometry and retinoscopy. The parameters were studied from pre-operative day to the 60 th postoperative day. Posterior chamber lens insertion after extra capsular cataract extraction was found to be technically easier and retinoscopy and other studies revealed + 42D PMMA power IOL was ideal for achieving near normal emmetropia.

## **28. SURGICAL MANAGEMENT OF A NEPHROLITH IN A DOG**

*R.S.GEORGE, A.P.NAMBI, L.NAGARAJAN, W.P.ARCHIBALD DAVID  
AND K.AMEERJAN*

Dept. of Clinics, Madras Veterinary College, Chennai – 7.

A non-descript bitch aged 8 years was presented with a history of persistent vomiting since 3 days. Serum biochemistry showed elevated BUN and creatinine levels. (162mg/dl & 7.9 mg) Survey radiograph of the abdomen revealed a radio-opaque nephrolith in the left kidney. IVP studies revealed absence of excretion of contrast media through the affected kidney. The animal was subjected to surgery under thiopentone (1.25%) anaesthesia and the left kidney was incised along the greater curvature and three impacted nephroliths of varying sizes were removed from the renal pelvis. The incised kidney was sutured with simple interrupted sutures using 2/0 mersuture and the abdominal incision closed as per routine technique.

## **29. USE OF DIAZEPAM-KETAMINE IMMOBILISATION FOR DIAGNOSTIC RADIOLOGICAL PROCEDURE IN WATER MONITORS**

*B.J.WILLIAM, W.P.ARCHIBALD DAVID, K.AMEERJAN, B.RAMESH KUMAR, R.SURESH KUMAR AND G.D.RAO*

Dept. of Surgery, Madras Veterinary College, Chennai – 600 007.

Chemical restraint using diazepam at the dose rate of 0.40 mg / kg and ketamine 20 mg / kg bodyweight intramuscularly was achieved and the anaesthetic parameters were studied. The induction was achieved  $\pm$  min. The total duration of chemical immobilization was  $\pm$  hrs. The reptile was subjected to radiological examination. The water monitor made an uneventful recovery after the radiological examination with the above anaesthetic regimen.

## **30. CHEMICAL IMMOBILISATION OF A CROCODILE WITH DIAZEPAM – KETAMINE FOR A MINOR SURGICAL PROCEDURE**

*B.J.WILLIAM, W.P.ARCHIBALD DAVID, K.AMEERJAN, B.RAMESH KUMAR, R.SURESH KUMAR AND G.D.RAO*

Dept. of Surgery, Madras Veterinary College, Chennai - 600 007.

A crocodile was referred to the surgery unit with a history of swelling in the left temporal region since 20 days. The reptile was chemically restrained using diazepam 0.40 mg / kg and ketamine 20 mg / kg body weight intramuscularly. The induction was attained in 20 minutes. The reptile was under chemical immobilization for 8.50 min. During the period the surgical management of the swelling which was diagnosed as abscess was carried out. The reptile made an uneventful recovery.

## **31. TWIN RUPTURE OF URINARY BLADDER IN A DOG**

*L.NAGARAJAN, C.RAMANI, R.SURESH KUMAR AND W.P.ARCHIBALD DAVID*

Dept. of Surgery, Madras Veterinary College, Chennai.

Rupture of urinary bladder is a common sequelae to accidents in dogs. However double rupture of the bladder is not a usual finding. A spitz aged six years was referred to the M.V.C. hospital with a history of accident a couple of days back, vomiting and anuria since then. Physical examination revealed a fluid filled abdomen. Contrast cystography showed the presence of contrast material in the peritoneal cavity confirming bladder rupture. Laparotomy revealed the presence of a double rupture one on either side of the fundus of the bladder. The bladder defects were closed with inversion suture pattern. The laparotomy wound was closed after thorough abdominal lavage. The animal recovered uneventfully following antibiotic and fluid therapy.

## **32. A RARE CASE OF INTESTINAL EVISCERATION THROUGH A VAGINAL TEAR IN A BITCH**

*L.NAGARAJAN, C.RAMANI AND W.P.ARCHIBALD DAVID*  
Dept. of Surgery, Madras Veterinary College, Chennai-7.

Road accidents in dogs usually result in ventral hernia or diaphragmatic hernia in addition to other orthopaedic involvement. An unusual case of intestinal herniation through a vaginal tear due to an accident is documented. An eight month old, non descript female dog was reported with evisceration of intestinal contents through the vagina. The animal was in a state of shock. Clinical examination revealed a 2" tear on the roof of the vaginal wall. The dog died before any attempts could be made for surgical repair.

## **ORTHOPAEDICS**

**Chairman: Dr. K.G. AVACHAT      Rapporteur: T.P. BALAGOPALAN**

### **1. SURGICAL FIXATION TECHNIQUE FOR THE REPAIR OF TIBIO-TARSAL DISLOCATION IN TWO DOGS A CLINICAL REPORT**

*N.S.SAINI, V.K.SOBTI AND BALROOP SINGH*  
Dept. of Surgery & Radiology, P.A.U., Ludhiana, Punjab.

The immobilization of the tibio-tarsal dislocation by cortical screw fixation was evaluated in two clinical cases of dogs. In one case Achilles tendon was also severed which was repaired by using two simple locking loop tendon sutures. Immobilization with the cortical screw was found to be satisfactory for the treatment of tibio-tarsal dislocation and healing of severed Achilles tendon. The dogs recovered without any major post-operative complication.

### **2. EVALUATION OF FIBRIN COMPOSITE AND TRICALCIUM PHOSPHATE COMPOSITE FOR THE REPAIR OF FRACTURE OF RADIUS WITH BONE LOSS IN GOATS**

*M.P.KALE, B.RAMESH KUMAR, W.P.ARCHIBALD DAVID,  
AND B.JUSTIN WILLIAM*  
Dept. of Surgery, Madras Veterinary College, Chennai.

Twelve cross-bred goats were randomly divided into two groups comprising of six goats each fracture of radius with bony defect was created under xylazine (0.2 mg/kg. b.w.) and ketamine (11 mg/kg. b.w.) The defect in Group 1 was filled up using Fibrin-Fibrillar Collagen - Hydroxyapatite

composite and in Group II using Tricalcium Phosphate Collagen composite. The fractured radius was immobilized by a 9 hole, narrow Dynamic compression plate with 3.5 mm cortical screws. All the goats were sacrificed on the 60<sup>th</sup> post-operative day for gross and histopathological studies. Increased respiratory rate was observed in both the groups on the 1<sup>st</sup> & 2<sup>nd</sup> post-operative days. Post-operative tissue reactions such as hyperaemia and swelling were mild in group I and moderate in group II. The weight bearing pattern of animals in group I were better than group II during the early post-operative period.

### 3. EFFECT OF CISSUS QUADRANGULARIS IN ACCELERATING HEALING PROCESS OF FEMUR FRACTURE IN DOGS

*B.SARAVANAN, S.K.MAITI, M.HOQUE AND G.R.SINGH*  
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The study was undertaken to evaluate the efficacy of the herb, *Cissus quadrangularis* Linn (Hardjore) as an adjunct, in fracture healing. Ten clinically healthy Hindustani dogs of either sex were divided equally into two groups (A and B). In all animals, unilateral comminuted diaphyseal femoral fracture were created under thiopental anaesthesia and then it was immobilized with dynamic compression bone plate (DCP). In group B in addition to bone plating, the ethanolic extract of the herb, hardjore, was applied twice a day externally at the fracture site from day 1 – 21 P.O. Clinically, early resolution of inflammatory signs and weight bearing were observed in animals of herbal group (B) than control (A). Radiographs taken at different intervals (0, 15, 30, 45 & 60 P.O. showed accelerated fracture healing with complete bridging of comminuted fragment, extensive bony deposition along with periosteal and medullar continuity across the defect site in the animals of herbal group (B) whereas radiographic union and periosteal bridging at fracture site were relatively slow and incomplete in the animals of control group (A). Gross, histopathological and scanning electron microscopic (SEM) observations revealed complete union, excellent remodeling and collagenous net work at the fracture site in the animals of herbal group whereas in control group healing was slow and delayed as evidence by presence of fibro cartilaginous tissue at the defect site.

#### **4. SURGICAL MANAGEMENT OF TIBIAL TUBEROSITY AVULSION IN A RACING BULL – A CASE REPORT**

*T. SARADA AMMA, K.V.SYAM, T.P. BALAGOPALAN, S.R.NAYAR,  
AND K.N.M.NAYAR*

Dept. of Surgery, College of Veterinary and Animal Sciences, Mannuthy.

A two and a half years old racing bull was presented with a history of lameness and inability to bear weight on the right hind limb, following a race. The region of the stifle was oedematous and painful. Radiological examination of the part revealed an avulsion fracture of the anterior tibial tuberosity. Fixing the separated bone fragment with a cortical screw along with hemicirclage wiring performed surgical correction. The surrounding soft tissue also was apposed with Stainless Steel wire sutures. Immobilization of the limb was effected with a heavy plaster of Paris cast. Functional recovery of the limb was reported three months after surgery.

#### **5. EFFECT OF CISSUS QUADRANGULARIS-URARIA PICTALEPIDIUM SATIVUM ON RADIUS/ ULNA FRACTURE IN DOGS**

*ALI ASGAR, SHARMA, V.K.KUMAR A AND H.P.SINGH*  
Dept. of Surgery and Radiology, G.B.P.U.A.T., Pant Nagar, U.P.

Eighteen, 2-2.5 years old dogs were divided equally in control and treatment groups. In all the animals close fracture of radius ulna was created experimentally and immobilized with plaster of Paris cast. Animals of treatment groups were fed with 6 ml. of *Cissus quadrangularis-Uraria Pictalepidium sativum* suspension (Caldhan, Dabur Ayurved Ltd.) twice a day for a period of 20 days post fracture while animals of control group were given usual diet without any medicament. Clinical observations revealed early functional restoration of limbs in treated group ( $45 \pm 2.72$  days) than control group ( $54 \pm 3.68$  days). The radiographic, angiographic and micro-angiographic observations demonstrated early vascularisation (15<sup>th</sup> day) and regression of vascularity (60<sup>th</sup> day) with well organized, dense, periosteal callus (60<sup>th</sup> day) around fracture site in the treatment group of animals. Histological, histochemical and tetracycline labeling studies showed early proliferation of osteogenic and angioblastic cells and deposition of collagen fibers. Tetracycline labeling studies demonstrated early uptake (15<sup>th</sup> day) and heavy deposition (45<sup>th</sup> day) of calcium at the fracture site in treatment group. It is thus concluded that *CISSUS QUADRANGULARIS- URARIA PICTALEPIDIUM SATIVUM* feeding for 20 days enhanced the rate of fracture healing and calcification.

## **6. CLINICAL AND EXPERIMENTAL STUDY ON SUPRACONDYLAR FEMUR FRACTURE IN DOGS**

*S. K. MAHAJAN AND S.S.SINGH*

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The present study was conducted on experimental and clinical cases of dogs for repair of supracondylar femur fractures. Nineteen clinical cases of supracondylar femur fractures were repaired using cross pinning (n=8), single intramedullary non-threaded pinning (n=5 ± .1 - threaded), oblique pinning (n=5). Cross pinning provided rigid fixation. Fixation failure and distal migration of pin were common with single intramedullary pinning. Oblique pin usually got dislodged after functional recovery of the limb (about 25 days). In experimental study, transverse supracondylar femur fractures were fixed with cross- pinning (n=3), single intramedullary threaded pin (n=3) and oblique pin along with orthopaedic wiring (n=3). Cross-pinning and single intramedullary threaded pin provided rigid fixation. Migration and dislodgment of one pin was the complication observed with cross pinning. Angulation/dislodgment of fractured fragments was observed with oblique pinning along with wiring technique. In conclusion, threaded single intramedullary pinning with over-reduction of the distal fragment and cross pinning were found to be suitable techniques for repair of supracondylar femur fractures in dogs.

## **7. RADIOGRAPHIC EVALUATION OF DIFFERENT INTERNAL FIXATION TECHNIQUE FOR THE MANAGEMENT OF COMMUNUTED FEMORAL FRACTURE IN DOGS**

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This study was conducted in 15 clinically healthy adult Hindustani dogs of either sex which were divided randomly into three equal groups. (A, B and C) In all the animals, unilateral comminuted diaphyseal femoral fracture was created under thiopental anesthesia and immobilized with intramedullary pinning with circlage wiring (Gr. A), dynamic compression bone plating (DCP) (Gr. B) and dynamic compression bone plating with circlage wiring (Gr. C) respectively. Lateral and oblique radiographs taken at different intervals (0, 15, 30, 35, 45 & 60 P.O.) evaluated these different internal fixation techniques. Radiographs taken immediately after surgery revealed excellent reduction and alignment of comminuted fragment in animals of groups B and c but a small gap was observed in group A at the fracture site. On day 15, there was little evidence of periosteal bridging callus formation at the defect site in all the animals. However, this periosteal reaction was extensive in subsequent intervals, in animals of group A than groups B & C. Excellent primary fracture healing with periosteal continuity was observed in animals of groups B & C

whereas, in group A, healing was slow and delayed. In two animals of group A, signs of fixation failures like proximal pin migration, collapse and osteomyelitis was observed. One animal each of groups B and C, bending and loosening of screws and compartmental syndrome with osteopenia were observed respectively.

## **8. RADIOGRAPHIC EVALUATION OF MANAGEMENT OF FRACTURE OF DISTAL THIRD OF RADIUS AND ULNA IN DOGS**

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Division of Surgery, I.V.R.I., Izatnagar, U.P.

Fifteen dogs were divided in three equal groups and a transverse fracture of distal third of radius and ulna was created and repaired with stainless steel bone plating (Group A), external skeletal fixation (Group B) and plaster of Paris gutter splint (Group C). The techniques were evaluated and compared on the basis of radiographs taken just after operation and subsequently on day 15, 30, 45 and 60 post-operatively. The radiographs were observed for the status of fracture reduction and fixation, progress of healing at the fracture site and complications if any at different intervals. Radiographs taken after surgery revealed good fracture fixation, reduction and alignment in animals of groups A & B, but alignment was not good in animals of group C. Complete fracture union was achieved on day 60 and 45 post-operatively in all the animals of group A & B respectively. In group C, fracture healing was observed in two animals in which excessive periosteal callus was formed and bone lost its normal architecture. In other three animals of group C non-union and infection was noticed.

## **9. RESURFACING OF FEMORAL TROCHLEOPLASTIES WITH FREE AUTOGENOUS FASCIA LATA AND PERIOSTEAL GRAFTS IN DOGS AN EXPERIMENTAL STUDY**

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A.N.G.R. Agricultural University, Rajendranagar, Hyderabad.

The study was conducted in 18 mongrel dogs divided into three equal groups of 6 each. Femoral trochleoplasty was performed in all the dogs and in the dogs of groups I and II autogenous, free fascialata and periosteal grafts were used to resurface the femoral trochleoplasties. Resurfacing was not done in the dogs of Group III, which acted as controls. Clinical, gross and histopathological examination proved that periosteal grafts were found suitable for resurfacing trochleoplasty and fascia lata was found to be an effective alternative.



## 10. HIP DISLOCATION IN CALVES – A NEW APPROACH FOR CORRECTION BY CLOSED METHOD

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AND K.N. MURALEEDHARAN NAYAR*

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The study was undertaken to evolve a suitable technique, which can be adopted under field conditions for the management of coxofemoral luxations in calves. The study was conducted in 6 male cross-bred calves in which coxofemoral luxation was induced under anaesthesia. After closed reduction, immobilization was effected by the fixation of two Steinmann pins at the greater trochanter, one through the wing of ilium and the other through tuber ischii and connecting the exposed ends by an external connecting assembly. All the animals were able to support weight at rest by 5<sup>th</sup> day. Lameness noticed during progression disappeared once the fixation assembly was removed. Physiological parameters were within the normal range in all animals. Variations in haematological values upto 7<sup>th</sup> day were indicative of inflammatory changes for the healing process subsequent to surgery. Radiographic studies showed normal alignments of femoral head in acetabulum and the absence of recurrence. Gross morphological examination revealed normal hip joints, and absence of any local complication in the joint and the joints capsule. The technique of closed reduction along with external fixation was found satisfactory for reduction and immobilization in coxofemoral luxation in calves.

## 11. WEDGE OSTEOTOMY AND ULNECTOMY FOR CORRECTION OF ANGULAR DEFORMITY OF RADIUS AND CARPAL VALGUS IN A DOG

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Peripheral Veterinary Hospital, TANUVAS, Chennai.

A 3 months old Great Dane pup was reported with angular deformity of the right radius and carpal valgus. Trauma and lameness of the limb 3 weeks back was also reported. Detailed clinical and radiological examination revealed old fracture of radius with mal union in addition to premature closure of the distal ulnar physics due to trauma. Under general anaesthesia a medial wedge osteotomy was performed at the site of deformity in radius followed by ulnectomy. Plate osteosynthesis for the radius was performed with a 3.5 mm, 7 hole D.C.P. and the dog started bearing weight perfectly on the operated limb from the 5<sup>th</sup> week onwards. Periodical X-rays were taken to assess the healing. There was clinical union at the osteotomy site 4 months after surgery and the implants were removed. The dog exhibited normal shape of the carpal joint and straightening of radius.

## **12. USE OF KUNTSCHER NAIL FOR IMMOBILIZATION OF FEMUR FRACTURE IN A GOAT – A CASE REPORT**

*B. RAMESH KUMAR, B. JUSTIN WILLIAM, R. JAYAPRAKASH  
AND W.P. ARCHIBALD DAVID,*

Dept. of Surgery, Madras Veterinary College, Chennai.

A non descript male goat aged about 2 years was brought to the Madras Veterinary College Hospital after an automobile accident. The animal was lame on its right hind limb with signs of fracture of femur. It was subjected to radiological examination and the diagnosis was confirmed as transverse fracture of right femur. The animal was prepared for open reduction and immobilization procedure using Kuntscher nail. Under xylazine-ketamine anaesthesia the femur was approached through lateral side of the right thigh region using traumatic techniques. The fractured fragments were identified and reduced for immobilization. Using a reamer the medullar canal was reamed. A Steinman pin was introduced as guide pin into the medullar canal of femur. A 12 mm diameter Kuntscher nail was introduced into the medullar canal of femur under the guidance of Steinman pin for immobilization and it was impacted into the distal epiphysis of fractured femur. The excess k-nail was cut at the proximal end. The muscle and skin incisions were closed by routine manner. The goat was under antibiotic cover for 7 days postoperatively and periodical x-rays were taken to assess the healing pattern. The animal made an uneventful recovery after 6 weeks and the k-nail was removed using an extractor device.

## **13. THOMAS EXTENSION SPLINT FOR IMMOBILISATION OF LONG BONE FRACTURE IN BOVINES**

*ARUP KUMAR DAS, SATENDER KUMAR, V.K. SHARMA, AMRESH KUMAR  
AND HARPAL SINGH*

G.B.P.U.A.T., Pantnagar, U.P.

Thomas extension splints were fabricated using iron rods, wrapped with synthetic adhesive for immobilization of long bone fracture in bovines. Hooves were snared with wires through the drilled holes and tied to welded hoof plates for extension of the limb. The ambulatory capability, the overall comforts and clinical union of the fractured bones was considered.

# **RADIOLOGY AND IMAGING TECHNIQUES**

**Chairman: Dr. A.P. SINGH**

**Rapporteur: Dr. V.D. AHER**

## **1. EXCRETORY UROGRAPHY STUDIES USING SODIUM MEGLUMINE DIATRIZOATE IN DOGS**

*L.RANGANATH AND W.P.ARCHIBALD DAVID*

Dept. of Surgery, Madras Veterinary College, Chennai.

Excretory urography provides geographic assessment of the entire upper urinary tract. Meaningful interpretation of functional abnormalities is dependent on the knowledge of normal radiographic appearance of kidney. With this background the study was undertaken to evaluate the usefulness of sodium meglumine diatrizoate at 1000mg/kg body weight for excretory urography studies in dogs and to assess its influence on radiographic renal density, renal size, physiological, haemato-biochemical and urine analysis parameters. Sodium meglumine diatrizoate (Urografin 76%) at 1000mg/kg-dose rate provided good radiographic density of kidney with no significant change in renal size and other parameters.

## **2. INTRAVENOUS PYELOGRAPHY STUDIES IN DOGS WITH DIFFERENT RENAL AFFECTIONS**

*L.RANGANATH AND W.P.ARCHIBALD DAVID*

Dept. of Surgery, Madras Veterinary College, Chennai.

Intravenous pyelography was conducted on 48 dogs suffering from unilateral renal ischaemia, chemical nephrosis and pyelonephritis. Nephrogram and pyelogram phase was studied using urografin 76%. Intravenous pyelography helped to differentiate normal and healthy kidney and also to diagnose renal affections at an early stage as per renal shape, size, architecture and pattern of contrast drug excretion.

## **3. NON-SELECTIVE RENAL ANGIOGRAPHY STUDIES IN DOGS**

*L. RANGANATH AND W.P.ARCHIBALD DAVID*

Dept. of Surgery, Madras Veterinary College, Chennai.

Non-selective renal angiography (aortography) for hydronephrosis was carried out in 12 normal dogs and 48 dogs with different renal affections viz., renal ischaemia, chemical nephrosis and pyelonephritis using Urografin 76% through transfemoral approach. Aortography demonstrated good internal branching in normal dogs, thinning of the left renal artery and splaying in hydronephrotic kidney, spares crowded appearance in kidney with renal

ischaemia, good internal branches in chemical nephrosis and distortion of intrarenal vessels in pyelonephritis.

#### **4. NEPHRO-SONOGRAPHIC STUDIES IN DOGS**

*L.RANGANATH AND W.P.ARCHIBALD DAVID*

Dept. of Surgery, Madras Veterinary College, Chennai.

Ultrasonography is a modern diagnostic imaging technique which makes use of high frequency sound waves ranging from 2 to 10 MHz. Nephrosonography was carried out in 12 normal dogs and in 48 dogs affected with hydronephrosis, renal ischemia, chemical nephrosis and pyelonephritis. Nephrosonography was non-invasive, easier to use requiring no patient preparation. With nephrosonography it was possible to measure the renal length, renal width, renal height, renal volume and also to study nephrosonographic architecture. Nephrosonography helped to diagnose the renal affections at an early stage.

#### **5. RADIOGRAPHIC EVALUATION IN EXPERIMENTAL POST-TRAUMATIC OSTEOMYELITIS IN GOATS**

*M.HOQUE AND G.R.SINGH*

Division of Surgery, I.V.R.I., Izatnagar, U.P.

The experiment was conducted in 36 goats divided into six groups (A1, A2, B1, B2, C1 and C2) of six animals each. Using unsterilised Steinmann pin, K-nail and Stainless steel plate in femoral fracture in groups A1, B1 and C1 respectively produced osteomyelitis. Groups A2, B2 and C2 served as corresponding controls, where sterilized devices were used. The treatment of osteomyelitis was undertaken in the test groups once the radiographic signs of osteomyelitis developed i.e. day 30 post - operation. Radiographs were taken in all the animals at day 1, 15, 30, 45, 60 and 90 post - operation. Radiographs taken 24 hrs following fracture fixation showed soft tissue swelling and loss of demarcation between fascial and muscle planes in the animals of groups A1, B1 and C1. The early radiographic sign observed on day 15 was a zone of bony lysis around the fixation devices. At day 30, cortical lysis, sequestra formation, increased medullary density were visible in all the animals of test groups. The radiographs taken during the post - treatment period (day 45, 60, 90) revealed abatement of bony destruction and gradual reparative and remodeling sequences. The animals of groups A1, B1 and C1 took day 45 to 60 for fracture union. The animals of groups A2, B2 and C2 showed normal fracture healing sequences and took day 30 to 45 to obliterate the fracture line.

## **6. ACCELERATION OF BONE HEALING WITH PROGESTERONE SUPPLEMENT- A RADIOLOGICAL, SCANNING AND HISTOPATHOLOGICAL STUDY**

*S.K.MAITI, M.HOQUE, H.P.AITHAL AND G.R.SINGH*

Division of Surgery, I.V.R. I., Izatnagar, U.P.

The effect of progesterone supplement on fracture healing in 10 spayed rabbits, divided equally into two groups was studied. In all the animals, midshaft simple transverse fracture was created under thiopental (2.5%) anaesthesia. In the test group, 1 mg progesterone was given on alternate days upto 35 post-fracture day. Lateral and antero-posterior radiographs were taken on days 0,7,14,21,28 and 35 post-operatively. The specimens for electron bone scan and histopathological study were collected from the healed site of test bone immediately after euthanising the animals on day 35 showed, newly formed osseous tissue (bone cells and collagen network) which filled the entire defect in test group whereas in the control the defect was partially filled with fibrocartilagenous tissue. Radiographs taken at different intervals revealed that periosteal proliferation and bridging callus developed by day 14 post-operative and on day 35, remodeling of fracture site and periosteal continuity was well developed in test group of animals whereas, fracture healing in control group was relatively slow and delayed.

## **7. RADIOLOGICAL FINDINGS OF FRESH SEROSAL AND MESENTRIC ONLAY GRAFTS OVER ENTERO-ANASTOMOTIC SITE IN CANINES**

*N.V.V.HARI KRISHNA, R.V.SURESH KUMAR AND M.SREENU*

Dept. of Surgery & Radiology, College of Veterinary Sciences, Tirupathi.

Twenty-four dogs of either sex divided randomly into three groups of eight animals each were used for the study. In group I, anastomosis was performed by two-layer inversion technique. In group II and III entero-anastomosis was performed by single layer of simple continuous apposition sutures and fresh serosal and mesenteric onlay grafts were wrapped around the anastomotic sites and kept in position by four stay sutures. Radiological studies using barium sulphate and Conray -420 were conducted at 7, 14, 21 and 30 postoperative days to study the patency of intestinal lumen, stenosis, leakage and vascular pattern at the anastomotic site. Angiograms at different intervals showed less vascular response in two-layer inversion technique group compared to grafted animals. Group II showed slightly more vasculature among three groups. Contrast radiography showed more constriction in two-layer inversion technique group while lumen was patent without marked stenosis in grafted groups. Serosal onlay grafted groups showed slightly more stenosis than mesenteric onlay grafted groups. There was no leakage at the anastomotic site in grafted groups.

## 8. ENDOSCOPIC EVALUATION OF CANINE GASTRO-INTESTINAL TRACT

*D.DILIP KUMAR, K.AMEERJAN AND W.P.ARCHIBALD DAVID*  
Dept. of Surgery, Madras Veterinary College, Chennai.

Endoscopic evaluation of normal canine gastro-intestinal tract was done with the help of gastro-intestinal fibroscope in six mongrel dogs. Six clinical cases having oesophageal obstructions also (3 cervical part and 3 thoracic part) were diagnosed by using endoscope.

## 9.EFFECT OF ATROPINE AND XYLAZINE ON GASTRO-INTESTINAL TRANSIT TIME IN PUPS

*K.U.RAJESH, V.K.SHARMA, A.KUMAR AND VAISHALI BHAT*  
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Effect of atropine and xylazine on the transit of barium sulphate was studied in nine clinically healthy mongrel pups of 3 to 4 months of age divided equally into three groups A, B and C. Group A served as control and group B animals were administered atropine sulphate (0.04 mg / kg) i/m and combination of atropine sulphate (0.04mg/kg) with xylazine (1 mg / kg) respectively atleast 15 minutes prior to the oral administration of 50 % w/v suspension of barium sulphate @ 20 ml/kg. The abdominal region was radiographed in lateral and ventrodorsal positions at 0,15,45,75,135,185,245 and 305 minutes following barium sulphate administration. In group A animals, the contrast material passed rapidly through the gastro-intestinal tract and its presence in the rectum was observed at 245 minutes, in group B and C, the mean transit time was prolonged to 305 minutes. In animals of group B, accumulation of air in the stomach, giving the effect of double contrast gastrography was also observed at 15 and 45 minute radiographs. Thus atropine and xyalzine decreases transit time of barium suspension and can be used to study the various segments of the GIT as contrast agent is retained in various segments for prolonged duration. Atropine sulphate alone facilitates the visualization of the stomach better particularly for radiolucent foreign bodies or gastric neoplasms as it simulates double contrast gastrography.

## 10. CONTRAST ARTHROGRAPHY OF THE METACARPO-PHALANGEAL JOINT IN COW CALVES

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JIT SINGH AND SURAJ KUMAR*  
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Positive and double contrast arthrography of the fetlock joint was done in six cow calves using Urografin 76 % (sodium and meglumine diatrizoate, 370 mg of Iodine / ml) and room air as positive and negative contrast media, respectively. The positive contrast medium was used in the concentrations of

19,25,38 and 76 percent and in the volumes of 1 to 4 ml. Double contrast using 1 to 3 ml Urografin 76 % along with 15 to 25 cc of room air was used arthrography. The synovial fluid aspirated as much as possible to avoid dilution of the contrast medium. Arthrograms obtained immediately and within 3 minutes of injection of the contrast medium were of good diagnostic quality. The contrast medium disappeared completely from the joint after 30 minutes. Lower concentration (38 %) of the contrast medium helped in better visualization of the articular structures than the higher one. The optimum dose of Urografin (38 %) was 2 ml while 20 cc of room air was considered adequate. The articular surface of the joint and the shape, size and location of the proximal sesamoids were visualized better on a dorsopalmar view. However, the mediolateral view provided better details of different joint pouches. There appeared to be a communication between the two metacarpophalangeal joints on the palmar aspect. Double contrast arthrography was considered to be of poor diagnostic value in comparison to positive contrast arthrography as the former invariably obscured the details of the articular surface due to formation of widespread air bubbles in a mixture of contrast material and synovial fluid.

## **11. RADIOGRAPHIC ESTIMATION OF SOFT TISSUE SWELLING IN ELECTRO-ACUPUNCTURE TREATED ARTHRITIC BUFFALO CALVES**

*A.M.PAWDE, O.P.GUPTA, G.R.SINGH, H.P.AITHAL AND H.C.SETIA*  
Division of Surgery, I.V.R.I., Izatnagar, U. P.

An acute aseptic arthritis in the left carpal joint of 24 male buffalo calves was induced by intra-articular injection of oil of turpentine. Radiographic changes were moderate to intense. Soft tissue swelling was measured on the radiographs on day 5,12 and 19 post induction. A linear measurement was made at the middle of the accessory carpal bone. This measurement was capable of determining the presence of swelling in buffaloes. The other notable radiographic changes recorded were increased joint space and osteolytic changes at various intervals.

## **12. LAPAROSCOPIC OBSERVATION OF TUBERCULOUS LESIONS IN A COW**

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R.SRIDHAR AND S.R.PATTABIRAMAN*  
Dept. of Clinics, Madras Veterinary College, Chennai.

A cow with clinical signs of tuberculosis was subjected to laparoscopic examination. Under local anesthesia in standing posture laparoscopic examination of the peritoneum and rumen wall was carried out through left flank. A 10 mm, 30 degree oblique angle Hopkins Telescope of 57'cm length connected to a Halogen light source (TTL Flash Generator) was inserted

through the cannula for visualization. The tuberculous lesions observed on the peritoneal and rumen surface were recorded and documented as still pictures and video recordings.

### **13. LAPAROSCOPIC SEXING OF BIRDS**

**T.N.GANESH, M.G.JAYA THANGARAJ, MATHEW C.JOHN,  
DEVAKI THEOGARAJAN AND S.THILAGAR**

Dept. of Clinics, Madras Veterinary College, Chennai.

Laparoscopic sexing studies in ten different birds were carried out as a preliminary study. Birds included were domestic fowls (2), Pigeons (4), Parakeets (2) and Budgerigars (2). The gonads were directly visualized using a 2.7mm dia, 30 degree oblique angle 18 cm Hopkins Telescope inserted through a 3.5 cm dia trocar and cannula of 5.5 cm length. The observations were documented in the form of still pictures and video recordings. The details about the preparation and restraining of birds and the technique followed will be discussed. It was concluded that the laparoscopic method of sexing was safe, rapid and effective in birds.

### **14. EVALUATION OF BARIUM SULPHATE AND IOHEXOL AS CONTRAST AGENT FOR ILEUM OBSTRUCTION IN DOGS**

**D.DILIP KUMAR, K.AMEERJAN AND W.P.ARCHIBALD DAVID**

Dept. of Surgery, Madras Veterinary College, Chennai.

Twelve apparently healthy dogs were randomly divided into two groups of six animals in each group. Ileum obstruction was created in both the groups using plastic cord clamps. Group I animals were given barium sulphate (30%) @ the dose rate of 10 ml/Kg body weight. Whereas, in animals of group II iohexol was used as contrast agent @ the dose rate of 700 mg of I/Kg body weight. Iohexol was found to be unsuitable for evaluation of ileum obstruction. Iohexol was absorbed into the system and was excreted by renal system. Whereas, barium sulphate produced excellent contrast in obstructed ileum.

### **15. ULTRASONOGRAPHIC FEATURES OF INTESTINAL INTUSSUSCEPTION IN A DOG - A CASE REPORT**

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A five-year-old German shepherd male dog was brought to the referral clinics, Madras Veterinary College Hospital with a history of weight loss and inappetence. The animal was reported having vomition and diarrhoea a month back. Plain and contrast radiographs did not reveal any abnormality. An



elongated abdominal mass was palpable on abdominal palpation. Ultrasonography revealed concentric ring pattern suggestive of intussusception. The animal died before surgery and on postmortem examination jejuno - jejunal intussusception was detected measuring 14 cm. in length.

## **16. A RADIOGRAPHIC SURVEY OF HYPERTROPHIC OSTEODYSTROPHY IN DOGS**

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The study included cases referred to MVCH from 1998-1999 totaling 21 in number. The parameters studied were breed, sex, age and bones affected. The incidence in various breeds was : Great Dane (25%), GSD (25%), ND (14%), Dalmatian (9.4%), Doberman (4.7%) and Boxer (4.7%). The age group ranged from 2 months to 1½ years with more incidences between 4-8 months (52%). The occurrence was more commonly seen in males (75%) than in females (25%). The bones affected were radius and ulna (50%), pelvis (28%), femur (10%), carpus (10%) and patella (0.5%). Radiographic changes in the early stages of the disease occurred in the metaphyseal region with marked radiolucent line and soft tissue swelling. In the later stages, periosteal bone formation was noticed in the metaphyseal and diaphyseal regions. Pathological fractures which are of the folding type were noticed in two cases and included bilateral femoral fractures.

## **17. RADIOGRAPHIC SURVEY OF THE INCIDENCE OF VETEBRAL COLUMN AFFECTIONS IN DOGS**

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AND B.SUCHITRA*  
Dept. of Surgery, Madras Veterinary College, Chennai-7.

A total of 126 dogs were referred to the radiology unit from August 1997 to August 1998 for diagnosis of affections of the vertebral column causing lameness and/or paresis. Interpretations were made by correlating the results of the radiographs with data collected. Fifty-eight cases were found to be having one or the other kind of vertebral column affections. Radiographic lesions of the vertebral column have been grouped under two classes as degenerative (75.86%) and traumatic (24.14%). Spondylosis (41) and intervertebral disease (3) were the most common affections observed in the degenerative class. Of the 41 spondylosis cases, 19 were German shepherd, 6 Doberman and 2 Dalmatians were found to be affected more (65.85%) and the incidence was mostly in old and middle aged dogs. The caudal thoracic, lumbar lumbosacral segments were frequently affected. Among the three cases of intervertebral disc

disease 2 were dachshund and the other in Doberman. Traumatic lesions included vertebral fracture- 4, dislocation – 3, fracture with dislocation-2, sub luxation-3 and scoliosis-2. Fracture was common in cervical (2) and lumbar region (2). Dislocation was mostly noticed at the second lumbar vertebra. Whereas fracture and dislocation was involved with the last thoracic and first lumbar vertebrae.

## **EXPERIMENTAL SURGERY**

**Chairman: Dr. S.K. CHAWLA**

**Rapporteur: Dr. AMARPAL**

### **1. EVALUATION OF TRABECULECTOMY AND GONIO IMPLANTATION FOR THE SURGICAL CORRECTION OF OCULAR HYPERTENSION IN DOGS**

**ANGELA.B.LOBO, B.RAMESH KUMAR AND W.P.ARCHIBALD DAVID**  
Dept. of Surgery, Madras Veterinary College, Chennai.

Unilateral ocular hypertension was experimentally induced in 12 non-descript dogs by topical instillation of 4% dexamethasone sodium phosphate. Six dogs in the group A were subjected to trabeculectomy and a single plate Molteno valve was introduced into the eyes of the six dogs in Group B. Both groups were observed for 14 days for various parameters. Tonometry revealed highly significant rise in IOP after induction and after surgery, pressure fell by a significant margin by the first post-operative day in both groups. The pre-operative co-efficient of aqueous out-flow indicated an out flow obstruction but the postoperative values were significantly above normal in both groups. The water provocative test values indicated glaucoma prior to surgery but was normal postoperatively. There was a significant rise in globulin content in group B. Gross and histopathology indicated greater inflammation in group B. On the basis of the intra and post operative operations and a statistical analysis of the results, trabeculectomy was found to be a better technique for the correction of ocular hypertension in dogs.

### **2. STUDIES ON VASCULAR ANASTOMOSIS BY CARREL AND EVERSION TECHNIQUE USING POLYTETRA-FLUORO-ETHYLENE AND POLYESTER SUTURES IN CANINES**

**E.LAKSHMI CHANDRA SEKAR**  
College of Veterinary Sciences, Hyderabad.

The study was conducted on 24 apparently healthy mongrels of either sex of different age groups to evaluate two different suture techniques i.e. Carrels and Everson type using two different suture materials i.e. polytetrafluoroethylene and polyester sutures in anastomosis of carotid artery.

There were significant rises in temperature pulse and respiratory rate on the third post-operative day, which later became normal on the 7<sup>th</sup> post-operative day. There was also a significant rise in the platelet count on the first post-operative week and the values decreased to normal after the 8<sup>th</sup> post-operative day. The percentage of leakage and stricture was less in Carrels technique than Eversion technique as evidenced by angiographic and histo-pathological study. By analyzing the results of the above parameters it was concluded that Carrels technique of anastomosis is the ideal technique to anastomosis of carotid artery and polytetrafluoroethylene is the better suture material which can be used in canines.

### **3. CLINICAL AND HISTOLOGICAL FEATURES OF FRESH SEROSAL AND MESENTERIC ONLAY GRAFTING ON ENTERO-ANASTOMOSIS IN CANINES**

*N.V.V.HARIKRISHNA, R.V.SURESH KUMAR,  
SREENU MAKKENA AND T.S.C.RAO*

Dept. of Surgery and Radiology, College of Veterinary Science, Tirupathi.

A total of 24 dogs of either sex were divided into three groups of 8 animals each to study the efficacy of fresh serosal and mesenteric onlay grafting on entero-anastomosis. A 10 cm long piece of small intestine was dissected in all, the animals. In Group I, anastomosis was performed by two-layer inversion technique. In Group II and III cut ends of the intestines were united by a single layer of simple continuous apposition sutures and onlay grafting was performed with fresh serosa and mesentery respectively over the anastomotic site. The grafts were kept in position by four simple stay sutures. No significant changes were observed in temperature, pulse and respiratory rates in all the three groups post-operatively. All the animals passed faeces normally between 5 to 8 post-operative days in different groups. Inflammatory oedema, discharges at the operative site were observed in two dogs of control animal. Vomiting was observed in two dogs of mesentery group post-operatively. Histological sections were studied after euthanising the animals at 7, 14, 21 and 30 post-operative days. Microscopically, the two grafted groups showed early healing epithelialization and alignment of muscular layers compared to the control group. Healing was complete by 30<sup>th</sup> postoperative day in both grafted groups and grafts were well accepted.

#### **4. ACCEPTABILITY AND FUNCTIONAL EFFICACY OF CHROME PROCESSED AORTIC ALLOGRAFT FOR CERVICAL OESOPHAGOPLASTY IN DOGS**

*T.P.BALAGOPALAN AND K.N.M.NAYAR*

Dept. of Surgery, COVAS, Mannuthy.

Experimental study was conducted in twelve dogs of either sex weighing 9- 13 kg randomly divided into groups A and B. Thoracic aorta harvested from dogs, processed, cross-linked with chromium sulphate and preserved in isopropanol was used as graft material. Hyper alimentation intravenously and through pharyngostomy tube was employed post-operatively in 6 animals each. Morphological, histological and biomechanical studies were performed to assess the healing process. On autopsy, the proliferative changes in the vicinity of the graft material and the peri-oesophageal tissue were minimum. The grafted site showed satisfactory breaking strength, extensibility, and energy absorption and total dilatation capacity on 60<sup>th</sup> post-operative day. The healing at the site was by first intention healing characterized by early infiltration of polymorphs and macrophages followed by vascularization and fibroplasia. Epithelialization was almost complete by 30<sup>th</sup> day but by 60<sup>th</sup> day, epithelial lining was slightly hyperplastic and the lamina propria was devoid of oesophageal glands. Presence of pharyngostomy tube did not influence the healing process.

#### **5. ROLE OF HETEROLOGOUS TUNICA VAGINALIS PATCH GRAFTING IN URETHRAL WOUND HEALING IN DOGS**

*R.S.CHEEMA, K.I.SINGH, V.K.SOBTI AND K.S.ROY*

Dept. of Veterinary Surgery and Radiology, C.O.V.S., PAU, Ludhiana.

The study was conducted on four clinically healthy mongrel adult dogs. The heterologous tunica vaginalis (cow calf) was collected and stored in 20 % plasma saline solution and stored at 4 C . Prescrotal urethrotomy wound was patch grafted with heterologous tunica vaginalis instead of suturing the urethral wound margins. Urine samples and swabs from external wound surface were sent for culture and sensitivity at regular intervals for detection of any infection in the urine or in the vicinity of the wound. After 60 days, contrast urethrography was done to detect any urethral stricture. Penile tissue including urethra were collected from the operated site and subjected to micrometrical and histomorphological examination. There was no wound and urine infection in two animals whereas, in the rest two animals, infection was detected which was controlled by proper antibiotics. There was no significant change in rectal temperature and respiration rate. Packed cell volume increased significantly on 2<sup>nd</sup>, 3<sup>rd</sup>, 7<sup>th</sup> and 9<sup>th</sup> post-operative days. Contrast radiography of urethra revealed no stricture formation. On micrometrical examination, a non-significant increase in the urethral lumen size at operated area was noticed.

Histomorphological examination showed normal transitional epithelium of urethra. The granulation tissue matured and the lamina propria submucosa had negligible cellular reaction. At places, the remnants of graft were present surrounded by plasma cells, lymphocytes and the grafted tissue showed resorption. Acidic mucopolysaccharide reaction in the lamina propria submucosa was comparable to normal tissue histochemical reaction.

## 6. STUDIES ON INTERVERTEBRAL DISC FENESTRATION AND FUSION IN DOGS

*T.P.S.DHALIWAL AND K.K.MIRAKHUR*

Dept. of Veterinary Surgery and Radiology, P.A.U., Ludhiana.

This study was undertaken in 15 dogs to evaluate disc fusion by placing intervertebral bone grafts after dorsolateral intervertebral disc (IVD) fenestration. In the control group only IVD fenestration was performed whereas, autogenous cortico cancellous bone and allogenic demineralised cortical bone grafts were used after fenestration of the disc respectively in the other groups. The animals were subjected to clinical monitoring, neurological investigations, radiography, myelography, gross and histomorphological studies. The results indicated absence of disc fusion till 8 weeks radiographically, grossly and histologically. But evidence of initial chondrogenesis remodeling was observed in autogenous and allografted animals. The changes at 12 weeks, correlated with the radiographic, gross and histologic findings, were quite advanced as compared to 8 and 10 weeks and almost complete disc fusion was observed in the demineralised cortical bone grafted animals though in the early fusion phase as observed histologically.

## 7. EFFECT OF CILIARY GANGLIONIC BLOCKADE ON CONJUNCTIVITIS

*R.P.SHUKLA, N.S.JADON AND AMRESH KUMAR*

College of Veterinary Sciences, Pantnagar.

Infectious conjunctivitis was produced experimentally in 12 buffalo calves with sub-conjunctival injection of 1.0 ml suspension of *Staphylococcus aureus* having  $5.3 \times 10^7$  per ml micro-organism. The animals were divided into groups 1 and 2 and were subjected to topical instillation of ciprofloxacin eye drops, 3 - 4 times a day for 7 days and in group 2, ciliary ganglionic blockade using 5 ml of 0.5 % procaine hydrochloride was repeated on alternate days for 3 to 4 times. The efficacy of the treatment was determined by observing clinical parameters viz. colour of the conjunctiva, lachrymal secretion, exudate and chemosis and by determining the quantitative extent of lachrymal secretion using Schirmer test. All the clinical signs of conjunctivitis were more prominent in the animals of group 2 at respective time intervals. Early return of the normalcy of eye was observed at 9<sup>th</sup> day in the animals of

group 2 treated with ciliary ganglionic blockade with topical instillation of antibiotic as compared to 12<sup>th</sup> day in the animals of group 1 treated with antibiotic alone.

## **8. SYNOVIAL FLUID ALTERATIONS FOLLOWING HOMOGENOUS SYNOVIA TRANSFUSION IN ASEPTIC ARTHRITIS IN EQUINES**

*A.K.GUPTA, A.C.VARSHNEY, MOHINDER SINGH,  
S.K.SHARMA AND J.M.NIGAM*

Dept. of Surgery and Radiology, C.O.V.A.S., H.P.K.V., Palampur.

Aseptic traumatic arthritis of tibio-tarsal joint was induced by injecting turpentine oil intra-articularly in 12 adult donkeys and divided into 3 equal groups. Animals of group 1, were treated with 3ml of fresh homogenous synovia intra-articularly, group 2 with a combination of 1.5 ml of fresh homogenous synovia and 1.5 ml (3.75 mg) diclofenac sodium on the 3<sup>rd</sup> post induction day, whereas group 3 served as untreated control. The colour of the synovial fluid changed to yellow, amber or reddish. Mucin clot quality and relative viscosity were decreased and glucose, total protein, albumin, alkaline phosphatase, lactate dehydrogenase and total leukocyte count in the synovial fluid were increased significantly on 3<sup>rd</sup> post-induction day. Following treatment the colour, relative viscosity and mucin clot quality of synovial fluid showed improvement in both treated groups as compared to control on 20<sup>th</sup> day. The total leukocyte count decreased significantly in all the 3 groups, it however reached the base value only in treated groups. Synovial glucose, total protein, albumin, alkaline phosphatase and lactate dehydrogenase declined sharply in treated groups on 20<sup>th</sup> day compared to the 3<sup>rd</sup> post induction day values. Comparatively post-induction changes in synovial fluid following arthritis were more appreciably reversed after treatment in the animals of group 2.

## **9. CLINICAL, HAEMATOLOGICAL AND BIOCHEMICAL OBSERVATIONS FOLLOWING PLASMA AND GLYCERIN STORED TENDON ALLOGRAFTING IN EQUIDS**

*N.S.SAINI AND K.K.MIRAKHUR*

Dept. of Veterinary Surgery and Radiology, P.A.U., Ludhiana.

The study was performed after tendon allografting of superficial digital flexor (SDF) tendon and surgically traumatizing deep digital flexor (DDF) tendon in 16 donkeys. In group I (n=8) plasma stored and in group II (n=8) glycerin preserved tendon grafts were used. The grafted SDF and traumatised DDF tendons were encased in amniotic membrane. External coaptation was applied for 8 weeks. Donkeys were observed at various stages upto 120 days. Animals of both the groups showed a significant rise of temperature, respiration and heart rates on 1<sup>st</sup> two operative days. Swelling reduced

significantly by the 5<sup>th</sup> day and disappeared by the 42<sup>nd</sup> day in majority of the animals of group I, whereas, it persisted in two animals in group II, which is also evident from the girth measurements of the operated limb. Girth measurements remained significantly more than normal upto 10 days and were normal by day 35 and showed no significant variation thereafter till the end of the study period in the plasma stored tendon allografted animals. However, the girth measurements remained more and substantially higher in glycerin stored tendon allografted animals till the end of the study period. Contralateral limbs showed appreciable increase in the girth measurement upto 28 days in both the groups. Majority of the plasma stored allografted animals showed normal tendon gliding movements. Weight bearing on walking became normal in 34 days and 36 days in groups II and I respectively. Haematological and biochemical parameters showed no clinically significant change.

#### **10. HISTOMORPHOLOGICAL AND HISTOCHEMICAL FINDINGS IN EQUINE ARTHRITIS TREATED WITH A COMBINATION OF THERAPEUTIC ULTRASOUND (1WATT/SQ.CM) AND A NEW ANTI-ARTHRITIC DRUG (ART)**

*NAVDEEP SINGH, K.S.SINGH, K.S.ROY AND V.K.SOBTI,*  
Dept. of Veterinary Surgery and Radiology, P.A.U., Ludhiana.

The study was conducted on 4 clinically healthy donkeys aged 2 to 4 years and weighing 80-100 kg. Intercarpal joint was entered on the medial side upto the extensor carpi radialis tendon and 0.5 ml of turpentine oil was injected in it after removing 1.0 to 1.5 ml of synovia to create acute arthritis. The animals were treated with anti-arthritic drug (ART) and 1 Watt / sq.cm. pulsed therapeutic ultrasound. The synovial membrane showed the epithelial lining to be near normal and subintimal layer showed granulation tissue at different stages of formation. AB - PAS sections was moderately positive for neutral mucopolysaccharide and weakly positive for acid mucopolysaccharide. The surface of articular cartilage was still rough and eroded. The lacunae appeared to be normal. The acid mucopolysaccharide content was moderate in and around chondrocyte of lacunae but progressively increased in lower part of cartilage.

#### **11. COMPARATIVE EVALUATION OF CYSTOMETRY AND URETEROMETRY IN COW AND BUFFALO CALVES**

*D. M. MAKHDOOMI,*  
S.K.University of Agricultural Science and Technology, Srinagar.

Intracystic and intra-ureteral pressure following intrapelvic catheterization cum obstruction to free flow of urine was created in cow calves constituting group A and B respectively. Cow calves sustained to more intracystic and intra-ureteric pressure (160+/- 4.50 and 76.0 +/- 3.32) compared

to buffalo calves (119+/- 3.28 and 32.80) mm Hg respectively. Increase in biochemical parameters was faster in buffalo than in cow calves.

## **12. EXPERIMENTAL STUDIES ON THE WOUND HEALING PROPERTIES OF CHITIN AND CHITOSAN IN CANINES**

**G.DHANANJAYA RAO, N.N.BALASUBRAMANIAN,  
ARCHIBALD DAVID AND B.JUSTIN WILLIAM**

Directorate of Clinics, TANUVAS, Madras Veterinary College, Chennai.

Chitin and Chitosan have evolved into one of the most promising biomaterials due to their multivarious properties as bio-implants in surgery. The present study was conducted on dogs to assess their biocompatibility and efficacy in wound healing. Normal saline, chitin and chitosan were used as dressing materials and the study revealed a significantly higher microbial count upto 14<sup>th</sup> post excision day with normal saline. The percentage of wound contraction and epithelialization were significantly higher with chitin and chitosan with a significant decrease in unhealed area. Serum alkaline phosphatase, serum zinc and serum copper were significantly higher on day three in all the groups but persisted till 21<sup>st</sup> day in the control group. Chitin and Chitosan favoured proliferation and organization of cells with subsequent enhancement in the reconstruction of histo-architectural pattern of the tissue. Angiogenesis was favoured on the 7<sup>th</sup> post excision day in chitin and chitosan treated wounds. Chitin and Chitosan are degraded by the lysozymes present in the wound fluid and were incorporated in hyaluronidase and glucose-aminoglycons to accelerate the wound healing locally. Inflammatory reaction was less in chitin and chitosan dressed wounds, collagen formation, granulation and neovascularisation were quicker revealing the biodegradable and bio compatible properties of the dressing materials.

## **13. STUDIES ON HAEMOSTATIC PROPERTIES OF CHITIN AND CHITOSAN IN EXPERIMENTAL CANINES**

**G.DHANANJAYA RAO, N.N.BALASUBRAMANIAN,  
ARCHIBALD DAVID AND B.JUSTIN WILLIAM**

Directorate of Clinics, TANUVAS, Madras Veterinary College, Chennai 7

Chitin, B- (1-4) poly-N-acetyl-D-glucosamine is widely distributed in nature as the skeletal material of crustaceans, insects and cell wall of fungi. Chitin is present as a protein complex along with minerals and requires deproteinisation and demineralization to obtain chitin. The objective of this study was to assess the haemostatic properties of chitin and chitosan in partial hepatectomy in experimental dogs. The coagulation time and blood loss was least in chitosan, less in chitin and high in control group. Haematological study revealed a significant fall in haemoglobin, total erythrocyte and total leukocyte counts in all the groups during hepatectomy and the fall was less significant in chitosan group after haemostasis. Post hepatectomy assessment



of haemorrhage by splenoportography revealed no extravasation of contrast material in chitin and chitosan groups.

#### **14. DIAPHRAGMATIC PEDICLE GRAFTING AT THE GASTRO-OESOPHAGEAL REGION IN DOGS**

*T.SARADA AMMA, C.B.DEVANAND, K.D.JOHN MARTIN  
AND K.N. MURALEEDHARAN NAYAR*

College of Vety. and Animal Sciences, Mannuthy, Thrissur, Kerala.

Under xylazine-thiopentone anaesthesia gastro-oesophageal region was exposed by resection of 12<sup>th</sup> rib. The oesophageal hiatus was incised and myotomy was performed at GER for a length of 4 cm. The myotomy edges were undermined and the portion cranial to the hiatus was sutured to the border of diaphragm at the hiatus in a horizontal direction, which converted the exposed myotomy wound intra-abdominal in position. A pedicle graft of 4 x 3 cm size was prepared from the dome of diaphragm without exposing the thoracic cavity and was drawn over the myotomy site and sutured to the myotomy edges. Contrast radiography of the oesophagus at weekly intervals showed normal emptying into the stomach. Autopsy on 22<sup>nd</sup> day revealed intact hiatus, widened GER, complete healing of graft at the myotomy site. Histologically, the mucosa and submucosa were normal. Fibrovascular tissue proliferation was observed between submucosa and the diaphragmatic muscle fibrils. Cellular infiltration was absent indicating the acceptance of graft at the site.

#### **15. HAEMODYNAMICS, ACID-BASE STATUS AND BLOOD-GAS TENSIONS FOLLOWING TOTAL NEPHRECTOMY IN BOVINES.**

*A.M.JALALUDDIN, B.PRASAD, V.K.SOBTI AND V.RAMAKUMAR*

Dept. of Surgery and Radiology, COVS, PAU, Ludhiana.

Total nephrectomy was performed in seven clinically healthy calves, aged 1-2 years and weighing between 100-150 kg. There was moderate hypotension, increased central venous pressure and mild bradycardia but these parameters were within normal range just before death. There was metabolic alkalosis along with respiratory acidosis. The animal showed hypoventilation/alveolar hypofunction. The oxygen extraction ratio increased considerably. These changes in the cardio-vascular system, acid base status and blood gas tensions were quite different from those in the non-ruminants.

## 16. EFFECTIVENESS OF POLYMETHYL-METHACRYLATE AND SILICONE INTRA-OCULAR LENS IMPLANTATION FOR VISUAL REHABILITATION IN DOGS AN EXPERIMENTAL STUDY

*C. RAMANI, K. AMEERJAN AND W. P. ARCHIBALD DAVID*  
Dept. of Surgery, Madras Veterinary College, Chennai - 7

The study was conducted in forty-eight experimental dogs, which were divided into four groups to evaluate two types of lens extraction procedures and two types of intra-ocular lens. The extraction procedures carried out were extracapsular cataract extraction (ECCE) and cryo-extraction (CE). Poly methyl methacrylate (PMMA) and Silicone were the two types of lenses used. The parameters included visual function, direct ophthalmoscopy, slit lamp biomicroscopy, position of IOL, tonometric and retinoscopy studies were conducted up to 30 th post operative day. The response to visual function tests was not marked in the early postoperative period due to mild ocular inflammation following surgery. However by the 30 th post operative day the response gradually increased due to the gradual reduction in inflammatory process. The study revealed + 42 D PMMA IOL was ideal for visual rehabilitation in canines.

## 17. PATHOPHYSIOLOGICAL STUDY ON SODIUM DIATRIZOATE AND IOHEXOL IN INTRAVENOUS UROGRAPHY IN DOGS

*R. GANESH, N. N. BALASUBRAMANIAN, W. P. ARCHIBALD DAVID AND S. THILAGAR*  
Dept. of Surgery, Madras Veterinary College, Chennai - 600 007.

The pathophysiological studies on the effects of sodium diatrizoate and iohexol in intravenous urographic procedures were conducted in 12 experimental dogs divided into two groups. Sodium diatrizoate and iohexol was administered at the rate of 1000 mg / kg bodyweight and repeated three times in 24 hrs. interval. Glomerular filtration rate was found to be influenced by the contrast media and was less in sodium diatrizoate group. Histopathological study revealed hyperaemia, fatty degenerative changes in liver, hyperaemia, swelling of glomerular tufts, filling of Bowman's capsule with degenerative changes and mononuclear cell infiltration in renal pelvis, papillomatous proliferation of bladder mucosa, mild to moderate cystitis and thickening of bladder wall in the sodium diatrizoate group.

## **18. EFFICACY OF BIOLOGICAL IMPLANTS IN THE TREATMENT OF THERMAL INJURIES IN EXPERIMENTAL DOGS**

*R.SESHACHALAM AND D.KATHIRESAN*

Dept. of Clinics, Madras Veterinary College, Chennai.

The study was conducted in 36 adult mongrel dogs divided into three groups and after induction of thermal injury was further divided into two sub groups. All the dogs in sub group A of the three groups were subjected to second degree thermal injury and third degree thermal injury in the sub group B of all the three groups. Group I dogs were kept as control. Collagen and amniotic membrane was used as biological dressing in the remaining groups. Wound healing was evaluated with the following parameters: wound healing, biocompatibility, haematological, biochemical, electrolytes, trace minerals, microbial count, wound surface and histological studies. The study revealed that amniotic membrane provided better adherence to wound surface, with less immunological reaction and fewer infiltrations of inflammatory cells and early epithelialization.

## **19. BIOCOMPATIBILITY OF POLYMETHYL-METHACRYLATE AND SILICONE INTRA-OCULAR LENS IMPLANTATION IN DOGS – AN EXPERIMENTAL STUDY**

*C.RAMANI, K.AMEERJAN AND W.P.ARCHIBALD DAVID*

Dept. of Surgery, Madras Veterinary College, Chennai.

The biocompatibility of two intra-ocular lens: polymethyl-methacrylate and silicone were studied following lens extraction in forty-two experimental dogs. The parameters included estimation of aqueous humor protein concentration, aqueous flare, scanning electron microscopy and histopathology. Increase in AHPC and aqueous flare was found to be more in cryo-extracted and PMMA implanted cases. Scanning electron microscopy revealed least surface changes on the silicone IOL group. Histopathology revealed more inflammatory cells, red blood cells with more amount of fibrin in cryo-extracted and PMMA groups.

## **20. SUTURE FRACTURE AND DISSECTION & LIGATION AS TECHNIQUES FOR PARTIAL PANCREATECTOMY IN DOGS**

***PRIYADARSHINI GOVIND, W.P.ARCHIBALD DAVID, B.J.WILLIAM  
AND A.SUNDARARAJ***

Dept. of Surgery, Madras Veterinary College, Chennai

The study was conducted on 18 dogs divided into three groups: the control group (laparotomy), suture fracture group and the dissection and ligation group. The animals were clinically assessed pre and post surgically and had relatively uneventful recoveries. The differential count in the hematological studies revealed a stress related neutrophilia post surgically and an eosinophilic reaction related to the leakage of phospholipase and elastase from the pancreatectomy stump. Blood glucose, cholesterol, calcium and amylase were the parameters that showed high significance. The serum insulin rise post surgically was concurrent with the marginally increased blood glucose level in the postoperative period. Histopathology revealed a typical picture of inflammatory reaction in both the groups that underwent partial pancreatectomy with a marked eosinophilic infiltration in the dissection and ligation group.

## **21. PATHOMORPHOLOGICAL CHANGES OF KIDNEY IN RENAL AFFECTIONS IN DOGS**

***L.RANGANATH AND W.P.ARCHIBALD DAVID***

Dept. of Surgery, Madras Veterinary College, Chennai.

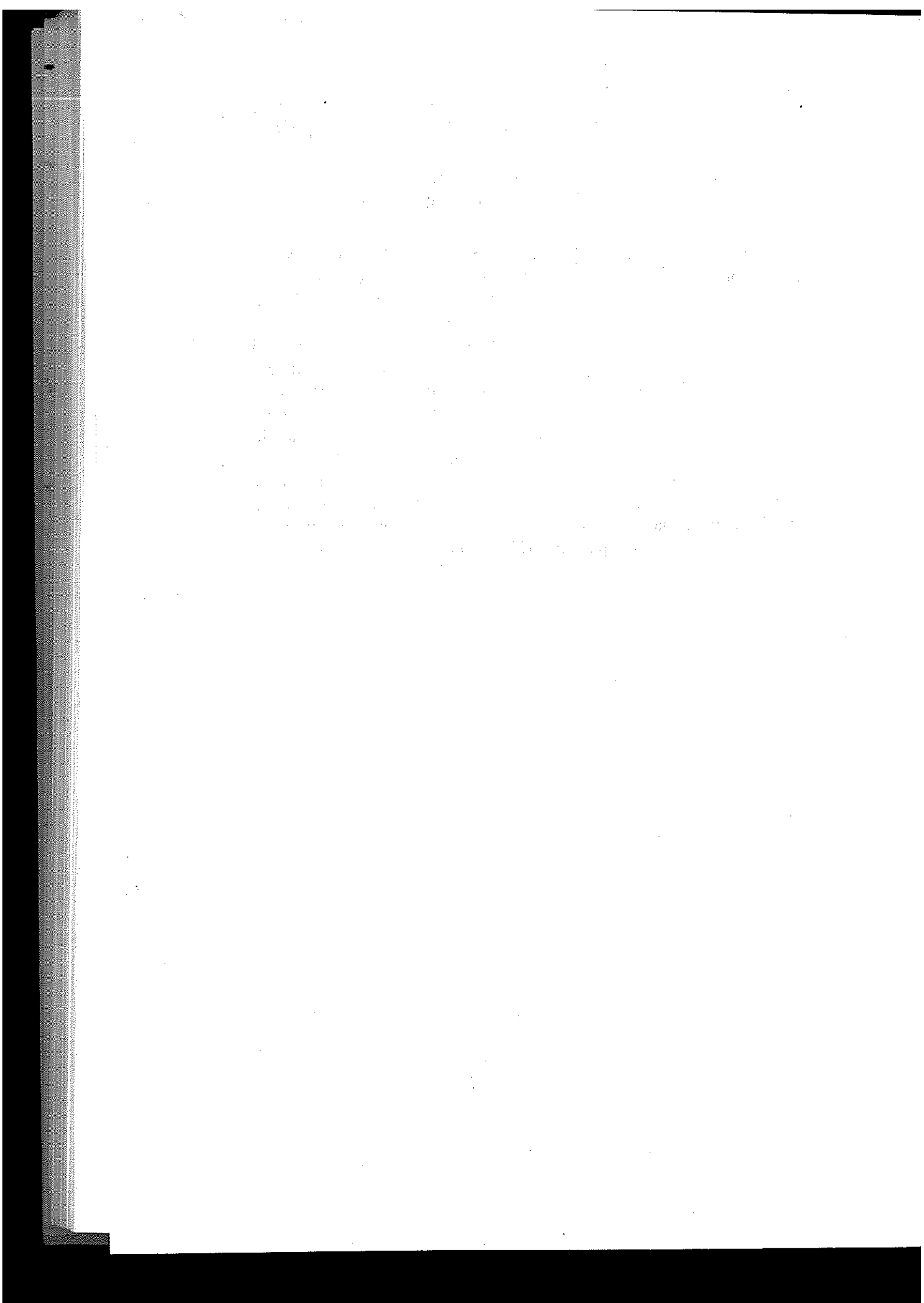
Renal affections are important causes of morbidity and mortality in dogs. Renal insufficiency becomes apparent only after damage to 70% of the nephrons. The study was undertaken to record histopathological changes in kidney due to contrast drug administration (Urograffin 76%) for IVP studies, hydronephrosis, renal ischaemia, chemical nephrosis, acute renal failure and pyelonephritis. Hydronephrosis and renal ischaemia was induced experimentally in left kidney by ligating the ureter and renal artery respectively. Chemical nephrosis was induced by administering 2% mercuric chloride at 2mg/kg b.wt. I/v. For pyelonephritis, dogs with a history of renal disease were screened and based on clinical, laboratory and culture studies were selected. All the dogs were euthanised after 10 days and the kidneys were collected for gross and histopathological studies. The results are presented and discussed.

## 22. PHARMACOKINETICS AND DOSAGE REGIMEN OF CEFAZOLIN AFTER URETHRAL OBSTRUCTION IN DOGS

*J.S.HARIKA, N.S.SAINI AND A.K.SRIVASTVA*

Dept. of Surgery & Radiology, P.A.U., Ludhiana, Punjab.

The present study was carried out on 10 clinically healthy dogs divided into two groups of five animals each. All the dogs received Cefazolin @ 10 mg/kg b.wt. I/V. In group-I (control) urethrotomy and cystotomy were performed without creating any urinary obstruction, whereas, in group-II, urethral ligation for 36 hrs. at pre-scrotal site behind the os penis was done and then urethrotomy and cystotomy were performed. Haematological parameters did not show any significant change but BUN and creatinine showed significant rise after 36 hrs. of urethral ligation. The urine concentration of cefazolin remained well above its MIC throughout the study. Cefazolin concentration in the tissue 2 hrs after single intravenous dose was 9.39 0.35; 42.17 0.65 in urethra, 5.00 0.13; 6.14 0.06 in muscle and 37.98 0.70; 11.58 0.95 in urinary bladder respectively in groups II&I in each tissue. The optimum dosage regimen calculated on the basis of results of kinetic data in groups II and I were 10.3mg/kg and 10.1mg/kg to be repeated at 12hr intervals.



## POSTER SESSION

**1. A RETROSPECTIVE STUDY OF ABC – A PROGRAMME  
IN DOGS**

*M.M.CHAUDRI, D.S.TULPULE, J.H.SHAIKH AND S.DAS - Pune.*

**2. VENTRAL HERNIA IN A DOBERMAN PINSCHER PUP  
AND ITS SURGICAL MANAGEMENT**

*S.K.TIWARI AND S.ROY - Anjora.*

**3. PERI-ANAL ADENOMA IN A DOG – A CASE REPORT**

*Y. KASPA REDDY - Guntur.*

**4. SURGICAL MANAGEMENT OF RANULA IN A DOG**

*P.K.BOSE, P.K.SAMANTA, T.B.SEN, P.NAG, K.DAS, A.CHAKRABORTY,  
S.KUMAR, S.K.DAS AND T.BISWAS - Calcutta.*

**5. SURGICAL MANAGEMENT OF INTESTINAL  
PROLAPSE IN A PUP**

*P.K.BOSE, P.K.SAMANTA, T.B.SEN, B.SINGH, A.DUTTA, S.SANKI,  
P.BHAGAT, S.HALDAR, P.NAG - Calcutta.*

**6. HYPOTHELIA /ATHELIA OF UDDER – A CASE REPORT**

*N.ARUL JOTHI, R.M.D.ALPHONSE AND D.ANTONIE - Pondicherry.*

**7. SURGICAL MANAGEMENT OF PERVIOUS  
URACHUS IN A JERSEY CALF**

*G.SHAMBULINGAM AND T.MADHAVA RAO - Hyderabad.*

**8. NORMAL OSTEO-MEDULLOGRAPHY OF  
TIBIA AND RADIUS IN DOGS**

*RAJBIR SINGH, S.K.CHAWLA, A.P.SINGH, RISHI TAYAL  
AND S.M.BELL - Hisar.*

**9. INCIDENCE OF CONGENITAL ANOMALIES IN  
DOMESTIC ANIMALS – A REVIEW OF 40 CASES**

*MOHINDER SINGH, S.K.SHARMA, A.C.VARSHNEY  
AND ARVIND SHARMA - Palampur.*

**10. EYE AFFCTIONS IN DOMESTIC ANIMALS  
A REVIEW OF 144 CASES**

**S.K.SHARMA, M.S.KANWAR, A.KUMAR, S.P.TYAGI,  
A.C.VARSHNEY AND SHAKUNTLA - Palampur.**

**11. SUCCESSFUL TREATMENT OF COMPOUND TIBIAL  
FRACTURE USING MODIFIED MOULDED PVC  
SPLINTS IN DEONI BULLOCK**

**R.RAMESH, S.M.USTURGE AND D.DILIPKUMAR - Bidar.**

**12. TRANSMISSIBLE VENEREAL TUMOUR IN A  
PREGNANT BITCH**

**M. KANTHAMMA - Kurnool.**



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