

SOUVENIR



13th Annual Convention And
National Symposium On

*"Emerging Surgical Diseases Of Large Animals
In Relation To Health And Production"*

Of

Indian Society for Veterinary Surgery

16th to 18th October, 1989

Department of Surgery and Radiology
College of Veterinary and Animal Science



*V. P. Smith
12/11/90*

RAJASTHAN AGRICULTURAL UNIVERSITY, BIKANER

Editor : Dr. T. K. Gahlot

Asstt. Editor : Dr. Anuj Synghal

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RAJASTHAN AGRICULTURAL UNIVERSITY, BIKANER

Kalyani Printers, BIKANER

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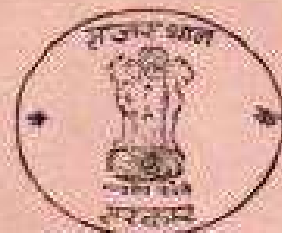
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MESSAGE



Prof : B. D. Kalla
Minister for P.W.D., I.G.N.P. & C.A.D.

4th Sept. 89.
Jaipur.

Dear Shri Chouhan,

It was quite encouraging to note that Rajasthan Agricultural University is going to organize the 13th Convention of Indian Society of Veterinary Surgery and The Symposium on 'Emerging Surgical Diseases of Large Animals in relation to Health and Production' from 16-18 Oct '89.

The North-Western Rajasthan and its rural economy to a considerable extent depends on cattle breeding and animal husbandry. I firmly believe that the celebration and paper reading will give a strong impact to the cattle breeding of the area.

I wish the Convention and the Symposium all the success. I also wish the participants a comfortable and enjoyable stay at Bikaner.

Thanking you.

Yours sincerely,
sd/-
(B. D. Kalla)

Rajasthan Agricultural University,
Bikaner-334 001 (Raj.)



Message



Dr. K.N. Nag
Vice-Chancellor

It is a moment of immense pleasure and happiness for me that the national symposium on "Emerging Surgical Diseases of large animals in relation to health and production" and 13th Annual Convention of Indian Society of Veterinary Surgery is being hosted by the Department of Surgery and Radiology, College of Veterinary and Animal Science of this University from 16th to 18th October, 1989. There could not have been a better theme than the one chosen by the Organising Committee.

Live-stock & Animal Husbandry practices and Animal health care is an integral part of rural upliftment programmes. Animal husbandry especially in Rajasthan is not mere adjunct to agriculture but contributing a major economic activity estimated to be over 19.22 percent of the total domestic net income.

As a lay man I would only stress to the scientists/participants to concentrate and evolve out economical veterinary aids and that too if assistance to the poor

farmers is provided at the their door step. The need of the hour is to have a composite mobile units with modern diagnostic, radiological and surgical means for mobilising the facilities at the remotest possible corners.

I am confident that the fruitful scientific deliberation carried out in various fields of Veterinary Surgery, radiology, anaesthesiology and orthopaedics will benefit and widen the academic horizon of participating delegates. I am looking forward to see the recommendations implemented that emerges out through the hectic session covering the wide spectrum of the topics coming for discussions in Veterinary Surgery and allied sciences.

I wish this symposium a fine success.

Dr. K.N. Nag

PROGRAMME

1. Theme Session

Chairman : Dr. P.E. Kulkarni

16.10.89/forenoon (12 a.m.)

Rapporteur : Dr. I.S. Chandana

2. Large Animal Surgery Session

Clinical Surgery

16.10.89/ Afternoon (2.30 p.m.)

Chairman : Dr. Jit Singh

Rapporteur : Dr. S.K. Pandey

Experimental Surgery

Chairman : Dr. B Prasad

Rapporteur : Dr. S.C. Pathak

3. Orthopaedic Surgery Session

Clinical Surgery

17.10.89/Forenoon (9.00 a.m.)

Chairman : Dr. Rama Kumar

Rapporteur : Dr. Gajraj Singh

Experimental Surgery

Chairman : Dr. S.S. Rathor

Rapporteur : Dr. A.P. Singh

4. Small Animal Orthopaedic & Radiology Session

Chairman : Dr. R.L.N. Rao

17.10.89/Forenoon

Rapporteur : Dr. K.K. Mirakur

5. Anaesthesiology Session

Chairman : Dr. Amresh Kumar

17.10.89/Afternoon (2.30 p.m.)

Rapporteur : Dr. V.K. Sobti

6. Small Animal Surgery Session

Chairman : Dr. A.P. Bhokre

17.10.89/Afternoon

Rapporteur : Dr. C.C. Wakanker

7. Young Surgeons's Award Session

Chairman : Dr. A.K. Bhargava

18.10.89/Forenoon (9.00 a.m.)

Rapporteur : Dr. D.C. Dhablania

8. Field Veterinarian's Award Session

Chairman : Dr. A.A. Khan

18.10.89/Forenoon

Rapporteur : Dr. S.C. Ojha

9. Business Session

18.10.89/Afternoon

Large Animal Surgery Session

Clinical Surgery

1. Tumors in domestic animals-a review of 191 cases
Prem Singh and Kuldip Singh
2. Intestinal obstruction in buffalo-case report.
R.I. Bhume, R.S. Dadke, V.D. Jahagirdar and A.P. Bhokre
3. Hypopyon in a cow-a case report
Jahagirdar, V.D., Dadke, R.S., Bhume, R.I. and Panchbbhai, V.S.
4. Diaphragmatic herniorrhaphy in field condition under local anaesthesia.
V.S. Patil, A.P. Chaudhary and A.M. Kelkar
5. Open test surgery in bovine and caprine.
V.D. Aber, A.P. Bhokre and S.M. Usturge
6. Surgical treatment of chronic otitis in a bullock.
S.M. Usturge, and A.P. Bhokre
7. Otic fistula in a buffalo.
S.S. Misra, S.K. Panday, G.K.S. Kanaujiya, A.K. Srivastava.
8. A new technique for cystorrhaphy in the management of the urinary calculosis in the bovines.
S.S. Mishra and G.K.S. Kanaujiya.
9. A report on a carbuncle in a cow.
Q.K. Singh, S. Kumar, R.P. Pandey, A.K. Srivastava and S.S. Misra.
10. Radical surgery for a large tumor like growth in the anterior neck region of a buffalo.
S. Kumar, A.K. Singh, R.P. Pandey, A.K. Srivastava, S.S. Mishra.
11. Per-acute noninfectious thelitis in buffaloes.
V. Ramaswamy, B. Rameshkumar and A.C. Subramaniam
12. Abdominal hernias in cattle and sheep : A review of 25 cases.
A.P. Singh, M.I. Yashin, and D.K. Murthy

13. Incidence and surgical management of neoplasms in ruminants and equines.
A.P. Singh, M.L. Yashin and S.M. Eshoqe.
14. "Surgical management of urethral calculi in a buffalo bull-a case report."
T.K. Tiwari, R.K. Jain and S. Roy.
15. Surgical management of mammary tumours in six buffalo heifers (Bubalus-Bubalis)
D.K. Sharma, Prem Singh, S.M. Behl and I.S. Chandna
16. Dystokia due to monstrosities in large animals.
I.S. Chandna, D.K. Sharma, S.M. Behl, Prem Singh & R.K. Chandoliya.
17. Prevalence and etiology of test & mammary gland affections in Bovine & caprine
A.P. Bhokre, V.D. Aber. S.M. Usturge.

Experimental Surgery

1. Effect of strangulated ileal obstruction on clinical, haematological, acid base and biochemical status in buffalo calves (Bubalus bubalis)
Harcharan Singh, R.P.S. Tyagi, Rishi Tayal and Kuldeep Singh
2. Evaluation of small intestinal viability using fluorescein dye technique in buffalo calf.
P.H. Tank and R.R. Parsania
3. Histomorphological studies on skin grafting in buffalo calves.
P.N. Parikh, J.N. Mistry and D.M. Tatkod
4. Pathological studies after transplantation of induced diaphragmatic defect in buffalo calves.
R.W. Ashturkar, A.P. Bhokre, G.B. Kulkarni and S.M. Usturge.
5. Gross observations on skin grafting in experimental buffalo calves
P.V. Parikh, J.N. Mistry and D.M. Tatkod.
6. Estimation of lacrimal function in buffalo calves
V.S. Panchbbhai, R.S. Dadka, R.I. Bume and V.D. Jahagirdar
7. Intracoronary anastomosis following experimental coronary occlusion in goats
A.K. Bhargava.
8. Effects of suture materials and suture patterns on uterine healing in ewes.
S.Y.A. AL-Dahash, I.I. AL-Sultan, M.I. Yasin and A.P. Singh
9. Studies on healing of soft tissues in yalk calves (Bos Grunniens)
S.K. Sharma, D.N. Sharma, M.S. Kanwar and J.M. Nigam

Orthopaedic Surgery Session

Clinical Surgery

1. Pedal osteitis in a mare—surgical management.
T.K. Gahlot, Jit Singh, P.K. Peshin, Davood Sharifi, & D.B. Patil,
2. Acute traumatic synovitis in a horse and its treatment with synovial fluid transfusion.
B.M. Jani and D.R. Barvalia
3. Incidence of carpal hygroma in cross-bred cows of Assam
K.K. Sarma and S.C. Pathak
4. A complicated case of osteomyelitis in a tigress
A. Kumar, and R.K. Das,
5. Procaine therapy for arthritis and idiopathic lameness in horses.
N.S. Jadon and Amresh Kumar
6. Non-infected tarsal hygroma in cattle.
R.J. Choudhory, Chonderkala and D.S. Chouhan.
7. Patellectomy in goat
Chander Kala and D.S. Chouhan,
8. Congenital appendicular contracted tendons in cattle.
S.K. Pandey, A.M. Srivastava, M.K. Bhargava and V.P. Chandrapuria
9. Investigation of incidences of bovine foot disorders in west Bengal.
Utpal Dass, S.L. Moitra, M.K. Chakraborty and S. Sabu,
10. "Partial ligament grafting" in the surgical management of congenital flexion of the carpus in cow calves.
R.P. Pandey, A.K. Srivastava and S.S. Mishra
11. "Coaptation splinting for the management of the tibial fractures; a report of 2 cases."
T.K. Gahlot, D. Sharifi, D.B. Patil, & Jit Singh,
12. Atypical sub luxation of Patella in Buffalo – case report
Mozammel Hoque

Experimental Surgery

1. "Experimental studies on entire segment cortical bone grafting in goats".
R.S. Bista
2. Clinicopathologic evaluation of Escherichia coli lipopolysaccharide induced arthritis in buffalo calves.
D.R. Barvalia and R.R. Parsania
3. Horn plates versus stainless steel plates in the internal fixation of tibial fracture in cow calves-an biomechanical, clinical and radiological study.
L.B. Sarkate
4. Evaluation of bovine horn plates vis-a-vis stainless steel plates for tibial fracture repair in calves.
T.K. Gahlot
5. Evaluation of encasement technique in experimental tenorrhaphy of tendo-achilles in buffalo calves.
P.S. Solanki, S.C. Ojha, and D.P. Amin.
6. A comparative study on the osteoinductive, healing process and fate of different types of allogeneic and xenogeneic bone grafts.
G.R. Singh, C.S. Celly, B. Parsanalli and G. Chakraborty
7. A study on the repair of severed tendoachilles using external iron crutch splint in bovine.
Prem Singh and Jit Singh
8. Studies on repair and healing of flexor tendons in bovine.
R.V. Singh and Y.S. Bhatia.
9. Scope of autogenous synovia transfusion for treatment of traumatic arthritis in cow calves and goats.
M.S. Kanwar, S.K. Sharma and J.M. Nigam.
10. Effect of electromagnetic stimulation on osteogenesis in long bone fracture of calves.
Anil H. Ulemale and P.E. Kulkarni.
11. Treatment of severely damaged diaphyseal fracture of long bones using entire segmental allografts.
Anil J. Ulemale and P.E. Kulkarni,

12. Comparative studies on the feasibility of autogenous grafts for immobilization of experimentally induced subluxation of scapulo-humeral joint in goats.
K.S. Dhillon, D.S. Chouhan, N.R. Purohit, Chander Kula
and R.J. Chaudhary
13. Tissue reaction towards horn implant in comparison with standard orthopaedic implants (Steel Plate).
S.S. Merudwar, M.S. Dhakate, B.B. Gupta, A.M. Pawde,
A.K. Sharma and I.K. Dubey
14. An experimental study to evaluate the effect of compression on articular cartilage of dogs.
S.K. Agarwal, Rajesh Gaur and Nirmal Jain.

Small Animal Surgery Session

Clinical Surgery

1. Follicular cyst in the ovary of of a bitch.
De., D. K. & Bose, P. K.
2. Adenocarcinoma of a canine mammary gland—case report.
B. Sarma, S. Goswami.
3. A modified technique for surgical management of chronic otitis externa in dogs.
A. K. Srivastava; Ramjanam Singh
4. Intussusception and prolapse in pups—review of four cases.
T. N. Ganesh, N. N. Balasubramaniam, W. P. Archibald, David, R. Suresh Kumar,
Mala S. Purohit and Dewan Muthu Mohamed.
5. A complicated case of intestinal foreign body in a dog.
A. K. Srivastava, S. S. Misra
6. Effect of vincristine on clinical cases of canine transmissible venereal sarcoma (CTVS).
Arup Kr. Das, Utpal Das, Deb Kumar Das
7. Obstruction of proximal jejunum in a dog—a case report
B. Ramesh Kumar, V. Ramaswamy and A. C. Subramaniam

Experimental Surgery

1. A Technique of Nephrotomy and surgical approach to the kidney in dog—a experimental study
Badgujar, C. L. and Mantri, M. B.
2. Histopathological evaluation of involved skin, muscle and peritoneum after repeated laparotomy on the same line of incision in canines.
B. B. Das, D. B. Mukherjee, P. K. Samanta

3. Studies on cardiac contractility by aqueous extract of
T. Arjuna – vitro studies in frog's heart.*
Ravi Prakash A. K. Bhargava,
4. A new technique of simultaneous craniotomy and spinal puncture in rabbits : An
experimental surgical approach
S. Bhaskara Rao, V. V. Radhakrishnan,
5. Effect of aqueous extract of terminalia Arjuna – a clinical, haematological and
electrocardiographic study.
N. S. Yadav, A. K. Bhargava and C. S. Celly
6. Role of T. arjuna as a cardioprotective agent in experimentally induced myocardial
ischemia in goats.
N. S. Yadav, A. K. Bhargava and O. P. Gupta
7. Comparison of split sternothyroidic pedicle and gastrioeseromuscular patch/grafts
for oesophagoplasty in dogs.
Amar Pal, B. Singh and A. Kumar
8. An experimental study on oesophageal end to end anastomosis by inverting &
everting techniques in dogs
Naveen Sharma

Anaesthesiology Session

Clinical Surgery

1. A study on equine balanced anaesthesia in race horses
K. Srinunder Rao and R. L. N. Rao
2. Studies on the management of anaesthesia for castration in horse
S. Bhattacharya, P. K. Samanta
3. Prolongation of anaesthesia for surgical removal of brisket tumor in mule.....
a case report.
M. M. S. Zama, R. S. Rawat, B. A. Moulvi and S. S. Hussain

Experimental Surgery

1. Haemodynamic, blood gas and blood biochemical changes following chloral hydrate-magnesium sulphate sedation in calves.
A. G. D. Costa, A. P. Singh, Jit Singh and P. K. Peshin
2. Haloperidol as a premedicant for thiopental anaesthesia in the dog.
V. K. Sobti, Kushpalinder Singh, P. S. Bansal,
Narinder Singh and S. S. Rather.
3. Ventricular fibrillation—a severe hazard during anaesthesia in dogs
A. K. Srivastava and Ramjanam Singh
4. A study on evaluation of xylazine and ketamine anaesthesia in cow calves : An
experimental study.
L. B. Sarkate, A. K. Bhargava and G. R. Singh
5. Potentiation of thiopentone induced anaesthesia with diazepam pentazocine premed-
ication in sheep
Syed Sajjad Hussain, M. M. S. Zaman, M. A. Kirmani and B. A. Moulvi

6. Drug and dose dependent epidural anaesthesia in goat.
R. S. Katoch and S. K. Pandey
7. Haematological and biochemical studies on ketamine, propofol and propofol-ketamine as general anaesthesia in diazepam premedicated goats (*Capra hircus*).
N. H. Kelawala and R. R. Parsania.
8. Effects of epidural injection of pethidine in dogs.
Amresh Kumar, N. S. Jadon and Bharat Singh
9. Preliminary trials of domosedan* in yak calves (*Bos grunniens*)
J. M. Nigam, S. K. Sharma, M. S. Kanwar and S. K. Rastogi
10. Preliminary studies on regional anaesthesia in yak calves
J. M. Nigam, S. K. Sharma and M. S. Kanwar
11. Pentazocine and chlorpromazine combination as neuroleptanalgesic in camels.
Shila Singh, P. K. Peshin and D. Kr'shnamurthy

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*Clinical and experimental surgery papers are combined

Theme Session

Chairman : Dr. P. E. Kulkarni

Rapporteur : Dr. I. S. Chandna

Emerging Surgical Diseases and Use Of Ultrasound In Large Animals.

BY

Dr. Sohan Singh Rathor Professor, Surgery &
Radiology P. A. U. Ludhiana

Intestinal Obstructions :

Due to great pressure on agricultural production, animal husbandary received a great set back in many states of India. Due to farming, the animals are confined to stables. Cross bred and pure bred high yielding animals are to be fed more of concentrates. Metabolism of concentrates produce more of gases and hypermotility of intestines, there are all possibilities of having intestinal obstructions. History and per-rectal examination will give the diagnosis. There will be distension of right side abdomen, offfeed, straining, dehydration, etc. Some of the cases can be treated medicinally with heavy dose of lactate or saline I/V (7-10 litre) at a time will relieve the obstruction. If not, right side laparotomy and resection of affected intestines is the treatment of choice.

Acidosis And Alkalosis :

There are very many cases of these conditions which can be treated medicinally. But in advance as well as at early stages, if rumenotomy is done and the rumen is lavaged and the pH is corrected, the recovery is much faster and safer.

Abomasal Dislocation :

This condition is explained to be frequently noticed in India but so far very few cases have been recorded. Left side dislocation of abomasum is treated significantly. Sutures are placed on the greater curvature of the abomasum and then it is reduced to its normal position and the suture already placed through the ventral wall and ligated outside. This is removed after 10-15 days.

Diaphragmatic Hernia :

This condition, by this time, has been well established in many of the states of India in buffaloes and some times in cattle. Surgeons of Maharashtra, Haryana, Punjab, Rajasthan and other states have already established their procedures. Recently, at

Punjab Agricultural University, Ludhiana, Dr. Rathor and his team has successfully operated upon 60 D. H. cases under local anaesthesia with 70-80% success rate. Readers are requested to contact personally for further details, on the technique. A nice video-recording of D. H. operation under local anaesthesia has been prepared by Dr. Bhokre of Maharashtra.

Torsion Of Uterus :

This condition is very common in buffaloes. All the states having more of dairy buffaloes are experiencing right sided torsion of uterus. It can be best corrected at early stages, by right side rolling of the animal. If not, cesarean operation is done which needs no deailed techniques.

Cutaneous Tumours :

In buffaloes, very many cases have been observed as exogenous growth, or fibromas on the ventral part of the body. Behind the elbow, dewlap etc. surgical excision is best suited.

Mechanical Injuries :

Due to tractor parts, plough, and auto-accidents, in buffaloes, on the hind leg, flexor tendons are damaged. In equines, fast pace and racing result in tendon injuries. These are not new diseases but due to mechanisation, animals on the farm have become more prone to accidents.

Teat Diseases :

Heavy milkers and poor hygiene are the causative factors for teat diseases. Surgical diseases are obstruction, wound, teat spider, tumour etc. The treatment is as usual but precautions are to be taken afterwards.

USES OF DIAGNOSTIC ULTRASOUND IN VETERINARY PRACTICE

Introduction

Ultrasound is a noninvasive means of eliciting information about internal structure, size and function of many internal body organs. Differentiation of cystic, solid and complex masses can be determined ultrasonically.

The utilization of ultrasonography in Veterinary Medicine offers many advantages over radiography. Because ionizing radiation is not utilized, it is safe for the patient and the clinician. In pregnant patients fetal susceptibility to ionizing radiation is not there. Ultrasonography can identify tissue/organ margins and abdominal fluid

does not interfere with ultrasonography. Because of the low ($\sqrt{100}$ mW/cm²) of sound waves dissipates readily and leads to no known deleterious effects.

It is considered diagnostic because it reveals information on organ architecture relationships of radiographically silhouetting soft tissue structure and fetal inability that is unobtainable by radiography alone.

Physics Of Ultrasound

Interaction of sound waves and tissue is limited by the length of sound wave. The smaller the wavelength (λ), greater is the absorption of sound. Velocity (V) is constant in soft tissues and increases with density of tissues. The amount of sound reflected is proportional to velocity.

Components

- 1- Transducer
- 2- Ultrasound beam
- 3- Display
- 4- Recorder.

Transducer

It sends and receives sound waves. Frequency (F) is kept between 1-15MHZ. There is a Pizeoelectric crystal which generates the beam. The backing block allows only one wavelength to pass through. The pulse rate is 1000 per second. The echoes are caused by ultrasonic wave reflection off tissue interfaces. These echoes carry energy that compresses the transducer crystal. This information is displayed on a TV monitor.

Beam

It consists of parallel sound waves. The fresnel zone contains useful waves which produce better lateral and depth resolutions. By increasing the diameter of crystal size, the width of the beam increases thereby lengthening the Fresnel zone which produces better image of deeper structure but deteriorates the lateral resolution.

By increasing F, the depth resolution increases and the tissues absorb more waves creating a poor image.

The amount of beam reflected depends upon the acoustic impedance of tissue (Z) and angle at which the beam strikes the tissues interface.

$Z = \text{density} \times \text{velocity}$.

For air it is 0.004, Fat 1.38, Blood 1.61, Liver 1.65, Muscle 1.70 and Bone

If the Z increases at tissue interface, there is more reflection. This does not allow imaging of deeper structures.

At soft tissue-bone interface there is significant reflection and at air-soft tissue interface there is all reflection.

Ultrasonic imaging through lung, gas filled bowel and bone is unrewarding because no useful information is gained below these surfaces.

At incident of 90° , more beam is transmitted; reflected beam returns completely and errors in echo localization are minimal.

Display

There are several operational modes.

1. Amplitude (A) mode :

One dimensional picture appears on an oscilloscope. Spikes arising from a baseline identify echoes. The more is the intensity of the echo, the higher are the spike. The horizontal axis denotes the tissue depth.

It is used in echo-encephalography and intraocular sonic imaging.

2. Time-motion (TM) mode :

The scan is imaged over a period of time so that motion is observed. Depth of moving structure is recorded on horizontal axis and dots oscillate back and forth on this axis. At the same time, the base line drifts vertically to allow a permanent recording of the image.

It is used for imaging the heart.

3. Brightness (B) mode :

It is a two dimensional display. It can be a) Static, b) Real time. In static mode, the transducer is moved across the body and image is depicted on a TV monitor as a series of dots.

The real time imaging is done for moving structures.

The B mode is useful for locating soft tissue masses, parenchymal metastases, abscesses and cystic changes.

Image Storage

The images are stored in videotapes, multiformat camera with special X-ray film or Polaroid film.

Interpretation

1. Skin surface or near field should be at the top of the film.
2. For Saggital, parasaggital and oblique scans, the cranial aspect of the animal is kept to viewer's left.
3. For transverse scan, keep it in such a way as if the viewer is observing the animal from caudal aspect.

The lesions could be

Anechoic	—	fluid filled,
Hypoechoic	—	abscess, cysts, neoplasms.
Complex	—	Combination of above two.
Well defined border	—	Cyst.
Irregular border	—	Abscess, neoplasm.

Pelvic Ultrasonography

1. Reproductive Disturbances :

Ultrasound is considered diagnostic in dogs for pyometra, hematometra hydro-metra, follicular ovarian cysts, luteal ovarian cysts, cystic endometrial hyperplasia, granulosa cell tumor, endometritis leiomyoma and uterine stump granuloma.

2. Ovarian Activity :

Ultrasonic scanning is capable of depicting ovarian follicles larger than 5 mm and they can be seen to change shape just before ovulation. GL are recognizable during diestrus. Ovarian neoplasms and follicular hematomas can be detected too.

Cardiovascular Ultrasonography

1. Traumatic Pericarditis :

It is the method of choice in the cattle, though costly.

2. Specific Cardiac Lesions :

Ventricular septal defects, Tetralogy of Fallot, Atrial Septal Defects and Mitral Valve Regurgitation can be diagnosed safely in small and large animals.

Contrast agents used are Isotonic Sodium Chloride, the patients blood and Indocyanine green dye. The injection of these substances produces an abrupt increase in the intensity of the reflected echoes. The blood flow pathway in the hearty is outlined.

3. Endocarditis :

Abnormalities of aortic valve, mitral valve and left ventricle can be diagnosed in small and large animals.

4. Mean Arterial Pressure (MAP) :

With an indirect method in Equines, MAP can be measured within 10 mm Hg of true intraarterial pressure and even in circulatory shock.

An inflatable cuff is placed around the tail and the blood flow is detected by a Doppler device.

5. Erythrocytic Disintegration :

The suspension of erythrocytes is exposed to ultrasound at $0.5-2W/cm^2$ at 0.83 MHz and $36^\circ C$. The degree of hemolysis is recorded after 5 Min. The RBCs (1 part blood + anticoagulant to 675 parts NSS) is exposed to ultrasonic waves provides information mechanical on resistance of RBCs membrane. The disintegration pattern of cattle with leucosis, liver diseases and pneumonia differ from normal.

Bone And Tendon Ultrasonography

1. Bone Quality :

The transverse apparent velocity of sound in the bone of horse is a

potential method for assessing the bone quality,

$$C^2 = \frac{E}{d}$$

where

C - velocity of ultrasonic wave.

E - Modulus of elasticity.

d - Mass density.

2. Injury to Bones :

Injury to Cranium resulting in concussion, contusion, congestion and edema, subarachnoid, subdural and intracerebral haemorrhage and epidural hematomas can be diagnosed.

Bone Sequestra and fistulous tracts can be visualized.

3. Tendons and Ligaments ;

Ultrasonography is useful to identify small, presymptomatic lesions. It can also determine the completed healing.

As little as 5 ml of fluid can be identified in a localized area within the tendon.

Ultrasonic therapy of split flexor tendons results in excellent healing with a small scar.

Other Uses

4. Fetal Growth and Activity :

Ultrasonic transducers are implanted on either side of the skull of fetuses between 101-119 d of gestation in lambs and biparietal diameter is measured.

The mares, in mid-gestation, can be scanned to see size and structures of placenta, position of placentaumbilical cord insertion, fetal activity and respiration. The fetal heart rate can be calculated. The diagnosis of congenital abnormalities and prediction of fetal inability can be made.

Future Veterinary Anaesthesia

Dr. Amresh Kumar,
Professor, Surgery and Radiology,
G. B. Pant University of Agri. and Tech.,
Pantnagar

Matter will be presented during the session.

Large Animal Surgery Session

Clinical Surgery

Chairman : Dr. Jit Singh

Rapporteur : Dr. S. K. Pandey

Page 9-17

Experimental Surgery

Chairman : Dr. B. Prasad

Rapporteur : Dr. S. C. Pathak

Page 18-22

Tumors in Domestic Animals-A Review Of 191 Cases

Poon Singh and Kuldip Singh,

Department of Surgery and Radiology,
Haryana Agricultural University, Hisar.

A clinical survey of 191 cases of tumors based upon 10 years (1978-88) in different species of animals is presented. Cattle were observed to be more commonly affected (56.5%) followed by buffalo (20%), dogs (16.2%), equines (4.2%) and camels (3.1%). Incidence of tumors was higher in adult than in young animals. Squamous cell carcinoma was more common followed by fibroma (17.8%) cerebral granuloma (11%), papilloma (9.5%) and leiomyoma (4.7%) etc. Squamous cell carcinoma of horn core in cattle were more common as compared to other body sites. Other common sites for origin of tumors were genital organs, jaw, eye trunk, orbit and neck etc.

Intestinal Obstruction In Buffalo-Case Report

R. L. Bhume, R. S. Dadke, V. D. Jahagirder and A. P. Bhokre

College of Veterinary and Animal Science, M. A. U., Parbhani

A clinical case in a buffalo was diagnosed as an intestinal obstruction. On the basis of symptoms and per rectal examination it was confirmed a case of intestinal obstruction and operated through right flank under the influence of paravertebral nerve block. Jejunum was exteriorized and obstructive mass, a mango kernel from intestine was removed by enterotomy. Animal passed faeces after 24 hours and showed uneventful recovery.

Hypopyon In A Cow-A Case Report

Jahagirder, V. D., Dadke, R. S., Bhume, R. S., Bhume, R. L and Panchbhai, V. S.

College of Veterinary and Animal Science, M. A. U., Parbhani.

A clinical case of hypopyon in a cross bred cow was treated under the influence of retrobulbar, auriculo-palpebral and supra-orbital nerve block. Paracen-

tesis of anterior chamber was carried out following flushing with 0.9% sterile saline. Saline with 40 mg of Gentamycin was deposited in the anterior chamber. Subconjunctival injection of Gentamycin was also given, followed by membranoplasty. Animal showed uneventful recovery on 12th day post-operatively.

Diaphragmatic Herniorrhaphy In Field Condition Under Local Anaesthesia

V. S. Patil, A. P. Chaudhary and A. M. Keikar

Veterinary Polyclinics, Nasik.

Four clinical cases of diaphragmatic hernia in large animals were subjected to rumenotomy followed by herniorrhaphy with transabdominal approach under tranquilizer and local anaesthesia without use of positive pressure ventilation apparatus. Post-operative radiographic study indicated intact diaphragm. Three cross bred cows recovered uneventfully and one she buffalo succumbed.

Open Teat Surgery In Bovine And Caprae

V. D. Aher, A. P. Bhokre, and S. M. Usturge

Department of Surgery,

Marathwada Agricultural University, Parbhani.

Open teat surgery was performed successfully for the removal of obstruction from teat sinus and treatment of perforating and fistulous wound of teat in bovine and caprine. Four types of suturing techniques namely simple continuous, continuous cushioning, Continuous lockstich and intramural were employed. Intramural suturing technique was superior to all in respect of simplicity, fastness, apposition and minimum scar formation. Postoperatively, use of teat plug prevented pressure upon suture line, drained milk completely and helped in uneventful healing.

Surgical Treatment of Chronic Otitis In A Bullock

S. M. Usturge, and A. P. Bhokre

Veterinary Polyclinics, Maharashtra Agricultural University, Parbhani.

The case under report had swelling at the base of ear with foul smelling purulent discharge since eight months and was not responding to antibiotics and ear treatment. Lateral resection of ear canal was performed under squal and local anaesthetics infiltration. The caseated and inspissated mass of pus with necrotic tissue was removed and the cavity was irrigated with normal saline and sprinkled with antibiotic powder daily. Parenteral antibiotics and local dressing with specific antibiotic was done postoperatively. Healing was uneventful but took a long course for the cure. The case was discharged on 30th postoperative day.

Otic Fistula In A Buffalo

S.S. Misra, S.K. Pandey, G.K.S. Kanaujiya, A.K. Srivastava,

Department of Surgery and Radiology,

College of Veterinary Science and Animal Husbandary,

C.S.A. University of Agriculture and Technology, Mathura.

A seven years old buffalo with an unusual fistulous opening on the posteriolateral aspect of the right horn was noted since last one year.

Purulent, mucopurulent and serosanguinous discharge was voided both from the abnormal fistulous opening and external ear. Probing revealed a roomy pouch in the contiguity of the posterior aspect of the base of ear with an approximate fluid capacity of 150-200 ml.

Under adequate tranquilisation and the chloral-mag narcosis the fistulous opening was enlarged and the cavity was curetted and thoroughly lavaged. The abnormal opening was closed with indwelling fenestrated lavage cum medication tube to retain within the cavity and the end was exteriorized from auricular orifice outside for a period of 10 days.

Medication included administration of chloromycetin, proteolytic enzymes, hyaluronidase mixed in normal saline and chloromycetin for seven consecutive days. Recovery was uneventful.

A New Technique For Cystorrhaphy In The Management Of The Urinary Calculosis In the Bovines

S.S. Mishra and G.K.S. Kanaujiya,

Department of Surgery and Radiology,

College of Veterinary Science and Animal Husbandary, Mathura.

A new technique of "parasacral approach" for cystorrhaphy with indwelling catheterization has been standardized experimentally, and evaluated clinically in bullocks.

Male buffalo calves about 18 to 20 months were used for experimental study. Adequate tranquillosedation and epidural analgesia were induced conventionally. A 10 cms long incision was made in the triangular hip region, in the parasacral area, underlying muscles and sacrosciatic ligament was bluntly dissected to reach the pelvic cavity, thereafter the urinary bladder was exteriorized via the incision. A two cms, incision was laid on the dorsal of the urinary bladder. A fabricated inwelling catheter was indwelled in the urethra. Cystorrhaphy was performed conventionally. The sacrosciatic rent was minimized with a set of mattress sutures and subsequently the tissue were repaired as usual. Recovery was uneventful in all the cases. Urine freely flowed from the indwelt catheter which was extricated after 7 days. Postmortem examination 3 months after the surgery testified that technique ensures easy and full visual access to the bladder. Catheterization proved safe and simple.

A Report On A Carbuncle In A Cow

Q.K. Singh, S. Kumar, R.P. Pandey, A.K. Srivastava and S.S. Misra.

Department of Surgery and Radiology,

College of Veterinary Science and A.H., Mathura.

Tharparkar crossbred cow, aged 5 years, suffered from an unusual fascial lesion, which was characterised by multiple purulent foci in its substance. The parotid, inferior parotid and the mesenteric, buccinator region were involved causing gross inconvenience during mastication etc. Pus culture and biopsy revealed granulomatous tendency of the tissues and resistance of the infection to the drug, almost all the antibiotics except Kanamycin.

Enucleation of the carbuncular lesion was done under deep tranquillo-sedation with chloral-mag narcosis. Topical dusting of the wound with iodine preparation and paracetal Kanamycin made a very speedy recovery in the patient.

Radical Surgery for a Large Tumor Like Growth in the Anterior neck Region of a Buffalo

S. Kumar, A. K. Singh, R. P. Pandey, A. K. Srivastava, S. S. Mishra.

Department of Surgery and Radiology,

College of Veterinary Science and A. H., Mathura.

An eight years old buffalo had an enormous growth in the right anterioventral aspect of the neck contiguous to laryngeal region causing gross obstruction in the feeding and watering. The growth gradually enlarged despite of the various treatment. Radical surgery under tranquillo-sedation was decided. Local analgesia was induced at the base of the lesion. Cantotomy type of incision were made at the junction of the growth with the neck. Radical surgery was conducted in an ablatory manner to dissect out the growth enmasse which weighed 4.2 kg. Vascular supplies were ligated before transection.

The histopathological examination indicated neoplastic tissue but could not be ascertained exactly. The wound was repaired conventionally and the patient made an uneventful recovery with the treatment and restrained method of animal.

Per-Acute Noninfectious Theilitis in Buffaloes

V. Ramaswamy, B. Rameshkumar and A. C. Subramaniam

Veterinary clinician centre, Erode.

A survey conducted at Veterinary Hospital, Erode, between 1986 to 1988 showed a high incidence (95%) of theilitis in buffaloes at lactation. Symptoms noticed were per-acute edematous swelling of the teat during milking soon after the parturition. The affected animals became "hard milkers". Cultural examination of the milk from the affected quarter did not reveal any organism of etiological significance. Hence trauma caused by knuckling type of milking was attributed as the main factor for this malady.

Enucleation of the carbuncular lesion was done under deep tranquillo-sedation with chloral-mag narcosis. Topical dusting of the wound with iodine preparation and parenteral Kanamycin made a very speedy recovery in the patient.

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Treatment consisted of parenteral administration of anti-inflammatory agents and broad spectrum antibiotics alongwith local application of counter-irritants. Restriction of concentrated feeding helped in controlling the milk secretion temporarily and thereby helped in rapid recovery. Full hand milking was advised to overcome the problem. Complications such as sloughing of teat epidermis, rupture of the whole teat and subsequent gangrene were encountered, in poorly managed and untreated cases. The prognosis was favourable, in promptly treated and well managed cases.

Abdominal Hernias in Cattle and Sheep : A Review of 25 Cases.

A. P. Singh, M. I. Yashin and D. K. Murthy
Department of Veterinary Surgery and Obstetrics
College of Veterinary Medicine
Mosul University, IRAQ.

Clinical records of a cattle and 17 sheep with abdominal hernias were examined. Thirteen hernias were caused by automobile accidents, six by fighting and one occurred just after parturition. Three cases were congenital and in few cases the cause was not known. Abdominal hernias occurred more frequently in female than male. The most common location for hernias was the lateral abdominal wall (40%), followed by prepubic (20%), sub-costal (16%), cranial ventral mid line (16%) and inguinal area (8%). Three cases had recurrence and four cases developed infection at different times during post-operative period. Eighteen animals (72%) had excellent recovery after surgery.

Incidence and Surgical Management of Neoplasms in Ruminants and Equine.

A. P. Singh, M. I. Yashin and S. M. Eshoue
Department of Veterinary Surgery and Obstetrics,
College of Veterinary Medicine
Mosul University, Mosul, IRAQ.

Ninety six cases of neoplastic growths were recorded during the period under report, which represented an incidence of 6.4%. Highest incidence was observed in

sheep (42.7%) followed by cattle (31.3%), horses and donkeys (19.8%) and goats (8.2%). Females (81.2%) were affected more than males (18.8%). Squamous cell carcinoma mainly involving the eyes was the most common tumor (34.4%). Other frequently occurring tumors were papilloma (17.6%), fibroma (8.3%), osteosarcoma (7.3%) and melanoma (6.3%). Less frequently recorded tumors were ameloblastoma, fibrosarcoma, fibrous sarcoma, fibropapilloma, lipoma, hemangioma, adenocarcinoma and teratoma in sheep, fibrosarcoma of external genitalia of cows and adenocarcinoma of eye lids in horse and cow were considered to be of excellent outcome in most cases except those of ocular squamous cell carcinoma invading orbital and frontal bones, ameloblastoma, melanoma, osteosarcoma and teratoma in one sheep.

Surgical Management Of Urethral Calculi In A Buffalo-Bull-A Case Report.

S.K. Tiwari, R.K. Jain and S. Roy.

Department of Surgery and Radiology.

College of Veterinary Sciences, ANJORA (MP)

A buffalo-bull was brought to the Department with the history of urine and non-passage of the faeces for the last 36 hours. The animal was reaching to a stage of toxæmia. Upon examination of the course of penis, the Calculi was felt to be lodged caudal to the distal curve of sigmoid flexure towards the tip of penis which was successfully removed surgically under triflupromazine sedation and local infiltration.

Surgical Management Of Mammary Tumours In Six Buffalo Heifers

D.K. Sharma, Prem Singh, S.M. Behl and I.S. Chandra

Department of Veterinary Clinics

College of Veterinary Sciences,

Haryana Agriculture University, HISAR.

Surgical management of six clinical cases of mammary tumours has been described. Out of six cases, two were lipomas and four fibroadenomas. Tumours had

gradual enlargement and the masses were semisolid, moveable and firm in consistency. The tumours were surgically removed under local infiltration and/or epidural anaesthesia. It was observed that fibroadenomas were partially or fully involving the glandular tissue as was evident from the secretion of the milk after parturition (on follow up) from the affected quarter in 2 out of 4 cases. The lipomas were not at all affecting the glandular tissue and were only subcutaneously located and secretion of milk following parturition, was observed in both the cases of lipomas. After surgical removal of the tumours, teat catheters were placed and intramammary infusions of antibiotics were given. The weight of removed surgical tumours ranged 2-20 Kg. The teat catheters were removed on 10th day of surgery. The patency of teat canal was intact in 2 out of six cases (lipomas). However in remaining four cases, in 2 cases there was partial or complete fibrosis of teat and quarter (2 cases of fibro adenomas); while in remaining two cases of fibro adenomas there was only stenosis of teat canal.

Dystokia Due to Monstrosities in Large Animals

I. S. Chandra, D. K. Sharma, S. M. Behl, Prem Singh and R. K. Chandoliya

Department of Veterinary Clinics,

Haryana Agricultural University,

HISAR.

Incidence and clinical management of dystocia due to foetal monsters has been described in large domestic animals viz Cows, buffaloes, goat and camel. 20 Cases of dystocia due to foetal monsters have been described. Foetal monsters were :

Amorphus globosus = 3, Schistosomus reflexus = 2

Bull dog calf = 3, Calf with central eye on the fore head

Ectopia or Cyclops = 1, Twin monsters (Sternopagus diplopagus) = 3, calves with muscle hypertrophy = 1, Calf with muscle contracture and flexion of limbs (in camel) = 1, Double Head calves = 3, calf with polymelia & Extra appendage = 1, Hydrocephalus calf = 1, perosomus clumbis = 1, (Poorly developed lumber region).

In all the above cases dystocia was relieved after performing caesarean operation. In such cases, toxemia was common observation and survival following caesarian section was 60%.

Prevalence and Etiology of Teat and Mammary Gland Affections in Bovine and Caprine

A. P. Bhokre, V. D. Aher and S. M. Usturge

Department of Surgery,

Marathwada Agricultural University, Parbhani.

Clinical studies on prevalence and etiology of the teat and mammary gland affections were undertaken in bovines and caprines. A total of 96 clinical cases of teat and mammary gland affections were recorded. These included 47 cases of cracks and fissures, maggot wound, bruises and contusions, lacerations and Staphylococcal infections. Obstruction of teat canal in 18 cases and stenosis of Streak canal was observed in 11 cases, while teat fistula and imperforate teat were observed in 7 and 5 cases, respectively. The left hind and right fore teat in bovine and left teat in caprine was found affected predominantly. The various etiological factors observed were barbed wire injuries, trauma due to self inflicted injuries, rough hand milking, stamping, treading, mastitis, horn thrust, staphylococcal infection, wet condition and season, calf bite and thorny bushes.

Session Large Animal Surgery

Effect Of Strangulated Ileal Obstruction On Clinical Haematological,
Acid Base And Biochemical Status In Buffalo Calves
(*Bubalus bubalis*)

Harcharan Singh, R.P.S Tyagi, Rishi Tayal and Kuldeep Singh

Department of Surgery and Radiology,
Haryana Agricultural University, Hisar.

Effects of strangulated ileal obstruction were evaluated in six buffalo calves. Animals showed progressive deterioration in clinical condition and elicited typical signs of shock. The survival time ranged from three to seven days. Mean values of B.U.N and creatinine remained elevated throughout the observation period. Significant decrease in sodium, Potassium and chloride concentration of plasma was noted. Progressive and significant increase was recorded in blood lactate level without marked alteration in blood pyruvate levels. Changes in biochemical constituents of saliva were almost parallel to those of plasma which indicate that saliva plays a very important role in this regard by adjusting concentration of various ions. Significant increase in PaCO_2 , pH, bicarbonate and base excess extracellular fluid concentration indicated severe metabolic alkalosis.

Evaluation Of Small Intestinal Viability Using Fluorescein Dye
Technique In Buffalo Calf

P.H. Tank and R.R. Parsania

Department of Surgery and Radiology,
Gujarat Agricultural University, Anand.

Strangulation obstruction was induced in 12 anaesthetized buffalo calves for period of one, three and six hours by selective ligation of 30 to 35 cms segment of jejunum with its associated arteries and veins (ischaemic strangulation obstruction-ISO) and jejunal fragments with its veins (Haemorrhagic strangulation obstruction-HSO). At the end

of specific occlusion periods the test segments were evaluated for its viability by standard clinical criteria (SCC), fluorescein dye technique (FLT), morbid angiography and histopathology. It was concluded that GLT was more accurate than SCC. It was found simple, easy to perform, inexpensive and its execution was feasible under existing conditions.

Histomorphological Studies On Skin Grafting In Buffalo calves

P.N. Parikh, J.N. Mistry and D.M. Tadkod

College of the Veterinary Science and A.H.

Gujarat Agricultural University,

Sardar Krushinagar (Gujarat)

In 12 male buffalo calves, 24 rectangular wound were created and repaired by full thickness punch skin grafts. Histomorphologically, 10th day observations were characterised by leucocytic infiltration, fibroblastic activity, capillary proliferation and epithelization of epidermis indicating active healing process. Pronounce healing substantiated by presence of network of elastic fibers, fine collagen fibers and PAS positive activity was observed with epipleural novocaine blockade.

By 20th day, the gap between the graft was almost filled up, collagen fibers had mature and arranged in bundles and PAS positive activity was more intense. Continuation of healing process was still evidenced with the presence of leucocytes, fibroblasts and proliferating capillaries. At this stage, specimens of epipleural novocaine blockade, were one step ahead in the healing process than the other specimens. The gap was completely filled up and epidermis was continuous.

Pathological Studies After Transplantation Of Induced Diaphragmatic Defect In Buffalo Calves

R.W. Ashturkar, A.P. Bhokre, G.B. Kulkarni and S.M. Usturge,

Marathwada Agricultural University, Parbhani.

Experimental studies were conducted on 30 male buffalo calves divided equally into 5 groups to investigate the practicability of the diaphragmatic defect. Group I acted as control, Surgical repair of diaphragm was undertaken on group II, III, IV

and Vth by transplantation of homogeneous preserved diaphragm, urinary bladder and prolene mesh, respectively. The sacrificed animals on 18th day showed firm union between host tissue and graft with severe inflammatory reaction in groups II and III and moderate inflammatory reaction in group IV and V. On 36th day, the macro and microscopic union was complete without any reaction in all groups. Of all the grafts used, urinary bladder and prolene mesh are better for transplantation on diaphragm.

Gross Observations On Skin grafting In Experimental Buffalo Calves

P.V. Parikh, J.N. Mistry and D.M. Tadkod.

Department of Surgery and Radiology,

Gujarat Agricultural University, Sardar Krushinagar.

Full thickness skin pouch grafting technique was studied 24 in wounds, clinically and grossly, created in 12 male buffalo calves to compare the effect of novocaine blockade on the acceptance and healing of the wounds. The % of acceptance were very high. However, slipping and displacement of new grafts to the lower side of wound was common. By 10th day, the surface of the accepted graft area revealed moderate hair growth. By 20th day the area of accepted grafts was smooth, tender and "creeping substitution" was observed in animals with short term and epipleural novocaine blockade. When compared to controls, the wounds subjected to short term and epipleural novocaine blockade were healthier and hair growth was more distinct.

Estimation Of Function In Buffalo Calves

V.S. Panchbhai, R.S. Dadke, R.I. Bhume and V.D. Jahagirdar

College of Veterinary and Animal Science, M.A.U., Parbhani.

Estimation of lacrimal function was carried out in 15 male buffalo calves, aged 1 to 1½ years and had body weight 40 to 70 kg. Modified Schirmer test was followed by using a Wattman's filter paper no 41 which was stripped in 5 × 35mm pieces. The normal reading was 10.87 µ ml/minute while under the influence of auriculopalpebral and retrobulbar nerve block was 9.95 µ ml/minute, respectively. Paired 't' test of significance was applied which revealed significant difference between lacrimal secretion of normal eyes, under auriculopalpebral and retrobulbar nerve blocks.

Intracoronary Anastomosis following Experimental Coronary Occlusion In Goats

K.K. Shargava,
Experimental Div. Surgery and Medicine,
I.V.R.I. Izatnagar.

The opening of intracoronary are more essential for immediate relief of ischemic heart. In 25 goats which were subjected to ligation of left anterior descending artery, the varying degrees of intracoronary opening were demonstrated by injecting lead suspension into coronary artery of freshly collected heart. These anastomosis were found to be influenced by the administration of T. arjuna. Oral powder takes longer time and serves as preventive measure, where as injection of aqueous extract has been found to be due to its positive inotropic effect in increasing cardiac contractibility and initiating the opening of intracoronary artery for revitalization of ischemic area. The study documented the significance of intracoronary anastomosis in preventing pathophysiological changes following acute coronary occlusion.

Effects Of suture Materials And Suture Patterns On Uterine Healing In EWes.

S.Y.A. AL-Dabash, I.F. AL-Sultan, M.I. Yasin and A.P. Singh

Department of Veterinary Surgery & Obstetrics,
and Pathology, College of Veterinary Medicine,
Mosul University, Mosul, IRAQ.

A total of 54 incisions, three in each uterine horn of each uterus made in 9 ewes, were closed equally by single layer inversion, double layer inversion and schmeiden patterns using catgut, silk and prolene. Macroscopic and microscopic observations made at 7th, 14th and 21st days showed that incisions, which were closed with single layer and double layer inversion patterns healed earlier with less adhesions formation than that of schmeiden technique. Healing was comparatively better with less tissue reaction, where silk and prolene were used as suture material. Catgut elicited intense and persisted tissue reaction. The healing of uterine wounds was achieved mainly by fibrous tissue scar formation without any evidence of smooth muscle regeneration.

Studies On Healing Of Soft Tissues In Yak Calves (Bos Grunnients)

S.K. Sharma, D.N. Sharma, M.S. Kanwar and J.M. Nigam,
Department of Surgery & Gynaecology,
College of Veterinary & Animal Sciences,
H.P. Krishi Vishvavidyalaya, Palampur (H.P.)

Rumentomy was performed under paravertebral nerve block. Vetafil silk and chromic catgut were used to approximate the rumen, peritoneum, muscles and skin using appropriate suture patterns. The tissue reaction to different suture material was comparable to cattle and buffaloes.

Orthopaedic Surgery Session

Clinical Surgery

Chairman : Dr. Rama Kumar

Rapporteur : Dr. Gajraj Singh

Pedal Osteitis in a Mare-Surgical Management

T. K. Gahlot, Jit Singh, P. K. Peshin, Davood Sharifi, D. B. Patil,
Department of Surgery and Radiology,
H. A. U., HISAR.

A mare aged 6 years was presented with a history of excessive granulation at the solar surface of right hind limb. Clinical and radiographic examination revealed exostosis and osteomyelitis of third phalanx covered with granulation tissue. Surgical management of the condition and shaping of the hoof to near normal were performed. The utility of limb was restored.

Acute Traumatic Synovitis in a Horse and its Treatment with Synovial Fluid Transfusion

E. M. Jani and D. R. Barvalia,
Veterinary Clinical Complex,
Gujarat Veterinary College,
ANAND.

A kathi horse was presented to the clinics with the history of acute lameness of right fore limb which had resulted due to stumbling while racing. Clinical examination revealed acute traumatic synovitis of knee joint. The autologous synovial fluid transfusion was performed twice at the interval of 96 hours. The first transfusion was supplemented with intraarticular dexamethasone to suppress acute inflammatory process. The lameness completely disappeared and there was considerable improvement in the quality of synovia as judged by estimation of MPQ, TLC, TP, AKP and ACP values.

Incidence of Carpal Hygroma in Cross-Bred Cows of Assam

K. K. Sarma, S. C. Pathak,
Department of Surgery & Radiology,
KHANAPARA.

A survey was conducted to study the incidence of carpal hygroma in the cross-bred cows around Greater Guwahati. A total of 65 clinical cases were recorded in a

survey which covered 1320 cows (4.17%. The incidence was higher in stall fed (12%), high yielding (13.5%) and older (21%) animals.

A Complicated Case of Osteomyelitis in a Tigress

Arvind Kumar, R K. Das,
V.O., A.H. Department,
LUCKNOW.

A tigress having the symptoms of lameness, local swelling and severe persistent pain in left forelimb was brought to Lucknow Zoo from the forest, Dudwa National Park. Numerous fine pores in the skin around the left elbow with purulent discharges oozing out through them, were marked on close examination. The radiographic interpretation revealed unusual necrotic sequestrum and the ulna had become more flattened and thickened than the radius. Lesions were present on both sides of the physis, epiphysis and metaphysis. The culture report was +ve for *Corynebacterium* and *E coli*. The proper surgical drainage was provided at the site and daily dressing were done for more than a month. Follow up treatment included higher dose of Gentamycin parenterally with a supportive therapy. Complete recovery was obtained in a spell of 45 days.

Procaine Therapy For Arthritis and Idiopathic Lameness in Horses

N S Jadon and Amresh Kumar,
Department of Surgery and Radiology,
College of Veterinary Sciences,
PANTNAGAR.

Two adult horses having arthritis and stiffness of thigh muscles and difficulty movement, who did not respond to routine therapy of treatment of arthritis, lameness in were treated by procaine therapy. Injection of procaine hydrochloride 2% were made subcutaneously on the right side of the neck 5-6 cms lateral to the centre of the neck or vertebral column, beginning at the level of the 3rd cervical vertebra and as far as the fifth thoracic vertebra. 3-4 ml solution with a total of 35 to 40 ml was injected. The injection was repeated at 4 day interval upto 12-15 times. For

the hind limb, injections were made in lumbosacral region and 75 to 80 ml anaesthetic solution was given. Along with procaine therapy, Belamyl, Neurobion and Triphosphon were given. At the end of last injection the horses showed marked improvement and were completely relieved of symptoms of lameness and arthritis. Two months later they were found completely healthy.

Non Infected Tarsal Hygroma in Cattle

R. J. Choudhary, Chanderkala and D. S. Chouhan,

Department of Surgery and Radiology,
College of Veterinary and Animal Sciences,
BIKANER.

Three cases of noninfected tarsal hygroma were successfully surgically treated in cross bred cows. The hygromal sac was incised and dressed with Tr. of Iodine soaked gauze which acted as wick. The part was bandaged. This procedure was found successful in rapidly curing the noninfected tarsal hygroma.

Patellectomy in Goat

Chanderkala and D. S. Chouhan,

Department of Surgery and Radiology,
College of Veterinary and Animal Sciences,
BIKANER.

Surgical correction of luxation of patella by patellectomy in goat was successfully attempted. The operation was performed under local anaesthesia. The animal exhibited complete recovery after 10 days, postoperatively.

Congenital Appendicular Contracted Tendons in Cattle

S. K. Pandey, A. M. Srivastava, M. K. Bhargava and V. P. Chandrapuria,

College of Veterinary Science and A. H.,
BABALPUR.

Surgical case record of 56 contracted flexor tendons of limbs of cattle have been assessed to probe the etiology, breed specificity, sex predominance, tendon and

joint involvement and treatment approach. The knee (Carpus) was most commonly affected (23 cases) joint followed by involvement of elbow joint (5 cases) was of rare incidence. In hind limb the involvement of the fetlock joint (10 cases) was higher as compared to hock joint (tarsus-6 cases). Involvement of the stifle joint (femorotibial) was rarely seen (1 cases). In 19 cases superficial flexor tendon and in 31 cases superficial and deep flexor tendons were involved. In the involvement of the elbow joint or stifle joint tendons of biceps brachi or fibularis tertius were affected. Ankylosis of either the knee or hock joint was seen in six animals while in 31 animals no bony pathological lesion were recorded. All the six animals affected with elbow or stifle joint contraction showed joint and bone deformity. Incidence in the exotic, crossbred (41 cases) was more as compared to calves of indigenous origin. Tenotomy was effective in all the cases which did not show any bony or arthritic deformity.

Investigation of Incidences of Bovine Foot Disorders in West Bengal

Utpal Dass, S. L. Moitra, M. K. Chakraborty and S. Sahu,
Tangra Livestock Yard and Slaughter House,
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CALCUTTA.

The overall incidence of bovine foot disorder was 36.79% and forefeet was mostly affected. In most of the animals either of the fore or hind foot was involved. In some both the fore or hind feet and rarely all the four feet were involved. Regular overgrown hoof was the most common foot disorder followed by scissors claw, cracked hoof, traumatic injury, bruising of sole, erosion of sole, interdigital lesion and so on. Factor responsible for such affections vis-a-vis their possible surgical treatment was discussed.

Partial Ligament Grafting in the Surgical Management of Congenital Flexion of the Carpus in Cow Calves

R. P. Pandey, Dr. A. K. Srivastava, Dr. S. S. Mishra,
Department of Surgery and Radiology,
U. P. College of Veterinary Science & A. H. Mathura

A study was made to correct the congenital flexion of the carpus in both limbs of calves by partial ligament grafting.

Out of three calves, having congenital flexion of the carpus in both limbs; two were grafted heterogenous ligaments obtained from slaughter house and third one was left only after dividing the lateral and medial ligaments. Though two of the three calves (which were grafted) were relieved from flexion of the carpus and obtained normal gait and was limping. Hence the study revealed that grafting is successful remedy.

Coaptation Splinting for the Management of the Tibial Fractures-A Report of 2 Cases

T. K. Gahlot, D. Sharifi, D. B. Patil & Jit Singh,
H. A. U. HISAR.

This case report depicts the management of tibial fractures in case of a buffalo heifer and a bull. The technique of crutch application and the complications time-in are discussed.

Atypical Subluxation of Patella in Buffalo-A Case Report

Muzammel Hoque,
Veterinary Surgeon, State Veterinary Hospital,
Mathabhanga, West Bengal.

A buffalo from Tufanganj area of West Bengal was attempted to move, its rear legs twisted with each other like to pieces of rope and then the patient fell down on the ground following 2-3 steps. No abnormality or pain was detected in the muscles or joints while examined. There was no signs of subluxation of patella.

As a last trial medial patellae desmotomy in both the hind legs were performed under local analgesia on 8-3-89. Surprisingly after the operation the animal started normal movement.

Orthopaedic Surgery Session

Experimental Surgery

Chairman : Dr. S. S. Rathor

Rapporteur : Dr. A. P. Singh

Experimental Studies On Entire Segment Cortical Bone Grafting In Goats.

R.S. Bisla

The experiments were conducted in 30 goats (*Capra hircus*) divided into three groups of ten animals each to evaluate entire segment cortical bone fresh autograft, fresh homograft and autoclaved heterograft to fill up a 2.5 cm long entire segment bone defect created in the mid shaft of tibia of goats. The results were evaluated at varying intervals i.e. 15, 30, 45, 60 and 90 days. Clinical observations showed that weight bearing capacity of affected limb returned early in animals with autograft. Plain radiography showed that autograft and homografts were incorporated into the host bone by sixty and ninety days respectively. However, encasement of the graft and bridging of host graft junctions remained incomplete upto ninety days in heterograft group. The osteomedullographic studies showed early reconstitution of intraosseous circulation in animals with autograft as compared to homograft group. However, it was much delayed in heterograft group. The arteriographic observations substantiated osteomedullographic results. Histopathological findings showed that graft was incorporated by creeping substitution in autograft and homograft groups. Healing was better in autograft group whereas it was very poor in heterograft group.

Clinicopathologic Evaluation Of Escherichia Coli Lipopoly-Saccharide Induced Arthritis In Buffalo Calves.

D.R. Barvalia and R.R. Parsania

Arthritis of the left knee joint was induced by intraarticular administration of *E. coli* Lipopolysaccharide (LPS) at the dose rate of 4 µg/kg body weight in twelve buffalo calves. In six animals, 4 mg dexamethasone was injected in the same joint, 5 minutes following induction of arthritis. To evaluate efficacy of the therapy clinical signs, haematological and biochemical changes of blood as well as physical, cytological and biochemical changes in synovial fluid were studied. Histopathology of joint capsule and articular cartilage was done to know the structural changes. It was concluded that *E. coli* LPS evoked local and systemic changes analogous to acute arthritis. Periodic

synovial fluid analysis was found to be helpful in assessing the extent of joint inflammation and response to therapy. Intra-articular dexamethasone was found effective in counteracting the effect of *E. Coli* LPS.

Horn Plates Versus Stainless Steel Plates In the Internal Fixation of Tibial Fracture In Cow Calves—An Biomechanical, Clinical And Radiological Study.

L. B. Sarkate,

Division Of Experimental Medicine & Surgery,

Indian Veterinary Research Institute, Izatnagar-243122

The horn plates of different sizes were constructed from buffalo horn and were tested for their mechanical properties. Second part of study was conducted on 18 healthy male cow calves, divided into three equal groups. Mid-shaft transverse or short oblique fracture was created in each animal under xylazine and ketamine anaesthesia. Two heavy duty stainless steel plates in group I, combination of stainless steel and horn plate in group II and two horn plates in group III were fixed on anterior and medial surface of tibia for the repair of tibial fracture.

The modulus of elasticity of horn plates ranged from 4300-6800 N/m², ultimate tensile strength from 63.82-122.28 MN/m², and bending stiffness, from 1.567-2.19 N/degree. Plane radiography of fractured tibia revealed evidence of external callus formation at day 21 in all the three groups, however, fracture line was visible upto 49 days. Further periosteal callus became organised and complete fracture healing was observed in all the three groups at day 63. Bending of stainless steel plate and refracture was observed in one animals of groups I and II but in none of the animal breakage of horn plate was seen in group II and III. Radiographically, presence of horn plate did not show any untowards reaction at the site of contact with host bone in group II and III during the period of observations.

Osteomedullogram performed at day 77 revealed beginning of remodelling process of tibial fracture in all the three groups suggesting that horn plates are comparable to stainless steel plates as regard to their mechanical properties in the internal fixation of tibial fractures in younger calves upto 120 kg body weight. Anterior and medial surface of tibia seems to be tension band sides of the tibia in bovine.

Evaluation Of Bovine Horn Plates Vis a-Vis Stainless Steel Plates For Tibial Fracture Repair In Calves

T. K. Gahlot,

Department of Surgery and Radiology,

H. A. U., HISAR.

The experimental study was conducted in 26 calves to investigate the efficacy of double plating with bovine horn plates and stainless steel plates for mid-diaphyseal tibial fractures in calves.

Clinical and radiological examination revealed rigid immobilization with an early rehabilitation and radiodense callus formation in both the groups. Osteomedullography and angiography revealed an early reconstitution of intraosseous circulation in both the groups.

Histopathological examination of callus revealed early establishment of Haversian system with thick compact type of trabeculae formation at fracture site in animals with steel plates and horn plates. It was concluded that both types of plates provide rigid immobilization but horn plates are at risk of breakage in absence of external support.

Evaluation Of Encasement Technique In Experimental Tenorrhaphy Of Tendo-Achilles In Buffalo Calves

P. S. Solanki, S. C. Ojha and D. P. Amin,

Department of Clinics, College of Veterinary

Science and A. H., Gujarat Agricultural University

Sardar Krushinagar-385 506.

Efficacy of nylon mesh and auto skin encasement over simple tenorrhaphy was assessed in 18 male buffalo calves, divided in three groups equally. Tendo-Achilles was sectioned surgically and repaired by modified Bunnell-Mayer technique, following encasement with nylon mesh/auto skin. Clinical and fasciographic evaluation revealed that nylon mesh encasement was preferable over simple tenorrhaphy or auto skin encasement.

A Comparative Study on the Osteoinductive, Healing Process and Fate of Different Types of Allogeneic and Xenogeneic Bone Grafts

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Division of Experimental Medicine and Surgery,
Indian Veterinary Research Institute,
IZATNAGAR-243 122 (UP)

Forty trials on the use of preserved allogeneic and xenogeneic cortical bone grafts were conducted in twenty animals. The different methods used for the preservation/treatment of bone grafts were autoclaved allogeneic, Deepfrozen allogeneic, Fresh xenogeneic, Decalcified xenogeneic and Formalin preserved xenogeneic.

Twenty cow calves in age group of $1\frac{1}{2}$ to 3 years were divided randomly in five groups of 4 animals each. Both metacarpus bones of an animal were used for creation of rectangular defect (2 cm \times 5 cm) leading to trials in each group. One type of above mentioned grafts was grafted in animals of respective groups. The grafts were evaluated for host bone reaction, healing process and osteoinductive, osteogenic properties and fate of different grafts on the basis of clinical, radiographic, angiographic, osteomedullographic, tetracycline labelling and histopathological observations.

Observations made at different interval revealed that deep frozen allogeneic bone grafts were resorbed and replaced by new bone rapidly. The autoclaved allogeneic bone grafts showed slow resorption but induced extensive new bone formation. Amongst xenogeneic bone grafts, fresh xenogeneic bone grafts showed rapid resorption and replacement by new bone followed by decalcified and formalin preserved xenogeneic bone grafts. However, none of the grafts studied showed cellular contribution towards new bone formation.

A Study on the Repair of Severed Tendoachilles Using External Iron Crutch Splint in Bovine

Prem Singh and Jit Singh,
Department of Surgery and Radiology,
H. A. U. HISAR,

A study was done on six healthy male buffalo calves weighing 70 to 150 kg

to evaluate the healing of severed achilles tendon after its repair by placing the distal figure of eight knot of braided black silk no. 3 with external immobilization by application of iron crutch splint. The healing process was assessed on the basis of clinical observation and fasciography. Animals were having difficulty in assisted standing and use to drag the operated limb while walking upto 5 days post surgery. The animal showed progressive weight bearing ability and were able to bear near normal weight on operated limb by 30th day. Fasciography demonstrated almost complete union of severed tendon with mild adhesions with surrounding structures. The external iron crutch splint which was removed after one month resulted in pressure sores. After removal of splint calves showed limping of the operated limb, however, they were able to bear complete weight by 20 day.

Studies on Repair and Healing of Flexor Tendons in Bovine

L. V. Singh and Y. S. Bhatia,

College of Veterinary Science,

MATHURA.

Superficial and deep flexor tenotomy and tenectomy was experimentally performed in eighteen buffalo calves. The repair was done by different methods i.e. by simple cotton thread (Group-I), simple cotton thread and autogenous fascial slips (Group-II) using Bunnell-Mayer suturing technique in both group. In group-III where tenectomy was performed creating 2 cm gap repair was done by grafting autogenous fasciata in the gap and severed ends were reunited with cotton thread. The immobilization in all animals was done by using high heeled shoe which anchored to the aluminium ring at the tuber calcis by wire.

The wire was removed from all the animals on 10th post-operative day while shoes were removed on 10th, 20th and 30th post-operative day in each group. After removing the shoe, gait and stance were noted and animal were sacrificed. The tendons from the tenorrhaphy site were collected and observations were made regarding color of the tissue, local tissue reaction, healing and peritendinous adhesions.

The results revealed that immobilization technique was quite satisfactory and high heeled shoe was found very advantageous in tendinous healing.

Scope Of Autogenous Synovia Transfusion For Treatment Of Traumatic Arthritis In Cow Calves And Goats.

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College of Veterinary & Animal Science,
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Traumatic arthritis of knee joint was experimentally produced in male cow calves by injecting 0.25 ml of turpentine oil. Acute typical arthritis was produced within 24 hours. Autogenous synovia from contralateral joint (1 ml) was injected intrarticularly in the affected joints after three days of production of arthritis. The symptoms disappeared within 20 days after synovial injection. The autogenous therapy was also successful in a clinical case of kid suffered from arthritis.

Effect Of Electromagnetic Stimulation On Osteogenesis In Long Bone Fracture Of Calves.

(An Experimental Study)

Anil H. Ulemale, and P.E. Kulkarni,
Department of Surgery and Radiology,
Punjabrao Agricultural University,
Akola, (Maharashtra)

Experimental study was conducted on 6 clinically healthy calves divided into groups of 3 animals in each group. Comminuted midshaft fracture of metacarpal bone was created in all the animals of both the groups by giving a blow with an iron bar. Group I was treated as control. Immobilization was done with plaster of paris. Group II electromagnetic field stimulation of 65 Hz was given continuously for 28 days.

The healing process was judged clinically, radiographically, biochemically and histomorphologically. Clinically, immobilization was perfect. Radiographs of group II showed complete obliteration of fracture gap with dense callus as compared to that in group I, at 29 days. Osteoblastic activity was better in Group II as compared to that in group I. Biochemical evaluation showed no correlation with healing process.

Treatment Of Severely Damaged Diaphyseal Fracture Of Long Bones Using Entire Segmental Allografts.

(An Experimental Study)

Asli J. Urmale and P.E. Kulkarni,
Department of Surgery & Radiology,
Punjabrao Agricultural University,
Akola (Maharashtra)

Experimental studies were conducted on 6 clinically healthy calves which were divided into 2 groups of 3 animals each. A 2 cm long entire segmental bone graft harvested from diaphysis of an animal of Group I was preserved at -20°C for a week, and then transferred in the defect of the same size created in the animal of Group II. The graft was immobilized with stainless steel plates and external co-aptation with plaster of paris cast. Healing was evaluated clinically, radiographically, biochemically, and histomorphologically.

Clinically, the animals showed full weight bearing. Radiographs in Group II revealed acceptance of the graft with new bone formation at the edges. Histomorphologically, osteoblastic activity was better evident in Group II as compared to that in Group I. Biochemical evaluation showed no significant differences in both the groups nor any correlation with the healing process.

Comparative Studies On The Feasibility Of Autogenous Grafts For Immobilization Of Experimentally Induced Subluxation Of Scapulo-Humeral Joint In Goats.

K.S. Dhillon, D.S. Chouhan, N.R. Purohit, Charnder Kala
and R.J. Chaudhary
College of Veterinary and Animal Science,
Rajasthan Agricultural University,
Bikaner (Rajasthan).

An experimental study was carried out to evaluate the feasibility of autogenous

grafts viz : the tendon of the peroneus longus muscle and fascia lata strip for immobilization of experimentally induced subluxation of scapulohumeral joint in goats. After repositioning of the head of humerus in glenoid cavity, the autogenic graft was passed through the created holes in the shape of figure of eight. A Surgeon's knot was applied by the free ends of the autogenic graft, then the free ends were reversed and sutured to itself. The efficacy of the graft was also evaluated radiologically, histopathologically and the results of observations are discussed. Both transplants showed their utility but fascial transplant proved better tissue than the tendon of peroneus longus.

Tissue Reaction Towards Horn Implant In Comparison With Standard Orthopaedic Implants (Steel Plate)

S.S. Marudwar, M.S. Dhakate, B.B. Gupta, A.M. Pawde,

A.K. Sharma and I.K. Dubey

Department of Surgery, Nagpur Veterinary College,

Nagpur (M.S.)

Horn and steel implant of $5 \times 5 \times 5$ mm size were implanted 1 cm deep in intermuscular space on either side of vertebral column in twelve clinically healthy male buffalo calves. Tissue reaction caused by alcohol sterilized horn implant was little more than that caused by alcohol sterilized stainless steel implant on 7th day. But tissue reaction caused by horn implant sterilized by autoclaving was comparable with autoclaved stainless steel implant. At 14th day the tissue reaction caused by alcohol sterilized horn implant was accompanied by young growing blood vessels, accumulation of numerous inflammatory cells around them and necrosis at some places. Tissue reaction caused by alcohol sterilized stainless steel implant was much milder. Tissue reaction of horn implant sterilized by autoclaving was milder than that caused by alcohol sterilized horn implant. The degree of reaction was almost comparable to that caused by autoclaved stainless steel implant at 14 day.

An Experimental study To Evaluate The Effects Of Compression On Articular Cartilage Of Dogs

S.K. Agarwal, Rajesh Gaur and Nirmal Jain
Department of Orthopaedics,
S.P. Medical College, Bikaner.

The study was conducted on 24 dogs, divided into two groups, since the anatomy of knee joint of dog resembled with human knee. Forced immobilization was achieved by POP GT cast and Charnley's clamp. Dogs were sacrificed at 1st, 3rd and 6th week and macroscopic and microscopic examination of articular cartilage was done. The degenerative changes in cast group were, milder than that of clamp group. The changes were predominantly seen at site of contact of articular cartilage and were related to duration of immobilization as well as to mode of immobilization.

Small Animal Orthopaedics And Radiology Session

Chairman : Dr. R. L. N. Rao

Rapporteur : Dr. K. K. Mirakhor

Osteogenic Sarcoma Of Femoral Head In A Dog

S. K. Pandey, V. P. Chandrapuria and M. K. Bhargava,
College of Veterinary Science and Animal Husbandry,
Jabalpur (M. P.)

A Labrador dog aged about 3 years was referred with the history of lameness. The signs of lameness appeared four months back without improvement with medical therapy. Two month later animal developed swelling of left hind limb which did not respond to therapy. The animal was dull with marked anorexia and swelling extending from hip to claws. It developed paralysis of hind quarters 8 days before death. Palpation showed intense pain on the hip and stifle joint. Radiographic examination of left hip joint revealed sclerotic and osteolytic irregular lesions on the femur which had "sun burst" appearance, suggestive of osteogenic sarcoma.

A New Technique of Open Reduction of Old Coxofemoral Luxations in Canines

A. K. Srivastava and Ramjanam Singh,
Genetic Therapy Section,
Veterinary Polyclinics,
Jalpaiguri (U. P.)

A new technique for open reduction of old coxofemoral luxation in canines has been developed, by the use of orthopaedic stainless steel wire in figure of eight fashion. This new technique is quite easy, viable and free of some lacunas associated with traditional techniques.

In the new technique the dorsal approach using gluteal muscles tenotomy was found most convenient for application of fixation device, the figure of eight shape being. This technique was found ideal and proper. Abduction adduction and flexion were achieved.

Repair Of Radius Ulna Fracture With Horn Plate In A Dog

Deep Singh Gill, S. N. Sharma, V. K. Sobti and K. I. Singh,
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Punjab Agricultural University, LUDHIANA.

The transverse mid-shaft fracture of radius-ulna in a dog was repaired by a single, four holed horn plate fixation. About a fortnight after repair the animal gnawed at the fracture site and exposed horn plate at its distal two screws.

Weight bearing on the affected limb was moderate by 8th day and satisfactory by 12th day. Satisfactory mobility was seen within a month of fracture repair. Radiographs revealed satisfactory alignment of the fractured fragments, good periosteal lipping at 30th day, fair calcification at 45th day and good calcification alongwith continuity of medullary canal on 60th day. Thereafter horn plate was removed and fracture line was hardly discernible.

Contrast Radiography In The Determination Extent Of The Development Of Terminal Bowel In Atresia Ani Et Recti In Calves

T.B. Sen

Department of Surgery and Radiology,
Bidhan Chandra Krishi Viswavidyalya,
West Bengal.

Radiological study using barium meal was done on six cases of atresia ani et recti in female new born calves. The study revealed barium filled terminal bowel in different stage of development with varying distances from the potential anatomical location of the anus. The gas caping at the terminal end was another noticeable feature which helps to locate the bowel end.

Radiographic Diagnosis Of Some Uncommon Disorders In Animals

C.C. Wakankar

Department of Surgery and Radiology,
Bombay Veterinary College, Bombay.

Some uncommon disorders diagnosed during routine radiographic examination at the college hospital are presented herewith.

A marked lordosis of the thoracic and lumbar spine in a lion cub with posterior paresis.

—Hypertrophic pulmonary osteoarthropathy involving the left and right radius ulna, tibia fibula, metacarpus and metatarsus of an adult dog with soft tissue swelling of the knee and hock joints. Hypertrophic osteodystrophy of the radioulna and tibiofibula of a young dog with similar joint swellings.

—Premature traumatic closure of the ulnar epiphysis in two dogs with anterior deviation of the manus involving only one limb in each case.

—A foreign body in the rumen in one goat and an inguinal herniation of a pregnant uterus in another.

Scapular Osteo Sarcoma In A Labrador Dog

K. Pratap, G. R. Singh, A. K. Bhargava,
Division of Experimental Medicine & Surgery,
VRII, Iratnagar, U. P. 243 122.

A three years old Labrador dog was presented with a history of hard painful growth on right shoulder region along with flexion of fetlock Joint. X-ray examination showed rarefaction of scapular region. There was periosteal proliferation with osteolysis of scapular blade and body of the scapula. Histopathological examination revealed short spindle shaped osteoblast cells with ovoid nucleus in various directions. Based upon the radiological and histopathological observations, the case was diagnosed to be of osteo-sarcoma. Since the loss of bone and deformity was irreparable, the animal was euthanised.

Hydronephrosis With Osseous Metaplasia Of The Renal Pelvis In A Young Alsatian Dog—A Case Report

N. N. Balasubramaniam, W. P. Archibald David, S. Thilagar,
T. N. Ganesh and M. S. Dewan, Muthu Mohamed,
Department of Surgery, Madras Veterinary College,
MADRAS.

An Alsatian dog aged 14 months was presented with a history of progressive abdominal distension. Palpation of the abdomen revealed a tense fluctuating cystic mass. Plain and contrast radiography revealed a dense cystic mass in the mid-abdo-

minal region. After laparotomy and after draining 7.5 liters of fluid from the cystic mass it was found to be a grossly enlarged left kidney and a portion of ureter (hydronephrosis with hydroureter). Nephrectomy was done with great care. Detailed examination of the mass showed total stenosis of the ureter, 5 cm away from the renal pelvis, suggestive of congenital etiology. Histopathology revealed osseous metaplasia of renal pelvis. Post-surgical excretory urography revealed compensatory hyperplasia of right kidney. Recovery was uneventful.

Efficacy Of Processed Allografts In Experimental Ulnar Fracture In Dogs

A. M. Pawde,
Nagpur Veterinary College,
NAGPUR.

Osteoperiosteal defect in midshaft of ulna of 12 dogs by osteotomy to study the efficacy of dried partially decalcified allografts of ulna which were treated with 0.6 N HCL for 36 hours. The radiological examination on 0, 6th and 15th weeks was done. Histopathological examination was carried out on 3rd, 6th and 15th weeks. Osteoinduction in dried partially decalcified allografts was satisfactory and showed minimal tissue reaction.

Evaluation Of Collagen Therapy In Experimental Osteomyelitis In Dogs

A. C. Varshney and Harpal Singh,
Department of Surgery and Radiology,
G. B. Pant University of Agriculture and Technology,
Pantnagar (U. P.)

Osteomyelitis was induced in the tibia of 36 dogs by injecting hemolytic strain of *Staphylococcus aureus*. Clinical, radiological and histological studies of the diseased tibia were conducted upto 15 weeks to study the response of diseased bone to parenteral therapy of Oxytetracycline in cases of closed wounds and surgical curettage, antimicrobial irrigation alongwith parenteral oxytetracycline therapy in animals carrying open wounds. The reversal of reaction was evidenced radiologically and histopathologically.

The surgical curettage alongwith irrigation of lesions was observed to be an effective method for bringing an early recovery in aggravated cases of osteomyelitis. The addition of collagen reduced the healing period approximately by 3 weeks in comparison with non-collagen treated animals of closed and open wound groups of osteomyelitis.

Bone Healing In Partial And Complete Thyro- Parathyroidectomized Rabbits

L. V. Mogha, G. R. Singh and H. C. Setia,

Division of Experimental Medicine and Surgery,

L. V. R. I., Izatnagar (U. P.)

Eighteen adult rabbits were divided in three groups, i. e. group I (6) and group II (8) with partial and complete thyroparathyroidectomy, respectively before creating transverse mid shaft fracture of radius under general anaesthesia. Group III (4) was used as control where only fracture of radius was created. Ulna was kept intact in all the animals. No means were used to immobilize the fracture.

The results based upon radiographic and histopathological observations suggest that bone healing may be delayed due to poor mineralization and lack of osteoblastic activity in the absence of parathyroid hormone.

Anaesthesiology Session

Chairman : Dr. Amresh Kumar

Rapporteur : Dr. V. K. Sobti

A Study On Equine Balanced Anaesthesia In Race Horses

L. Samsunder Rao and R.L.N. Rao
College of Veterinary Sciences,
Hyderabad

Three different anaesthetic combinations were evaluated in normal healthy Indian thoroughbred race horses. They were (a) Promazine, xylazine, glycerile guaiaconate and thiopentone, (b) Acepromazine, xylazine, glycerile guaiaconate and thiopentone, (c) Xylazine and Ketamine. All the horses were clinical cases that underwent body surface surgery. Heart rate, gingival perfusion time, respiratory rate, corneal reflex, palpebral reflex, muscle relaxation, E.S.R., P.C.V., Hb content, urine pH, color, transparency and presence of albumin, were recorded before and after surgical anaesthesia.

The changes noted were different with the use of each combination. The first and second combination were found to be suitable for long duration operation. The third combination (costliest of three combination) is most suitable for short duration anaesthesia. The xylazine-ketamine combination brought insignificant changes in the physiological parameters measured.

Studies On The Management Of Anaesthesia For Castration In Horse

S. Bhattacharya, P.K. Samanta,
Indian Chandra Krishi Vishva Vidyalaya,
West Bengal

The effects of atropine sulphate-diazepam-lignocaine hydrochloride combination for castration by open method was studied in six horses. Diazepam was administered i.v. @ 0.4mg/kg body weight. Thirty minutes after s/c injection of atropine sulphate. The deeper structure of the spermatic cord, at the highest point of the inguinal area, were anaesthetized by injecting 10 ml of 2% lignocaine hydrochloride into the mass of the cord. Diazepam premedication produced quite induction and excitement free recovery. There was no marked variation in haematological profile and physiological parameters. Except PCV, none of the parameters

related to erythrocytes were significantly affected. Duration of sedation was about 45 minutes.

Prolongation Of Anaesthesia For Surgical Removal Of Brisket Tumor In Mule—A Case Report.

M.M S Zama, R.S. Rawat, B.A. Moulvi and S.S. Hussain
Army Hospital, Srinagar

A 9 year old mule had an elliptical lump in its brisket region for the last six months. The lump was fibroma like hard, encapsulated and interfering with the movement of forelimbs. The general anaesthesia was induced with 5% thiopentone sodium @ 1 gm/ 90 kgs body weight I.V.

The mass was excised from the base. The general anaesthesia in the present case was sufficiently Prolonged with a slow drip which facilitated the completion of surgical operation smoothly and the animal recovered within 35-40 minutes after the drip (thiopentone dextrose solution) was discontinued

Haemodynamic, Blood Gas And Blood Biochemical Changes Following Chloral Hydrate-Magnesium Sulphate Sedation In Calves

A.G.D. Costa, A.P. Singh, Jit Singh and P.K. Peshin
Department of Surgery and Radiology,
Haryana Agricultural University, Hisar.

The effects of administration of chloral hydrate-magnesium sulphate solution (15%) in the ratio of 2 : 1 were evaluated in 12 calves weighing 89 to 120 kg. The mean dose was 1.3 ml/kg. This combination produced good analgesia and muscle relaxation for 35.2 ± 3.6 minutes as evidenced by clinical signs and EEG. The H₂O, PCV, total proteins, BUN, Blood glucose and plasma concentration of creatinine, sodium, potassium, chloride and calcium were not effected while inorganic phosphorus decreased on fifth day after administration of drug. There were no significant changes in rectal temperature and respiratory rate but hypercarbia and hypoxaemia were significant. Significant reduction in systolic, diastolic and pulse pressure were recorded by

MAP remained within safe limits. The tachycardia was negatively correlated ($r = -0.732$) with MAP while heart rate or MAP were not correlated with CVP which was not affected.

Haloperidol As A Premedicant For Thiopental Anaesthesia In The Dog

V.K. Sobti, Kushpalinder Singh, P.S. Bansal, Narinder Singh and S.S. Rathor.

Department of Surgery and Radiology,
Punjab Agricultural University, Ludhiana.

Haloperidol was administered i.v. at the dose rate of 0.87 mg/kg body weight five minutes prior to thiopental anaesthesia in 5 dogs, aged 10-12 months. Animals required only 4.36 ± 0.24 ml of 5% thiopental sodium to achieve surgical anaesthesia which lasted for 37.5 ± 4.3 minutes. There was adequate muscle relaxation and loss of pedal and palpebral reflexes during thiopental anaesthesia. Five minutes after administration of haloperidol, there was no appreciable change in the various cardio-pulmonary dynamics but for a hypocapnoea and a mild hypotension and arterial hypoxaemia was evident. This combination was also employed in 14 clinical cases and proved extremely useful for orthopaedic surgery as the muscle relaxation was adequate and the reduction of the fractured ends was easier.

Ventricular Fibrillation - A Severe Hazard During Anaesthesia In Dogs

A.K. Srivastava and Ramjanam Singh

Canine Therapy Section, Veterinary Polyclinics,
Lucknow (U.P.)

During the anaesthetic and surgical procedures, the dogs used to become more susceptible to the various causes of ventricular fibrillation. The most accurate way to diagnose ventricular fibrillation is with an E.C.G. It is manifested by absence of heart rate, pulse rate and blood pressure, no capillary refill and venous return, dilated pupils and skin, no bleeding and dark blood at operation site.

Ventricular fibrillation requires an emergent and adequate treatment to prevent irreversible brain damage. The various treatments adopted are discussed.

A Study On Evaluation Of Xylazine And Ketamine Anaesthesia In Cow Calves : An Experimental Study

L. B. Sarkate, A. K. Bhargava and G. R. Singh
Division of Experimental Surgery and Medicine,
I. V. R. I, Izatnagar. (U.P.)

The study was conducted in 15 male cow-calves divided into three equal groups. Atropine sulphate was given 10 minutes prior to administration of xylazine and ketamine in group I and II. In group I, administration of ketamine was preceded by xylazine where as both were mixed and administered together in group II, while in group III one third of mixed dose was injected I. V. and two third was diluted with 150-200 ml of normal saline solution and was infused I. V. at the rate of 10 to 15 drops/minute.

There was no significant difference in the onset of anaesthesia among three groups. Recovery from anaesthesia was significantly faster in group I and III. Various associated cardiopulmonary changes are also discussed. Xylazine and ketamine combination was also used safely for induction and maintenance of anaesthesia for the repair of tibial fracture in cow calves and a reduction in doses of both the drugs by about 40% was observed.

Potentialiation Of Thiopentone Induced Anaesthesia with Diazepam-Pentazocine Premedication In Sheep

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The trial was conducted in four adult sheep. The intravenous administration of atropine sulphate @ 0.03 mg/kg, diazepam @ 0.5 mg/kg, pentazocine @ 1.5 mg/kg and thiopentone sodium 2.5%, till effect, one after the another at the interval of 5 to 10 minutes was carried out. Thiopentone sodium @ 15-17 mg/kg produced satisfactory anaesthesia and muscle relaxation lasted 34 ± 5 minutes. It was concluded that the duration and extent of thiopental induced surgical anaesthesia and degree of muscle relaxation in sheep can be increased by pre-administration of diazepam and pentazocine without affecting the physiological parameters adversely.

Drug And Dose Dependent Epidural Anaesthesia In Goat

R. S. Katoch and S. K. Pandey

College of Veterinary Science and A. H.,
Jodhpur.

1% solutions of procaine, lignocaine and bupivacaine hydrochloride were used in 3 different doses i.e., 3, 5 and 8 mg/kg as epidural anaesthesia in 6 male goats and their effects were studied.

The area desensitised by bupivacaine was wider than the area by lignocaine and procaine. The dose @ 8 mg/kg was unsafe for bupivacaine hydrochloride as it induced severe respiratory, cardiac and other complications. Administration of procaine caused slight rise in pulse rate, while it decreased with the use of lignocaine and bupivacaine. Respiration decreased insignificantly while temperature did not show any variations after administration of procaine, lignocaine and bupivacaine at three different dose rates.

Haematological and Biochemical Studies On Ketamine, Propofol And Propofol-Ketamine As General Anaesthesia In Diazepam Premedicated Goats (*Capra hircus*)

N. H. Kelaivala and R. R. parsanika,

Department of Surgery and Radiology,
Gujarat Agricultural University, Anand (Gujarat).

A study on the general anaesthesia was conducted in 12 goats, comprising three equal groups. Animals were premedicated with diazepam @ 0.75 mg/kg, i.v., 10 minutes prior to induction. In group I, anaesthesia was induced by ketamine @ 11 mg/kg i.v. whereas in group II anaesthesia was induced by propofol @ 4 mg/kg and maintained by the same agent @ 3 mg/kg. In animals of group III, anaesthesia was induced by propofol @ 4 mg/kg, i.v. and maintained with ketamine @ 11 mg/kg, i.v. .

Effects Of Epidural Injection Of Pathedine In Dogs

Amresh Kumar, N.S. Jadon and Bharat Singh

Department of Surgery and Radiology
College of Veterinary Sciences, Pantnagar.

Epidural administration of pethidine at the rate of 5 mg/kg in atropine sulphate at the rate of 0.05 mg/kg i.m., and chlorpromazine hydrochloride @ 1 mg/kg i.m., pre-medicated dose produced a very good state of deep analgesia lasting 25 to 40 minutes. It was accompanied by a significant increase in heart rate and slight decrease in rectal temperature. A significant increase in MAP was also observed. EKG was not pronouncedly affected. The acid base changes included a mild decrease in arterial pH and an increase in P_aCO_2 . Standard bicarbonate and base excess remains within physiological limits. Haemocytological (total erythrocytes and leucocytes, haemoglobin and PCV) were slightly decreased at one hour after pethidine administration. Total proteins and creatinine was not significantly affected, blood glucose showed a significant increase. This blood combination was tolerated well and no complication was observed. It also permitted successful completion of surgical operation viz cystotomy, ovariobysterectomy, enterotomy, castration, amputation of tail. There was good postoperative sedation, The recovery in all the animals was good and uncomplicated.

Preliminary Trials Of Domosedan* In Yak Calves (Bos Grunniens)

J. M. Nigam, S. K. Sharma, M. S. Kanwar and S. K. Rastogi

College of Veterinary & Animal Sciences,

H. P. Krishi Vishvavidyalaya, Palampur (H. P.)

Detomidine HCl was used in yak calves. Six experiments were conducted at 48 hr. interval. A dose rate of 0.025 mg/kg was used intravenously. The average weak time, down time and recovery time were 1.55 ± 0.25 min, 8.67 ± 2.7 (sitting) and 11.33 ± 3.33 (lateral), 39.17 ± 3.72 (standing ataxia) and 52.0 ± 2.74 (Normal gait), respectively. Analgesia was evident after 5 minutes of injection which remained for 15-20 minutes. Urination was a normal feature immediately after injection and during recovery period. Bradycardia and oligopnea were seen. Haematological parameters and rectal temperature were not affected.

* Detomidine HCl.

Preliminary Studies on Regional Anaesthesia In Yak Calves

D. M. Nigam, S. K. Sharma and M. S. Kanwar

College of Veterinary & Animal Sciences

K. P. Krishi Vishvavidyalaya, Palampur (H. P.)

Epidural, paravertebral, Lumber, auriculopalpebral and peterson nerve blocks were tried in yak calves using 2% lignocaine HCl with adrenaline. Optimal dose of the epidural block varied from one to two ml into 1st or 2nd intercoccygeal space. For paravertebral block T₁₄, L₁ and L₂ spinal nerves were blocked using on an average 20 ml of the drug. Lumber epidural analgesia was achieved by injecting 5 ml of the drug in the 1st Lumber epidural space. 2 ml of the drug was required to achieve auriculopalpebral block while 10 ml of the drug was required to achieve peterson eye block. The extent and duration of the effect are discussed.

Pentazocine And Chlorpromazine Combination As Neuroleptanalgesic In Camels.

Shila Singh, P. K. Pesbin and D. Krishnamurthy

Chlorpromazine HCl and pentazocine lactate when given at a dose rate of 2 mg/kg b.wt. each, i. m., was found to be an effective neuroleptanalgesic in six camels. chlorpromazine and pentazocine each at dose rate of 2 mg/kg. b.wt. i. m. were also evaluated separately in 12 camels.

Chlorpromazine alone produced ataxia within 14.0 ± 1.023 minutes and recovered from it by 145 ± 9.23 minutes. Pentazocine lactate induced ataxia within 8.125 ± 0.76 minutes. The animals got up voluntarily after 151 ± 15.99 minutes and complete recovery occurred after 292 ± 6.94 minutes.

There was a significant increase in respiratory and heart rate. When these drugs were combined one after another, there was onset of ataxia after 14.43 ± 1.10 min. and camels remained calm, stable and docile. Animals recovered completely quite early (180 ± 15.67 min), than when these drugs were given alone. There were no significant changes in haematology and blood biochemistry when these drugs were given alone or in combination.

Small Animal Surgery Session

Chairman : Dr. A. P. Bhokre

Rapporteur : Dr. C. C. Wakanker

Follicular Cyst In The Ovary Of A Bitch

De, D.K. & Bose, P.K.

Department of Surgery and Radiology,

Bidhan Chandra Krishi Viswavidyalaya., Calcutta

A Lhasa Apso bitch aged about 8 years was brought to the Calcutta Canine Clinic with the Symptoms of low grade left sided abdominal pain. The history depicts that about one year ago the bitch was Sterilised since she was suffering from pyometra following repeated pseudo-pregnancies. The abdominal pain started about 5 months after the operation. An X-ray of the abdomen was made but nothing could be clearly diagnosed by the X-ray plate. As such, exploratory laparotomy was done after routine preparation.

Thorough search in the abdominal cavity revealed that the left ovary was enormously large in size containing a big cyst. The left and the right ovaries were removed and the abdomen was routinely closed. The bitch recovered with due post operative care and management. The interpretation of histopathological changes of the left ovary will be discussed with slides.

Adenocarcinoma Of A Canine Mammary Gland-Case Report

B. Sarma, S. Goswami.

College of Vety. Science

Assam Agril. University,

Guwahati-Assam.

A seven year old Alsation bitch was brought to the clinics with a large tumour on last left mammary gland. The bitch was anaesthetised under intraval sodium. The growth was removed surgically under general anaesthesia. The histopathological examination revealed it to be adenocarcinoma.

A Modified Technique For Surgical Management Of Chronic Otitis Externa In Dogs

A.K. Srivastava and Ramjanam Singh

I/C Canine Therapy, State Vety Polyclinic Lucknow;

Director, Animal Husbandry, Lucknow, U.P.

The technique provides drainage for the central ear canal. A curved and deep enough incision is made from the cranial border to caudal border of the pinna, dorsally to the granulomatous tissue; so as to include the cartilage of the pinna.

A blunt dissection of cartilage and granulomatous tissue is made to make five attachments. Then a second curved incision, 1-2 c.m. above the auditory meatus, depending on the extent of the unhealthy tissue is made ventral to the granulomatous tissue. Both of the incision meet cranially and caudally; allowing excision of the entire granulomatous region. The edges of the lateral ear resection are sutured routinely and the wound created by excising the granulomatous tissue is pulled together with three interrupted stay sutures. The rest of the incision is apposed with simple interrupted sutures.

Intussusception And Prolapse In Pups-Review Of Four Cases

T.N. Ganesh, N.N. Balasubramaniam, W.P. Archibald David

R. Suresh Kumar, Mala, S. Purohit and M.S. Dewan Matha Mohamed.

Department of Surgery

Madras Veterinary College.

MADRAS.

Four case reports of Intussusception and prolapse in pups are reported.

CASE REPORT I :

A case of double Intussusception with prolapse due to acute gastroenteritis was surgically corrected by laparotomy, resection of the intussuscepts (ileum and anastomosis).

CASE REPORT II :

A pupy with ileoileal Intussusception with prolapse due to foreign body trauma (sharp bone pieces) was successfully corrected by laparotomy and castration.

CASE REPORT III & IV :

Ileocaecocolic junction suffered Intussusception in 2 cases where the Drum alone was prolapsed. Laparotomy and subsequent manual correction was resorted. The faecal sample revealed heavy hookworm infestation.

A Complicated Case of Intestinal Foreign Body In A Dog

A. K. Srivastava, S. S. Mishra

Department of Surgery & Radiology

U.P. College of Veterinary Science & A.H.,

C.S.A. University of Agriculture & Technology

Mathura

A six months old G S D. pup brought to this department as a referred surgical case of ascending testis having none of the systemic symptoms.

Clinical examination, revealed an indolent swelling in the abdomen as a cold abscess instead of ascending testis. The radiograph of the abdomen revealed foreign body (a piece of wire) in ileum. The foreign body was removed by performing laparotomy and enterotomy. The proliferated mass of the abdominal muscles were removed to facilitating the abdomen in normal shape. Complete recovery was achieved within twenty two days.

Effect Of Vincristine On Clinical Cases of Canine Transmissible Venereal Sarcoma (CTVS).

Arun Kr. Das, Utpal Das, Debkumar Das

South Calcutta Veterinary Clinic, 59 Ramesh Mitra Road,

Calcutta-700 025

A trial was made with Vincristine @ 0.25 mg/kg b.wt. intravenously at weekly interval for three occasions in 24 naturally infected dogs. 23 cases including one bitch with metastasis underwent cent percent remission after 20 days of outset of therapy; the remaining bitch showed partial regression even after completion of fourth injection. Two dogs experienced transitory side effects. Haematological study revealed that TLC, DLC, Hb% and ESR were within normal limit. It was concluded that chemotherapy with vincristine is the convenient, safe and effective treatment of CTVS.

Obstruction Of Proximal Jejunum In A Dog—A Case Report

B. Ramesh Kumar, V. Ramaswamy and A. C. Subramaniam
Livestock Research and Development Centre, Erode.3.

A male crossbreed dog aged about one year was presented with the symptoms of anorexia, depression, abdominal tenderness and vomiting since last 5 days. Defecation was less frequent with the stools blood tinged, standard radiographic examination of the abdomen revealed a radio-opaque foreign body in the gas filled, dilated intestinal loops (proximal-jejunum). Exploratory celiotomy by mid ventral approach under general anaesthesia revealed the presence of a pebble stone obstructing the lumen of proximal jejunum. It was removed through an enterotomy incision made distal to and slightly over the foreign body. The intestinal wound was closed by two-layer inverting pattern with absorbable suture material. The abdominal muscle and skin wound were sutured by routine manner. The animal was put under intensive post-operative care and it made an uneventful recovery.

EXPERIMENTAL SURGERY

A Technique Of Nephrotomy And Surgical Approach To The Kidney In Dog - An Experimental Study

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Dept. of Surgery,
Bombay Veterinary College, Parel, Bombay-12.

Postoperative haemorrhage and persistent urinary fistula are the most frequent complications of nephrotomy in human, different surgical techniques have been described for nephrotomy whereas in dog all the workers have described single similar technique of nephrotomy. In the present study, a new technique of nephrotomy was employed and evaluated to overcome the complications. In human, the approach to the kidney is almost usually through the loin incision. In dog, the kidneys can be approached either through midline abdominal or high flank incision and, it is difficult to state which one should be preferred. Both these approaches were assessed for their suitability, in this study.

In all 16 dogs, divided in group-A and group-B of eight dogs each were

used. Two different techniques for nephrotomy (each in four dogs) were studied in group-A, and unilateral nephrectomy was studied in group-B. Midline abdominal and high flank approach to the kidney, each in eight dogs (in four dogs from each group) were studied. High flank approach was found better than midline abdominal, as it gave easy exposure and greater accessibility to the kidney. Although it required few minutes more for operation, with the use of new technique, haemorrhage was reduced and adhesions were negligible, so it may be used for nephrotomy in dog.

Histopathological Evaluation Of Involved Skin, Muscle And Peritoneum After Repeated Laparotomy On The Same Line Of Incision In Canines

B. B. Das, D. B. Mukherjee, and P. K. Samanta
Deptt. of Surgery & Radiology, F/o Vety. & Animal Sciences,
Bidhan Chandra Krishi Viswavidyalaya,
MAHANPUR, NADIA, W. B.

Study was carried out in 42 healthy Mongrel bitches of same age group divided into 7 equal groups under isomanagtrial conditions. Group-O served as control, while the animal of Group A, B, C, D, E and F were subjected to midventral laparotomy once, twice, thrice, four times, five times and six times respectively. In each and every occasion of laparotomy, incision was given on the same line. Time interval between two successive laparotomy were kept at 100 days. All the bitches were sacrificed after 100 days of last operation. The scar portions of skin, muscle and peritoneum were histopathologically studied and the observations are discussed.

Studies On Cardiac Contractility By Aqueous Extract of T. Arjuna- Vitro Studies In Frog's Heart.*

Ravi Parkash, and A. K. Bhargava
Indian Veterinary Research Institute,
Izatnagar-UP.

5% aqueous extract was tried in frog's heart (Straub's heart) to understand its possible mechanism of action. Heart was flushed with frog Ringer solution and drug was also diluted in $\frac{1}{4}$ Ca⁺ Ringer. The straub's preparation of heart was constantly bubbled with oxygen in bath fluid and stabilized by $\frac{1}{4}$ Ca⁺ Ringers at least for 30 minutes. 5% aqueous extract showed the stabilization of heart rate & rhythm in the drug induced cardiac arrhythmia. In limited dose range of 0.0001-0.0003 µg/ml of Ringer solution drug produced longer lasting positive inotropic effect without altering heart thus imparting better oxygenation of myocardium by opening of intra-coronary arteries for revitalization of ischaemic area. The study will support that goats subjected to acute coronary occlusion, survive better under influence of T. arjuna.

A New Technique Of Simultaneous Craniotomy And Spinal Puncture In Rabbits : An Experimental Surgical Approach

S. Bhaskara Rao,
and
V.V. Radhakrishnan,

The efficacy and effects on biological system, of two materials viz chytosan, NEU/NMU, was evaluated in rabbits. A new surgical method of simultaneous craniotomy and spinal puncture has been tried and the attempt successfully been made for direct contact of these material with brain.

The detailed surgical protocol including the anaesthetic regimen rationalised herewith Ketamin and Diazepam, the post surgical results etc. will be discussed.

Effect Of Aqueous Extract Of Terminalia Arjuna-A Clinical, Haematological And Electrocardiographic Study

N.S. Yadav, A.K. Bhargava and C.S. Celly
Division of Experimental Medicine & Surgery
Indian Veterinary Research Institute
Izatnagar

The present Study was conducted in 12 rabbits and 12 goats. The rabbits were divided into two groups (A1 and A2) of six animals each. In group A1, 1 ml of aqueous extract of *T. arjuna* was injected intravenously and in animals of group A2, 1 ml of placebo (sterile on the basis of general behaviour and changes in rectal temperature, respiration and heart rate). The goats were also divided into two groups (B-1 and B2) consisting of six animals each. In animals of group B1, 2-2.5 ml of aqueous extract of *T. arjuna* was given intravenously on the basis of their body weight. In animals of group B2 which served as control, sterile normal saline solution was injected intravenously. In goats, in addition to rectal temperature, respiration and heart rate, effect on electrocardiogram in lead II and haematology were also studied.

No change in general behaviour was observed in rabbits as well as in goats after injection of aqueous extract of *T. arjuna*. No significant change in rectal temperature, rate and haematology was observed throughout the period of observation.

The heart rate however showed a significant decrease ($P < 0.05$) immediately after injection of the drug in rabbits as well as in goats. The bradycardia persisted for 30 minutes thereafter there was a gradual increase in the heart rate and it returned to preinjection values by 90 minutes post-injection. Besides this no marked change in the duration, recorded at different intervals. The result suggest that that the intravenous injection of aqueous extract of *T. arjuna* in rabbits and goats except producing transient bradycardia, failed to demonstrate any adverse effect in animals during the experimental trial.

Role Of *T. arjuna* As A Cardioprotective Agent In Experimentally Induced Myocardial Ischaemia In Goats

N.S. Yadav, A.K. Bhargava and O.P. Gupta
Division of Experimental Medicine & Surgery
Indian Veterinary Research Institute

The study was conducted on 12 adult goats randomly divided into two equal groups. In animals of group I, injection of aqueous extract of *T. arjuna* was administered, 10 minutes before subjecting them to ligation of left anterior descending (LAD) coronary artery. Under positive pressure ventilation. In animals of group II, the ligation followed in the same manner but with prior injection of sterile NSS given

intravenously 10 min prior to coronary ligation. The two groups were evaluated and compared on the basis of survival time, clinical, haematological, biochemical, haemodynamic, coronary, angiographic and pathomorphological studies.

No casualty was recorded in group I. However, five out of 6 animals died within 48 hours of coronary ligation in group II. There was significant fall ($P < 0.01$) in rectal temperature but the fall was comparatively more in group II. The respiration rate showed initial decrease in animals of group I whereas it increased non-significantly in the animals of group II. A significant fall ($P < 0.01$) in carotid artery pressure was recorded in both the groups. However, it returned to preligation values within 30 minutes in animals of group I. In group II, the fall in carotid artery pressure persisted till the death of animals.

There was initial significant decrease ($P < 0.05$) in heart rate of animals of group I but in animal of control group (II) no definite pattern in the heart rate was recorded. The electrocardiographic changes recorded in lead II were displaced S-T segment, increased amplitude and duration of T-wave reversal of QRS complex and delayed Q-T segment. These changes were more pronounced in-group II. The haematological examination revealed a significant increase in neutrophil count ($P < 0.05$) and decrease in lymphocytes ($P < 0.01$) in animals of group II. Serum sodium showed initial non-significant decrease in both the groups which returned to normal limits in group I and increased significantly ($P < 0.05$) in group II. Serum potassium showed insignificant increase in both the groups during postligation period. Coronary angiography showed revascularization of myocardium in the area distal to ligature through opening of inter and intra coronary tributaries. Pathomorphology also revealed sequential myocardial tissue healing in animals of group I. Intravenous aqueous extract of *T. arjuna* behaved as a potent cardioprotective herbal drug to combat myocardial ischemia.

Comparison Of Split Sternothyroideous Pedicle And Gastric Seromuscular Patch Grafts For Oesophagoplasty In Dogs

Amar Pal, B Singh and A. Kumar

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G. B. Pant University of Agriculture and Technology, Pantnagar.

Sternothyroideus pedicle graft and gastric seromuscular patch graft were used for oesophagoplasty in dogs. Breaking strength, tensile strength, extensibility and energy absorption in muscular flap graft defect were significantly higher than that of gastric seromuscular grafted defects at 7th postoperative day. Macroscopically the healing was complete in all the animals by 30th postoperative day except in one dog where small area of graft was left uncovered with mucosa. The histopathological and histochemical studies of healing sites revealed infiltration of enormous neutrophils, lymphocytes and few macrophages at 7th postoperative day in both the grafts. At 30th postoperative day collagen fibers were present in greater quantities and there was absence of mucous gland below the regenerated stratified squamous epithelium. At 60th postoperative day the quantum of stratification of regenerated squamous epithelium was more. Both the grafts were taken up well and healing took place through connective tissue formation. These grafts can be used to replace defects in oesophagus in dogs.

"An Experimental Study On Oesophageal End To End Anastomosis By Inverting Techniques In Dogs"

Deptt. of Surgery & Radiology
College of Veterinary & Animal Sciences,
BIKANER.

Naveen Kumar

End to end anastomosis of cervical oesophagus was performed in dogs by inverting & everting suture techniques using catgut No. 3/0 & braided black silk No. 3/0 suture materials. On the basis of gross, radiographic & histomorphological examination the inverting suture technique was found to be superior than everting technique and silk a better suture material than catgut.

Young Surgeon's Award Session

Chairman : Dr. A. K. Bhargava

Rapporteur : Dr. D. C. Dhablania

Field Veterinarian's Award Session

Chairman : Dr. A. A. Khan

Rapporteur : Dr. S. C. Ojha

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