

**FOURTEENTH CONGRESS  
OF  
INDIAN SOCIETY FOR  
VETERINARY SURGERY**

*Symposium : Advances in Veterinary Surgery in  
Pets and Farm Animals*

**18-20 February, 1991**



**PUNJAB AGRICULTURAL UNIVERSITY  
LUDHIANA-141 004-PUNJAB, INDIA**

# SOUVENIR

**FOURTEENTH CONGRESS  
OF  
INDIAN SOCIETY FOR VETERINARY SURGERY  
AND  
NATIONAL SYMPOSIUM  
ON  
ADVANCEMENTS IN VETERINARY SURGERY  
IN PETS AND FARM ANIMALS**

18-20 FEBRUARY, 1991

---

*Patron* : Dr. KHEM SINGH GILL  
*Chairman* : Dr. BALWANT SINGH  
*Convenor* : Dr. S. S. RATHOR

---

**PUNJAB AGRICULTURAL UNIVERSITY  
LUDHIANA, PUNJAB-141 004.  
INDIA**

## ORGANISING COMMITTEES

### *Reception :*

Dr. Balwant Singh (Chairman)

Dr. P. N. Verman

Dr. S. S. Rathor

Dr. S. N. Sharma

Dr. R. D. Sharma

Dr. M. S. Kwatra

Dr. R. P. Saigal

Dr. P. P. Gupta

Dr. M. S. Setia

Dr. S. S. Sodhi

Dr. D. C. Dhablania

Dr. K. S. Dhillion

Dr. H. S. Bali

Dr. D. C. Naurial

### *Scientific and Souvenir :*

Dr. S. S. Rathor

Dr. K. K. Mirakhur

Dr. Sukhpal Singh

Dr. Rakesh Chaudhary

Dr. P. S. Bansal

Dr. D. C. Dhablania

### *Registration :*

Dr. S. N. Sharma

Dr. V. K. Sobti

Dr. S. K. Chawla

Dr. P. S. Bansal

### *Lodging and Transport :*

Dr. D. C. Dhablania

Dr. Prabhjit Singh

Dr. H. K. Verma

Dr. Rajiv Khosla

### *Food and Refreshment :*

Dr. B. S. Taneja

Dr. S. S. Sidhu

Dr. Prabhjit Singh

### *Decoration and Audio-visual :*

Dr. K. K. Mirakhur

Dr. Sukhpal Singh

Dr. K. S. Roy

# Indian Society For Veterinary Surgery

## Executive 1989—91

<i>President</i>	:	Dr. A. K. Bhargwa (Since Deceased)
<i>Vice-Presidents</i>	:	Dr. D. S. Chouhan
		Dr. P. K. Bose
		Dr. P. A. Deore
<i>Secretary</i>	:	Prof. J. M. Nigam
<i>Jt. Secretary</i>	:	Dr. S. S. Marudwar
<i>Treasurer</i>	:	Dr. S K. Chawla
<i>Editor</i>	:	Dr. Amresh Kumar
<i>Zonal Secretaries</i>	:	
North	:	Dr. J. S. Chaggar
East	:	Dr. S. C. Pathak
West	:	Dr. D. A. Bajware
Central	:	Dr A. K. Srivastava
<i>State Representatives</i>	:	
Maharashtra	:	Dr. V. S. Patil
Rajasthan	:	Dr. Uday Veer Singh

(i)

(SESSION-I)  
(Experimental Surgery)

Date : 18-2-91  
Time : 11-30 A.M. to 1-00 P.M.  
Chairman : Dr. V. S. SARDA  
Rapporteur : Dr. JIT SINGH

<i>Code No.</i>	<i>Title</i>	<i>Presenting Author</i>
E-1(I)	The response of collagenase induced tandon injury and treatment with adequan	...A ORYAN
E-2(I)	The effect of locomotor activity on healing processes of tandon.	...A ORYAN
E-3(I)	Return of splinic functions after anti transplant of splinic tissue.	...KAMAL GUPTA
E-4(I)	Split thickness autogenous free skin transplantation in canines.	...M. R. WANI
E-5(I)	Pinch skin grafting in the gramlating wounds of canines.	...M. R. WANI
E-6(I)	Bovine factal cathetelization and hemodynamics : An Experimental study.	...I. V. MOGHA
E-7(I)	An experimental evaluation of cotton vascular grafts in abdominal aorta of dogs.	...A. M. PAWDE
E-8(I)	Efficacy of some indigenious drugs in tissue repair in buffaloes.	...V. K. SHARMA
E-9(I)	Comparative efficacy of honey and ampicillin in the repair of injected wounds in buffaloes clinical and histomorphological studies.	...S. K. GUPTA
E-10(I)	Comparative efficacy of honey and ampicillin in the repair of injected wounds in buffaloes II. biochemical study.	...S. K: GUPTA
E-11(I)	Circumferential tracheal re-section and end to and anastomosis in dogs- an experimental study.	...PRAKASH KINJAVDEKAR

( ii )

SESSION-II  
(Experimental Surgery)

Date : 18-2-91  
Time : 2-00 P.M. to 3-30 P.M.  
Chairman : Dr. P. E. KULKARNI  
Rapporteur : Dr. S. K. PANDEY

Code No.	Title	Presenting Authors
E-1(II)	The effects of omasectomy and reticulobomasal bypass in ovine (An Experimental study).	.. S. DEGHANI
E-2(II)	Clinical, physical and radiological observation following bladder reconstruction using different grafts in goats.	...B. V. SHIVAPARKASH
E-3(I)	Biochemical alterations following bladder reconstruction using different grafts in goats.	...B. V. SHIVAPARKASH
E-4(II)	Comparative study of different suture materials on diaphragm in buffalo calves.	...JAGMOHAN SINGH
E-5(II)	Comparative study of different approaches for diaphragmatic herniorrhaphy in buffaloes.	.. JAGMOHAN SINGH
E-6(II)	Effect of permanent unilateral parotid fistula in cow calves.	...S. C. SHARMA
E-7(II)	Estramiation of lacrimal functions in gaddi goats	...S. K. SHARMA
E-8(II)	Clinical evaluation of some biological tissues as an adjuvant to wound healing in large animals. I A microscopic study.	...K. K. GUPTA
E-9(II)	Clinical evaluation of some biological tissues as an adjuvant to wound healing in large animals. II A microscopic study.	.. K. K. GUPTA
E-10,II)	Electrocardiographic changes following experimental ligation of left anterior descending (LAD) coronary artery in calves.	...O. P. GUPTA
E-11(II)	Clinical and haemodynamic changes following experimental ligation of left anterior descending (LAD) coronary artery in calves.	...O. P. GUPTA
E-12(II)	Comparative studies on <i>Adhatoda Vasica</i> and Olive oil wound healing.	...M.M. S. ZAMA

( iii )

(SESSION-III)  
(Radiology and Orthopaedics)

Date : 18-2-91  
Time : 4-00 P.M to 5-30 P.M.  
Chairman : Dr. HARPAL SINGH  
Rapporteur : Dr. G. R. SINGH

<i>Code No.</i>	<i>Title</i>	<i>Presenting Author</i>
RO-1(III)	Radiodiagnosis in veterinary Practice-an update INVITED PAPER	...I. S. CHANDANA
RO-2(III)	Radiographic evaluation of autogenous bone marrow and plasma impregnated alcap ceramic implants in goats.	...S. K, MAITI
RO-3(III)	Triple fluochrome labelling study in the evaluation of different types of bone grafts and ceramic implants.	...S. K, MAITI
RO-4(III)	Radiographic evaluation of autogenous bone marrow and plasma impregnated decalcified allogenic bone grafts in goats.	.. S. K. MAITI
RO-5(III)	Evaluation of autoclaved and decalcified segmental cortical bone allografts in goats- Plain and contrast radiographic study.	.. S. K. CHAWLA
RO-6(III)	Angiographic study of uterus after repeated laparotomy and hysterotomy in canines.	...B. B DAS
RO-7(III)	Effects of different types of external splintage used in treatment of fractured long bones of goats and sheep.	...J. M. DOIFODE
RO-8(III)	A modified technique of open reduction of atlanto-axial subluxation in canines.	...A. K. SRIVASTAVA

( iv )

SESSION-IV  
(Anaesthesiology)

Date : 19-2-91  
Time ; 9-00 A.M. to 11-00 A.M.  
Chairman : Dr. AMRESH KUMAR  
Rapporteur : Dr. P. K. PESHIN

<i>Code No.</i>	<i>Title</i>	<i>Presenting Authors</i>
A-1(IV)	Therapeutic effects of paravertebral anaesthetic blockade for treatment of mastitis in buffaloes.	...N. S. JADON
A-2(IV)	Therapeutic effects of paranephric anaesthetic blockade in hepatitis in buffaloes.	...N. S. JADON
A-3(IV)	Detomidine as sedative- Studies in buffaloes.	...DAVOOD SHARIFI
A-4(IV)	Sedative effect of Detomoidine in infant calves.	...DAVOOD SHARIFI
A-5(IV)	Evaluation of Detomidine as a sedative in sheep.	...DAVOOD SHARIFI
A-6(IV)	A preliminary note on effects of epidencal administration of xylazine in buffaloes.	.. AMRESH KUMAR
A-7(IV)	Surgical anaesthesia by administration of diazepam and xylazine in dogs.	...AMRESH KUMAR
A-8(IV)	Thiopentone sodium : An experimental study on disposition kinetics and plasma protein binding in dogs.	...A. K. SRIVASTAVA
A-9(IV)	Study on cardiophlmonary parameters for diaphragmatic hernia.	.. JAGMOHAN SINGH
A-10(IV)	Posture induced change in base apex lead of electrocardigraph in goats.	...C. S. CELY
A-11(IV)	Comparative evaluation of various ECG components and cardiacvectors in horizontal and frontal planes in pastomina goats.	...C. S. CELLY
A-12(IV)	Evaluation of triflupromazine as a sedative in camel.	...D. B. PATIL
A-13(IV)	Effect of intra-articular injection of local anaesthetics and arthrocentesis on bovine synovia.	...D. B. PATIL



( v )

SESSION- V  
(Award and open house)

Date : 19-2-91  
Time ; 11-30 A.M. to 1-00 P.M.  
Chairman : Dr. J. M. NIGAM  
Rapporteur : Dr. A. P. SINGH

<i>Code No.</i>	<i>Title</i>	<i>Presenting Authors</i>
P-1(V)	Plastic surgery of skin in dogs (An experimental study of various autogenous free skin grafts.	...M. R. WANI
P-2(V)	A comparative study of free full thickness and pink grafting technique in the treatment of cutaneous wounds in dogs.	...S. V. VISHWASRAO
P-3(V)	Propofol as an intravenous anaesthetic agent in dogs (canis domestica)	...N. H. KELAWALA
P-4(V)	Tissue grafting on teat sinus for repair of teat obstruction in bovines.	...K. K. MIRAKHUR
	OPEN HOUSE	

(SESSION-VI)  
(Clinical Surgery Large Animals)

Date : 19-2-91  
 Time : 2-00 P.M. to 3-30 P.M.  
 Chairman : Dr. I. S. CHANDNA  
 Rapporteur : Dr. V. RAMAKUMAR

<i>Code No.</i>	<i>Title</i>	<i>Presenting Author</i>
LA-1(VI)	Surgical affections of livestock in Himachal Pradesh. INVITED PAPER	...J. M. NIGAM
LA-2(VI)	Castration of horses with primary closure and scrotal ablation-compared to open technique.	...S. DEGHANI
LA-3(VI)	Chronic otitis externa in bullocks and its surgical repair.	...V. D. AHER
LA-4(VI)	Rupture of urethra and sub cutaneous infiltration of urine in camels.	...T. K. GAHLOT
LA-5(VI)	Ventral herniography in horses.	...D. K. SHARMA
LA-6(VI)	A complicated case of ventral hernia in goats.	...M. HOQUE
LA-7(VI)	Caesarian section in bovines under some uncommon situations.	...M. HOQUE
LA-8(VI)	Comparative efficacy of caesarian section and fetotomy in handling dystocia due to pelvic fracture.	.. H P. S. KOCHAR
LA-9(VI)	Castration of horses using serotal ablation and primary closure technique. A review of ten clinical cases.	...R. R. PARSANIA
LA-10(VI)	Histoblastic all carcinoma in a buck.	...C. S. CELLY
LA-11(VI)	Surgical management of oesophageal amomolias in buffaloes (a report of nine clinical cases)	...PREM SINGH
LA-12(VI)	Macrostomus in calf.	...D. S. RADDY
LA-13(VI)	Surgical removal of a liposarcoma located around the large intestine in a jersey cow.	...S. K. TIWARI
LA-14(VI)	Surgical treatment of an extensive case of horn cancer in a cow bullock-a case report	...S. K. TIWARI

**SESSION- VII**  
(Clinical Surgery-Large and Small Animals)

Date : 19-2-91  
Time : 4-00 P.M to 5-30 P.M.  
Chairman : Dr. DEWAN MUTHU MOHAMMED  
Rapporteur : Dr. DIPAK DE

<i>Code No.</i>	<i>Title</i>	<i>Presenting Authors</i>
SA-1(VII)	Scope of small animal surgical practice in metropolitan citis. INVITED PAPER	...J. S. CHAGGAR
LA-2(VII)	Incidence of diaphragmatic hernia in bovines in Marathwara region.	...S. K. JAWALIKAR
LA-3(VII)	Ocular neoplasm and their surgical management in bovines- a report of five cases.	...P. V. PARIKH
LA-4(VII)	Clinical and microbiological study of cutaneous wounds in camel.	...N. R. PUROHIT
LA-5(VII)	A case of sialolith accompanying salivary fistula in a camel.	...P. H. TANK
LA-6(VII)	Bovine lameness in an organised farm.	...K. PRATAP
SA-7(VII)	Some diseases pattern of the conjunctiva and cornea in pet animals.	...K. OUAD
SA-8(VII)	Uterine and ovarian disgerminoma in a female dog.	...G. R. SINGH
SA-9(VII)	Sweat gland carcinoma with metastasis in fox-terrier dog.	...UTPAL DAS
SA-10(VII)	Surgical repair of bilateral mandibular fracture in a Dobarman dog.	...S. K. TIWARI
SA-11(VII)	Lymphosarcoma of the uterus and ovary in a German Apso bitch and its surgical treatment.	...S. K. TIWARI
SA-12(VII)	Transtonsilectomy by surgical diathermy in canines.	...A. K. SRIVASTAVA

( v )

SESSION- V  
(Award and open house)

Date : 19-2-91  
Time : 11-30 A.M. to 1-00 P.M.  
Chairman : Dr. J. M. NIGAM  
Rapporteur : Dr. A. P. SINGH

<i>Code No.</i>	<i>Title</i>	<i>Presenting Authors</i>
P-1(V)	Plastic surgery of skin in dogs (An experimental study of various autogenous free skin grafts.	...M. R. WANI
P-2(V)	A comparative study of free full thickness and pink grafting technique in the treatment of cutaneous wounds in dogs.	...S. V. VISHWASRAO
P-3(V)	Propofol as an intravenous anaesthetic agent in dogs (canis domestica)	...N. H. KELAWALA
P-4(V)	Tissue grafting on teat sinus for repair of teat obstruction in bovines.	...K. K. MIRAKHUR
	OPEN HOUSE	

## MESSAGE

**S. K. MISRA**

Secretary, DARE, & DG, ICAR.

I am extremely happy to note that the Indian Association of Veterinary Surgery during its 14th Annual Convention (18-20th February, 1991) is organising National Symposium on "Advances in Veterinary Surgery in Pets and Farm Animals" at College of Veterinary Science, Punjab Agricultural University, Ludhiana. The theme of the symposium is quite befitting in the present context, as Veterinary Surgery in India have made rapid strides in the last decade, and these advancements are being used for the benefit of the owners and pets and livestock. During these years, many new surgical techniques have been evolved for providing health care to farm animals which in turn have helped the livestock owner in improving their livestock production and thus their own economic status. Further, the improvement in the living standards and the interest in keeping pets has also increased. The health care of these pets is very important keeping in view the emotional aspects, Veterinary public health importance and the services rendered by the pets in criminal investigations. I am sure that during the Convention the Veterinary surgeons will discuss the application of newer techniques not only in the field of Veterinary Surgery but also in the field of Anaesthesiology and Radiology. The deliberations of the Symposium will be useful for practising Veterinary Surgeons, Teachers and Researchers as a whole.

I extend my greetings and best wishes for the success of this Symposium.

Sd/-

(S. K. MISRA)

## MESSAGE

**Dr. R. M. Acharya**  
Deputy Director General,  
(Animal Science)

I am extremely happy to learn that 14th Congress of Indian society for Veterinary Surgery is being organised at the College of Veterinary, Sciences, PAU, Ludhiana. At this occasion a National Symposium on Advances in Veterinary Surgery in Pets and Farm Animals is also being organised

Tremendous advances have been made in Veterinary surgery specially in pet animals. This is a growing area of private clinical practice for Veterinarians. The advances made in Veterinary surgery not only had their significance in restoring health to the animals but can act as models for similar surgical intervention in humans. I wish to convey my very best wishes for the success of the Congress and the National Symposium.

with my regards,

Sd/-  
(R. M. Acharya)

---

---

*Technical Programme*

---

---

ABSTRACTS

SESSION-I  
(Experimental Surgery)

*Technical Programme*

Date : 18-2-1991  
Time : 11-30 a.m. to 1-00 p.m.  
Chairman : Dr. V. S. Sarda  
Rapporteur : Dr. Jit Singh



## The Response of a Collagenase-induced Tendon Injury to Treatment with Adequan

A. Ozyan

*Department of Pathology  
School of Veterinary Medicine  
Shiraz University, Shiraz  
ISLAMIC REPUBLIC OF IRAN*

The effects of local administration of a polysulphated glycosaminoglycan on healing of a standard collagenase-induced tendon injury in the superficial digital flexor tendon of the rabbit were evaluated. Histological and ultrastructural changes together with mechanical properties, dry weight, collagen content and amount of DNA in healing tissue at the site of the lesion were assessed in treated and untreated animals. In treated lesions 28 days after injury, the normal orientation of tenoblasts and collagen fibrils was well preserved compared with the disorganized scar seen in the untreated animals. The degree of cellularity was significantly higher in the untreated lesions. At the ultrastructural level the collagen in the healing tissue of treated animals consisted of a mixture of small diameter, new, regenerated fibrils intermingled with well-preserved large diameter, old fibrils, aligned to the long axis of the tendon; while in untreated animals small, randomly-arranged new fibrils predominated.

The diameters of treated tendons had returned to normal, but in untreated animals the injured tendons remained significantly thicker than their controls. There were no differences between the normal and the contralateral treated, injured tendons in ultimate strength, fatigue strength and index of stiffness. However, in untreated animals, although the tendon diameter was greater, the ultimate strength, fatigue strength and index of stiffness were all less than in contralateral control. These data suggest that polysulphated glycosaminoglycans may be of clinical value in the treatment of acute tendon injury.

## The Effect of Locomotor Activity in Healing Processes of Tendon.

A. Ozyan

*Department of Pathology  
School of Veterinary Medicine  
Shiraz University, Shiraz  
ISLAMIC REPUBLIC OF IRAN*

A satisfactory treatment of tendon and ligament injury that restores the normal structural and mechanical characteristics has not been achieved. The beneficial effects of physical exercise and the deleterious effects of immobilization on mechanical properties of intact

tendon, ligament, cartilage and bone have been reported by many investigators. However, the precise mechanism whereby changes in physical activity modify the early repair of tendon and ligament injuries is obscure. The purpose of the present experiment was to investigate the influence of free movement and cage confinement on early healing of the superficial digital flexor tendon of the rabbit following a standard collagenase-induced lesion. Histological and ultrastructural changes together with mechanical properties, dry weight, collagen content and amount of DNA in healing tendon were assessed in free exercised and cage confined tendons 28 days after experimental injury. Restoration of collagenous tissue structural hierarchy was greater in exercised as compared with confined animals while the cellularity of confined tendon was much greater than that of tendons in exercised animals. Mobilization of the rabbits in the early stages following tendon injury had beneficial effects on the mechanical properties of injured tendons. Early mobilization significantly improved their mechanical properties and while tendons from non-exercised animals had lower yield strength, ultimate strength, yield strain and ultimate strain than their normal contra-lateral tendons, the mechanical properties of injured, exercised tendons were restored to values that were comparable to those of their contra-lateral controls. There were no significant differences in the total collagen contents, percentage dry weight and DNA contents of confined compared with exercised healing tendons. At this stage of healing there were no significant differences in injured confined ones, compared with the trimodal distribution of collagen fibril diameter in normal tendons. The collagen in the healing tissue was predominantly in the form of small diameter, new fibrils 28 days after injury in both free exercised and confined tendons and only very few large, old collagen fibrils were present. These data suggest that early free mobilization may be of clinical value in the treatment of acute tendon injury.

E-3 (1)

### Return of Splenic Functions after Autotransplant of Splenic Tissue

Kamal Gupta

*V.M. Sazda, S.C. Goyal, S.S. Rathor and A.S. Grewal*

*Department of Surgery,*

*Dayanand Medical College and Hospital,*

*Ludhiana (Punjab)*

A study was undertaken to determine whether after removal of normal spleen, it was possible to restore splenic functions by implanting the splenic fragments in the omentum. A total of 18 dogs were taken and divided into two groups i.e. Group A: control group in which splenectomy was done and Group B: in which splenic fragments were reimplanted in greater

omentum after splenectomy. Post-operative studies included blood and platelet count, peripheral blood film, determination of immunoglobulin levels and histopathological examination; to assess the functions, viability and regeneration of implanted tissue. Four weeks postoperatively, the anisopoikilocytosis, reticulocytosis, Howell-Jolly bodies and nucleated RBCS disappeared in the implated group. The total leucoyte count and platelet count returned to normal. The immunoglobulin levels started rising to normal and histopathology examination revealed initial degeneration followed by regeneration of the splenic tissue six weeks later. Based on this study, we feel that splenic auto-transplant may be carried out in patients where splenectomy is mandatory after trauma.

E-4 (I)

### Split Thickness Autogenous Free Skin Transplantation in Canines

Mohan R. Wani,  
*M. D. Nazkhede & P. E. Kulkarni*  
*Department of Surgery & Radiology,*  
*Punjabrao Agricultural University,*  
*Akola (Maharashtra)*

A total of twelve split-thickness grafts were attempted on healthy adult dogs of either sex to investigate graft "take", its survival and cosmetic appearance. All the grafts were performed on healthy granulating wounds created a week prior to grafting. Grafts were dissected with the help of skin grafting knife and Eshman's Blade. A total of 50% grafts survived. The cosmetic appearance of the successful grafts were at acceptable levels. Sparse hair growth was seen in some successful grafts. Unsuccessful grafts were leathery, black in colour and sloughed off. Complications were mainly due to failure of vascularization, haematoma formation and self mutilation. The grafts from the lateral thigh region gave the best results as compared to those from ventral thorax. Histomorphologically, healing and complete union was observed. Subepidermal layer showed granulation and deposition of collagen. In some grafts hair follicles, sebaceous glands or sweat glands were observed.

E-5 (I)

### Pinch Skin Grafting in the Granulating Wounds of Canines

Mohan R. Wani,  
*M. D. Nazkhede and P. E. Kulkarni*  
*Department of Surgery and Radiology,*  
*Punjabrao Agricultural University,*  
*Akola (Maharashtra)*

Pinch grafting was done in twelve granulating wounds in the dogs. Acceptance of the grafts were evaluated clinically and histomorphologically. Pinch grafts were harvested by using hypodermic needle and biopsy punch. Common donor sites were the inner surface of

thigh (medial thigh) and ventral abdomen and recipient sites were the right and left metacarpus, metatarsus and forearm. The survival rate of the pinch graft was 75%. There was complete epithelial cover over the wound. Few hairs grew on the grafts but none between the grafts. Pinch grafts, however, do not give good cosmetic appearance. Histomorphologically, pinch grafts showed epithelization of epidermis, presence of leucocytes, fibroblastic activity and proliferating capillaries.

E-6 (I)

### Bovine Fetal Catheterization and Haemodynamics : An Experimental Study.

J. V. Mogha

*Division of Experimental Medicine and Surgery  
Indian Veterinary Research Institute,  
Izatnagar (U.P )*

Nine Angus and Brehman cross bred cows in their terminal days of gestation (275-280 days of pregnancy) were utilized in the study. Under paravertebral lumbar nerve block, 20-25 cm. long vertical incision, equidistant between posterior border of 13th rib & tuber coxae, was made. Head and neck was exteriorized through 15-20 cm long incision made on greater curvature of gravid horn. Cannulation of fetal carotid and jugular vessels were done with appropriate size of polyvinyl catheter. These cannulae were connected outside with pressure recording unit. The blood samples were collected for  $PO_2$ ,  $Pco_2$ , pH, buffer content and bicarbonate analysis. Retained placenta was the most common post partum complication, observed in six cows, necessitating manual removal and intra-uterine treatment. *In utero*, right and left mean ventricular pressures were almost equal i.e. 115 mm Hg and 120 mm Hg. respectively. The left ventricular pressure was observed at peak (145 mm Hg) in 8 min. and declined steadily to 120 mm Hg post delivery in 60 min. No significant change in intraaortic temperature was observed in fetal life and 60 min post delivery. Right and left ventricular pressure ratio in utero was 1 : 1.043 which increased to 1 : 1.96 at 60 min. post delivery. The  $Pco_2$  in right ventricle remained high throughout the experiments than the  $PO_2$  where as in left ventricle the pressure followed the reverse pattern. No significant change in pH and in bicarbonate of *in utero* and post delivery life was observed.

E-7 (I)

## An Experimental Evaluation of Cotton Vascular Grafts In Abdominal Aorta of Dogs

*S. V. Joshi, A.M. Pawde, B.B. Gupta, V. S. Shzote and S. Kothekar*

*Nagpur Veterinary College,  
Nagpur (Maharashtra)*

Abdominal aorta in 16 non-descript dogs was approached beyond renal bifurcation to study the cotton cloth as a tubular vascular graft. The graft (prosthesis) was 3.5 cm long and 1.6 cm in diameter cuffed at both the ends and preclotted in the recipient dog's blood and was anastomosed at both the ends with the aorta by proline 4-0 in the place. After assuring total haemostasis the abdominal wound was closed. The contrast radiography (aortography) was done after 4 weeks which revealed established and strong collateral circulation but the contrast medium (dye) could not reach beyond the graft. However, the fluoroscopic study evinced no hematoma in the graft and the latter was patent.

E-8 (I)

## Efficacy of Some Indigenous Drugs in Tissue Repair in Buffaloes

*Anil Kumar, V.K. Shazma & H. P. Singh*

*Department of Veterinary Surgery and Radiology,  
G. B. Pant University of Agriculture & Technology,  
Pantnagar (U.P.)*

Efficacy of roots of *Curcuma longa* (Turmeric) and leaves of *Azadirachta indica* (Neem) in the form of ointment and pure honey as indigenous medicaments taking nitrofurazone as control were evaluated in the treatment of full thickness open skin wounds created on either side of vertebral column on thoracolumbar region in 12 buffalo calves. Clinical observations and estimation of percent healing of wounds and estimation of mechanical properties (Breaking strength, tensile strength and extensibility) revealed faster rate of tissue healing in the order of honey, *Curcuma longa*, *Azadirachta indica* and nitrofurazone applications. Histological observations showed fibroblastic and angioblastic proliferation on 7th day and formation of thin wavy collagenous fibres on 15th day in honey and *Curcuma longa* treated wounds whereas in other groups these activities were less discernible. The complete healing of honey and *Curcuma longa* treated wounds was observed by 26th and 28th post wounding day, respectively, while the wounds treated with other medicaments did not show evidences of complete healing even upto 30th day.

E-9 (I)

**Comparative Efficacy of Honey and Ampicillin in the Repair of Infected wounds in buffaloes, I : Clinical and Histomorphological Studies**

***S. K. Gupta, Hazpal Singh, A. C. Vazsney and Pzem Pzakash***

*Department of Veterinary Surgery, and Radiology,  
G. B. Pant University of Agriculture and Technology,  
Pantnagar (U.P.)*

Efficacy of ampicillin ointment, natural honey and honey-ampicillin mixture was evaluated in 90 equidimensional full thickness cutaneous infected wounds in 9 buffalo calves at different intervals till 28 days. Each site of wound was infected by inoculating  $10^8$  *Staphylococcus aureus* micro-organisms and the wounds were created 48 hours after infection. Healing was adjudged clinically and histomorphologically. All treated wounds showed reduction in inflammatory exudation, faster wound contraction, scar tissue formation and epithelialization, however, the overall rate of healing was significantly higher in wounds treated with natural honey followed by ampicillin ointment and ampicillin-honey mixture. Honey treated wounds showed less neutrophilic infiltration and more pronounced proliferation of angioblasts and fibroblasts as compared with other treated wounds. Histomorphological observations on 28th day revealed mature fibrous connective tissue in honey treated wounds as compared to other two groups.

E-10 (I)

**Comparative Efficacy of Honey and Ampicillin in the Repair of Infected Wounds in buffaloes II : A Biochemical Study.**

***S. K. Gupta, Hazpal Singh and A. C. Vazshney***

*Department of Veterinary Surgery and Radiology,  
G. B. Pant University of Agriculture and Technology,  
Pantnagar (U.P.)*

Efficacy of ampicillin ointment, natural honey and honey-ampicillin mixture in the repair of 90 equidimensional full thickness cutaneous infected wounds in 9 buffalo calves was evaluated on the basis of tissue collagen, elastins, hydroxyproline and hexosamine estimation at different intervals till 28th post wounding days. Tissue collagen and hydroxyproline contents were increased in all treated wounds throughout the period of study, however, their concentrations were maximum in honey treated wounds and minimum in ampicillin-honey treated wounds. Honey treated wounds registered higher elastin contents with respect to other treatments at different intervals. The hexosamine contents exhibited a decreasing trend which was pronounced in honey treated wounds followed by ampicillin and ampicillin-honey treated wounds.

## Circumferential Tracheal Resection And End to End Anastomosis in Dogs An Experimental Study

*Pzakash Kinjavdekar and R. J. Choudhary*

*Department of Veterinary Surgery and Radiology,  
Rajasthan Agricultural University,  
Bikaner (Rajasthan)*

Seventy two dogs, randomly divided in four groups of eighteen dogs each, were utilized to evaluate different suture materials and suturing techniques for tracheal anastomosis. Circumferential tracheal resection, by resecting four cartilage rings, was performed in all the animals. In group one and two, chromic cat gut (No. 3/0) was used to achieve end to end anastomosis with simple and mattress interrupted pattern, respectively. In group three and four black braided silk (No.3/0) was used to achieve the anastomosis using the same two techniques. The two techniques and suture materials were evaluated and compared on the basis of clinical, gross, radiological and histomorphological observations. Six animals from each group were sacrificed at day 7, 14 and 21 postoperatively for the purpose. Tracheal anastomosis using simple interrupted sutures was easy to perform. In both the techniques the resected ends could be brought in apposition without any tension. Postoperatively, the animals of four groups behaved normally. In two animals, signs of laryngeal paralysis attributed to over manipulation were noticed. Grossly, the tracheal lumen was patent in both the techniques irrespective of suture material used. More amount of granulation tissue was observed along the silk sutures. Mattress suturing pattern resulted in overlapping of cartilages causing slight constriction of lumen at anastomotic site as demonstrated radiographically. Histomorphologically, the cellular response was higher against black silk irrespective of the technique employed. The results of this study suggest that trachea, can be anastomosed safely with simple interrupted sutures using chromic catgut No. 3/0.

### The Effects of Omasectomy and Reticulo-abomasal by-pass in Ovine (An Experimental Study)

S. Dehghani & A. H. Meymandi

*Department of Veterinary Surgery and Radiology*

*School of Veterinary Medicine,*

*Shiraz University, Shiraz.*

**ISLAMIC REPUBLIC OF IRAN**

The study was conducted on five Iranian breed sheep, 3 months of age, weighing 19-27 kg, which were fed on regular basis. The omasum was resected completely in two sheep (group-1) and the reticulum was anastomosed to the abomasum in other two (group-2) and the fifth sheep was used as the control. The animals were starved off feed for 48 hours and water for 12 hours before surgery. Weight, feed and water consumption, faeces, nutrient absorption, hematological tests as well as clinical evaluations were recorded daily pre-and post operation. The animals in both groups showed inappetence, weight loss, debility and low nutrient absorption post operatively compared to the control animals which was severe in group-1. Also, all the parameters tested post operatively never returned to pre-operative values.

### Clinical, Physical and Radiological Observations following Bladder Reconstruction using Different Grafts in Goats.

B. V. Shivaprakash, G. R. Singh & C. S. Celly

*Division of Experimental Medicine & Surgery,*

*Indian Veterinary Research Institute,*

*Izatnagar (U. P.)*

Twenty four adult goats divided randomly into 4 groups of 6 animals each were used to compare different graft materials for urinary bladder reconstruction following sub-total cystectomy. The graft materials used in group I, II, III and IV were polytetrafluoroethylene (PTFE), caecum, preserved allogeneic bladder and fresh autogenous bladder, respectively. Clinically, all the animals showed dullness, depression and increased effort for urination and increased micturition frequency. The animals showed gradual improvement in their clinical behaviour and were normal by day 30. Temperature, respiration and pulse rates increased for 1-2 weeks postoperatively before returning near normalcy. The bladder capacity reduced to 60% when recorded on day 30 which improved to 80% on day 60 in all the 4 groups. Similarly, bursting pressure of urinary bladders reconstructed with different grafts was lower than that of the normal animals which improved by day 60. Radiological examination revealed no evidence of leakage or calculi formation. The PTFE implant was partially detached into the lumen over which bladder tissue grew. The reconstructed urinary bladders could not attain their normal size and shape upto day 60 in all the 4 groups.



E-3 (II)

**Biochemical Alterations following Bladder Reconstruction using Different Grafts in Goats.**

*B.V. Shivapzakash, G. R. Singh & Devendera Swazup*

*Division of Experimental Medicine and Surgery,*

*Indian Veterinary Research Institute,*

*Izatnagar (U.P.)*

Twenty four adult goats randomly divided into 4 groups consisting of 6 animals each were used to evaluate biochemical alterations following bladder reconstruction using four different graft materials viz. PIFE, Caecum, preserved allogeneic bladder and fresh autogenous urinary bladder. The serum samples collected on day 3, 7, 15, 30 and 60 post operatively were analysed for urea nitrogen, creatinine, sodium, potassium and chloride levels in all the four groups. No marked change was noticed in serum creatinine levels in different groups at different intervals as compared to their preoperative values. Post operatively, Serum Urea Nitrogen (SUN) levels increased significantly up to day 30 with peak levels at day 7 in all the 4 groups. Maximum increase in SUN values was seen in animals where allografts were used. Serum electrolytes levels also increased inconsistently in respect of different post operative intervals in all the four groups. The animals, where bladder was reconstructed with PTFE implant, took more time to regain normalcy in biochemical parameters as compared to animals where reconstruction was done with other grafts.

E-4 (II)

**Comparative Study of Different Suture Materials on Diaphragm in buffalo calves**

*Jagmohan Singh, D. C. Dhablania & K. K. Mizakhuz*

*Department of Surgery & Radiology,*

*Punjab Agricultural University,*

*Ludhiana (Pb)*

Catgut, silk, polyamide and nylon were used in group of three buffalo calves each on diaphragm. Macro and microscopic studies were conducted on seventh, fifteenth and thirtieth day post operatively. Catgut incited more tissue reaction with delayed fibroplasia and wet healing. Adhesions with the adjacent viscera viz. lungs and liver were observed with catgut. Polyamide incited more reaction compared to nylon whereas silk incited minimum tissue reaction and early fibroplasia. Silk can be recommended for diaphragmatic suturing.

E-5 (II)

**Comparative Study of Different Approaches for Diaphragmatic Herniorrhaphy in Buffaloes.**

*Jagmohan Singh, D. C. Dhablania & S. S. Rathor*

*Department of Veterinary Surgery and Radiology,  
Punjab Agricultural University  
Ludhiana (Punjab)*

Paracostal, hockey stick shape, post xiphoid and trans-thoracic approaches were tried in the experimental as well as clinical cases of diaphragmatic hernia. The topographic surgical anatomy was also studied. There was interference by viscera for approaching the diaphragm with paracostal and hockey stick shape approach, though the animals were comfortable. Trans-thoracic approach was arduous whereas the post-xiphoid approach was considered suitable due to the ample working space and visibility of the diaphragm.

E-6 (II)

**Effects of Permanent Unilateral Parotid Fistula in Cow Calves**

*S. K. Shazma, Mohinder Singh, S. K. Rastogi & J. M. Nigam*

*Department of Veterinary Surgery and Gynaecology  
H.P.K.V. Palampur (H. P.)*

Permanent unilateral parotid fistula was created in male jersey calves of 6 months age by exteriorizing the Stenson's duct. The samples collected were blood and saliva daily and cerebrospinal fluid (CSF) on alternate days for six days. No significant ( $P \leq 0.05$ ) changes were seen in haemoglobin, PCV and total protein values. The bicarbonate loss increased through saliva but it was not enough to disturb blood values. There was marked increase in plasma concentrations of sodium and potassium but the plasma chloride concentrations remained unaffected. The salivary and CSF concentrations of these parameters were also estimated but no definite trends were seen.

E-7 (II)

**Estimation of Lacrimal Function in Gaddi Goats**

*S. K. Shazma*

*Mohinder Singh, A. C. Varshney & J. M. Nigam*

*Department of Veterinary Surgery & Gynaecology,  
H. P. K. V.  
Palampur (H P.)*

Modified Schirmer tear test, using 5x35 mm strips of Wattman's filter paper No. 41. was used to measure the lacrimal function of both eyes in 9 female gaddi goats, aged 5-6 months (n=18). The function was seen normally, under auriculo-palpebral eye block

(AP block) and under AP+Peterson eye block at 48 hours interval, respectively. The data was analysed statistically using Complete Randomised block design (CRD). The normal readings were  $19.86^b \pm 1.02$  mm/minute (range 12-28) where as it was  $10.94^a \pm 0.92$  mm/minute (range 6-19) under AP-block and  $10.33^a \pm 1.21$  mm/minute (range 2-22) under AP+Peterson eye block. Figures bearing different superscripts differ significantly ( $P < 0.01$ ). It was concluded that regional eye blocks significantly decrease the lacrimal function in gaddi goats.

E-8 (II)

### Clinical Evaluation of Some Biological Tissues as an Adjuant to Wound Healing in Large Animals. I. A Macroscopic Study

K. K. Gupta & S. S. Rathoz

*Department of Veterinary Surgery & Radiology,  
Punjab Agricultural University,  
Ludhiana (Punjab)*

Eighty eight open wounds (6 cms x 3 cms), 6 on 13 animals and 10 on one animal were created experimentally in 14 cow calves. The wounds were treated with amniotic membrane, fresh spleen, liver, kidney, spleen powder, liver powder, mixture of spleen and liver powder, blood clot, serum and normal saline (control) without antibiotics. The healing and rate of contraction were evaluated daily and on 15th, 25th, 40th and 60th day, respectively. On the basis of gross observations, it was concluded that these dressing materials enhanced the wound healing in order of spleen powder, fresh spleen, blood clot, amniotic membrane, serum, liver powder, mixture of powders, fresh liver, normal saline, and fresh kidney. The rate of contraction was highest with amniotic membrane in initial stages.

E-9 (II)

### Clinical Evaluation of Some Biological Tissues as an Adjuant to Wound Healing in Large animals. II. A Microscopic Study.

K. K. Gupta

S. S. Rathoz & K. S. Roy

*Department of Veterinary Surgery and Radiology,  
Punjab Agricultural University,  
Ludhiana (Punjab)*

Eighty eight open wounds (6 cms x 3 cms in size), 6 on 13 animals and 10 on one animal were created with experimentally in 14 cow calves. The wounds were treated with amniotic membrane, fresh spleen, liver, kidney, spleen powder, liver powder, mixture of

spleen and liver powder, blood clot, serum and normal saline (control) without antibiotics. Microscopic examination at 15th, 25th, 40th and 60th day showed that spleen tissue (powder and fresh) initiated early onset and organisation of the granulation tissue, early epithelialization with development of cutaneous glands and hair follicles. Amongst other treatments, the success of wound healing was in order of blood clot, amniotic membrane, serum, liver powder, mixture of powders, fresh liver, normal saline and fresh kidney.

E-10 (II)

### Electrocardiographic (ECG) Changes Following Experimental Ligation of Left Anterior Desending (LAD) Coronary Artery in Calves

O. P. Gupta,

G. R. Singh & C. S. Celly

*Division of Experimental Medicine and Surgery*

*Indian Veterinary Research Institute,*

*Izatnagar (U.P.)*

The study was conducted on 6 clinically healthy male cow calves of 4-6 months of age. The animals were premedicated with Triflupromazine hydrochloride and Atropine sulphate before performing tracheostomy under local analgesia. The trachea was intubated for administration of positive pressure ventilation during thoracotomy. Standard ECG viz, I, II, III, aVR, aVL and aVF were recorded before and immediately, 15 minutes, 30 minutes, 1 hour, 2 hours, 24 hours, 48 hours and 72 hours after the ligation of LAD coronary artery exteriorized through left lateral thoracopericardiotomy. There was no change in P-wave, however QRS complex showed marked changes at various intervals. The configuration of QRS complex, which was of QS type in all the animals before ligation, changed to rs type in two animals after ligation. The duration of QRS complex showed an initial increase in the animals immediately after ligation, however, it came to near normal after 72 hours. On the other hand, amplitude of QRS complex showed an initial decrease immediately after ligation. T-wave configuration was up right in all the animals before ligation but it became inverted in one animal immediately after ligation. Inversion of T-wave was also observed in one animal after 30 minutes of ligation and it became upright after 48 hours. Duration and amplitude of T-wave increased in all the animals immediately after ligation and came to near normal after 72 hours. S-T segment became elevated immediately after ligation and remained so upto 72 hours of ligation. The Q-T interval decreased immediately after ligation and remained so up to 72 hours. The mean electric axis of QRS which was negative in three calves positive in other three calves before coronary ligation showed a change in the direction immediately after coronary ligation in 4 calves and after 72 hours in one calf. Presence of arrhythmias viz. indioventricular rhythm with complete heart block, premature ventricular complex and coarse type of fibrillation were recorded immediately after ligation, 15 minutes and after 48 hours respectively.

## Clinical and Haemodynamic Changes following Experimental Ligation of left anterior Descending (LAD) Coronary Artery in Calves.

O. P. Gupta

*G. R. Singh & C. S. Cally*

*Division of Experimental Medicine and Surgery,  
Indian Veterinary Research Institute,  
Izatnagar (U.P.)*

The study was conducted in 6 calves of 4-6 months of age. The animals were pre-medicated with Triflupromazine hydrochloride and atropine sulphate 30 minutes prior to surgery. All surgical manoeuvres were done under local anaesthesia. LAD coronary artery was ligated after performing left lateral thoracotomy through 4th intercostal space under positive pressure ventilation. Clinical signs and heart rate were recorded during surgery and post operatively up to 21 days. Aortic pressure was recorded before and immediately, 15 minutes, 30 minutes and 60 minutes after coronary artery ligation. Out of 6 animals, two animals could survive up to 21 days. Remaining animals died after 15 minutes (2), 24 hours, (1) and 11 days (1) of coronary artery ligation. The clinical manifestations following ligation of coronary artery included anorexia, dullness and signs of anguish for 24 hours. The animals resumed normal consumption of feed and water after 48 hours. During this period respiration was shallow and rapid. Temperature was subnormal. There was sudden fall in blood pressure immediately after coronary artery ligation. In the animals which died within 15 minutes, the aortic pressure fell below 40 mm Hg and remained so till the animals died. In other animals, it never fell below 58 mm Hg immediately after coronary artery ligation and showed gradual increase there-after reaching to preligation values by the 60 minutes of ligation. There was marked increase in the heart rate immediately after coronary artery ligation in animals which survived for 24 hours or more and remained so up to 72 hours, whereas, the animals which died within 15 minutes of coronary ligation did not show appreciable increase in the heart rate.

The result suggests that coronary artery ligation results in fall in aortic blood pressure and compensatory increase in the heart rate. Decrease in blood pressure below 40 mm Hg appears to be critical.

Comparative Studies on *Adhatoda vasica* and Olive Oil on Wound Healing*M. M. S. Zama*

Faculty of Veterinary Sciences and Animal Husbandry

S.K. University of Agricultural Sciences and Technology,

Srinagar, (J &amp; K)

Forty eight cutaneous deep wounds, 2 x 4 cm in size, four on each animal were prepared aseptically in twelve buffalo calves. The wounds were treated with alcoholic extract ointment of *Adhatoda vasica* and olive oil. The healing of the wounds was evaluated by clinical examination, estimations of mechanical properties and biochemical estimations of biopsy specimen collected at 3, 7, 14 and 28 days. The observations revealed that the rate of healing was higher in *Adhatoda vasica* treated wounds.

ABSTRACTS

SESSION-III  
(Radiology and Orthopaedics)

Date : 18-2-1991  
Time : 4-00 p.m. to 5-30 p.m.  
Chairman : Dr. Harpal Singh  
Rapporteur : Dr. G. R. Singh

## Radiodiagnosis in Veterinary Practice —An Update

*Dr. J. S. Chandna*

*Department of Veterinary Surgery and Radiology,  
Haryana Agricultural University,  
Hissar (Haryana)*

### INVITED PAPER

## Radiographic Evaluation of Autogenous Bone Marrow and Plasma Impregnated Alcap Ceramic Implants in Goats

*S. K. Maiti and G. R. Singh*

*Division of Experimental Medicine and Surgery  
Ineian Veterinary Research Institute,  
Izatnagar (U.P.)*

The study was carried out in 9 clinically healthy, adult goats divided into three equal groups (D, E & F). Two trials were performed in each goat. In all the animals, identical bone defects (1 x 3 cm) were created in the medial aspect of proximal metaphysis of tibia. In animals of group D, E and F, ALCAP (Aluminum-calcium-phosphorus oxide) ceramics, ALCAP ceramics impregnated with autogenous bone marrow and ALCAP ceramics impregnated with autogenous citrated plasma, were implanted, respectively. Lateral radiographs were obtained immediately after implanting and at day 30, 60 and 90 post operatively. In group D, the radiographs taken at day 0, revealed that the ceramic implants were in position filling almost entire defect with their density comparatively more than the host bone. Radiographs taken at day 30 and 60 demonstrated newly formed bone encapsulating the implants. There was no change in the size or density of the implants. Radiographs of day 90 demonstrated that the activity of new bone formation was slower and newly formed bone was in the process of remodelling. There was slight thinning of implants at their edges which appeared irregular suggesting that the process of implant resorption was still continuous. The radiographs taken at different intervals in group E and F showed similar signs like in group D, except in group E in which resorption of implants and replacements by the new bone was seen in those animals where relatively smaller sized implants were used. In none of the animal of these groups (D, E & F) were there any evidence of implants' or osteoinducers' (autogenous red marrow and citrated plasma) contribution towards new bone formation at any stage of observation.



## Triple Fluorochrome Labelling Study in the Evaluation of Different Types of Bone Grafts and Ceramic Implants

*S. K. Maiti and G. R. Singh*

*Division of Experimental Medicine and Surgery  
Indian Veterinary Research Institute,  
Izatnagar (U. P.)*

Technique of triple fluorochrome labelling of bone was used for the evaluation of different types of bone grafts and ceramic implants in goats. Triple fluorochromes viz. Tetracycline dihydrate (50 mg/kg B. Wt. I/M), hematoporphyrine (100 mg/kg B. Wt., I/v) and DCAF solution (20 mg/kg B. Wt. I/v) were used three days before sacrificing the animal. The grafted/implanted segments of the bone were collected after sacrificing the animals and transverse section (2-2 mm thick) including the grafted area were cut with the help of heck saw. The sections were then grinded in 20 micron thickness using different grades sand papers. Final grinding was over hone under moderate pressure using slow circular motion. The section were washed and observed under U-V light using fluorescent microscope. Triple fluorochrome labelled ground sections revealed that the moderate to extensive newly formed bone originated from periosteal as well as endosteal side, however, its intensity was more in periosteal side in the groups A (frozen decalcified allografts), B (frozen decalcified allografts impregnated with autogenous bone marrow) and C (frozen decalcified allografts impregnated with autogenous citrated plasma). At places, remnants of grafts were still present but they were in the process of disintegration and fragmentation. In group B, the presence of bright yellow organised areas within the remnants of grafts were suggestive of osteogenic activity within the graft. In group C, plasma coated graft was seen as fragmented homogenous mass between trabeculae of newly formed osteoid tissue. Resorption cavities containing new bones were demonstrated in the all type of bone grafts. Fluorochrome labelling study showed the activity of new bone formation was mild to moderate adjacent to implant site in group D (ALCAP ceramic implants), E (ALCAP ceramics impregnated with autogenous bone marrow) and F (ALCAP ceramics impregnated with autogenous citrated plasma). Most of the implants were lost leaving a gap apposed by newly formed bone on endosteal side, however, on periosteal side lipping of new bone was seen on both sides which failed to unite. The implants which were not completely resorbed gave spongy but homogenous appearance when viewed under U-v light. Small areas of red and light yellow colour were distributed throughout the implant.

## Radiographic Evaluation of Autogenous Bone Marrow and Plasma Impregnated Decalcified Allogenic Bone Grafts in Goats

*S. K. Maiti and G. R. Singh*

*Division of Experimental Medicine and Surgery,  
Indian Veterinary Research Institute  
Izatnagar (U. P.)*

The study was carried out in 9 clinically healthy adult goats divided into three equal groups (A, B and C). Two trials were performed in each goat. In all the animals, identical bone defects (1x3 cm) were created in the medial aspect of proximal metaphysis of tibia. The bone defect was filled with frozen decalcified allografts, frozen decalcified allografts impregnated with autogenous bone marrow and frozen decalcified allografts impregnated with autogenous citrated plasma in animals of group A, B and C, respectively. Lateral radiographs were obtained immediately after grafting and subsequently at day 30, 60 and 90 post-operatively. At day 0, in all the animals of the three groups, the bone grafts were not visualised and the defects appeared as dark rectangular space, suggesting their complete decalcification. In group A, the defect was filled gradually by new bone originating from its periphery in subsequent intervals. At day 90, the defect was almost completely filled with the periosteal new bone. No evidence of osseous tissue formation was seen within the grafts at any stage of observation. In animals of groups B, the bone defects were also progressively reduced in size by the ingrowth of newly formed osseous tissue from their periphery at different intervals. However, in these animals, the grafted area appeared cloudy due to the presence of osseous tissue within the grafts. At day 90, it was completely filled with newly formed bone contributed by both host bone as well as bone marrow impregnated decalcified bone grafts. In plasma impregnated bone grafts (group C) the new bone ingrowth into the defect reducing their size from its periphery was seen with the passage of time. At day 90, it was completely obliterated with newly formed bone in most of the cases. Areas of calcification or osteoid tissues formation were also seen in the grafted area at later stages of observations.

## Evaluation of Autoclaved and Decalcified Segmental Cortical Bone Allografts in Goats-Plain and Contrast Radiographic Study

*Jasvinder Pal Singh,*

*S. K. Chawla, Jit Singh and A. P. Singh*

*Department of Veterinary Surgery and Radiology  
Haryana Agricultural University,  
Hissar (Haryana)*

Experimental studies were done in 24 adult goats to evaluate autoclaved and decalcified full thickness cortical bone allografts. Results were evaluated upto 120 days using plain

adiographs, osteomedullograms and arteriograms. In animals with autoclaved grafts, plain radiographs showed initiation of scaffold formation around graft at 30 days, bridging of periosteal callus around graft at 60 days and complete encasement of graft at 90 days. The graft was incorporated into newly laid osteoid tissue by 120 days. Similar changes, but slightly delayed in initial stages, were observed in animals with decalcified graft. A major complication with the use of decalcified grafts was impaction of the graft. Osteomedullographic studies also showed that healing was better with autoclaved allografts which was perhaps due to lack of stability at fracture site with flexible decalcified grafts. Arteriograms did not prove useful for comparative evaluation of the two grafts.

### RO-6 (III)

#### Anggiographic Study of Uterus after Repeated Laparotomy and Hysterotomy in Canines

B. B. Das,

*D. B. Mukherjee and P. K. Samanta*  
*Department of Veterinary Surgery and Radiology,*  
*Bidhan Chander Krishi Vishwavidyalya,*  
*Mohanpur (West Bengal).*

Angiographic study of uterus was performed in 6 laparotomized (control group) and 36 mongrel bitches (6 cases each of the six groups) after 100 days of 1st, 2nd, 3rd, 4th, 5th and 6th times of successive hysterotomy on the same line of incision. Comparative evaluations are discussed between the cases of single and multiple hysterotomy; and also between simple laparotomy and laparohysterotomy.

### RO-7 (III)

#### Effect of Different Types of External Splintage used in Treatment of Fractured Long Bones of Goats and Sheep

J. M. Doifode and P. E. Kulkarni

*Veterinary Polyclinic*  
*Aurangabad (Maharashtra)*

Plaster of Paris. Outrigger method using motor cycle spokes and bamboo splints with resin impregnated bandages were evaluated for long bone fractures in sheep and goats. The immobilisation with resin impregnated bandages reinforced with bamboo splints was not only economical but also equally effective and simple in the treatment of long bone fracture in sheep and goats.

## A Modified Technique of open Reduction of Atlanto-Axial Subluxation in Canines.

*A. K. Srivastava and Ram Janam Singh*

*Canine Therapy Unit,  
State Veterinary Polyclinics,  
Lucknow (U. P.)*

A modified technique for open reduction of atlanto-axial luxation in canines has been developed by the use of orthopaedic stainless steel wire in cross fashion. This technique is quite easy, viable and free of some risks and lacunas associated with other techniques.

This technique involves the dorso-lateral approach and separation of the neck muscles from the spinous process to expose the dorsal arch of atlas and axis ; facilitating for application of fixation device, the cross-fashion wiring. This technique was proved most ideal and suitable. The proper cervical rotation and ventro-dorsal motion were achieved without causing any complication.

## ABSTRACTS

SESSION-IV  
(Anaesthesiology)

Date : 19-2-1991  
Time : 9-00 a.m. to 11-00 a.m.  
Chairman : Dr. Amresh Kumar  
Rapporteur : Dr. P. K. Peshin

## Therapeutic Effects of Paravertebral Anaesthetic Blockade for Treatment of Mastitis in Buffaloes

*N. S. Jadon and Amtesh Kumar*

*Department of Veterinary Surgery and Radiology  
G. B. Pant University of Agriculture and Technology,  
Pantnagar (U. P.)*

One group of 15 animals suffering from mastitis were treated with intramammary infusion of one gram of procain penicillin dissolved in 10-15 ml of distilled water and 2 ml of Avil daily for 7 days. The second group of 15 animals were treated by intramammary infusion of procaine penicillin dissolved in 10-15 ml of 0.25% of procaine hydrochloride solution and 2 ml Avil daily for 7 days and paravertebral anaesthetic blockade at L<sub>2</sub>, L<sub>3</sub> and L<sub>4</sub> was also performed using 20 ml of 0.25% procaine hydrochloride at each site. The blockade was repeated at 3 days intervals. It was used 2-3 times in acute cases and 5-6 times in chronic cases.

The efficacy of the treatment was assessed by observing the clinical signs of mastitis, colour and composition of milk, number of somatic cells, lactose percentage of alkaline phosphatase activity, chloride concentration and status of sodium and potassium in milk. The results indicate that procainetherapy helps in early and complete recovery in cases of mastitis. It is beneficial even in chronic cases of mastitis.

## Therapeutic Effects of Paranephric Anaesthetic Blockade in Hepatitis in Buffaloes.

*N. S. Jadon and Amtesh Kumar*

*Department of Veterinary Surgery and Radiology,  
G. B. Pant University of Agriculture and Technology,  
Pantnagar (U. P.)*

The hepatitis was induced in buffalo calves by injection of carbon tetrachloride intraruminally at a dose rate of 0.3 ml/kg body weight at 5 days apart. In one group of animals, a liver tonic preparation (Belamyl) was given daily for 15 days and in the other group right paranephric blockade with 100 ml of 0.25% procaine hydrochloride was used alongwith Belamyl. The blockade was repeated at 4 days intervals. The untreated animals served as control.

The efficacy of the treatments was assessed by determination of blood coagulation time, hemoglobin percentage, plasma bilirubin, plasma glucose, total plasma proteins, cholesterol, glutamic dehydrogenase, sorbital dehydrogenase, aspartate amino transferase, alanine amino-

transferase, and gamma glutamic transpeptidase values. The findings reveal that use of paranephric anaesthetic blockade alongwith Belamyl is more effective in the treatment of hepatitis and all the animals recovered early in comparison with animals given Belamyl alone.

A-3 (IV)

### Detomidine as a Sedative : Studies in Buffaloes.

*A. P. Singh, Jit Singh, P. K. Peshin, Davood Shaziqi  
and D. B. Patil*

*Department of Veterinary Surgery and Radiology,  
Haryana Agricultural University,  
Hissar (Haryana)*

Detomidine 10, 20 and 40  $\mu\text{g}/\text{kg}$  both intramuscularly (i.m.) and intravenously (i.v.), was evaluated for its sedative effects in 15 buffalo bulls. The drug produced dose-dependant sedation. After 10  $\mu\text{g}/\text{kg}$ , either effective sedation did not occur (i.m.) or it was of short duration (i.v.). Higher doses of 20 and 40  $\mu\text{g}/\text{kg}$ , both i.m. and i.v., produced effective sedation, mild to moderate analgesia, ataxia and moderate to profuse salivation. After 40  $\mu\text{g}/\text{kg}$  most animals went to sternal recumbancy. Bradycardia and hyperglycaemia were observed at all dose levels used. The changes in rectal temperature, respiratory rate, haemoglobin, packed cell volume and plasma concentration of total protein, sodium, potassium and chloride were not significant.

A-4 (IV)

### Sedative Effects of Detomidine in Infant Calves

*P. K. Peshin,*

*A. P. Singh, Jit Singh, D. B. Patil and Davood Shaziqi*

*Department of Veterinary Surgery and Radiology,  
Haryana Agricultural University,  
Hissar (Haryana)*

Detomidine @ 10, 20 and 40  $\mu\text{g}/\text{kg}$ , administered i.m., was evaluated for its sedative effects in 15 unfasted infant calves of 15 to 20 days old and weighing 18 to 33 kg. The drug produced dose dependant sedation. The dose of 10  $\mu\text{g}/\text{kg}$  produced effective sedation for 30 to 45 min. without any observable analgesia. The dose of 20 and 40  $\mu\text{g}/\text{kg}$  caused deep sedation, sternal recumbancy, moderate analgesia of trunk and longer recovery time. Bradycardia and hyperglycaemia were recorded at all dose levels. The changes in respiratory rate, rectal temperature, haemoglobin, packed cell volume, total erythrocyte count and plasma concentration of total protein were not significant.

## Evaluation of Detomidine as a Sedative in Sheep

*Jit Singh,*

*A. P. Singh, P. K. Peshin, Davood Shazifi and D. B. Patil*

*Department of Veterinary Surgery and Radiology,*

*Haryana Agricultural University,*

*Hissar (Haryana)*

Studies were done in 15 sheep to evaluate the sedative and analgesic effect of detomidine. Three different doses of 30, 60 and 90  $\mu\text{g}/\text{kg}$  were evaluated with both routes of intramuscular (i.m.) and intravenous (iv) administration. The dose of 30  $\mu\text{g}/\text{kg}$  i.v. and 60 and 90  $\mu\text{g}/\text{kg}$  both i.m. and i.v., produced a dose-dependant effective sedation. Moderate analgesia of trunk developed only at higher doses of 60 and 90  $\mu\text{g}$ . Few animals went to sternal recumbency after dose of 60 and 90  $\mu\text{g}$ . Intravenous administration produced quick induction and better depth of effective sedation. Other effects of drug included mild salivation, mild to moderate ataxia, increased respiratory rate (higher doses), bradycardia and hyperglycaemia. The changes in packed cell volume, haemoglobin, rectal temperature and plasma concentrations of total proteins, sodium, potassium and chloride were not significant.

## A Preliminary Note on Effects of Epidural Administration of Xylazine in Buffaloes.

*Amresh Kumar,*

*Hazpal Singh and V. K. Sharma*

*Department of Veterinary Surgery and Radiology,*

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

*Pantnagar (U.P.)*

Xylazine was administered at the rate of 0.1 to 0.2 mg/kg body weight epidurally in buffaloes. It has a local and generalized effects. The sedation/analgesia produced by epidural xylazine simulated the effects of its parenteral administration. It produced mild to good sedation lasting for 40-45 minutes, which was marked by calming effect, pendulous lower lip, inclination of head and sleepiness. A significant decrease in respiration and heart rate was observed during sedation. Xylazine @ 0.2 mg/kg despressed the rumen movements and the animals resumed sternal recumbency. There was salivation, excellent sedation and no response to pin prick stimulation at perineal and caudal region. Physiological effects after epidural xylazine administration were also similar to its parenteral administration. The recovery from sedation was good in all the animals. It provided good local analgesia for successful completion of amputation of tail and could also be used for surgery of perineal region and caesarean section. It may also provide good post-operative analgesia in cases of caesarean section and difficult after-birth.



## Surgical Anaesthesia by Administration of Diazepam and Xylazine in Dogs.

Amzesh Kumaz and Bhasat Singh

Department of Veterinary Surgery and Radiology,  
G. P. Pant University of Agriculture and Technology,  
Pantnagar (U. P.)

Intramuscular or intravenous administration of diazepam @ 3 mg/kg and xylazine @ 1-2 mg/kg separately or as a mixture in atropine @ (0.05 mg/kg) premedicated dogs produced complete immobility, relaxation, and anaesthesia similar to the one produced by a barbiturate. The immobility and relaxation occurred in 8 to 15 minutes depending upon the route of administration and dosage or drugs' combinations. The anaesthesia lasted for, 35 to 110 minutes in various groups of animals and recovery was smooth and occurred in 65-185 minutes. The extent of anaesthesia was graded as excellent in all the animals. There were no behavioral aberrations. Gastrotomy, Zepp's operation, splenectomy, cystotomy, repair of fractures, ovariohysterectomy, amputation of tail were performed during anaesthesia. The mucous membrane remained healthy, pink in colour and capillary refill Times were normal. Although a significant decrease in heart rate and respiration rate was observed at 10 minutes after administration but during anaesthesia they were maintained within normal range. Physiological and acid-base alterations did not reveal any marked effect. There was also no significant effect on rectal temperature. These drugs combination may be useful as a substitute for thiobarbiturates in dogs, however, further investigations will be necessary to substantiate this fact.

## Thiopentone-Sodium : An Experimental Study on Disposition Kinetics and Plasma Protein Binding in Dogs

A. K. Srivastava,

S. Rampal and R. K. Chaudhary  
Department of Pharmacology and Toxicology,  
Punjab Agricultural University,  
Ludhiana (Punjab)

The disposition kinetics and *in vitro* plasma protein binding of thiopentone sodium were studied in healthy mongrel dogs. The animals were given a single intravenous dose of thiopentone sodium ( $18.6 \pm 2.73$ , SE, mg/kg). The time course of plasma thiopentone concentration was adequately described in terms of a bi-exponential equation. The distribution half-life ( $t_{1/2}$  alpha) was  $0.113 \pm 0.045$  (SE) h and elimination half-life ( $t_{1/2}$  beta) was  $8.16 \pm 0.22$  (SE) h. The apparent volume of distribution and total body clearance were calculated to be  $3.20 \pm 0.53$  (SE) l/kg and  $274.4 \pm 45.37$  (SE) ml/kg/h, respectively. Thiopentone sodium bound with plasma proteins of dogs to the extent of 78.5 to 88.8%.

## Study on Cardiopulmonary Parameters for Diaphragmatic Hernia

Jagmohan Singh,

*D. C. Dhablania and V. K. Sobti*

*Department of Veterinary Surgery and Radiology*

*Punjab Agricultural University,*

*Ludhiana (Punjab)*

Local anaesthesia alone (Group I), in combination with pentazocine (Group II), and chloral-diazepam combination (Group III) were used in buffalo calves and clinical cases of diaphragmatic hernia. Electro-cardiographic recordings were made in lateral position (before anaesthesia), while manipulating diaphragm and following completion of surgery in lateral recumbency. Heart rate and Respiratory rate were monitored. Heart rate decreased in group I and II while there was increase in heart rate in group III on diaphragmatic manipulation. Variations in P-wave, indicative of delayed atrial depolarization, were observed in group I and II. T-wave inversion, indicative of myocardial hypoxia and stress, was observed in all the groups. Depression of ST segment, indicative of stress, was observed in group II. Respiratory rate showed significant increase in all the groups during surgical manipulation in diaphragm.

## Posture Induced Changes in Base-Apex Lead of Electrocardiograms in Goats

C. S. Celly and G. R. Singh

*Division of Experimental Medicine and Surgery*

*Indian Veterinary Research Institute,*

*Izatnagar (U. P.)*

The study was conducted in 25 adult goats of both sexes. The base apex lead was recorded by placing the animals in three different postures viz. Standing, Right lateral recumbency and Dorsal recumbency. Heart rate increased in right lateral recumbency, however, a maximum increase in the heart rate was seen in dorsal recumbency. Duration of P wave remained unaffected in three postures but the amplitude increased slightly. The amplitudes of QS complexes increased markedly in right lateral recumbency and dorsal recumbency as compared to standing animals. An increase, both in duration and amplitudes, was seen in that of T waves in right lateral recumbency and dorsal recumbency when compared with standing animals. Sinus arrhythmia, though of common occurrence in dorsal recumbency, was also encountered occasionally in right lateral recumbency. The study suggests (i) Any increased in amplitudes of various components and occurrence of sinus

arrhythmia in base apex lead recorded in lateral and dorsal recumbencies should be considered as posture induced and should not be attributed to any cardiovascular abnormality until it is proved otherwise. (ii) P and T waves in the base apex lead appear more prominently when the recording is made in recumbent animals than in standing animals.

#### A-11 (IV)

### Comparative Evaluation of various ECG Components and Cardiac Vectors in Horizontal and Frontal planes in Pashmina Goats

*C. S. Celly and G. R. Singh*

*Division of Experimental Medicine and Surgery,  
Indian Veterinary Research Institute  
Izatnagar (U. P.)*

Electrocardiograms were obtained in 27 Pashmina goats using leads placed in horizontal and frontal planes. For recording ECG in horizontal plane, conventional electrodes, i.e. RA, LA, RF and LF were connected to respective fore and hind limbs. All the leads, viz. I, II, III, aVR, aVL, and aVF were recorded. For frontal plane electrocardiography, LF electrode was placed at the skin lying over the 5th thoracic vertebra, however, the position of other electrodes remained same. Leads were recorded and designated as I, II, III, IV, V and VI. Hexaxial reference systems were framed in both the planes for calculation of cardiac vectors. Leads II ECG recording revealed P and T waves to be upright, isoelectric, and notched upright types whereas QRS complex to be of QS, R, Rs, Rr Qr' and rs types. The mean values of vectors for P, QRS, and T waves were  $40.44^\circ - 13.33^\circ$ , and  $47.33^\circ$ , respectively, in horizontal plane and were  $-5.3^\circ$ ,  $90.66^\circ$  and  $-11.51^\circ$  in frontal plane. These vectors differ markedly from the vectors values reported for other species of goats.

#### A-12 (IV)

### Evaluation of Triflupromazine as a Sedative in Camels (*Camelus dromedarius*)

*P. K. Peshin, Davood Shaziqi, D. B. Patil, Sheela Singh,  
Hazchazan Singh, Jit Singh, A. P. Singh and D. K. Muzthy*  
*Department of Veterinary Surgery and Radiology,  
Haryana Agricultural University,  
Hissar (Haryana)*

Effects of administration of triflupromazine were evaluated in eleven adult camels weighing 300-500 kg. Six camels were used to evaluate sedative properties of the drug and its effects on haematological and blood biochemical parameters. In the remaining five camels, effects on haemodynamics, acid-base status and blood gases were studied. In all the

animals triflupromazine was administered intramuscularly at the dose rate of 2 mg/kg; the dose being based on the results of pilot trials. Mean down time after administration of the drug was  $48.8 \pm 5.4$  minutes but animals could stand if disturbed. Drowsiness, drooping of lower lip and salivation were evident. There was no evidence of cutaneous analgesia. Animals started walking with ataxia after  $159 \pm 7.4$  minutes and recovered completely from the effect of drug in  $259 \pm 23$  minutes. The drug caused significant hypotension 30 minutes after its administration while significant tachycardia was evident five minutes onwards. The decrease in central venous pressure was also significant. The changes in rectal temperature, respiratory rate, acid base status, blood gases haemoglobin, PCV, TEC, TLC, DLC, BUN, SGOT, SGPT, LDH, alkaline phosphatase, blood glucose and plasma concentration of sodium, potassium chloride and inorganic phosphate were not significant.

#### A-13 (IV)

### Effect of Intra-Articular Injection of Local Anaesthetics and Arthrocentesis on Bovine Synovia

*A. P. Singh,*

*D. B. Patil, Davood Shaziqi, Jit Singh and P. K. Peshin*

*Department of Veterinary Surgery and Radiology,  
Haryana Agricultural University,  
Hissar (Haryana)*

The effects of injection of lidocaine Hcl and procaine Hcl on the bovine carpal joints were investigated and compared with intra-articular injection of normal saline solution (saline control) and repeated arthrocentesis alone (non-saline control) in 12 male calves, aged 1 to  $1\frac{1}{2}$  years. Synovial samples were collected before and 12, 24, 48, and 72 hours following injection. Local anaesthetics injection caused a transient inflammatory response, as evidenced by increased total leukocyte count and total protein concentrations in the synovia. Total leukocyte count increased ( $p < 0.01$ ) in the local anaesthetic injected joints within 12 hours. Lidocaine Hcl, however, elicited lesser degree of reaction than procaine Hcl. Saline solution injection caused marked inflammatory response which was more than Lidocaine Hcl. Arthrocentesis alone was not totally harmless procedure as it also elicited increase in total leukocyte and total protein concentrations.

## ABSTRACTS

SESSION-V  
(Award and open house)

Date : 19-2-1991  
Time : 11-30 a.m. to 1-00 p.m.  
Chairman : Dr. J. M. Nigam  
Rapporteur : Dr. A. P. Singh

## Plastic Surgery or Skin in Dogs —An Experimental Study of Various Autogenous Free Skin Grafts.

Mohan R. Wani

NFATCC, Jopasana,  
85/1, Kothrud, Paud Road,  
Pune (Maharashtra)

The study was undertaken to evaluate comparative merits of autogenous free fullthickness grafts, split thickness grafts and pinch grafts to determine which graft would provide functional, survival and cosmetically acceptable appearance. This was evaluated clinically and histomorphologically. Pinch grafts gave the best survival results as compared to the full thickness and split thickness grafts. The full thickness graft had a poor survival rate but the cosmetic appearance was better as compared to split thickness and pinch grafts. The histomorphological study revealed complete healing of graft as evidenced by proliferating capillaries and maturation of fibroblast.

## A Comparative Study of Free Full Thickness and Pinch Grafting Technique in the Treatment of Cutaneous wounds in Dogs

S. V. Vishwasrao and S. B. Mantzi

Department of Surgery,  
Bombay Veterinary College, Parel  
Bombay (Maharashtra)

A comparison between free full thickness skin grafting and pinch grafting is made. A total of thirty six grafting were performed in clinical cases of wounds in dogs. Unsatisfactory results were obtained with free full thickness skin grafting either due to (i) Mutilation by the dog, (ii) larger size of the graft thus making the immobilization difficult (iii) accumulation of discharges below the graft, thus preventing nutrition to the graft (iv) infection at the recipient site. Pinch grafts helped to cover the wound faster, could be easily and quickly performed, require routine surgical instruments and grafts survived inspite of motility and mutilation thus making them more preferable to free full thickness grafts.

## Propofol as an Intravenous Anaesthetic Agent in Dogs (*Canis domestica*)

N. H. Kelawala

*Department of Veterinary Surgery and Radiology,  
Gujrat Agricultural University,  
Anand (Gujrat)*

A study on general anaesthesia was conducted in eight healthy dogs of either sex divided into two groups of four animals each. All the animals were premedicated with Chlorpromazine HCl @ 0.5 mg/kg body weight intravenously, 5 minutes prior to induction. Anaesthesia induced by iv administration of propofol at the mean dose rate of 3.51 mg/kg showed that induction of anaesthesia was quick and smooth. In Group II, animals were subjected to surgical intervention which proved the adequacy of surgical anaesthesia. In all the animals, there was insignificant alteration in heart rate, respiratory rate and rectal temperature, except significant depression of respiratory rate in Group II. Endotracheal intubation was not difficult and seems to be dose-dependent. Recovery was complete in a mean time of  $32.75 \pm 2.93$  and  $42.50 \pm 2.53$  in Group I and II, respectively. The quiet, rapid and complete recovery proved to be most valuable in cases where the animal had to be returned to the owner's care with the minimum of delay.

A-4 (V)

## Tissue Grafting on Teat Sinus for Repair of Teat Obstruction in Bovines

K. K. Mizakhuṛ,

*Balwinder Singh, K. S. Roy and S. S. Rathor  
Department of Veterinary Surgery & Radiology,  
Punjab Agricultural University,  
Ludhiana (Punjab)*

The investigation included four adult buffaloes for experimental study and six clinical cases presented with obstruction of teat. In the experimental study, the mucosal defects were created and were either left uncovered or mucosal sliding or amniotic membrane or venous patch graft was used to cover the defect. Healing was studied for 10 days post-operative both grossly and histologically. In clinical cases also the similar procedures for covering the defect created by excision of obstruction were used. Uncovered mucosal defects resulted in reoccurrence of obstruction, whereas, mucosal sliding, amniotic membrane and venous patch grafts maintained patency of teat sinus in both experimental and clinical cases. There was squamous cell metaplasia of the slided mucosa and amniotic membrane grafts and complete acceptance of venous patch graft with squamous metaplasia of tunica intima of grafted vein. Structure of the obstructive teat lesion varied from simple fibrous tissue to highly specialised cartilagenous tissue.

## ABSTRACTS

### SESSION-VI (Clinical Surgery—Large Animals)

Date	:	19-2-1991
Time	:	2-00 p.m. to 3-30 p.m.
Chairman	:	Dr. I. S. Chandra
Rapporteur	:	Dr. V. Ramakaumar



## Surgical Affections of Livestock in Himachal Pradesh.

*Pzof. J. M. Nigam*

*Dean, College of Veterinary and Animal Sciences*

*H. P. K.*

*Palampur (H. P.)-176062*

High altitude ranges occupy more than half of the geographical area of this Himalayan State. Rearing livestock, such as cattle, gaddi sheep and goat and dog, Spiti horses, Angora and broiler rabbits and yak is the primary occupation of the majority of farmers of these areas.

Surgical affections of the animals are primarily governed by the climatic conditions, which vary according to altitude, land and water distribution, soil topography and socio-economic status of the farmers. Factors like variable rainfall, vegetation, air movement and humidity also play a significant role. Climatic variations in the region affect the animals in two ways; firstly, by affecting the physiological functions of the body as most of the body energy is diverted to fight the climatic variations; and secondly by adversely affecting the health and growth of the animals because of the extreme paucity of fodder during the winters.

The animals of the hills are usually short statured. Prolonged walking of animals on uneven, undulating, hard, rough and steep rocky slopes in hilly terrains often causes foot-affections, long-bone fracture and dislocation. In addition, soil and vegetation in the hilly areas are deficient in calcium, phosphorus and other trace elements, which affect the growth of bone. Hence rickets, osteomalacia and arthritis are the most commonly observed conditions in hilly tracts. Similarly ventral abdominal hernia is not infrequent in large statured animals because of running and jumping on the hilly surfaces. Ocular filariasis in buffaloes has been reported from some areas of lower hills. Urinary calculi, cutaneous neoplasms, gid, heaves and congenital abnormalities have also been recorded, in addition to wound, injuries and leopard bites in different domestic animals.

Congenital abnormalities malformations are most commonly observed maladies in rabbits, however a few cases have also been recorded in large animals such as cranioschitis (due to osteogenesis imperfecta) in a new born buffalo.

The congenital and developmental anomalies have also been observed in hilly terrains and most of these involves in the gastro-intestinal tract, musculoskeletal, ophthalmic and genital system. The congenital malformations most commonly seen in cattle followed by goat and rabbit. The malformations could be attributed to definite genetic cause but majority of malformations are inherited as recessive and may be required several abnormal genes for their expression. The frequency of various type of congenital malformations cannot be ascertained because merely informations are reported. The prevalence of such malformation in hilly terrains could be uncontrolled and lack of scientific breeding programme. Some of these musculoskeletal malformations may have a major environmental cause or interaction between the genetic and environment sources. Even number of non-

chemical environmental factors such as maternal infections, hypoxia, hypothermia, maternal immobilization and other stress producing factors may also accept separately or jointly for producing malformation. Seasonal variations in the occurrences of infection and extreme temperature may be consistent with maternal nutritional disturbance specially in farm animals due to seasonal difference in many food stuffs. The congenital anomalies in different species of animals are recorded in Table 1.

Table 1.

<i>Congenital anomalies</i>	<i>Species</i>
Atresia ani	Caprine
Atresia ani and recti	Caprine
Atresia ani vaginalis	Caprine
Knuckling	Bovine
Arthrogryposis	Bovine
Athelia	Bovine
Cranioschisis	Bovine
Imperforate vulva	Bovine
Supernumerary teats	Bovine
Cryptorchidism	Equine
Preputial diverticulum	Caprine
Pregnathism	Ovine
Dermoid cyst	Canine
Microphthalmia	Canine
Absence of Tail	Bovine
Fusion and misshapen cervical and thoracic vertebral column	Bovine

Most of surgical affection in rabbits are due to exterior factors which result in injuries such as wound, fracture, dislocation and sprain etc. Most of the surgical condition reported are managerial specially the housing and feeding. Congenital anomalies like malformations of teeth are common. The common surgical affections in angora rabbits are recorded in Table 2.

Table 2. Survey of surgical problems in angora rabbits.

<i>Surgical affections and causes</i>	<i>Organ lesions/symptoms</i>
<p>1) <b>Abscesses</b> Cause ; Staphylococcus, Environmental infection</p>	Purulent abscesses in lymph nodes of body and viscera (Neck, Shoulder, skin, knee fold, mesentery etc.)
<p>2) <b>Infections arthritis</b> Cause : Pasteurella, Staphylococcus</p>	Thickening of joints (knee, hip, shoulder etc). limited movement.
<p>3) <b>Sare hocks</b> Cause : Purulent inflammation of soles of hind feet (Staph ; neccrobacillosis, pseudomonas etc.</p>	Swelling of soles of hind feet, purulent fistular formation, solid skin.
<p>4) <b>Fracture of leg bones</b> Cause : Accident, catching in wire of grid floor.</p>	Swelling in area of fracture pain, crepitus and mobility of bone below fracture point.
<p>5) <b>Joint luxation (dislocation) of hip, hock and knee joints</b> Cause : Accident, catching in wire of grid floor.</p>	Swelling, pain, deformity
<p>6) <b>Biting and tearing Sores</b> Cause : Injuries from cage or fighting.</p>	Heamarrhaging wounds with or without scab formation.
<p>7) <b>Muscle or tendon wounds</b> Cause : Injuries from sharp pointed objects.</p>	Lameness, swelling, open wounds pain.
<p>8) <b>Spinal column injuries/ fracture</b></p>	Lameness of both front or hind legs, Paraplegia, paralysis of extremities.
<p>9) <b>Malocclusion</b> "Pike", "Carp" or "Scissors"</p>	Protruding incisors, irregular molase.
<p>10) <b>Wry neck (Infection of inner ear)</b> Cause :</p>	Pus in the inner ear and discharge from ear.

<i>Surgical affections and causes</i>	<i>Organ lesions/symptoms</i>
11) <b>Ear Mange</b> Cause : Earmmangemites.	Scales and crustiness inside auricle.
12) <b>Corneal capacity</b> Cause : Infection and injuries.	Whitish corneal opacity.
13) <b>Conjunctivities (Weepy eye)</b> Cause : Infection, irritation, rabbite Pox	Watery secretion and mild redness of conjunctiva.
14) <b>Blocked stomach</b> Cause : Hair balls, foreign boddies etc.	Atony, stomach enlarged constipation Anorexia.

The surgical affections are conditioned by a number of factors :

- i) Geographical factors - include type of soil, height from the sea level, rain fall, green foliages or fodders.
- ii) Type of work-ploughing, load-carriage, race etc.
- iii) Animal factor-species variation.
- iv) Managemental factors deficiency diseases leading to surgical problems.

Based on the above observations, the per cent incidence of various conditions was as under :

<i>Sr. No.</i>	<i>Conditions</i>	<i>Per cent</i>
1.	Musculoskeletal disorders (including long bone fracture, arthritis, rheumatism, tendon injuries, peresis etc.)	35
2.	Ophthalmic problems (corneal opacity, conjunctivitis, traumatic injuries, corneal rupture etc.	11.5
3.	Neoplastic conditions (odontoma, V.G., warts, fibroma, lipoma etc.)	8.3
4.	Abdominal affections (hernia, fistula, obstruction)	5.6
5.	Teat/udder affections (teat fistula, stenosis, gangrene, bite).	6.1
6.	Miscellaneous (wound, cyst, abscess etc. Elective Surgery (castration, docking etc.) was performed in 31 animals.	34

Thus, among the animals, the most common affection was involvement of the musculo-skeletal system, which approximated 35% of the total surgical conditions encountered. A few basic reasons could be responsible for these maladies, which are enumerated as under :

- i) Hill-pasture grazing : The animals walk whole day in search of fodder on uneven, undulating hilly-terrain paved with hard, sharp and unstable stones. The sharp and hard stones not only injure the feet but also predispose for sudden slip of the animals causing greivous injuries like fracture, dislocation, etc.
- ii) Drinking water : Since flowing streams are the main source of drinking water, grazing animals move to the base of the hills for drinking water time and again. In this process they often get injured or fall.
- iii) Fodder scarcity : In winters there is acute shortage of green fodder and the animals are forced to move to long distances in rough terrains to satisfy their hunger.
- iv) Soil conditions : The soil in most parts of the state is acidic in nature and only some parts have neutral soil. Heavy rainfall leads to seepage or drainage of essential macro as well as micro-elements like calcium, phosphorus, iron, iodine, etc. leading to poor their accumulation in the forages. Consequently, the animals suffer from various deficiency diseases. The problems like rickets, osteomalacia, arthritis are directly or indirectly associated with these factors.
- v) Altitude : The altitude in Himachal Pradesh varies from 250 meters to more than 2200 metres above mean sea level. It has been postulated that the bones tend to become more brittle at higher altitudes. However, this work needs to be substantiated further by scientific investigations.
- vi) Rainfall : Heavy rainfall not only drains away the essential elements of the soil making the animals deficient and weak. It also makes the terrain slippery and many causes fractures associated with sudden fall.
- vii) Vehicular traffic : The roads of the hilly state are zig-zag. Acute bends are major reasons for the accidental injuries to animals.
- viii) Parasitic infestations : Humid climate is best suited for the survival of parasites. The problem of parasitism is a regular feature among these animals which again conditions the animals to suffer from secondary deficiency diseases, making them prone to suffer from surgical affections.
- ix) Wild fauna : Number of leopard bite cases have been reported in the state. This problem is unheard of in the plains.

Although the affections requiring surgical management vary according to the circumstances and places, yet the management of a particular type of surgical affection is based on indential fundamentals irrespective of places or geographical factors. There is no doubt that a particular type of surgical problem is more common at a particular place while the other

types predominate at other place, e. g. foreign bodies syndromas (traumatic pericarditis, traumatic reticulitis, traumatic peritonitis) are more common in industrial cities and the injuries to the bones are common in hilly tracts.

As compared to plains, the case of surgical affections are manifold in this state. The actual record is not possible, because they are not generally presented to the clinics or brought to the notice of Veterinarians. The major reason is the lack of transport through the hilly terrain.

Thus in short, the various livestock species reared in Himachal Pradesh suffer from the common surgical diseases as are prevalent in other states of the country, but the orthopedic disease are the most frequent amongst them. The latter is due to peculiar environment of the Pradesh such as hilly terrains, heavy rainfall, soil and feed deficient in macro and micronutrients etc. Due to peculiar wild life and fauna of the state, the animals also suffer from the problems such as leopard bites etc, which are not common in plains. Similarly a few diseases such as reticular hernia etc. are very rarely encountered due to the poor mechanisation of agriculture and industry. Proper health management of these animals with good food all the year round may take care of most of the disease problems for which the ruralites of Himachal Pradesh need to be educated. Other specific surgical conditions requiring attention of the skilled Veterinarians, surgery can be attempted on the general standard principles adopted to the local field conditions which could better suit to the pocket of the poor farmers of the area.

## Castration of Horses with Primary Closure And Scrotal Ablation Compared To Open Technique.

*D. S. Dehghani and f. Abdolahy*

*Department of Veterinary Surgery and Radiology,  
School of Veterinary Medicine,  
Shiraz University, Shiraz,  
ISLAMIC REPUBLIC OF IRAN*

A study was conducted to compare castration by open technique and castration by primary closure and scrotal ablation clinically, using 15 horses for each group. The horses used in this study were healthy and aged 3-12 years. All operations were performed under general anesthesia. In the open technique the scrotum and tunica vaginalis were incised, then testicle and spermatic cord were freed up and hemostasis and cutting were performed by emasculator forceps. For the primary closure and scrotal ablation technique, an elliptical incision was made on the scrotum, then the testicle along with tunica vaginalis were freed up, the spermatic cord was transligated by chromic gut No. 2 and resected by emasculator forceps caudal to the ligatures. The scrotal dead space was reduced by multiple rows of simple continuous suture pattern using chromic gut No. 1. Results indicated that the open castration is faster than the other method (15 Min Versus 40 Min), but the wound healing was slower. All incisions in the primary closure technique healed by primary intention with minimal incisional swelling and other post operative complications.

## Chronic Otitis Externa in Bullocks and its Surgical Repair

*V. D. Ahez, S. M. Ustuzge and A. P. Bhokte*

*Department of Surgery,  
Veterinary College,  
Parbhani (Maharashtra)*

Three clinical cases of bullock, 10 to 12 years of age, were presented to the clinics with the history of foul smelling discharge from affected ear since 4-5 months. History and systemic examination revealed otitis externa with ulceration of the vertical aural canal in two cases and small granulomatous growth at the deeper portion of vertical aural canal in the third case. Lateral wall resection was performed to improve aeration of aural microclimate and to facilitate drainage from aural canal as well as to provide access to the aural canal for cauterisation of ulcerated portion and removal of granulomatous growth from the aural canal. All the three cases showed uneventful recovery within twenty days.

### Rupture of Urethra and Subcutaneous Infiltration of Urine in Camels (*Camelus dromedarius*)

T. K. Gahlot,

*C. K. Vashistha, R. J. Choudhary, P. R. Dudi and D. S. Chouhan*

*Department of Veterinary Surgery and Radiology*

*Rajasthan Agricultural University*

*Bikaner (Rajasthan)*

Rupture of urethra and subcutaneous infiltration of urine has been recorded in five clinical cases. Rupture was observed at postscrotal part of urethra (1 case) by a sharp iron nail and at penile urethra within sheath (4 cases) by tight abdominal strap involving sheath. Urine escaped into sheath, ventrolateral abdominal muscles and perineal region causing extensive necrosis of muscles. Postscrotal urethrostomy and gradual debridement were carried out. All cases recovered but debridement and dressing of wounds took 6 to 8 weeks to heal.

### Ventral Herniorrhaphy in Horses (A Report of Four Clinical Cases)

D. K. Shazma, Pzem Singh, S. M. Behl,

A. P. Singh, J. S. Chandna and R. M. Bhazdwaj

*Department Veterinary Clinics,*

*Haryana Agricultural University,*

*Hissar (Haryana)*

Repair of ventral hernias in four horses (Three foals and one mare) had been attempted. The hernias were reducible epiplocoel (omentum in the hernial contents with size the ring 4.6 cms, 2 cases-foals); reducible enterocoel (ruptured ileum in hernial contents with seepage of intestinal material and local peritonitis, size of the ring 8 cms-one case foal) and irreducible enterocoel (with massive herniation of intestines from the abdominal rupture on right lateral side, extensive hernial sac occupying the major posterior abdomen with effusion of peritoneal fluid, size of the ring 12 cms-one case, mare). Ventral herniorrhaphy in all the cases and reconstruction of ruptured ileum in case no. 3 was attempted under general anaesthetic management with local anaesthetic infiltration of the site of incision and hernial ring. Preanaesthetic medication was done by diazepam and pentozocaine. General anaesthesia was induced by thiopentone or Xylazine-ketamine combination and maintained either with additional doses of ketamine and/or 6% chloral hydrate I/v. After usual post operative care with fluids, antibiotics, and antiseptic dressing, the cases were cured. In case no. 4 there was extensive oedema on the site of incision and dead space formed by the hernial sac which was managed by establishing the drainage and use of diuretics.



## A Complicated Case of Ventral Hernia in a Goat

*Mozammel Hoque and O. P. Gupta*

*Division of Experimental Medicine and Surgery,  
Indian Veterinary Research Institute,  
Izatnagar (U. P.)*

A goat was presented with ventral hernia showing symptoms of intestinal obstruction. The hernial swelling was opened under local analgesia which revealed presence of pus and intestinal loop as hernial content. The pus was drained and irrigated carefully. Strong adhesions, obstructing the herniated intestine, were seen. The herniated intestine was devitalized and ruptured. The intestine was freed from adhesion carefully and the devitalized segment of the intestine (approximately 6 inches long) was resected. End-to-end anastomosis was achieved using continuous Connel stitches with black braided silk (2-0). The hernial ring was closed by overlapping mattress suture and the abdominal wound was sutured in layers leaving drainage at the ventral commissure of the wound. The animal showed uneventful recovery.

## Caesarean Section in Bovine Under Some Uncommon Situations.

*Mozammel Hoque*

*Division of Experimental Medicine and Surgery,  
Indian Veterinary Research Institute,  
Izatnagar (U. P.)*

The paper deals with 4 unusual cases of dystocia in cows managed by caesarean section. The cases included i) recumbency following lightning stroke, ii) bilateral hip dislocation, iii) insufficient dilatation of cervix associated with rupture of uterus and iv) structural changes in cervix and uterus following prolonged oestrogen therapy. The case-i was a cross bred cow in late pregnancy which became recumbent following lightning stroke. A live foetus was delivered by caesarean section. The cow also responded favourably to medicinal treatment. Case-ii became recumbent following bilateral hip dislocation. The cow did not respond to supportive therapy, hence, caesarean section was performed to save the life of the foetus. The cow died after 2 days of operation. Case-iii was of insufficient dilatation of cervix associated with uterine rupture. Coeliotomy was performed and a live foetus was found in peritoneal cavity with intact umbilical attachments which was recovered. Uterine wound was sutured. Both the calf and the cow survived the operation. Case-iv was of prolonged gestation period due to structural changes in cervix and uterus. The caesarean section in this case revealed thickened, black coloured and completely detached placental membrane. The foetus was dead but there was no signs of putrefaction. The cow survived the operation. Caesarean section in all the 4 mentioned cases was performed under local analgesia through left lower flank approach.

## Comparative Efficacy of Caeserean Section and Foetotomy in Handling Dystocia Due to Pelvic Fracture

*R. D. Shazma, A. S. Nanda, G. S. Dhaliwal, S. Parbhakar  
V. K. Gandotra, Jagit Singh, V. K. Singla and H. P. S. Kochhar*

*Department of Veterinary Obstetrics and Gynaecology  
Punjab Agricultural University,  
Ludhiana.*

A total of 15 cases of narrow pelvis due to pelvic fracture, presented in PAU Vety. Clinics for relieving dystocia, were analysed. Two techniques were used depending upon the condition of the dam, the space available in birth canal and presentation of foetus. Caeserean section was put into practice in 10 cases out of which 4 succumbed after the surgery. The other 5 animals were subjected to foetotomy operation, out of which only one died, that also due to excessive mishandling at a field hospital. The foetotomy technique to relieve dystocia i. e. the cutting of foetus into smaller portions and thus extracting out per-vaginum was rendered to be successful and a better technique as compared to caeserean Section where the stress of surgery on the animal seemed to be more pronounced.

## Castration of Horses Using Scrotal Ablation and Primary Closure Technique- A Review of 10 Clinical Cases.

*R. R. Patsania*

*Department of Surgery and Radiology,  
Veterinary College,  
Anand (Gujrat)*

Castration using scrotal ablation and primary closure was done in 10 horses under light sedation using chloral hydras, maintenance with chloroform and local circular infiltration. Out of 10 cases, in eight cases primary closure technique was followed after open uncovered method and in two cases primary closure technique was followed after open covered method. In all the cases, sutures were removed on 10th to 12th post-operative days. This procedure provided encouraging results by rapid healing without major complications and minimising chances of secondary complications.

## Histoblastic Cell Sarcoma in a Buck

C. S. Celly,

*N. S. Fazihat and G. R. Singh*

*Division of Experimental Medicine and Surgery,  
Indian Veterinary Research Institute,  
Izatnagar (U. P.)*

An adult buck was presented with a swollen and pendulous scrotum, almost touching the ground. The buck was castrated by closed method 2 months back, however, the scrotum started swelling 15 days ago at a very rapid rate. Surgically, a mass weighing 950 g was recovered. Histopathology revealed it to be histoblastic cell sarcoma. This tumor is of rare occurrence. It is opined that most probably, this can also be accounted as one of the post castration complications.

## Surgical Management of Oesophageal Anomalies in Buffaloes (A Report of 9 Clinical Cases)

Pzem Singh,

*D. K. Shazma, S. M. Behl, T. K. Gahlot and J. S. Chandana*

*Department of Veterinary Surgery and Radiology,  
Haryana Agricultural University,  
Hissar (Haryana)*

The anomalies of oesophagus viz megaesophagus (3 cases), oesophageal obstruction (2 cases), one due to leather ball and other due to plant ball (phytobezoar), oesophageal stenosis (one case), oesophageal rupture (2 cases) and oesophageal diverticulum (one case) had been attempted for surgical correction in buffaloes. Out of the three cases operated for megaesophagus, two made uneventful recovery while in one case the normal food uptake could not be restored due to rumen dysfunction. In two cases of oesophageal obstruction, one case with plant ball was cured while in other case due to leather ball there was complication of oesophageal rupture due to passage of probang resulting in oesophageal necrosis and rupture with fistula formation. The case of oesophageal stenosis due to lateral pressure caused by abscess in ventrocaudal cervical area adjacent to thoracic inlet was cured following surgical drainage of abscess. Out of two cases of oesophageal fistula due to rupture of oesophagus, there was recurrence following surgery and one case could not be treated while in other case the healing took place as an open wound following antiseptic dressing with BIPP. The case of oesophageal diverticulum was cured without complication.

**Macrostomus in a Calf**

D. Sreenivasa,

*L. Nagarajan and M. S. Gopal*  
*Poultry Research Development Centre,*  
*Veterinary College and Research Institute,*  
*Nankkal.*

A case of Macrostomus in a calf was operated and the results of the new surgical technique are encouraging.

**Surgical Removal of a Lipo-Sarcoma Located Around the Large Intestinal in a Jersey Cow**

S. K. Tiwazi,

*R. C. Ghosh and R. P. Tiwazi*  
*College of Veterinary Science and Animal Husbandary*  
*Anjora, Durg (M. P.)*

A Jersey cow of Government Jersey farm Bilaspur (M.P.) was referred to the college with the suspicion of extra-uterine pregnancy. Per rectal examination revealed presence of hard mass away from the uterus. The animal had already delivered a mummified foetus about 3 months back. The case was tentatively diagnosed to be a tumour. The animal was operated under anterior epidural anesthesia and triflupromazine sedation. Right ventro-lateal oblique incision was given for laparotomy. The hard mass which was enclosed in a pouch was brought up to the level of skin incision. After incising the pouch, a very hard mass, found to be caseous on cutting, was seen. After its removal, other two masses involving the intestinal wall were seen which were also removed. The abdominal and skin incision were closed in the usual manner. Post operatively, dial dressing with furacin and Nebasulf and injection of strepto-pencillin (2.5 gm) for 5 days was given. The animal recovered after 12 days. Histopathological examination revealed lipo-sarcoma.

Surgical Treatment of an Extensive Case of Horn Cancer in a Bullock—  
A Case Report

S. K. Tiwazi,

*R. P. Tiwazi and S. Roy*

*College of Veterinary Science and Animal Husbandary,  
Anjora, DURG (M. P.)*

A bullock was brought to the hospital with the history of horn injury about 6 months back. The animals had a loose horn at the base and typical cauli-flower like growth and thus it was diagnosed to be a case of horn cancer. The animal was operated after corneal nerve block and all the neoplastic tissue was removed. Skin sutures were applied using nylon in simple interrupted pattern. Post operatively strepto-penicillin (2.5gm) was administered for 5 days. Fluid therapy and corticosteroids were also given. The animal recovered completely after 21 days.

## ABSTRACTS

### SESSION-VII

(Clinical Surgery—Large & Small Animals)

Date	:	19-2-1991
Time	:	4-00 p.m. to 5-30 p.m.
Chairman	:	Dr. Dewan Muthu Mohammed
Rapporteur	:	Dr. Dipak De

## Scope of Small Animal Surgical Practice in Metropolitan Cities.

*J. S. Chaggaz**D-150, Saket,**New Delhi.***INVITED PAPER**

## Incidence of Diaphragmatic Hernia in Bovine in Marathwada Region

*S. K. Jawalikar**A. P. Bhokze and S. M. Usturze**Veterinary Polyclinic,**Khadkeshwar,**Aurangabad (Maharashtra)*

A total of 2844 clinical cases of ruminal disorders were thoroughly scrutinised during the year 1985-88, reported at various polyclinics in Marathwada Region of Maharashtra State. On further screening of these cases of ruminal disorders, 243 cases showed typical symptoms of foreign body syndrome ; of which 141 (58.03%) cases were in buffaloes and 102 cases (41.97%) were in cattle. The sexwise distribution showed 207 (85.19%) in females and 36 (14.81%) cases in males. Out of 243 cases of foreign body syndrome, 46 (18.93%) cases were positive for Diaphragmatic Hernia in milch animals. These cases were diagnosed on the basis of history, symptoms, radiological examinations and laparorumenotomy at various polyclinics in Marathwada region. Amongst 46 cases of diaphragmatic hernia 28 cases were in buffaloes and 18 in cattle, while sexwise distribution showed 41 cases in females and 5 cases in males. The agewise distribution of diaphragmatic hernia cases showed 9 cases in the age group of 0 to 5 years, 32 cases were recorded in the age group of 6 to 10 years and the remaining 5 cases were between 11 to 15 years of age. The diaphragmatic hernia cases reported in females were mostly in advanced stage or gestation of recently parturited cases.

## Ocular Neoplasm and Their Surgical Management in Bovines- A Report of Five Cases:

*P. V. Pazikh,**Department of Surgery and Radiology**Veterinary College,**Anand (Gujrat)*

Five clinical cases of ocular neoplasm were treated successfully by surgical intervention. Out of five, three cases were reported in buffaloes and two in cow. Four cases of ocular

cancerous growth were subjected to extirpation of eye ball following standard procedure and post-operative dressing consisted of daily packing of eye socket with Hostacycline gauge. In one case (buffaloe) there was involvement of nictance membrane and a lemon size tumorous growth at the post orbital fossa was observed. In this case, the affected nictance membrane and growth at the post orbital fossa was surgically excised keeping eye ball intact. Histopathological result revealed squamous cell carcinoma in three cases and follicular lymphoma in two cases. All the cases were followed post-operatively for the six month period and no recurrence was noticed.

LA-4 (VII)

### Clinical and Microbiological Study of Cutaneous Wounds in Camel

N. R. Puzohit,

*D. S. Chouhan, Mayank Rawat & K. N. Shazma*

*Department of Surgery and Radiology,*

*Rajasthan Agricultural University*

*Bikaner (Rajasthan)*

Management of a variety of wounds share a sizable number of surgical cases in camel in routine clinics in the north-west desert of the country. A clinical study of the cutaneous wounds was carried out in camels. These included traumatic cutaneous wounds, lacerations, abscesses, sinuses, fistula, haematomas, ulcerating/suppurating neoplastic growths, cutaneous fibromas etc. commonly encountered at various locations of the body. In addition, the abscesses following mandible fractures, salivary fistulas, lacerations/maggot wounds of nostrils, abscess at supra orbital fossa, eye lid lacerations, cutaneous actinobacillosis-wounds, saddle sores/galls leading to extensive suppurative wounds at wither, hump, sternum or rump regions, pedestal injuries (abscess, sinus, maggot wounds etc), scrotal bite wounds, urine necrosis of abdominal wall, tail gangrene, lymphangitis followed by suppuration, exuberant granulation of the lower limb, punctured/pricked foot, avulsion of toe-nail etc were also studied.

A microbiological examination of the clinical cases of wounds and their sensitivity pattern to antibiotics and sulphas were also carried out in the camels.

LA-5 (VII)

### A Case of Sialolith Accompanying Salivary Fistula in a Camel.

D. R. Batvalia, P. H. Zank and S. C. Ojha

*Department of Veterinary Surgery and Radiology,*

*Gujrat Agricultural University,*

*Sardarkrushinagar (Gujrat)*

A case of sialolith accompanying salivary fistula, its surgical management and post operative care has been discussed.



### Bovine Lameness in an Organised Farm

K. Pratap,

*A. K. Sharma and G. R. Singh*

*Division of Experimental Medicine and Surgery,  
Indian Veterinary Research Institute,  
Izatnagar (U. P.)*

A population of eight hundred twenty eight animals comprising of seven hundred forty nine cattle, (456 adult females, 213 young stock, 80 adult males) and seventy nine buffaloes (38 adult females, 21 young stock, 20 adult males) of Institute dairy farm were screened. All the animals were kept on pucca floor in open paddock system. The physical examination revealed that 6.4% (48/749) cattle were suffering from one or the other orthopaedic affection. It was seen that 1.4% cases were of joint affections, 3.8% of foot disorders and 1.07% cases were of the combinations of both. The number of animals having foot disorders viz. interdigital hyperplasia, inter digital podo-dermatitis, interdigital wounds, ulceration of sole, heel erosion, scissors claws and overgrown hooves was higher than the joint affections. Among the animals having foot affections, the incidence was high in high-yielders (68.1%) in comparison with medium yielders (22.7%) and low yielders (9%). Out of 79 buffaloes' population only one was found lame due to hoof deformity.

### Some Diseased Patterns of the conjunctiva and Cornea in a Pet Animal.

K. Ouad,

*M. Hamid and G. Mahmoud*

*Department of Surgery  
Veterinary College,  
Giza, EGYPT.*

96 normal healthy eyes and 98 diseased conditions were bacteriologically examined. Different species of microorganisms were isolated from the presented cases. 84 clinical cases representing different affections of the cornea and conjunctiva were encountered. 23 cases were subjected to histopathological examination. Dermoid cyst and lateral folds were among the congenital anomalies. Serous form, acute catarrhal, mucopulent and purulent conjunctivitis were encountered. Among the corneal affections, superficial vascularization, kera-to-conjunctivitis sicca, pannus, exuberant granulation tissue, superficial dystrophies and bullans were met with. Treatment of the affected cases was carried out on the same principle.

### Uterine and Ovarian Dysgerminoma in a Female Dog.

G. R. Singh,

*C. S. Celly and Kali Charan*

*Division of Experimental Medicine and Surgery  
Indian Veterinary Research Institute,  
Izatnagar (U.P.)*

An adult female dog was presented with the history of uterine bleeding. No evidence of any venereal granuloma could be established in external genitalia, however, a hard mass was palpated in the pelvic region. Laparotomy revealed a hard mass in the body of uterus and another mass over the left ovary, which were resected out. An ovariohysterectomy was also performed. Histopathology revealed the masses to be dysgerminoma. The case was put on record as a rare occurrence of dysgerminoma in uterus in dogs.

SA-9(VII)

### Sweat-gland Carcinoma with Metastasis in a Fox-Terrier Dog

Utpal Das,

*Azup Kr. Das, J. Sengupta, B. B. Das and Debkumar Das*

*South Calcutta Veterinary Clinic  
Calcutta (West Bengal)*

A very rare case of "apocrine cell carcinoma" with metastasis in a 7 year old Fox-Terrier dog has been recorded. The dog was presented with a history of growth just upon the skin of anal opening since two months. That mass was surgically excised. Again another growth appeared on the right hind foot-pad three months later with the recurrence of anal growth. Both the growths were surgically removed in two stages. Histopathological investigation revealed all the growths as "apocrine cell carcinoma". Further, there was no recurrence of growth after operation as observed for past seven months.

SA-10 (VII)

### Surgical Repair of Bilateral Mandibular fracture in a Doberman Dog.

S. K. Tiwazi

*Department of Surgery and Radiology,  
College of Veterinary Science and Animal Husbandary,  
Anjora, DURG (M. P.)*

A Doberman dog of about six and half months age was brought to the department of Surgery & Radiology with the history of extensive dog bite. The lower jaw was hanging like a lumpy mass. Careful examination revealed bilateral mandibular fracture but the teeth were

intact. Simple wiring technique in the figure of eight was used after sedation with triflu-promazine (30 mg) and administration of ketamine hydrochloride (75 mg). A stomach tube was inserted for 7 days to feed milk and water. Intravenous fluid therapy was given for four days. There was uneventful recovery and the animal completely recovered after a month.

SA-11 (VII)

### Lympho-Sarcoma of the Uterus and Ovary in a German Apso Bitch and its Surgical Treatment.

*S. K. Tiwazi,*

*R. C. Ghosh and M. A. Roque*

*Department of Surgery and Radiology*

*College of Veterinary Science and Animal Husbandry,*

*Anjora, DURG (M. P.)*

A german Apso bitch was brought to the hospital with the history of continuous blood mixed sero-sanguineous discharge from the external genitalia for the last seven months. The animal had difficulty in defaecation also. After a few days, it was seen that the animal had difficulty in urination. On the next day, there was sudden cessation of urination and it started accumulating in the urinary bladder. Catheterization was tried but it was not possible to insert the catheter.

The bitch was operated for laparotomy under triflupromazine (40 mg) sedation and local infiltration using 2% lignocaine. Laparotomy revealed presence of a large sized tumour in the body of the uterus. The ovaries were also of much larger size. The walls of rectum and bladder adhered with the wall of the uterus thus pressing and narrowing the lumen of rectum and the neck of bladder. Ovario-hysterectomy was done and the tumour was removed along with uterine body surgically. Fluid therapy and the routine post operative care was done. The animal recovered completely after 10 days. Histopathological examination revealed lympho-sarcoma of the uterus and ovary.

SA-12 (VII)

### Tonsillectomy by Surgical Diathermy in Canines

*A. K. Szivasatva, and Ram Janam Singh*

*Canine Therapy Unit*

*State Veterinary Polyclinics,*

*Lucknow (U. P.)*

The canines suffering from persistent cough due to chronic hypertrophic tonsillitis were relieved by tonsillectomy. The best technique suited was removal of tonsil by a surgical diathermy needle after maneuvering the tonsil. This technique does not involve haemorrhage which is a great problem in all the traditional techniques. The technique will be discussed in detail.