

# Veterinary Surgery

## 1. Anesthesiology

- 1.1 Importance of anaesthesia in veterinary surgery, general considerations for anaesthesia, examination of animals before anaesthesia
- 1.2 Anaesthetic equipments, machines and circuits
- 1.3 Preanesthetic agents and their effects on body systems
- 1.4 Anaesthetic agents (injectable and inhalational), muscle relaxants, neurolept, neuromuscular blocking agents and their administration in small and large animals
- 1.5 Balanced anaesthesia, total intravenous anaesthesia, local and regional anaesthesia, anaesthesia under field conditions
- 1.6 Preemptive analgesia, peri- and post-operative pain and its management
- 1.7. Monitoring of patient during anaesthesia, IPPV and artificial ventilation, anaesthetic complications, emergencies and their remedies
- 1.8 Electro-anaesthesia, Euthanasia in animals, acupuncture, electronarcosis and hypothermia
- 1.9 Anaesthetic techniques and regimens for dog, cat, pediatric, geriatric, obstetrical, selected diseases and special patients patient
- 1.10 Anaesthesia of laboratory animals, birds, zoo and wild animals

## 2. General Surgical Science

- 2.1 Reasons of surgery, principles of tissue handling and general surgical principles
- 2.2 Preoperative assessment and preparation, operative management, and post-operative care of the surgical patient
- 2.3 Sterilizations of surgical materials and instruments, Suture and Ligature
- 2.4 Nutritional support to surgical patients
- 2.5 Infection control in surgical patients, wound and wound Healing Mechanism
- 2.6 Haemorrhage, haemostasis and shock, Principles of fluid and blood transfusions
- 2.7 Inflammation, abscess, tumors, cyst, hernia, haematoma, necrosis, gangrene, burn, scalds, frost bite, sinus and fistula and their treatments
- 2.8 Bandages and physical therapy
- 2.9 Affections of blood vessels, muscles, lymphatics, bursa, nerves and their management
- 2.10 Operating room emergencies, cardio-pulmonary embarrassment and resuscitation, monitoring of surgical patient

## 3. Radiology and Diagnostic Imaging

- 3.1 Conventional, computed and digital radiographic machine, radiographic accessories,
- 3.2 Production and properties of X-rays, Working principles of x-rays machine and radiographic accessories
- 3.3 X-ray film construction, intensifying screens, film screen combinations
- 3.4 Preparation of animals for X-ray exposure, formation of radiograph technique chart

- 3.5 Contrast radiography in various animals, preparation of processing solutions and film processing, artifacts and their prevention
- 3.6 Production of radiographs of different parts of the body
- 3.7 Physiotherapy in veterinary patients
- 3.8 Biological effects of radiation, radiation dosimetry, radiation safety and radiation therapy
- 3.9 Fluoroscopy, ultrasonography and Doppler echocardiography, MRI, CT-scan, positron emission tomography, xeroradiography, scintigraphy, gamma camera and other imaging techniques in animals
- 3.10 Viewing and interpretation of radiographs and modern diagnostic images

#### **4. Soft Tissues Surgery**

- 4.1 Injuries of integument and their management, principles of plastic and reconstructive surgery, and grafting techniques
- 4.2 Affections of tongue, salivary glands and oesophagus and their surgical treatment
- 4.3 Approaches for thoracic surgery and surgical treatment of thoracic diseases
- 4.4 Affections of stomach, intestines, rectum, anus and their surgical treatment
- 4.5 Affections of liver and biliary system, pancreas, spleen, bone marrow, tonsils, lymphatics and thymus and their surgical treatment
- 4.6 Surgical management of various hernias
- 4.7 Affections of respiratory, cardiovascular and lymphatic systems and their surgical management
- 4.8 Affections of male and female urogenital system and their surgical management
- 4.9 Surgery of the endocrine system- pituitary, adrenals, thyroid, parathyroid
- 4.10 Surgical affections of teat and mammary glands, and their surgical corrections

#### **5. Orthopedics and Limb Surgery**

- 5.1 Examination of the orthopaedic patient
- 5.2 Fractures and dislocations, fracture healing, ligaments and tendons -repair techniques
- 5.3 Biomechanics of fractures and luxation
- 5.4 Treatment of fractures of different bones in domestic animals
- 5.5 Bone diseases, affections of the joints, their diagnosis and treatment
- 5.6 Conformation of the limb and anatomy of hoof, examination of limbs for lameness
- 5.7 Lameness and allied surgical conditions of fore limbs/hind limbs
- 5.8 Declawing, use of therapeutic shoes and corrective shoeing
- 5.9 Neurological examination, imaging the spine, skull and brain, surgical approach to the brain and spinal cord
- 5.10 Physiotherapy and rehabilitation of orthopaedic patient

## **6. Surgery of Head and Neck Region**

- 6.1 Etiology, diagnosis and surgical management of the affections of sinuses, nasal and buccal cavity
- 6.2 Affections of the horn and their surgical management
- 6.3 Etiology, diagnosis and surgical management of the affections of larynx, pharynx and trachea
- 6.4 Principles of ophthalmic surgery
- 6.5 Surgical affections of eye lids, lacrimal apparatus, nictitating membrane, conjunctiva, cornea, sclera, choroids, iris, retina, lens, optic nerve, aqueous and vitreous humours and other parts of eye and their management
- 6.6 Transplantation of cornea, lens extraction/implantation
- 6.7 Affections and surgical management of lips and cheeks and teeth
- 6.8 Affections and surgical management of teeth and palate
- 6.9 Affections and surgical management of neck and withers
- 6.10 Affections and surgical management of ear and guttural pouch

## **7. Modern inventions in surgery**