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Editorial

The Role of Veterinary Surgery: an Editorial

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Veterinary surgery is an aspect of veterinary medicine. Veterinary surgery diagnoses and treats livestock illnesses (including injuries and abnormalities) using surgical procedures in conjunction with physical treatment and medications, and it plays an essential role in veterinary clinical practice. It includes the Etiology, clinical symptoms, pathophysiology, prevention, and therapy of illnesses. It also includes surgical infections, non-open soft tissue injuries (contusions), trauma, ulcers, traumatic shock, fistulas, illnesses of bones, muscles, joints, tendons and sheaths, bursae, nerves, and skin (limb disease). Veterinary surgery is becoming increasingly distinct as veterinary science advances. Veterinary obstetrics separated from surgery as an independent discipline. Veterinary surgeons (often known as veterinarians) provide healthcare for animals. After becoming a veterinarian, you can pursue a variety of careers, including teaching, government sectors, research studies, and clinical practice in clinics. Clinical veterinarians deal with farm animals, horses, zoo animals, laboratory animals pets, etc. It is a very diversified and hard career.

The veterinarians operate in sequestered practice, treating pet animals including dogs, cats, birds, and rabbits. The health and welfare of the animals is their first focus (similar to a doctor for humans). This is accomplished by identifying and treating diseases and injuries, preventing sickness, and advising pet owners on what way to best care for their animals.

Veterinary anesthesia

Animal anesthesia shares many parallels with human anesthesia, but it also has notable variances. Local anesthesia is usually used to close wounds and remove tiny tumors. The most frequent local anesthetics used in veterinary medicine are lidocaine, mepivacaine, and bupivacaine. Sedation without general anesthesia is used for more complex operations. Acepromazine, midazolam, xylazine, diazepam, and medetomidine are some of the most regularly used sedatives. Yohimbine and atipamezole can counteract $\alpha 2$ agonists, including xylazine and medetomidine. Xylazine is allowed for usage in dogs, cats, horses, and cattle in Pakistan. Most ruminant procedures can be done under regional anesthesia.

General anesthesia is frequently used in animals for foremost surgery. All animals are commonly given sedative, analgesic, and anticholinergic medications intravenously or intramuscularly. The next phase is induction, which is generally done using intravenous therapy. Cats and Dogs are repeatedly administered ketamine with diazepam, thiopental, (usually only in cats), and propofol. It has a similar physiological effect but then differs in alignment from the now-withdrawn Saffan. Thiopental is regularly administered to horses. After induction, the animal is intubated with an endotracheal tube and placed under gaseous general anesthesia. The most often used gas anesthetics in veterinary medicine are isoflurane, halothane, and enflurane, while sevoflurane and desflurane are gaining popularity due to their quick induction and fast recovery times.

Other common surgical problems and procedures

1. Ovariohysterectomy (OHE)

An ovariohysterectomy involves breaking down the ligaments of the ovaries and uterus, ligation of the blood arteries, and eradicating both organs from the body. The peritoneum layer, muscle layer, and subcutis are sutured with vicryl 2/0 and the skin is sutured with silk. Castration (Orchiectomy) is the removal of the testicles from male animals. Depending on the animal, several treatments are utilized, such as ligation of the spermatic cord with vicryl suture material 2/0, wrapping a rubber around the cord to stop the blood flow to the testes, and crushing of the cord with a specialized device like the Burdizzo (large animals).

2. Neutering

The neutering procedure is also utilized as an emergency treatment for some reproductive illnesses such as testicular torsion and testicular tumor. It is also advised in situations of cryptorchidism to avoid torsion and malignant alteration of the testicles. Laser surgery has several advantages, including a lower risk of infection, less postoperative and swelling discomfort, lesser bleeding, and better visualization of the operating region. Improved hemostasis and visibility can sometimes eliminate the need for anesthesia and/or shorten the total surgery duration.

3. Cesarean section

Cesarean section is routinely used on dogs, goats, sheep, cats, horses, and cattle. Usually, this procedure is performed in an emergency operation because of complications during the childbirth process. Certain breeds of dogs, such as bulldogs, frequently require this procedure due to the puppy's head size in comparison to the breadth of the female dog's birth canal.

4. Gastric dilatation volvulus (bloat)

Gastric dilatation volvulus is a frequent ailment in dogs. Whereas, the stomach blocks with gas and becomes torsed. Therefore, we need rapid surgical surgery to avoid the necrosis of the stomach wall and the death of the dog. During surgery time, the stomach is deflated and returned to its proper position. To prevent this illness from repeating, a gastropexy can be performed, which involves attaching the stomach to the body wall. A splenectomy or partial gastrectomy may also be necessary.

5. Cystotomy (remove bladder stones)

A cystotomy is the surgical procedure through which we open the urinary bladder. It is a common procedure in dogs and cats to remove tumors or bladder stones.

6. Repairing of wound

Bite wounds caused by other animals. Typically, many wounds are little scratches that may be quickly cleansed and sutured, occasionally with a local anesthetic. Bite wounds, on the other hand, entail compressive and tensile pressures as well as shearing forces, and can result in skin separation from underlying tissue and muscle avulsion. Subterranean puncture wounds are particularly susceptible to contamination. Deeper wounds or cuts are examined under anesthesia, then probed and debrided. Primary wound closure is operated when all residual tissue is healthy and contamination-free. The puncture wounds can be left open, bandaged, and healed without surgery. A third option is delayed primary closure, which entails bandaging, re-evaluation, and surgery in four to five days. Cow udder and teat wounds are tougher to treat due to the organ's poor access and compassion, as well as the fact that deep anesthetic may not be used on cows.

7. Removal of foreign body

Dogs, cats, and cattle frequently ingest non-edible things. Therefore, foreign bodies can clog the gastrointestinal tract, leading to unadorned vomiting and electrolyte abnormalities. The foreign body can be removed surgically through the stomach (gastrotomy) or the intestine (enterotomy). Necrotic gut can be excised (enterectomy), and reconstructed by intestinal anastomosis. Many foreign bodies can also be removed via endoscopy, which, while

requiring general anesthesia, does not need surgery and dramatically reduces recovery duration. Endoscopic removal of foreign bodies is physically limited to items trapped in the esophagus, stomach, or colon. The ailment in cattle is referred to as hardware disease.

Diagnosing

When an animal exhibits indications of injury or sickness, it is the veterinarian's responsibility to determine what is wrong. This can include a physical examination utilizing their expertise to watch, feel, and palpate the animal, as well as diagnostic testing such as blood tests, x-rays, or scans to determine the source of the problem. If more tests are required, the veterinarian will make the appropriate preparations and then process the results to diagnose the condition.

Treating

A veterinarian's primary responsibility is to determine the best way to treat an ill animal to restore its health. This might include providing medication that the animal's owner can easily give at home, or surgery to repair a fractured bone or remove a tumor. In some situations, the animal may need to be admitted to the clinic for treatment, similar to a hospital stay, or sent to a specialist for additional care. Many veterinarians pursue additional training in their chosen profession, like as surgery, internal medicine, or cardiology.

Prevention

As the aphorism goes, prevention is better than cure. As a result, part of a veterinarian's responsibilities includes advising owners on illness prevention. This involves suggesting and delivering yearly immunizations and treatments to prevent fleas, ticks, and worms. A physical examination will be performed by a veterinarian, and more advanced procedures will be used to uncover anomalies that can be addressed to prevent disease from beginning.

The goal of veterinary surgery

The objective of veterinary surgery may differ significantly between pets and agricultural animals. In the former, the situation is more analogous to that of humans, with the patient's benefit being the most essential consideration. In the latter case, the economic advantage is more significant.