JIMMA UNIVERSITY

COLLEGE OF AGRICULTURE AND VETERINARY MEDICINE

SCHOOL OF VETERINARY MEDICINE

VETERINARY SURGICAL CASE REPORTS IN DOMESTIC PATIENTS ANIMALS IN AND AROUND JIMMA TOWN, SOUTHWESTERN ETHIOPIA

MSC THESIS

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Veterinary Surgical Case Reports in Domestic Patients Animals in and Around Jimma Town, Southwestern Ethiopia

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I declare that the thesis research works has not been done in study area else before or is not part of an on-going work.

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We the thesis advisors have verifiedthat the student has in corporated the suggestions and modifications given during internal defense and the thesis is ready to submit. We have also verified that the work has not been done anywhere else before. Hence, we recommend the thesis is to be submitted for internal defense

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DEDICATION

I dedicate this MSc Thesis work to my father kasa kebede and my other mulunesh wedimu for all the love they have given me in the success of my work and for their prayers and support.

STATEMENT OFAUTHOR

First, I declare that this Thesis is my original work and that all sources or materials used for this Thesis have been fully acknowledged. This thesis has been submitted in partial fulfillment of the requirements for an MSc degree in Veterinary surgery at Jimma University College of Agriculture and Veterinary Medicine and is deposited in the University Library to be made available under the rules of the library. I declare that this thesis has not been submitted to any other institutions anywhere for the award of any academic degree, diploma, or certificate. Brief quotations from this Thesis are allowable without special permission if the source is accurately acknowledged. Requests for permission for comprehensive citation from, a duplicate of this manuscript in whole, or part may grant by the School of Veterinary Medicine and/or the School of Graduate Studies of Jimma University. In all other instances, however, permission should obtain from the author.

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BIOGRAPHICAL SKETCH

The author,Amanawit Kasa, was born on September 16, 1991, in jimma Zone of Oromia National Regional State. She attended her elementary education (grades 1-6) at Ginjogudru from 1998–2004 EC, grades 7 and 8 at tesfa tewahido Primary School from 2005–2006 EC, and grades 9 and 10 at Catholic High School from 2007–2008 EC. Preparatory at Jimma University Community School from 2009–2010: Amanawit Kasa received BVSC from Bahir Dar University in September 2021 (2014 EC).

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LIST OF ABBREVIATIONS

IV	Intravenous
IM	Intramuscular
JUCAVM	Jimma University College of Agriculture and Veterinary Medicine School of Veterinary Medicine
OVH	Ovariohysterectomy

ABSTRACT

Livestock is a vital part of agriculture due to the economic value that living animals and their products bring to the agricultural sector.The report was carried out at Jimma University College of Agriculture and Veterinary Medicine open veterinary clinic in and around Jimma town, starting from April 1/2023 to January 2024. With objectives for performing different surgical treatments and postoperative complications and their management in domestic animals. Sixteen cases were examinations based on their history and general physical examinations. Having thoroughly examined the animal's condition and determined that it needed a certain surgical procedure; to make sure aseptic procedures and proper animal preparation for surgery, anesthetic protocols based on the specific type of animal. This report revealed the different surgical cases; cesarean sections, castration, rumenotomy, ovariohysterectomy, umbilical hernia, rectal prolapse, tail docking, extirpation of the eye, enterotomy, cauliflower ear, abscess, and hematoma. After surgery, surgical problems, postoperative management, and results were documented. Some patients experienced complications. Out of 16 patients, only 1 patient (6.25%) died, while 93.75% (15/16) of the operated animals recovered. Among the outcomes following surgery were irritation to the surgical site, bleeding, anorexia, edema, and loss of body condition. To reduce post-operative problems, it is recommended to use appropriate early, aseptic surgical procedures and post-operative care.

Keywords: *Case Report, Complication, jimma* **,***Surgery* **,** *Surgical Management.*

1. INTRODUCTION

Livestock is an essential component of agriculture, with the contribution of live animals and their products to the agricultural economy (Asresie and Zemedu, 2015).It has a crucial source of income: wholesome food, money, manure, transportation of people and goods, and draught power (Randolph *et al*., 2007). In most of sub-Saharan Africa, animal production has been seen as the primary driver of agricultural growth since livestock are essential to both the national economy and rural populations' means of subsistence (Anteneh ., 2006). Ethiopia is believed to have the largest livestock population in Africa.According to recent estimates,the country has around 70 million cattle, 42.9 million sheep,52.5 goats, 8.1 million camels, 2.15 million horses,10.8 million donkeys,0.38million mules and 57million poultry (Anno et al., 2022). However,animal production is hampered by a wide array of constraints, which include diseases, low inputs of feeding, poor management, a lack of surgical knowledge, a lack of skills for diagnosis and treatment of diseased animals, and a weakness in animal health services (Assegai., 2000).In animal health services, veterinary surgery is essential in preserving animal life by performing surgical procedures and treating a variety of illnesses,anomalies, and deformities (Slatter., 2003).Surgery is a skill, and equipment based profession that manages patients via the use of sutures, incisions, excisions, manipulation, or other intrusive operations under local, regional, or general anesthesia (Jain.,2018),

In Europe continent like Germany different surgical services for instance cesarean section is used to correct dystocia as a result of insufficient cervical dilatation,uterine torsion, vaginal prolapse,foetal maldisposition, fetal oversize, fetal malformation in ovine (Viktoria *et al*.,2022). In Asia and parts of Africa, the concept of community-based animal health worker systems is largely related to the high impact on animal health and human livelihoods resulting from improved basic veterinary care in rural communities (Cheneau *et al.,* 2004). Veterinary services in Africa are supported by, the Food and Agricultural Organization (FAO) and World Health Organisation (WHO), with priority given to the production of food animals, veterinary public health, and preventive medicine (Tiruneh, 2014). In Namibia, one investigation indicates 58.7% non-elective and 41.3% elective surgical procedures were performed in pet animals from 2011 to 2016 (Segwagwe *et al.,2020).* A retrospective study conducted at the University of Ibadan Veterinary Teaching Hospital in Nigeria also shows major surgical

procedures (surgery of the abdominal cavity,thoracic cavity, and surgery involving orthopedics) between the years 2003 and 2013 to evaluate the level of compliance with safety and quality of care standards in dogs (Akinrinmade.,2014).According to Eyarefe and Dickson's (2014) study, which was conducted in Ghana on surgical disease prevalence and pattern among animal species of canine,feline,equine, caprine, and ovine within a seven-year period (1997–2013), the highest (96%) prevalence of surgical conditions was in dogs. Another scholar also studied case histories in sudan veterinary hospitals with findings of Surgical interferences in bovine (35.78%), ovine (12.13%), caprine (21.8%), and equine (43.41%) (Afrah and Atif, 2014).

Similarly,in Ethiopia, a study on different surgical conditions was conducted from 1999 to 2007 at Addis Abeba University's College of Veterinary Medicine and Agriculture Clinic, Debre Zeit In order to document and compare their prevalence. Of the total 689 surgical conditions and requested, cattle, sheep, goats, dogs, and cats accounted for 368 (53.48%), 148 (21.51%), 16 (2.32%), 133 (19.33%), and 23 (3.34%), respectively (Tiruneh *et al.,2014).* Woldegiorgis (2020) from the same University also reported that 93.75% (15/16) of the operated animals were recovered compared to 6.25% (1/16) that succumbed. Another study by Kitessa (2019) showed the recovery of 33.33% (9/27) small animals and 66.67% (18/27) large animals that had gone through surgical procedures, but 3.70% (1/27) died. Tizazu (2020) also noted that in a total of 16 cases, 15 (93.8%) animals subjected to surgery recovered fully, and one (6.2%) animal died after surgery.Similarly in Veterinary Teaching Hospital found in the College of Veterinary Medicine and Agriculture of Addis Ababa University, and Dire veterinary clinic,twenty-two cases were conducted with one patient loss (Kebamo, 2019). Though all the above studies reveal different surgical operations in central Ethiopia. However, there is a shortage of information, with no published reports of surgical cases in the Southwestern part of the country, including the current study area. To fill this gap, a surgical case report on techniques, postoperative complications, and the management strategy domestic animals (large and small) in and around the veterinary clinic, Oromia Region, Southwestern part of Ethiopia.

The study was conducted with the following objectives:

- To document different surgical procedures, techniques as well as their outcomes in domestic animals.
- To develop surgical skills in major and minor surgical procedures
- To identify postoperative complications and its management in domestic animals.

2. MATERIALS AND METHODS

2.1. Study Area

The study was carried out at JUCAVM open veterinary clinic in Jimma town.The town is found in Oromia regional state 352 km southwest of Addis Ababa. The was situated at a latitude of 7 ^{0} 13’ to 80 56’ N a longitude of 35^{0} 52’ to 37^{0} 37’ E, and an elevation ranging from 880 to 3360 m above sea level (JZARDO, 2009). The area receives a mean annual rainfall of about 1,530 mm, which comes from long and short rainy seasons. The average minimum and maximum annual temperature range between 14.4 and 26.7°C, respectively (Tolosa and Tigre .,2007).According to annual statistical abstract data of districts of the Jimma zone, there were about 3,956,247 cattle, 851,991 sheep,1,882,822 goats, 155,571 mules, 252,768 horses, 188,683 donkeys and 3,088,436 poultries (ASADD,2017).

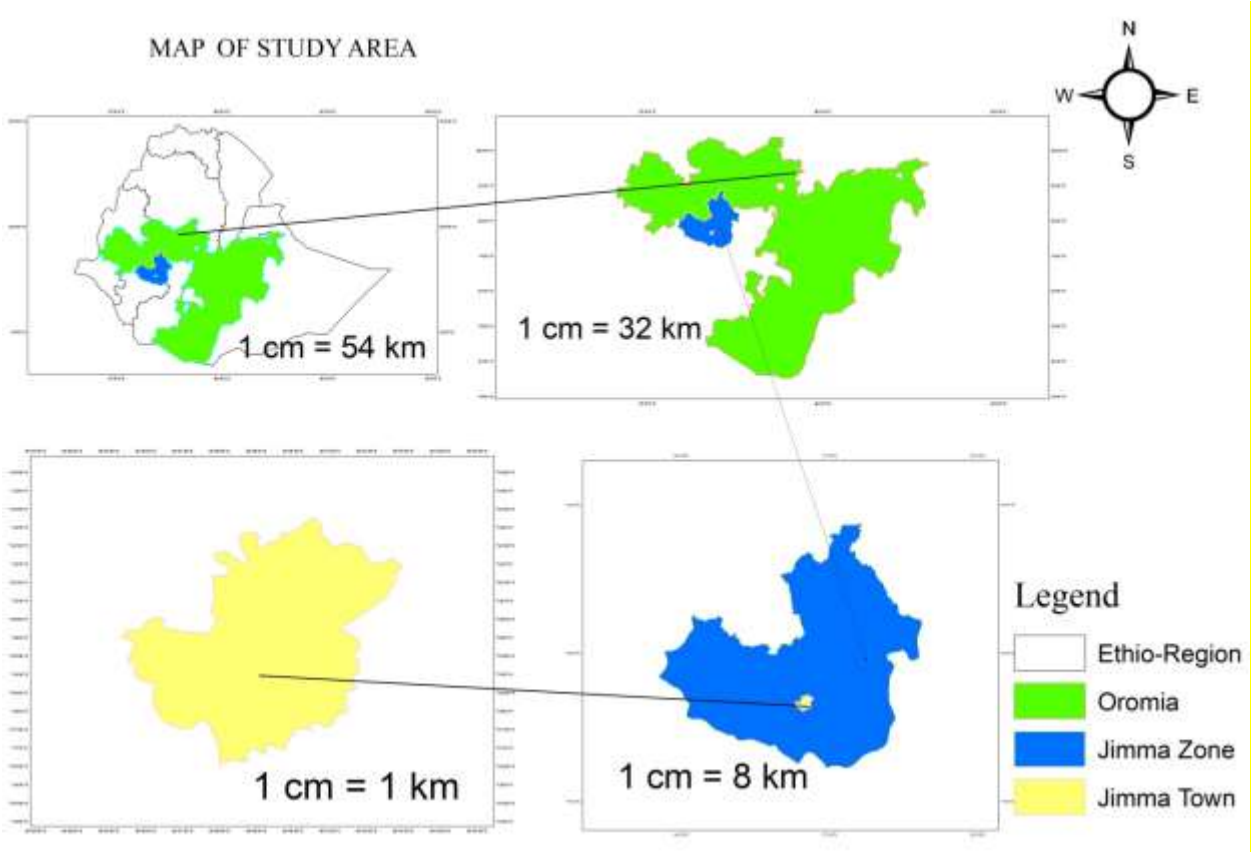

Figure 1 : Map showing study Area

2.2. Study Population

The study population were included different domestic animals species (small and large ruminants, equines, and companion), age, breeds, management system and sex from in and around Jimma town open veterinary clinic for a variety of surgical procedures. They were large and small animals of different breeds, ages, and management methods. Cattle, donkeys, goats, and sheep of local breeds were raised under an extensive management system, but some cross-breed cattle breeds were managed intensively. Small animals (such as dogs and cats) were maintained as pets and given meat and other concentrated meals. The surgical procedures were carried out at the JUCAVM veterinary clinic and outside the owner's place of residence of the owner.The number of species that were presented for surgical procedures is tabulated in the following .

2.3. Study Design

A descriptive case report was used to compile and document the conducted various surgical case on different domestic animals that was presented to in and around jimma town open veterinary Clinic from in and around Jimma town starting April 1/2023 to January 2024. A case report study was conducted based on a nonprobability sampling technique on sick and healthy domesticated animals in the study areas. Cases were recorded using a single patient, and each case report had full details of the patient's history, clinical examinations, surgical treatment, postoperative care, postoperative complications, and follow-up.

2.4. Study Method

A domestic animal brought to the open veterinary clinic with a variety of surgical situations requiring minor or large surgical manipulations either for elective or emergency treatment was given a medical examination. As a result, each case was examined and reviewed, and findings related to many clinical factors, such as patient history and physical examination, were recorded. The owner was interviewed on any issues with the provided animal, like sex, age, species, breed, management systems, source, and clinical signs, and all relevant information was documented. Physical examination involves using observation, palpation, percussion, and auscultation for the assessment of the anatomical structures of animals was done.

It includes checking vital signs,including temperature examination,heart rate,respiratory rate,colour of visible mucus membranes, hydration status of animals, rumen motility, and palpation of superficial lymph nodes were conducted.Additionally,the affected areas were handled to determine the type,consistency,size, attachment, and sensitivity of the lesions. When necessary, exploratory punctures were also carried out to reveal the natural characteristics of any fluids in the region. Surgical patients were classified as elective or non-elective after the analysis of all relevant information from the case history and physical examination. Specific surgical manipulations and treatments were recommended and carried out under aseptic conditions and a safe anesthetic protocol as required by the given situations based on the presented animal and clinical findings. Aside from their actual presence,all animals undergoing medical procedures were also monitored via phone calls for any discomfort or related complications. Each sick animal received postoperative care, and any postoperative outcomes were noted for each case. Finally, the relevant informations were compiled, the surgical case reports prepared and reported according to relative similarity of procedure and presentations of the surgical patient.

2.4.1. Patient signalement

Patient signalement such as: species, age, breed, sex, and reproductive status (intact or neutered and pregnant or not) of all the animals were recorded at the time of presentation.

2.4.2. Case history and Physical examination

Following the recording of the signalment duration of the illness, severity or volume of the problem, frequency of the diseases, appearance or character of the illness, history of previous ailment and history of past or present medication and vaccination were recorded for each case based on the anamnesis obtained from the client. Finally, clients' signed consent form before proceeding with the remaining procedures.

Animals admitted to each particular veterinary service center were undergone thorough physical examination starting from head to limbs. Hydration status of an individual patient of each case was assessed and recorded by using color of mucous membrane, capillary refill time, dryness or moisture of the muzzle, placement of the eye in the orbit and skin turgor. Vital sign such as: respiratory rate, pulse rate and rectal temperature were measured and recorded. Each case was closely inspected for detection of any structural and/or functional

disorders of the affected region when they were at motion and rest. The affected parts and/or lesions were palpated and manipulated to detect their nature, consistency and tenderness. Exploratory puncture was done whenever indicated to reveal the physical characters of the existence fluids or contents in the examined lesions. Finally all relevant information were assessed, concluded, decided and interpreted before undergoing particular surgical procedure.

3. SURGICAL CASE REPORT: PROCEDURES, TECHNIQUES AND TREATMENT OUTCOMES IN DIFFERENT SPECIES OF DOMESTIC ANIMALS

3.1. Surgical Management of Dystocia

3.1.1. Cesarean Section in a Queen

Abstract

Dystocia is one of the problems that result from an extended first or second stage of labour and require help during delivery. The purpose of this case report was to determine and surgically treat dystocia caused by uterine inertia in a four-year-old estimated-weighting 3.2kg local breed queen with a third party was brought to the Jimma University College of Agriculture and Veterinary Medicine open air veterinary clinic with history of dystocia. A clinical examination showed that the animal was dehydrated, had a heart rate of 120 beats per minute, a respiratory rate of 30 breaths per minute, and a rectal body temperature of 40^0c.Upon vaginal inspection, the delivery canal was discovered to be wet with unpleasant vaginal discharge.Depending on diagnostic finding caesarian section was admitted and a dead kitten was removed under general anesthesia and properly sutured ,Following the successful caesarian section the queen was recovered in period of 15 post-operative days. It is concluded from the preset case report that a cesarean section was used to solve dystocia in the dehydrated and anorexiatic cat. Early presentation of the animal to the veterinary clinic and appropriate supporting food are crucial for positive outcomes in surgical procedures.

Keywords: *Caseran section, Dystocia, Kitten, Queen*

Introduction

Dystocia is one of the issues that can arise from a prolonged fisrt or second stage of labour and need for assistance during delivery (Weldeyohanes *et al.,* 2020).The causes of dystocia are divided in to maternal and fetal origin (Kebede *et al.,* 2017).The incidence of dystocia in pet animals like the bitch and queen are not common but when it happen it may affect the dam and the young (Rothman, 2012). Dystocia in queen is defined as difficulty in giving birth or delivery of the kitten through the birth canal at the time (6-12 hours) of labor (Dar *et al.,* 2015). Between 3.3 % and 5.8% of all cat births are complicated with dystocia (Pretzer, 2008). It is reported to occur most frequently in Persian cats (Strom Holst and Frossling, 2009) then in Siamese type and Devon Rex cats (Linde Forsberg and Person, 2007).Uterine inertia is the primary cause of dystocia in cats (Noakes *et al.,* 2000).

The causes are may be fetal factors (oversized fetus, incorrect orientation when the fetus enters the birth canal) and maternal (insufficient size of the birth canal). However, maternal factors seem to be more prevalent (Rajesh and Rajesh, 2002).Overall, 67.1 percent of instances have been linked to maternal factors, while 29.7% have been linked to fetal factors (Jyothi and Rajesh, 2018). Accurate history taking and complete physical examination are necessary for an accurate diagnosis of dystocia.According to Linde Forsberg (2005). Report a clinician must obtain reproductive history such as breeding dates, ovulation time performed and general medical history. The gestation period, often known as the pregnancy, lasts for 60–67 days, on average 63-65 days (Wilcox., 2010). Recording date mating is very essential in animals. There are three stages to birth, commonly known as parturition or kittening.During the first stage the vagina and cervix relax where as the uterus begins contraction intermittently.The perineum, the region between the anus and the vulva,slacken and lengthens when the pelvic muscles relax.The uterine muscle starts to contract more often and forcefully during the second stage of labour.The outer layer of each foetus membranes emerges at the vulva as a water bag that bursts as it reaches the pelvic and is cleaned up by the cat.A kitten can usually be delivered five to thirty minutes after the second stage starts.One or two additional strains should be necessary to get the rest of the kitten body through the vulva once the head has out.

The third stage of labour immediately follows and is characterised by the simple passing of the membranes as well as the presence of the greenish-black mass of the separated placenta (Ghosh.,2020). In the current surgical case report, dystocia caused by uterine inertia in a local breed queen was diagnosed and surgically managed.

Case History and Physical Examinations

A four year old queen an estimated weighing 3.2kg was brought to the open veterinary clinic.The history previously given birth to one live kitten 20 hours prior to being brought to the clinic, and the second fetus was dead. During general physical examination the animal had signs of anorexia, depression, frequent perineal licking, and foul smelling black vaginal discharge. Clinical examination revealed that the animal was dehydrated, with a slightly elevated rectal body temperature (40^0 c), a heart rate of 120 beats per minute, and a respiratory rate of 30 breaths per minute. Upon vaginal inspection, the delivery canal was discovered to be wet with unpleasant vaginal discharge (Fig .A).Therefore, it was decided to conduct the non-elective cesarean section under general anesthesia.

Anesthesia and Animal Control

The queen was controlled in dorsal recumbent position with the four leg was tied to the surgical table. The general anesthesia was achieved by administered Atropine sulphate and @ 0.04 mg/ kg intramuscularly (IM) (which is manufactured by: Ciron Drugs & pharmaceuticals Pvt, Ltd. India) and xylazine @ 2mg/kg as premedication, and ketamine hydrochloride @ 5mg/kg intravenously (IV) as induction dose and ketamine hydrochloride @ 5mg/kg intravenously (IV) as maintenance dose through out surgical procedures. Then, surgical site was given a final scrub with 1% povidone iodine in circular manner starting from the center to prefer prior to proceeding to surgery.

Pre-Operative Animal Preparation

The ventral midline and surrounding area was aseptically prepared by washing with soap and tap water after the queen was immobilized through chemical method by intramuscular injection of xylazine hydrochloride @ 2mg/kg. Then, the hair was shaved from the skin that covers ventral midline starting from umbilicus down to the pubis and surrounding area (Fig

.B). The area was again washed by using antiseptic solution (savlon) to remove any fall of hair. Finally, surgical site was scrubbed with 1% povidone iodine in circular manner starting from the center to outward.

Surgical procedure

After surgical site was prepared aseptically and appropriate analgesia was achieved, a caudal midline incision was performed on the skin along the linea-alba starting from the umbilicus and ending a few centimeters in front of the pubis. The subcutaneous connective tissue was bluntly dissected to visualize the linea-alba by using blunt Mayo scissors. The linea-alba was grasped in the middle by using rat tooth tissue forceps and tented up. Then, small incision was made on the linea-alba by using scalpel blade. Finally, two fingers were inserted through the small incision and then, linea-alba was tented up to extend the incision in between the two fingers by using blunt Mayo scissors. Bleeding was controlled by using simple swabbing, and ligation or twisting of blood vessel with hemostatic forceps. After inserting gloved hand through incision, the gravid uterus was searched and gently pulled out on the surgical field. Then, the uterus was swapped by using gauze and incision was made on greater curvature in parallel to blood vessel. After excision of the uterus was completed, died fetus were removed (Fig .C) by doing independently trans-fixation of the umbilical cord using absorbable suture material (Chromic surgical cut gut 2-0), Then, The uterus was lavaged externally with warm normal saline and powder of fortified procaine penicillin was poured onto the incision site in both cases immediately after fetus was removed out. Finally, uterus was sutured with a continuous inverting pattern (Cushing) followed by lambert suture pattern (Fig. D). After suturing of uterus was completed any bleeding was checked, cleaned and returned it into abdominal cavity.linea alba closed using simple interrupted suture with cat-gut 2-0 and subcutaneous tissue closed subcuticular.

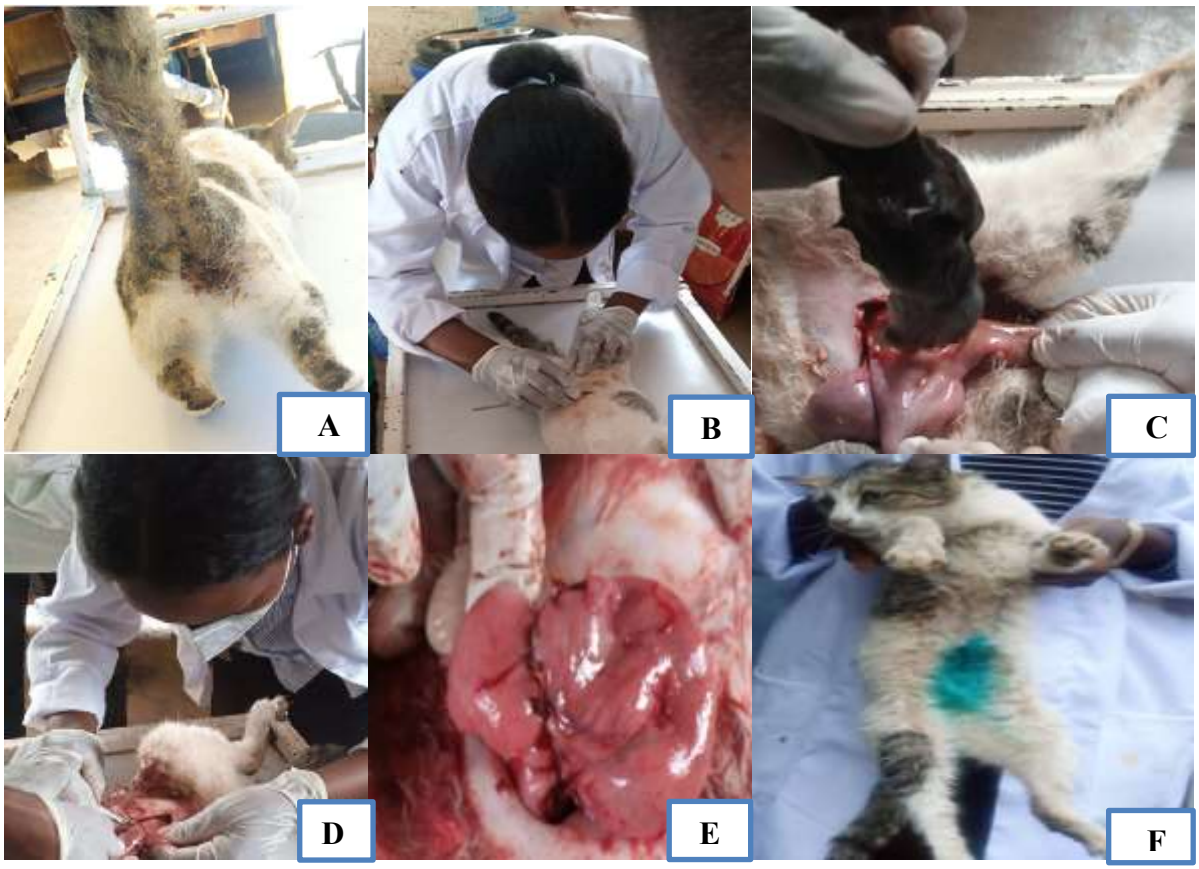

Figure 2. Management of dystocia in Queen:

(A) Physical observation of black vaginal discharge (B) Surgical site preparation on progress (C) Removal of dead fetus (D) On progress of uterine wall suturing (E) uterus was closed **(** F**)** Recoverd queen after 15 days

Post-operative care and complication

Penicillin (24mg/kg) and dihydrostreptomycin sulphate (30mg/kg) IM was provided a for five days following surgery and supported by Ringerlactet intravenously. Sprayed (3.58%oxy viocid w/w palath/Ankara/turkey) was also parallely.Suture was removed on the 14th postoperative day. The cat recovered uneventfully without any complications (Fig. F). Follow-up by telephone was done after postoperative management, and no problem was reported.

Discussion

In order to preserve the life of the fetus and occasionally the dam ,a caesarean section is a technique to deliver the fetus through an incision created on the uterus(Mashamba,2021).In the developed world, around 30% are performed for dystocia,11% are conducted for breech presentation and 10% are performed for fetal distress(Penn & Ghaem-Maghami, 2001). In this case report a caesarean section technique was performed because of the risk of a difficult delivery while the fetus is still in the uterus. In queen surgical management of dystocia the rate of neonatal survival is 42% (ROBBINAS and MULLEN, 1994). Caesarean section was conducted rather than enblock ovariohyeterectomy depending on the willing of the owner in order to have more kittens in the future.The cat gave birth with one normal kitten.However,the remaining fetus was died which removed from the womb of the dam by surgical method that had foul smelling and black discoloration as indicated in figureA.Primary uterine inertia, which is frequently occur in canine and feline species, probably the cause of the current case's inability to expel the dead fetus (Baraldi *et al*., 2004).According to Talukder *et al.* (2021), primary refers to a state when the uterine muscles do not contract. According to the owner the queen showed no clinical signs of whelping and expulsion of the left fetus from birth canal. Atropine sulfate was used as a premedication during case care to decrease the queen bronchial secretion and GIT motility.The idea and anesthetic procedure outlined by Kennedy and Miller (2007), in which it is usually suggested to reduce maternal stress and anxiety in addition to reducing the dosages of induction and maintenance anaesthetic drugs are similarly comparable to this. In the current case, dystocia was due to primary uterine inertia in queen and its successful management was performed by cesarean section, although further studies are necessary to confirm this finding.

Conclusion and recommendation

The present case report aimed to diagnose and surgically manage dystocia caused by uterine inertia in a local breed queen. The presented cat showed signs of dystocia before the 20 hour veterinarian visit, which was dehydrated and anorexiatic. So, the owner should bring the animal to the clinic immediately when the signs of dystocia initially appear.The cat must be also rehydrated and supported by palatable foods.

3.1.2. Caeseran Section in Ewe

Abstract

Dystocia frequently occurs when the first or second stages of parturition are delayed or when the first stage does not progress to the next stage within thirty minutes. This work was done to rescue a local ewe with the problem of lambing at the JUCAVM open-air veterinary clinic that had been in labor for the previous 4 days with smalling discharge via vagina.A general physical examination revealed pale mucous membranes, normal respiratory rates of 30 breaths per minute, a heart rate of 75 beats per minute, and a slightly elevated body temperature of 39.50 °C.Perivaginal examination indicated foul smelling, blood tinged fluid, and the size of the pelvic opening was too small, preventing manual manipulation and fetotomy. Depending on diagnostic finding caesarian section was conducted and a single died fetus was removed under local anesthesia with inverted L block anaesthesia. Following the successful caesarian section the dam was recovered in period of 15 post-operative days. Generally, the problem was minimized surgically, with the result that the owner cares for the animal's life, the isolation of sick sheep from the rest of the flock, and delay should be avoided when bringing the animal to a veterinary clinic.

Keywords: *C.Section,Dystocia,Ewe,L block,Lambing*

INTRODUCTION

Dystocia often happens when the first or second phases of parturition are delayed or when the first stage fails to move to the next stage within 30 minutes (Bhattacharyya *et al*.,2015).The first stage often begins when the animal separates itself from the herd,demonstrates indications of restlessness, and exhibits signs of appetite problem.As this stage progresses,intense abdominal contractions are stronger and more frequent.The fetus is expelled during the second stage of parturition,which typically lasts between 15 and 30 minutes and the fetal membranes are expelled at the last stage ,which typically occurs 4 to 6 hours (Sharma,*et al.*,2014). Beyond this indicated time is it likely shows difficulty in birth. Dystocia is characterized as a challenging delivery brought on by a prolonged, unaided parturition or an extended delivery requiring assistance (Zaborski *et al.,*2009). Small ruminants play an essential role in the rural economy,especially in areas where agriculture and

dairy farming are not profitable(Devendra ,2001). However, dystocia can result perinatal death of dams and fetus, uterine infections, retained placenta in sheep and goat which contribute a significant economic loss (scott. 2005). It may originate from either the ewe (maternal dystocia) or lamb (fetal dystocia).The causes of maternal dystocia is vary between breed (Manda and Makkena,2009).According to the studies fetopelvic disproportion is common in South African Mutton Merinos, uterine inertia in Dormer ewes and incomplete cervical dilation in other breeds (Mostefai *et al.,*2019). Uterine inertia and intrauterine infections are also another possible causes of dystocia that involve human intervention (Johnston *et al*, 2001).Fetal causes of dystocia include mainly oversize,maldisposition, and monsters .Malpresentation is one of the causes of fetal dystocia which accounts for 36% to 75% of the cases .When vaginal birth of the fetus is not possible,small ruminants should have a caesarian section or delivery of the fetus by Lazaro hysterectomy(Noakes *et al*. 2009).In this particular case,the presence of an infected fetus in the dam was the reason of the ewe's dystocia. As a result, a caesarean section was done on the left flank to treat it.

Case History and Physical Examination

A one year old estimated to weighing 27kg local breed ewe that had trouble of lambing was brought to the JUCAVM open veterinary clinic. The owner claimed that the ewe had been in labour for the previous four days but that nothing had come out other than a foul smelling bloody discharge via the vagina.According to the owner, the sheep has never previously given birth but, flocked together with others. The results of a general physical examination showed pale mucous membranes, normal respiratory rates of 30 breaths per minute, a heart rate of 75 beats per minute, and a slightly elevated body temperature of 39.50 °C. Upon paravaginal examination, bad-smelling fluid that is blood-tinged was observed, and the size of the pelvic opening was too narrow, which does not allow for manual manipulation and fetotomy.The cervix was partially dilated upon vaginal examination. Therefore, depending on the anamnesis and diagnosis, the case was decided to be performed as an emergency surgical manipulation by a caesarean section.

Pre-Operative Animal Preparation

A broad-spectrum antibiotic, pen strep (penicillin (24 mg/kg) and dihydrostreptomycin sulphate (30 mg/kg) (Pen & Strep® nor brook UK) I.M was administered to the sheep before the surgical procedure. The left paralumbar fossa region was then cleaned with soap and water to prepare it aseptically. The skin that covers the left paralumbar fossa area was also shaved using a scalpel blade to remove the hair.The area was thoroughly scrubbed once more to eliminate any remaining hairs using Savlon. The surgical site was finally cleaned with 1% povidone iodine in a circular motion, beginning at the center and moving outward, to prepare it for aseptic surgery.

Anesthesia and animal control

Ewe was restrained in a right lateral recumbent position.2% lidocaine hydrochloride (20 mg/mlmanufactured by jeil pharma. co.Ltd. Korea) inverted L block was applied to the surgical incision site (Fig .A).

Surgical Procedure

A left aparalumbar celiotomy was performed by incising the skin (Fig .B)starting from 10 cm away from the transverse process of the lumbar vertebrae and 5 cm distant from the last rib, after the surgical site had been prepared aseptically and the proper analgesia had been achieved.The subcutaneous fascia, the three abdominal muscles and Peritoneum were gently incised.The gravid uterus was inspected (Fig .C) and carefully removed to the operating area then incision was made on greater curvature at least vascular area.The dead,macerated fetus was extracted from the uterus after incision(Fig .D) .After looking for any leftover fetus components, The uterus was then sutured together using a continuous cushing and lembert suture pattern .The peritoneum with transverse muscles and oblique muscles were sutured using chromic catgut of 2-0 by simple interrupted and continuous interlocking suturing technique respectively. Subcutaneous tissue and skin were closed in simple interrupt suture pattern using nonabsorbable suture silk size 1-0.After surgery,the sheep was immediately raised (Fig .E).

Figure 3. Cesarean Section of Ewe:

(A) 2% Lidocaine Injected (B) left paralunbar fossa skin incision (C) part of the gravid uterus exteriorized (D) tissues and bones of macerated fetus was pulled out (E) sutured skin immediately after the surgery (F) 13 days after surgery skin suture removed with little scarring which treated with cyclo spray .

Post-operative care and complication

Sprayed (3.58%oxy viocid w/w palath/Ankara/turkey) on the wound to prevent microbial complications until the wound was completely recoverd .Following surgery,the ewe received intramuscular injections of procaine penicillin G (24mg/kg) with dehydrostreptomycin sulphate (30mg/kg)) (Pen & Strep® Norbrook UK) I.M for a total of five days .Finally,skin

suture was removed on 13th post-operative day and incision site healed completely at the end of the follow up with minimum scarring which treated with cyclo spray (Fig. F).

Discussion

Pregnancy loss in domestic animals can happen at any time throughout the gestational period.The death of the fetus may have been expelled before term (by abortion) or at term (by stillbirth), depending on the circumstances (Serin and Parin, 2009).The fundamental characteristics of fetal maceration and mummification is that the dead fetus is still inside the uterus and needs veterinary assistance to be removed.Together,these two conditions are regarded as an overall abortion syndrome (Noakes *et al.,*2001).In the present case,the causes of abortion is fetal maceration probably by bacterial infection because there was opening of the cervix which allow pathogens to enter the uterus, fetal decay in the uterus its soft tissues broken down and passed as a foul vaginal discharge. This is line with Jackson, (2004) earlier findings. The incidence of fetal maceration in ewes is low which range between 0.13 and 1.8% (Johnson *et al.*, 2011). Failure to discharge the foetus may be caused by prenatal infections that cause foetal emphysema and maceration (Johnston *et al.,*2001). Bacteria enters into the uterus by a combination of putrefaction and autolysis,the soft tissues are digested, leaving a mass of fetal bones within the uterus (Drost ,2007).

The clinical judgement of the ewe required a caesarean section ,according to the history and physical examination.The main indication for cesarean section in this sheep was uterine infection that leads preterm birth and incomplete dilatation of cervix.which is in agreement with similar case report by (Sharma *et al* 2014, Dutt *et al* 2018 ,Mulatu and Kefyalew,2022) respectively.According to Bhattacharyya *et al.* (2015), there was a 23% rate of fetal and dam survival in sheep undergoing caesarean sections. Shoats caesarean sections are typically carried out with the animal in right lateral recumbency while being given local anaesthesia, either with or without sedation (Kumar *et al.,*2013).In this instance ,2% lidocaine was used to administer regional anaesthesia during the procedure which was carried out with the animal in right lateral recumbency.This procedure is in agreement with the work of (Ravi *et al*.,2018,Woldegiorgis ,2020).The time that passes between the start of labour and presentation for caserean section has a substantial impact on the survival of both the dam and fetus(Sharma *et al.,*2014).According to Hussain and Zaid (2010), the success rate of a

caserean section is typically higher if it is done early, while the fetus is still living or freshly dead. The current report depicted survival of dam after cesarean section for putrefied dead fetus.

Conclusion and recommendation

The sheep in question was brought to JUCAVM open-air clinic with a history of dystocia, which had clinical signs of foul-smelling, bloody discharge through the birth canal, which were corrected by a cesarian section. Parallely, the owner openly explained that it was in labor for almost a half week while the rest of the flock was healthy. As a result, owners should be encouraged to visit a veterinarian early, and sick animals must be isolated from normal ovine.

3.1.3. Cesarean section in cow.

Abstract

Dystocia refers to a cow's incapacity to give birth to its calf which requires human effort for assistance. It is an emergency that veterinarians must handle carefully to ensure the survival of the dam and calf. Therefore, this work was planned to help a 3-year-old exotic breed cow in Merewa, weighing approximately 375kg, which was found to have dystocia with a recumbent condition, and two of the fetus's forelegs were expelled out. Physiological indicators were used to conduct an overall physical assessment.The cow showed normal values for temperature (38^0C), heart rate (62 beats per minute), and respiratory rate (35 breaths per minute). The site of the left flank laparotomy was selected and aseptically prepared with the chemicals of savlon and povidone-iodine. Using 2% lidocaine hydrochloride, caudal epidural anesthesia was given to prevent straining and defecating of feces. To provide local infiltration anesthetic to the left side, an inverted L block is used. The skin, subcutaneous tissue, muscles of the abdomen, and peritoneum were all incised. A section of the gravid uterus, which contained the fetus, was opened by a surgical blade. The dead fetus was then removed from the uterus by holding its legs. After removal of the placenta, the lining of the uterus was fully washed with saline water. Cushing sutures were used to close the uterine incision, and then a Lambert pattern using the chromic catgut number (2-0) was applied. The peritoneum with internal abdominal muscle was closed by a cross-mattress pattern. The transverse and external part of the abdominal muscle with subcutaneous tissue sutured using simple interrupted patterns by chromic catgut (2-0). Silk was used to

secure the skin incision in the form of a horizontal mattress. After the surgery, parenteral and topical antibiotics were used to prevent microbial complications until the wound completely recovered. Finally, the suture was removed on the 14th day following the procedure. In conclusion, the dystocia was corrected by performing a cesarian section, which was then maintained with antibiotics. Further, the owner was advised to keep a careful check on the cow and restrain from leaving it out on the grass. In spread, the cow should receive regular exercise and nutritious feed to promote wound healing.

Keywords: *Catgut, C.Section, Dam, Dystocia, Fetus.*

Introduction

The inability of the cow to deliver its offspring through its effort is known as dystocia (Jackson, 2004, Regmi and Gautam, 2020). It is an emergency that veterinarians must handle carefully to ensure the survival of the dam and the calf. To develop a therapeutic management plan for a particular animal, the causes of dystocia are divided into maternal and fetal origins (Youngquist and Threlfall, 2007; Kebede *et al*., 2017). A dam inadequate cervical dilation (ring womb), narrow pelvis, uterine inertia, lack of pushing force, and birth canal anomalies are maternal causes of dystocia (Noakes *et al*. 2009). Fetal anomalies breech presentation, dog sitting position, head deviation, and forelimb flexion are the most common fetal-related factors of difficulty in giving birth (Bhattacharyya *et al*., 2012; Bhattacharyya *et al*., 2015). Due to the size of the fetus concerning the dam, dairy cattle experience a higher frequency of dystocia than other mammals (McClintock, 2004). Reports in Sylhet District in Bangladesh indicate that the Prevalence of difficulty in birth is 21.18% in cows which is much higher than in goats (12.5%) (Lucky *et al*.,20 16). The incidence of dystocia appears higher in larger breeds such as the Holstein, Brown Swiss, and Hereford (Roberts, 2004). However, according to Zaborski *et al*.,(2009) findings the incidence is low in Braunvieh and Charolais with the largest pelvic width and the hugest pelvic height and area respectively. Regardless of the frequency of parturitions, younger cows typically have more challenging calving. Research on the Holstein Friesian in the United Kingdom revealed that heifers (6.9%) are more impacted than older cows (Rumph and Faust, 2006).

In the management of dystocia, the veterinarian should be able to carry out a variety of operations. Bringing a healthy fetus into the world and protecting the dam are the main goals of obstetrical procedures. This obstetrical operation can be divided into forced extraction, fetotomy, and cesarean section (Benesch and Wright, 2001). Forced extraction with a high magnitude of force can damage both the dam and the fetus (Kumar, 2009). Fetotomy also causes lacerations to the birth canal or uterus by instruments of sharp edges (Abera., 2017). However, the primary objectives of the caesarean section are the preservation of the dam and calf as well as the dam's future reproductive efficiency (Newman and Anderson, 2005). A different number of surgical approaches are available for the bovine cesarean section. These are the standing left Para lumbar, standing right Para lumbar, recumbent left Para lumbar, recumbent right Para lumbar, recumbent ventral midline, recumbent ventral paramedian, ventrolateral, and the standing left oblique celiotomy (Schultz *et al.,* 2008). This case report aims to describe the management of a caesarean section in an exotic breed cow, carried out in a recumbent left paralumbar celiotomy.

Case history and Physical examination

The owner who resided in Merewa which is a few kilometers from Jimma town contacted me from a cell phone. Next, a three year old exotic breed cow weighing about 375 kg was discovered to have dystocia during the previous seven hours. Further information was also conveyed from the owner’s mouth, who stated that the cow had never given birth before. On visual observation expulsion of two forelegs of the fetus was seen when the dam was in the recumbent condition in (Fig A). An overall physical examination was performed using vital physiological indicators first. The cow had a normal temperature of 38^0C, a heart rate of 62 beats per minute, and a respiratory rate of 35 breaths per minute.A vaginal examination revealed a huge fetus with a completely open cervix, making it challenging to remove the fetus through the birth canal. Even if the fetus to pelvic imbalance led to the attempt at episiotomy. Based on the diagnosis of the above parameters, a caesarean section was chosen as the emergency operation in this case.

Preoperative preparations

Once the animal was positioned optimally in a recumbent position, the site of the left flank laparotomy was chosen, aseptically prepared, and the surrounding area was scrubbed using a 1 % povidone iodine solution after the animal had been shaved and washed using savlon and water.

Anesthesia and animal control:

Caudal epidural anesthesia was administered due to the episiotomy surgery (Fig .A) to avoid straining and defecation of feces from the dam using 2% lidocaine hydrochloride (20 mg/mlmanufactured by jeil pharma. co.Ltd. Korea) at 0.22 mg/kg in the sacrococcygeal space.After that, an inverted L block is performed to administer local infiltration anesthesia left flank.

Surgical procedure

Following aseptic preparation of the surgical site and stabilization, a caesarean section using a recumbent position was performed by using a left flank laparotomy approach. The long incisions were made on the skin, subcutaneous tissue, abdominal muscles, and peritoneum, respectively (Fig .B). A portion of the fetus-containing gravid uterus was externalized and incised. Then, using light traction, the dead fetus was extracted from the uterus by grasping its legs. After the placenta was carefully removed from the uterus, the uterine lining was thoroughly cleaned with saline water. The uterine incision was closed by Cushing sutures followed by a Lambert pattern with chromic catgut number (2-0). A cross-mattress pattern was used to close the peritoneum with internal abdominal muscle. However, simple interrupted patterns were applied for (transverse and external) abdominal muscle with subcutaneous tissue by chromic catgut (2-0). The skin incision was sutured by silk in a horizontal mattress pattern. Lastly, the sutured line was covered with the wound spray (Fig .C).

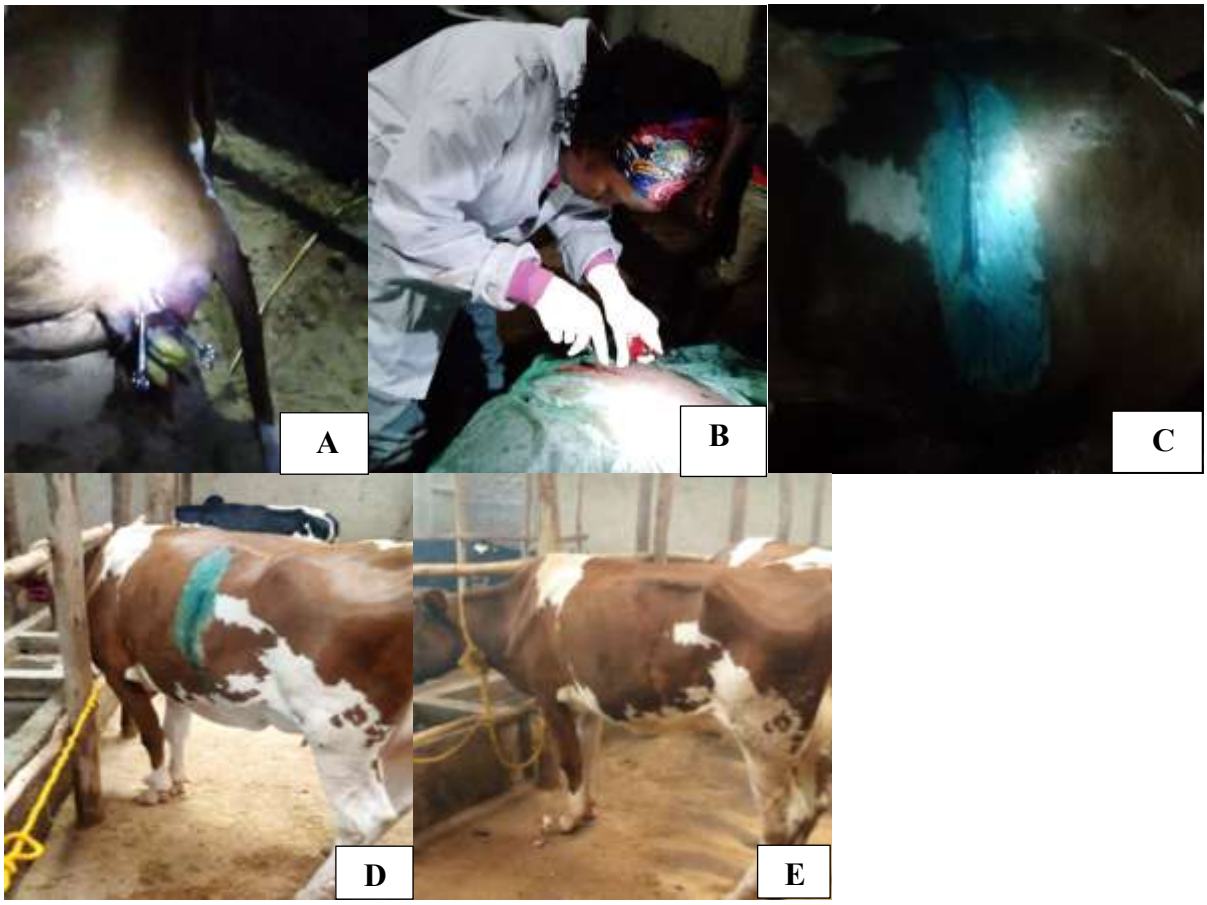

Figure 4. Cesarean Section of cow:
(A) Perform episiotomy surgery (B) left flank skin incision (C) skin sutured in an interrupted pattern (D) the cow after three day (E) The cow completely recovered after one month.

Post-operative care and complication

Following surgery, a combination of procaine Penicillin G (24mg/kg) and dihydrostreptomyci n sulfate (Pen & Strep® Norbrook UK) was administered intramuscularly using 15ml over 5 days. To prevent microbial complications until the woundfully recovered to normal, a topical antibiotic (3.58%oxy viocid w/w palath/Ankara/turkey) along with a daily dressing using an antiseptic povidone-iodine solution, was applied to the wound .In addition, the owner was counseled to keep a close eye on the cow and stop it from leaving it out on the grass.

Instead, the cow should be given regular exercise and nutritious food to promote wound healing. After the surgical wound healed, the suture was removed on the 14th day following

the procedure (figure .D). The cow was in good health after one months of follow-up (Fig .E).

Discussion

Preserving the dam and calf as well as maximizing the cow's future reproductive potential are the primary objectives of a caesarean section (Fesseha *et al.,* 2020).Fetal and maternal situations are among the reasons that justify a caesarean section. Maternal indications encompass a variety of conditions such as hydrops, prepartum paralysis, uncorrectable uterine torsion, and pelvic abnormalities (Schultz *et al.,* 2008). According to John (2012), the main causes of dystocia are aberrant fetal position, large calves, and multiple fetuses associated with fetal factors. The survival rate for caesarean cows is 70%,based to research done at Guru Angad devveterinary and Animal Sciences University in Punjab,India.This rate is based on several indicators, including fetal oversize (65%), monster (66.7%), uterine torsion (50%), incomplete cervical dilation (76%), and pelvic fractures (70%).Comparatively, this study showed that roughly 18% of cesarean operated animals were conceived after having a c.section within 12 hours of the dystocia occurring.However,zero(0%) was recorded more than 12 hours after the occurrence of dystocia (Dhindsa et al.,2019). The purpose of this case report is to describe the surgical care of a cesarian section performed on a dairy cow because of an oversized fetus. This report is in line with the finding of Woldegiorgis (2020) on the exotic cow of the Holstein breed.The left flank incision was used with a recumbent technique and 2% lidocaine hydrochloride under caudal epidural anaesthesia.The recumbent approach lowers the risk of abdominal cavity contamination since it makes the uterus easier to exteriorize,particularly in cases where the fetus is large (Newman and Anderson, 2005). Kebamo, (2019) also mentioned the same approach.This coincides with the surgical methodology applied in this case report.However, this work is contradict with the case report of Haben *et al.,(*2019) used a standing left paramedian celiotomy to perform cesarean sections in the cow. The current case report uterine incision was closed by Cushing suture, followed by a Lambert pattern with chromic catgut number (2-0). This method was related to Kitessa (2019). Numerous researchers documented postoperative complications, including skin suture dehiscence, subcutaneous emphysema, retained placenta, metritis, endometritis, and cow mortality(Newman,2008).This finding is in contrast to this case report since there

was no post-operative complication was found.The cow complete recovery in this case may be associated with the use of aseptic techniques during case handling time and the administration of antibiotics at post operative care (Pereira *et al*.,2018).

Conclusion and recommendation

The cow was presented with a history of dystocia-like recumbency and expulsion of fetal legs for several hours at merewa kebele. The cow's dystocia was treated with a cesarean section, and antibios were subsequently administered. The owner was also asked to monitor the cow closely and prevent it from going outside on the grass. Instead, to encourage the healing of wounds, the cow should receive a healthy diet and regular activity.

3.2. Surgical Management of Ovariohysterectomy

3.2.1. Ovariohysterectomy in the bitch

Abstract

The surgical removal of a female dog's uterus and ovaries to prevent further conception is known as ovariohysterectomy. As a result, a reproductive controlled method was applied by spaying to the 2-year-old local breed with a history of first parties that brought Jucavm open-air veterinary clinic. All vital parameters were found within normal range. General anesthesia s were administered at appropriate doses to the dog. The umbilical region was cleaned with soap and water and shaved. Finally, disinfected with povidone-iodine 1% for aseptic surgery. The uterus and ovaries were exposed by performing a ventral midline incision 1cm caudal to the umbilicus on the skin, subcutaneous tissue, and linea Alba. After the removal of the uterus and its ovaries closing of the incision is done in three layers. Topical and systemic antibiotics were administered to avoid microbial contamination. Post-operative complications were not found in the present case. Ovh helps with birth control in dogs and the pervasive transmission of diseases, including zoonotic diseases. In this case, the procedure was performed for contraceptive purposes. However, according to different literature, it is rarely known in developing countries, including Ethiopia. Therefore, spaying should be practiced as a surgical treatment to ensure birth control.

Keywords: *bitch, ovariohysterectomy, ventral midline incision*

Introduction

Dogs that undergo Ovariohysterectomy commonly referred to as spaying, have their ovaries and uterus surgically ablationed to prevent further conception (Slatter, 2003).In the US, this kind of elective surgery is highly common for dogs. According to recent reports by the American Society for Prevention of Cruelty against Animals, 83% of female dogs have undergone neutering (Belanger *et al.,* 2017). Among both sexes in the US, OVH is one aspect of the desexing with a prevalence that approaches 64% (Trevejo *et al*., 2011). As reported by Zanowski **(**2012) certain local governments have enacted laws requiring desexing. With a prevalence of 54% in the UK, it is comparatively less common in anglophone Western Europe (Diesel and Brodbelt, 2010).47% in Ireland (Downes *et al*., 2009). In contrast, Germany prohibits neutering unless there is a clear medical condition (Kuhne, 2012). Along with a prevalence of less than 10% in Sweden (Egenvall *et al.,* 1999), it is also present in some Nordic nations (Sallander *et al*., 2001). In African nations, there are some published materials available. For instance,10.7% of the research was conducted at the University of Ibadan Veterinary Teaching Hospital through retrospective studies conducted between 1990 and 2010 (Akinrinmade and Eyarefe,2012). From 2010 to 2016, a case study at the Federal University of Agriculture, Abeokuta's Veterinary Teaching Hospital in Nigeria revealed that just 0.45% of ovariectomies had been carried out (Ajadi *et al* ., 2018). Additionally, it can be carried out in conjunction with several surgical procedures, such as mastectomy, to lower the possibility of malignant mammary tumor occurrence(Kristiansen *et al*., 2013) and to prevent sexually transmitted infections, pregnancy toxemia, metabolic disease, and dystocia, these measures also help to avoid unwanted reproduction of puppies (McKenzie, 2010). It can be done by ventral midline and flank approach (Murthy *et al.*,2001). The present case report aims to stop the future reproduction of the bitch by surgical removal of both ovaries and uterus which is carried out at the ventral midline incision.

Case history and Physical examination

The two year old, around 12kg local breed bitch with a first parity history was brought to the Jimma University College of Agriculture and Veterinary Medicine clinic for reproductive control.Spaying was the first option here due to the lack of non surgical methods of contracept ion in canines. Every vital parameter that was measured including the temperature (38.5^0C),

heart rate (78 beats per minute), and respiratory rate (24 breaths per minute), was found to be within the normal range.

Pre-operative preparation

The bitch arrived at the clinic the following day for the visit after fasting for 12 hours from feed and 5 hours from water overnight. The dog's physiological characteristics were examined again when it arrived on the scheduled day of the appointment. The animal was then brought under control and placed in a dorsal recumbent position on the surgical table. Next, the surgical field was cleaned with soap and tap water, and the hair around the surgical site was shaved to prepare the umbilical region for aseptic surgery. At last, the surgical site was cleaned three times using 1 % povidone-iodine from the center to the periphery (Fig .A).

Anesthesia and Animal Control

Atropine was injected intramuscularly at a dose of 0.04 mg/kg (which is manufactured by: Ciron Drugs & pharmaceuticals Pvt, Ltd. India) as a pre anesthetic step of the bitch. Additionally, 2 mg/kg of xylazine was administered. The animal was moved to a table for aseptic preparation after receiving 5mg/kg of ketamine (Ketamine Hydrochloride, Germany) via the IV route for induction. During the procedure, a 50% induction dose of ketamine at a rate of 5mg/kg was injected for maintenance.

Surgical Procedure

A ventral midline incision measuring around 6 cm was made on the caudal side at one centimeter from the umbilicus (Stone,2003).Using a surgical blade, the incision was made into the skin, subcutaneous tissues ,linea alba,to reveal the contents of the abdomen (Fig.B). An index finger was employed to find the uterine horn. The thumb and index finger were used to hold the ovary, which was then pulled to the incision area. Following the adequate exteriorization of the ovary to the abdominal incision, three hemostatic clamp principles were applied to the ovarian pedicle through the creation of a window in the broad ligament. During the traction process, the suspensory ligament of the ovary was ruptured. Applying chromic catgut size 2-0, Tran's fixation ligation was performed. After that, the attachment between the ligature and the ovary was cut. After making sure there was no bleeding, the pedicle was carefully put back into the abdomen. Once one ovary was completed, the other ovary was found, removed, severed, and the replacement of the ovarian pedicle was done using the same process. The uterus's body was taken out of the abdomen. Similarly, the uterine body

immediately cranial to the cervix was clamped at three parts as well. Performing a Tran's fixation technique, the uterine body including the uterine artery was ligated. Between the proximal and middle clamps, the uterine body was severed (Fig.C). After checking for bleeding, the uterine pedicle was carefully returned to the abdomen. The abdominal incision was then closed starting from the inside to outward layers (Fig .D). The chromic catgut 2-0 was used to stitch lina Alba as the first layer by a simple interrupted pattern.The subcutaneous tissues in the second layer were sutured with catgut 2-0 in a simple continuous manner. The subcuticular suture technique was finally used to suture the skin with non-absorbable silk material. Next, as (Fig. E) indicates oxytetracycline wound spray, an antibacterial solution was applied to the surgical region.

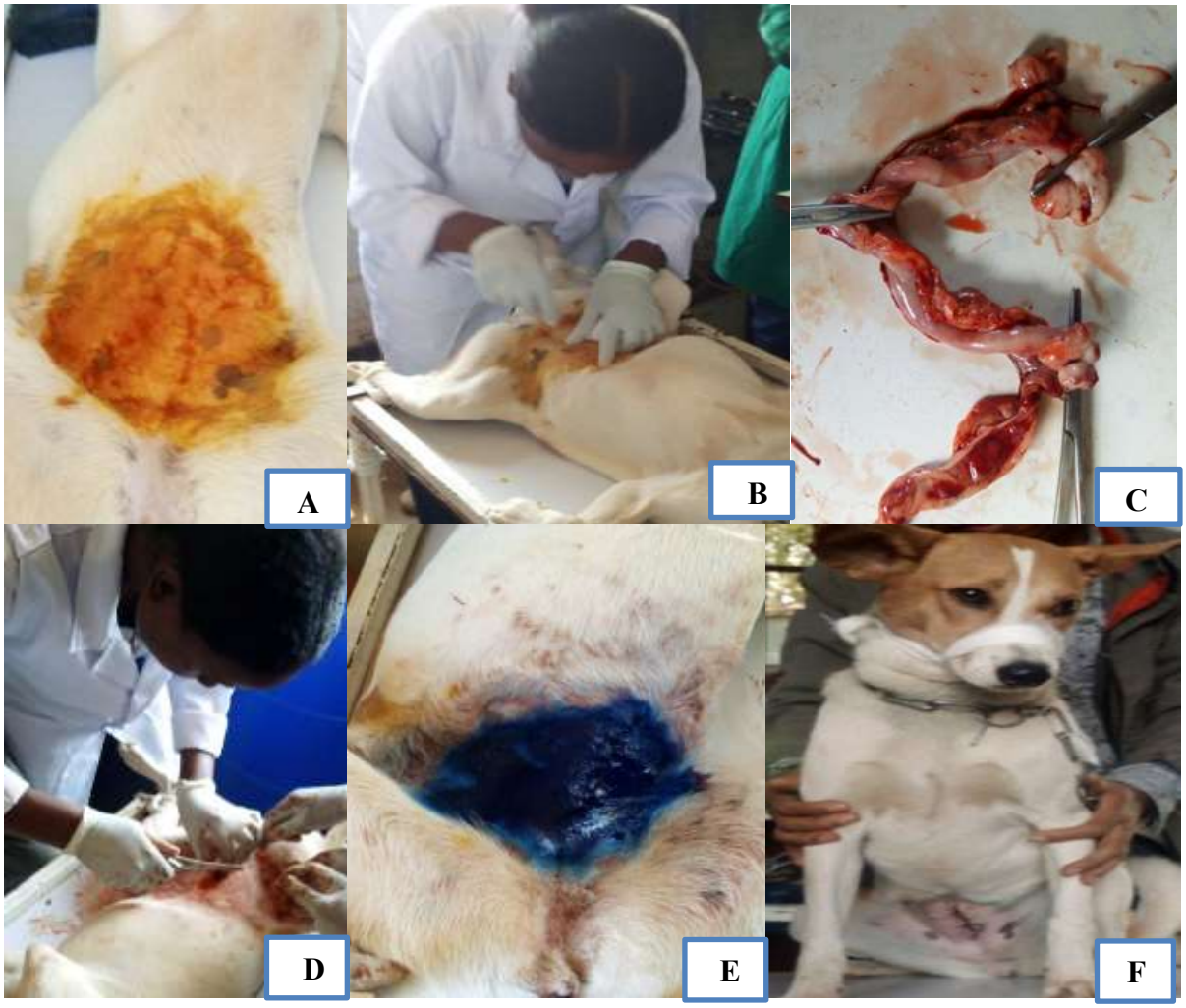

Figure 5. Ovariohysterectomy in dog:

(A) Surgical site shaved and aseptically prepared (B) Incision of skin and underlying layers (C) Uterus removed with ovaries (D) Closure of subcutaneous tissue (E) After closure of all layers the area sprayed by antibiotic (F) The dog completely recovered after twelve days.

Post-operative care and complication

To prevent secondary bacterial infections, a three-day systemic antibiotic treatment consisting of penicillin (24mg/kg) and dihydrostreptomycin sulfate (30mg/kg) (Pen &Strep® Norbrook UK) was given following the operation. To alleviate the pain, 4 mg/kg I.M. of Tramadol (2% Tramadol Hydrochloride, Sakar Health Care Pvt. Ltd, Gujarat, India) was also prescribed. It was suggested to the owner to make the dog cage warm, dry, comfortable, and clean. In addition to routinely inspecting the wound for signs of bruising, swelling, and bleeding. Parallely the Soft food was offered to the operated bitch as well as collar also applied .The dog completely recovered after twelve days of follow-up without any complications (Fig. F).

Discussion

According to Howe (2006), one of the most common surgical procedures performed on companion animals is canine ovariohysterectomy. It is recommended by many animal welfare organizations to control dog populations and is recognized by the World Health Organization (WHO), as part of rabies control programs in endemic areas (WHO, 2004). Analogously, OVH was performed in this instance to manage undesired offspring.The ventral midline method was used to perform the surgery in the present case. Due to the potential complications associated with the flank approach such as the difficulty of removing the entire uterine body,recovering dropped ovarian pedicle, and exposing the opposite ovary and uterine bifurcation (Hedlund,2002 and Stone,2003).This methodology was in line with work done at Addis Ababa University (Kebamo ,2019,and Woldegiorgis,2020).The best time to spay a dog or cat is just before puberty or after the animal has gone through one heat cycle, called anestrus(Blender,2012).According to Detora and McCarthy (2011), spaying at any age avoids unwanted puppies, noisy heat cycles, and possibly even urine markings in the home. OVH at a young age can also prevent mammary cancer. In the current case, the operation was done after the first parity during the anestrus period for contraceptive issues. This point is in agreement with the report Kittessa (2019). However, it contradicts the work of Tizazu (2020)

that was conducted on the German shepherd mix bitch before puberty without showing any heat signs. There was an incision performed into the skin and subcutaneous tissues to obtain the linea alba, which is located between a dog's pubis and umbilicus. This procedure was in agreement with the findings of Brown *et al,(*2014)

After severing the suspensory ligament and ovarian pedicle with a surgical blade, the left and right ovaries were removed.Then linea alba with a simple interrupted pattern; and subcutaneous tissues in a subcuticular pattern using absorbable chromic catgut were used to close the structures. However, the skin is closed nonabsorbable silk in a simple interrupted pattern. This method was related to Faisal *et al*.,(2014) who reported similar steps to close the operational site.Surgical complication rates associated with ovariohysterectomy in healthy dogs have been reported to range from 6.2% to 20.6% (Pollari *et al.,* 1996;Burrow *et al*., 2005). But in the current case, no complications were recorded. This is most likely the use of aseptic techniques and sterilized surgical types of equipment to reduce the possibility of surgical contamination. After healing of wound suture stitches were removed after 12 days.

Conclusion and recommendation

Ovh can prevent breast cancer and prevent unwanted puppies and noisy heat cycles. However, diverse literature suggests that it is rarely known in underdeveloped countries, like Ethiopia. It may even be beneficial during home markings. Consequently, spaying needs to be implemented as a surgical birth control method.

3.3. Surgical Management of Castration

3.3.1.Open Castration Horse.

Abstract

Castration in equine is a preventive measure against testicular trauma, neoplasia, inguinal herniation, unsuitability for reproduction, and behavioral management systems. The seven-year-old stallion was brought to the JUCAVM open air veterinary clinic for castration to control its aggressiveness. The three physiological parameters were in the normal range which includes body temperature (38^0C), heart rate (37 beats per minute), and respiratory rate (10 breaths per minute). Next with the help of physical restraining palpation was done to the

testicles for differentiation of the physiological and pathological conditions. By following aseptic procedures the surgical area was cleaned with appropriate chemicals, and local anesthesia was injected. Closed castration was performed by incising the scrotal skin, tunica dartos, and scrotal fascia parallel to the median Raphael after the horse was placed in lateral recumbency. Finally, the testis was removed including the parietal tunic and the incision was left open to heal by a second intention. Parallel to the administration of antibiotics to the stallion, little exercise and isolation from rest equine are also recommended to the customer and the operation was successful. After castration, little complications like swelling and depression were seen. However, it gradually regressed to normal and completely recovered. Exercise and isolation from rest equine are also recommended, and the operation was successful.

Keywords: *Castration, Scrotum.Stallion, Parietal Tunic, Tunica Dartos*

Introduction

Domestic animals can be castrated in the presence of veterinarians and anesthesia to reduce aggressive behavior and make male animals easier to handle. This is allowed by the law of many countries around the world. However, forbidden to castrate with elastic rubber bands in the Republic of Lithuania(Spoolder *et al*.,2016). As the most common surgical procedure in equine practice, castration is likely one of the oldest veterinary medical procedures (Schumacher, 2012; Coomer, 2013). It is indicated for the prevention of inguinal herniation, neoplasia, testicular trauma, and unsuitability for reproduction (Shoemaker *et al.,* 2004). Horses can be castrated using open, closed, and semiclosed techniques. The operation can be carried out on standing sedated animals and recumbents under general anesthesia (Schumacher, 2012).Stallions are classified as cryptochids if their testicle is located in abdominal or inguinal cavities. The inguinal skin incision is the most common surgical procedure to remove an undescended testicle (Sedrish and Leonard, 2001).

Similar to other surgical procedures castration can result in post-operative complications such as swelling, hemorrhage, eventration, septic funiculitis, and hydrocele formation (Christina, 2011). In the other hand knowledge of male reproductive anatomy and physiology combined with skilled surgeon can reduce the rate of complications (Searle *et al*.,1999).A study

conducted in the Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, Canada indicates that scrotal hematoma (7.6%), signs of colic (3.8%), fever (2.5%), and edema (23%)(Mickael *et al*.,2017). About 0.5% to 3% of animals undergoing surgery can also develop surgical site infections at the site of the incision or in the area surrounding it after the procedure (SSI,2022; Karlsen *et al.,*2020). Once surgery is performed, pain management is essential. To relieve pain after castration in horses, several anti-inflammatory drugs are available, including ketoprofen, meloxicam, and flunixin meglumine (Lemonnier *et al*., 2022). In general, the treatment of post-operative complications depends on the early detection of problems and the immediate administration of proper antibiotic therapy (Voermans *et al*., 2006). The purpose of this case report was to describe the steps and methods involved in the open castration of stallion.

Case history and Physical examination

The seven years aged stallion was brought to the Jimma University College of Agriculture and Veterinary Medicine (JUCAVM) clinic with a history of aggressiveness like fighting with other horses, neighing, snorting and galloping, and constantly looking for mares for mating. The horse was in good body condition and very alert. Mucous membranes of the mouth and gums were moist and pink. All physiological parameters, including body temperature (38^0C), heart rate (37 beats per minute), and respiratory rate (10 breaths per minute), were within normal limits. After applying the appropriate physical restraining palpation of both testicles was done to check for any swelling, pain, asymmetric size, cryptorchidism, and scrotal hernia. However, none of them were recorded. Depending on the above examinations decision was made to undergo open castration on the stallion.

Preoperative Preparations

The horse was deprived of feed and water for one night under the supervision of the owner. The stallion's health status was diagnosed again for vital signs on the next day, and all was normal. Then following physical restraining with the help of rope, the site of the incision was aseptically prepared by washing with water, and Savlon and scrubbing the testicle with povidone iodine 1 % solution(Fig .A).

Anesthesia and Animal Control

By extending and tying the hind limb with the corresponding forelimb, both testicles were seen clearly .To block the spermatic nerve and reduce pain during the surgical procedure, 10 ml of 2% lidocaine hydrochloride (20 mg/mlmanufactured by jeil pharma. co.Ltd. Korea) was directly injected intratesticularly into each testis.

Surgical Procedure

The scrotal skin, tunica dartos, and scrotal fascia are among the structural layers of the testis that were incised parallel to the median Raphael after the horse was placed in lateral recumbency (Fig .B). The length of the incision was about 9 cm and two centimeters apart from the median raphael. The spermatic cord of the encapsulated testicle by tunica vaginalis was ligated by using the transfixion method with vicryl no 2.(Fig .C). Then the testicle was severed approximately 2cm below the ligature .Similar procedures were followed to remove the second testicle through the opposite incision (Fig .D).

Figure 6. Castration of Horse:

(A) A plastic drape was applied to the testicle after restraining (B)The scrotum and underlying structures were incised (C) Transfixion ligature was applied to the encapsulated testicle (D)Removd the seond testicle (E)Antibiotic spray was used after the end of castration (F)The horse was completely recovered after one month

Post-operative care and complication

The surgical site bleeding was observed immediately after the removal of the testis from a scrotal superficial vein and ligated properly. The surgical area was cleaned with gauze and oxytetracycline spray applied (3.58%oxy viocid w/w palath/Ankara/turkey) (Fig E). Finally,

Penicillin (24mg/kg) and dihydrostreptomycin sulfate (30mg/kg) (Pen &Strep® Norbrook UK) were injected I.M daily for five days. Little exercise is also recommended and it should isolated from rest equine until recovery. Slight scrotal swelling and depression were observed for the first week of a few days. However, it gradually regressed to normal and completely recovered (Fig .F).

Discussion

Castrating horses is one of the most popular surgical procedures in equine veterinary practices known worldwide, which is usually done to lessen the masculine behavior of horses (Owens,2018). In the present case report the stallion was castrated due to the presence of aggressive behavior like fighting with other horses, attacking foals, and mounting mares. The horse underwent a full physical examination and aseptical procedures. Local anesthesia (2%lidocaine hydrochloride) alone was used before surgery to alleviate pain in the scrotal region. This report aligns with Kebamo's (2019) work at the Dire veterinary clinic regarding the aggressive behavioral issue of a mule.But,it differs from the woldegiorgis, (2020) work in that 2% lidocaine was applied to each testis as a local anesthetic in parallel with general anesthesia (xylazine at 1mg/kg given I/M). The current work also has no similarity to the Kilcoyne *et al*., (2013) survey research reports which imply usage of a combination of xylazine hydrochloride and butorphanol tartrate intravenous route for sedation as part of general anesthesia. In the current case, the stallion was castrated by the closed method in which the testicles were removed with it sac of the parietal tunic.

This statement is in agreement with the finding of Kilcoyne *et al*.,(2013) who state that 157 of 239 equids were castrated by close technique.However, this procedure contradicts the technique of Kittessa (2019) in which the parietal tunic of the testis was incised to undergo open castration. Following the trimming testicle, the scrotal incision was left open to allow fluid to drain and heal by the second intention. This step is in line with the report of Tizazu, (2020) in Addis Ababa University. In contrast, Mahmoud *et al*., (2013) research shows that a basic interrupted technique was used to suture the scrotal skin incision. According to Price *et al,* (2005), swelling is the most frequently occurring complication associated with routine castration. Little inflammation occurred in the first three days of the current castration. This could be the result of the closed castration method having less excessive swelling than the

open and semi-closed methods (Moll, *et al,* 1995). The present case is consistent with previous reports that indicate swelling typically peaks three to six days after the surgery (May,2002).After receiving an antibiotic for five days, the stallion eventually recovered fully, and phone follow-ups were also conducted.

Conclusion and recommendations

The purpose of the present surgical work was to control the aggressive behavior of the male horse. Preoperative preparation, anesthesia, animal control, operative procedure, postoperative care, and complications were also conducted accordingly. It should be kept apart from the other horses until it heals, and minimal exercise is also advised.

3.3.2. Open castration in dog

Abstract

The surgical desexing process entails the excision of reproductive organs such as the testicles and the epididymis of the dog which is recommended for treatment of benign prostatic hyperplasia, perianal hernia, prostatitis, population control, and behavioral modification. The castration was done in Giragualy Kebele 4 to prevent a dog from sexually dimorphic behavior(mounting and roaming), which halted house gardening activity and annoyed its owner.The dog's vital signs such as temperature, heart rate, and respiration rate were confirmed to be within normal range. Subsequently, the stud underwent a pre scrotal closed castration technique with preparation that included general anesthesia, shaving, and an aseptic technique.

Finally, antibiotics and painkillers were provided to prevent microbial complications and discomfort respectively. Concurrently, 1% povidone-iodine was also applied to the incision site. After ten days the suture was taken out and the dog recovered without any problems. Generally, the castration is done to control the dog's sexually behaviors after castration complication was not seen, which might be due to a sound surgical procedure. The owner also advised Col to polar on the dog's neck to avoid licking of surgical area

Keywords: *Castration, Catgut, Prescrotal, Stud*

Introduction

One of the earliest companion animals that humans domesticated was the dog around 8,000 BC (Matznick, 2002). They are kept for a variety of purposes, such as security, hunting, meat production, leisure, biomedical research, and companionship (Raheem, 2017). According to Bernete *et al*., (2021) estimates there are over one billion *C.familiaris* available in the globe. In the developed world, there are about 74 million dogs in Europe, 73 million in the US, 12.5 million in Japan, 6 million in Canada, 3.5 million in Australia, and half a million in New Zealand (Lord *et al.,* 2013).In the African continent, the numbers of dogs are not well documented. Natural breeding accounts for 83%of the dog populations which fosters an environment that is favorable for viral, bacterial, and parasitical zoonotic disease (Ghasemzadeh, and Namazi., (2015). Associated zoonotic disease and dog populations can be controlled by surgical and non-surgical (immune-sterilization, hormonal control, isolation, intrauterine device) sterilization methods (Munoz *et al.,* 2011). Canine castration is also the best remedy to prevent and treat alopecia, such as benign prostatic hyperplasia, perineal hernia, prostatitis, testicular tumors, and behavioral modifications (Jana *et al*.,2007).

According to Fossum (2007), the surgical castration methods are scrota and pre-scrotal. Problems associated with either approach include scrotal hematoma, hemorrhage, scrotal edema, splitting of the wound, and self-injury to the incisional site (Miller and Zawistowski, 2013). Aseptic conditions and injectable general anesthesia are used during the surgical procedure. Post-operative care is maintained with antibiotic and analgesic courses to avoid bacterial complications and pain respectively (Looney *et al*., 2008). In this instance, surgical castration of the dog has been reported as a means of managing behavioral issues.

History and physical examination

The owner of the dog lived in Ginjo Guduru kebele four of Jimma town invited me to solve the problem of his dog at home. The stud was a five-year-old, healthy, exotic breed, approximately weighing 12kg with a history of sexually dimorphic behaviors like mounting and roaming in search of bitches which stops house guarding activity.Up on physical examination, the dog's vital signs temperature (38.5^{o}C), heart rate (100 beats/minute), and respiration rate (27 breaths per minute) were measured by the appropriate instrument and

found with in normal limits. Depending on the willing and history of the owner, it was decided to perform surgical castration under general anesthesia.

Preoperative Preparations

For the next day's surgical procedure appointment, the owner has been told to deprive the dog of food and water for half of the day. On the scheduled day, the dog's physiological parameters were checked again and found normal (Fig .A). The choice to castrate the dog was made after it was determined to be in good health and fit for the procedure. Pre-scrotal hair was shaved, cleaned with soap and water, and scrubbed with 1% povidone iodine after the dog was put under sedation and placed in a dorsal recumbent position on the table.

Anesthesia and control

As a pre-anesthesia medication, atropine sulfate was given intramuscularly at a dose of 0.04mg/kg (which is manufactured by: Citron Drugs & pharmaceuticals Put, Ltd. India) to sedate the dog. Next, through the intravenous route, an induction diazepam (Intas pharmaceutical Ltd., India) @0.15mg/kg and ketamine (Ketamine Hydrochloride, Germany) @5mg/kg IV was administered. The dog was transferred to the table once aseptic preparation was completed. A half dose containing a mixture of 0.5mg/kg diazepam and 5mg/kg ketamine was used in single syringe for the maintenance procedure.

Surgical procedures

Dorsal recumbence was used to position the dog on the table. Pre scrotal region was scrubbed with 1% povidone iodine and shaved (Fig .B). The incision was made around 5cm cranial to the scrotal area. Scrotal skin, tunica dartos, and external spermatic fascia were incorporated into the incisional line. However, the parietal tunic was left intact for the closed castration technique. The pre-scrotal incision was used to deliver the first testicle. To fully exteriorize the testicle and spermatic cord, the surrounding fascia was stripped. The tissues of the spermatic cord proximal to the testicle were crushed using two hemostat forceps followed by chromic catgut number 2-0 double ligation (Fig .C). Using a scalpel blade, the spermatic cord was cut distal to the second hemostat. Using the same incision (Fig .D), the second testis was removed similarly. Finally, subcutaneous tissue (tunica dartos) and skin were sutured

subcuticular by chromic catgut and nonabsorbable suture material of silk by simple interrupted pattern respectively (Fig.E).

Figure 7. Dog Orchidectomy:

(A) Exotic breed dog before castration (B)Prescrotal incision (C) Hemostat forceps applied to crush spermatic cord (D) Prescrotal and skin closing by simple interrupted pattern (E)sutured pre scrotal skin (F)The dog was completely recovered after 15 days

Post-operative care and complications

Antibiotic pen strep, a combination of Penicillin (24mg/kg) and dihydro-streptomycin sulfate (30mg/kg) (Pen & Strep® Norbrook UK) I.M was given for three days to prevent microbial

complications. Tramadol (2% Tramadol Hydrochloride, Sakar Health Care Pvt. Ltd, Gujarat, India) was also injected I/M for two days to relieve post-operative pain. Parallely, the incision site was dressed with 1% povidone-iodine. To prevent licking, chewing and scratching to the surgical site, a collar was placed on the dog's neck. In this case, the complication was not recorded probably due to an aseptic procedure and good follow-up. On the tenth day following surgery, the skin suture was removed and the stud was completely recovered (Fig.F).

Discussions

The term “neutering” also known as “gonadectomy” describes the surgical removal of the reproductive organs, which results in a significant reduction in the gonadal hormones produced (Kaufmann *et al.,*2017). The veterinarian and shelter communities' justifications for desexing can be broadly categorized into three primary groups such as population control, health advantages, and behavioral benefits (Silvan and Matt, 2019). Castration was used in the current case report to suppress sexually dimorphic behaviors such as mounting and prowling around to quest bitches. This is in agreement with the findings of Kriese *et al*., (2022) who suggested castration as a method to significantly reduce the rate of mounting, roaming, and urine marking in dogs.When castrating a dog, the pre-scrotal midline approach is said to be the best technique. With this method, there are fewer complications, a shorter recovery period, and just a tiny scar after the operation (Misk, and Samia, 1991). Similarly, the pre-scrotal midline was used in this particular case to perform castration. This approach is consistent with the work of Kebamo (2019) which was carried out at Addis Ababa University Veterinary Teaching Hospital on stray dogs However; other scholars like Woodruff, (2013) reported that a scrotal neutering technique that conducted on 231 dogs at Mississippi State University, USA.

It is a routine practice dogs can be castrated using both open and closed techniques. In the case of open castration before ligation, the spermatic cord is exposed by incising the parietal vaginal tunic. The parietal vaginal tunic is left intact when the spermatic cord is ligated using the closed procedure and is associated with significantly fewer complications (Jacob *et al*., 2020). The closed method was applied in the present case work. This approach correlates with the study by Hamilton *et al*., (2014) that found 39 dogs had close castration which

experienced few complications. Converse studies, on 34 dogs undergoing open orchidectomy are also accessible to the same author. Orchidectomy in a small animal is not risk-free hematoma, swelling, subcutaneous bruises, and self-trauma are common post-operative consequences (Ajadi,2014).In this case complications did not happen this might be due to the usage of an aseptic technique and good antibiotic follow-up.

Concusions and recommendation

The castration is done for the control of a dog with sexually dimorphic behaviors after castration complication was not seen, it might be due to a sound surgical procedure and good follow-up. The sutured skin was removed and fully recovered. The owner also advised to put colar on the dog's neck to prevent licking of the surgical area.

3.3.3. Open Castration in tom

Abstract

Male cats are frequently encouraged to undergo castration to reduce undesired reproduction and eliminate undesirable behaviors such as roaming, fighting, mounting, and urine scent marking. In this case, the local tom was neutered due to the presence of roaming and violent behaviors toward other male cats at the Awetu Mendera owner's residence.The physiological parameters of the moggy were normal which included a temperature of 38.7^0 c, a heart rate of 170 beats/minute, and a respiratory rate of 27 breaths/minute. Following general anesthesia, shaving, cleaning, and scrubbing with an iodine tincture solution, an open surgical procedure was carried out. Post-operative complications were managed with topical and systemic antibiotics like oxytetracycline spray and pen strep (penicillin 24mg/kg and dihydrostreptomycin sulfate were administered respectively. During the follow-up period. Merely mild scrotal swelling developed during the surgical procedure. After using suitable aseptic the owner is also advised to isolate it from other pets and keep it clean to prevent fighting and contamination of surgical parts, respectively. Procedures and efficient antibiotic follow-up schedules. Ten days later, the cat was recovered.

Keywords: *Mild, Open castration, Post-operative care, Tom*

Introduction

The domestic cat (*Felis catus*) has expanded over the globe alongside human travel to prevent rodents away from crops (Lipinski *et al*., 2008). Unwanted cat (stray cat) overpopulation is still a problem in many countries of the world (Mohamed, 2017). Castration is a popular technique recommended for male cats to decrease unwanted breeding, and abolish objectionable behaviors like mounting, urine scent marking, fighting, and roaming (Holland, 1986; Yates *et al*., 2013).According to Root, (2017) castrating cats before they reach puberty is the most effective and safest procedure. While there is disagreement in the literature regarding the exact age for prepubertal gonadectomy, it is generally agreed that the procedure is carried out before 23 weeks of life (Howe, *et al.,* 2000; Farnworth, *et al*., 2013).

However, castration after pubertal growth is done between six to nine months, and after that, castration can occur at any time (Yates *et al*., 2013). Cats are castrated using a variety of methods, including open-covered and open-uncovered methods (Subrata, 2015). Several injectable chemicals for induction and maintenance techniques have been indicated, and it is conducted under general anesthesia (Howe, 2003; Fossum, 2007). The process involves scrotal incision, removing the testicles, blocking and transecting the spermatic cords, and there is no requirement to suture the wound (Tobias, 2010). The frequency of postoperative complications varied between 1% and 24% in elective gonadectomy cats (Franklin, and Bonnett, 1996). Animals undergoing surgery must receive the proper post-operative care.Until they have completely recovered, animals should be kept in a clean, dry recovery environment under constant observation by a veterinarian (Pereira *et al.,* 2018). The goal of this case report was to castrate a cat using an open surgical procedure to stop it from roaming and fighting with other male cats.

History and physical examination

A robust,four-kilogram,nine-month-old local breed tom with a history of roaming and aggressive behavior towards other males was observed in the Awetu Mandera kebele owner's home .Up on a general physical check-up, the moggy's vital statistics were within normal range as follows temperature of 38.7^0 C, heart rate of 170 beats/minute, and respiratory rate of

27 breaths/minute. To prevent the cat from the sexual behavior mentioned above, it was decided to perform open surgical castration under general anesthesia.

Preoperative Preparations

While scheduling the surgery for the following day, the owner was instructed to prevent Tom from food and water for twelve, and six hours respectively. The cat's physiological parameters were confirmed once more upon arriving on the scheduled day. Then castration of the cat was decided upon since it proved healthy. The cat was given a sedative agent and placed in a dorsal recumbent position on the table. Finally, draped with the help of a towel clamp after shaving, washing with Savlon and water, and scrubbing with 2% iodine tincture solution (Fig .A).

Anesthesia and control

Atropine sulfate (0.04 mg/kg) (which is manufactured by: Ciron Drugs & pharmaceuticals Pvt, Ltd. India) was injected intramuscularly as a pre-anesthetic agent. Next, the cat was placed on the table for aseptic preparation after receiving ketamine (Ketamine Hydrochloride, Germany) @5mg/kg. Throughout the surgical operation, a half dose of ketamine (5mg/kg) was administered intravenously for maintenance.

Surgical procedures

Dorsal recumbency was used to position the cat and secured it to the table by rope. The scrotal area was then shaved, washed, and disinfected using iodine tincture solution. The surgical region was covered by a sterile drape after the tail deviated away from the operating site. The testes were securely grabbed and extended towards the tip of the scrotum.The skin,tunica dartos, and tunica vaginalis were incised, exposing the testicle through gentle pressure to the incisional area (Fig .B). The tunica vaginalis was detached from the testis. On the spermatic cord, artery forceps were used. Under the upper artery forceps, a Tran's fixation ligature was placed using catgut 2-0 on the spermatic cord. Below the ligation, a second artery forceps was also used. Next, a surgical blade was used to cut the spermatic cord 2cm behind the ligature (Fig .C). Then testicle was extracted with its forceps. After making sure there was no bleeding, the upper artery forceps were taken. Similarly, the other testicle was removed.

The scrotal skin was not sutured. The area of the incision was sprayed with oxytetracycline (Fig .D).

Figure 8. Castration of Tom:

(A) The Testis was properly draped with towel clamps (B)Incision was made on the scrotum and underlying structures (C) The Testicle was incised by surgical blade (D) The surgical area was sprayed by oxytetracycline (E) Fully recovered cat after ten days

Post-operative care and complications

For three days, intramuscular medication containing penicillin (24mg/kg) and dihydro-streptomycin sulfate (30mg/kg) (Pen & Strep® Norbrook UK) I.M, was used to control secondary bacterial complications. Post-operative problems such as mild scrotal swelling happened. However, it healed after a few days of follow-up time through home visits and phone calls. Finally, the cat was fully recovered after ten days (Fig .E).

Discussions

Castration is one of the most popular surgical operations performed in small animal medicine that involves the removal of testes (Johnston, 1991; Ajadi and Oyeyemi, 2014; Howe, 2015; Kaufmann *et al*., 2017). It is a frequent surgery that is recommended to decrease aggressive behavior and the number of undesirable cats (Mohamed, 2017).Castration was performed in the current case report to prevent Tom from searching for the queen and intermale fighting.

Cats can be castrated using both open and closed methods. In the open technique before ligation, the spermatic cord is exposed by incising the parietal vaginal tunic. However, in the closed procedure the covered spermatic cord is ligated. In the present case castration was conducted through an open approach. This work is consistent with the report of Beata *et al*., (2017) and Woldegiorgis (2020) at Warsaw University of Life Sciences and Addis Ababa University respectively. In this cat, the scrotal skin was left open which is in agreement with the study of Subrata (2015) at Chattogram Veterinary and Animal Sciences University Khulshi, Bangladesh. However, it disagrees with the procedure of Muktha *et al*., (2020) that sutured the skin by simple interrupting pattern using ethilon. Castration is done when the cat is under general anesthesia. Scrotal edema, hemorrhage, bruising, and infection are among the castration-related complications (Lisa, 2006). During this surgical activity, only minimal scrotal edema happened. This might be because of appropriate aseptic practices and effective antibiotic follow-up protocols.

Conclusion and recommendation

According to current case report, castration was ordered to calm behavioral abnormalities in the male cat, and the work was also successfully performed. It is probably due to aseptic procedural technique, and the owner had a good commitment to apply the recommended points, like putting a tom in a clean area and avoiding to mix with other cats at home.

3.4. Surgical Management of Hernia

3.4.1. Umblical Hernia in Calf

Abstract

Umbilical hernia is an organ or tissue that protrudes through an opening, which can be created by congenitally and a tear in the abdominal wall. On a dairy farm found at Awetu Mandera Kebele, a five-month-old Holstein Friesian crossbred calf was the subject of the current case report. The calf had a history of swelling in the umbilical region after falling on a blunt stake. The recorded clinical data revealed that a heart rate of 120 beats per minute, a breathing rate of 26 breaths per minute, and a rectal temperature of 380 °C were in normal physiological status. On palpation, a hernia ring was felt as non-painful and reducible. Aseptically preparation is conducted in the dorsal recumbency position with water, soap, and povidone iodine. Then two percent lidacaine (20 mg/mL) was applied to the circumference of the ring.After making an elliptical-shaped skin incision, structures like the hernia ring and subcutaneous tissue were sutured by herniorrhaphy using chromic catgut. Even though the skin was closed by nonabsorbable material.Post-surgical follow-up was done through the administration of broad-spectrum antibiotics and anti-inflammatory medications as well as by giving appropriate advice to the owner.A small swelling only occurs during the follow-up period and disappears later. At the end of the two weeks following the operation, the skin sutures were taken out.In conclusion; the umbilical hernia was reduced and corrected by performing herniorrhaphy. It can be eliminated by avoiding the use of stake blunts around animal house.

Keywords: *Calf, Elliptical-Incision, Herniorrhaphy, Umbilical hernia*

Introduction

The word “hernia” comes from the Latin meaning "rupture,” which describes the passage of tissue or an organ like a bowel through the wall of the cavity in which it resides normally and contains three components that include the hernia ring, hernia sac, and contents which includes fat,omentum and segments of intestines (Amresh, 2009; Fritzgibbons, and Forse, 2015). According to Kumar (2001), the causes are classified as inherited and acquired and have detrimental implications for affected animals by reducing productivity and reproductivity. Based on anatomical locations, it can be categorised as umbilical, inguinal, scrotal, femoral, perineal, and ventral, which occur in both small and large animals (Fossum, 2013; Farman *et al*., 2018).

Umbilical hernia (omphalocele) is the product of lateral folds (rectus abdominus muscle and fascia) failure to join together, which frequently happens in calves but is rare in lambs and kids with congenital and acquired possible causes (Radisic *et al*., 2010). Birth defects known as congenital umbilical hernia are prevalent in calves, with incidences ranging from 0.1% to 14.2%, especially in Holstein Friesian cattle, probably due to multiple births,shortened gestation lengths, and defective alleles from sires and dams (Herrmann *et al*.,2001).The majority of the conditions that would increase the likelihood of this happening were related to management issues: constipation causing the calf to strain, severing the umbilicus near the body wall, and using unnecessary force to traction the huge fetus during delivery (Haile *et al., 2017)*. History, clinical signs,auscultation,palpation and needle aspiration are used for diagnosing umbilical hernia by considering risk factors sex, age, body weight, size of hernia ring and suture type (Fatima *et al.,*2022). Numerous methods of hernia therapy have been identified in different literatures.These include suturing body tissues (herniorraphy) and inserting foreign materials such as polypropylene monofilament plastic mesh to increase strength (hernioplasty) in the presence of local infiltration anesthesia using 2% lidocaine hydrochloride Different systematic studies and meta_analyses have established the benefits and drawbacks of herniorraphy and hernioplasty in relation to problems following surgery for hernia repair. The open mesh repair increases the risk of seroma formation but lowers the chance of recurrence. Concerning the risks of surgical site infection, haemorrhage, and chronic discomfort, there is no difference between the two methods (Madsen *et al*., 2020). To

minimize this complication, post-operative care along with antibiotic and antipain therapy should be employed (Sushanta,2007;Faslu,2019).The current case report describes the reduction and correction of an umbilical hernia in calf of the Holstein Friesian breed using open herniorrhaphy.

History and physical examination

The current case report was conducted on five-months-old Holstein Friesian crossbred calf weighing about 70 kg at Awetu Mandera kebele owner's dairy farm with history of swelling at the umbilical region after falling on the blunt stake found in the compound (Fig .A). The owner complained that increasing in size of the swelling in the previous a few weeks since the day of the injury.

Clinical data showed that calf heart rate of 120 beats per minute,breathing rate of 26 breaths per minute, and rectal temperature of 38^0C were recorded, which were within the normal physiological interval. Around 2cm diametrically, a hernia ring was felt when palpating the aberrant region, and the hernia content was found as non-painful and reducible to the usual location. A clinical examination showed the calf had an umbilical hernia. So, herniorrhaphy was chosen as the appropriate measure of correction action.

Preoperative Preparations

The calf was kept without feed for the full day, and water was withdrawn for twelve hours before any surgical activity was conducted. After the animal was put into a dorsal recumbency position, the ventral abdomen was cleaned with soap and water, shaved, and scrubbed with savlone to prepare it for aseptic surgery. After that, povidone iodine solution was applied to the surgical site (Fig.B).

Anesthesia and control

The ring block anaesthesia was achieved by local anaesthetic two percent lidocaine (20mg/ml) (20 mg/mlmanufactured by jeil pharma. co.Ltd. Korea).

Surgical procedures

Elliptical-shaped incisions were made on the skin (Fig .C). The blunt and sharp dissections separated the attachment between the skin and parietal peritoneum.The hernial ring was made visible and freshened Excess part of the sac was removed and closed by overlapping sutures chromic catgut(2-0). Next, chromic catgut (1-0) was used to stitch the subcutaneous by simple interrupted method.To achieve optimal apposition,the excessive part skin of part was removed and closed using silk sutures in an interrupted pattern (Fig .D).

Figure 9. Umbilical herniorrhaphy in calf**:**

(A) Umbilical hernia in calf (B) umbilical region was prepared asepticaly in dorsal recumbency (C) Elliptical-shaped incisions of skin was progress (D) Closing of the ring,subcutaneous tissue and skin in progress (E) skin sutured in an interrupted pattern (F)Calf recovered after 15 days

Post-operative care and complications

After surgery,intramuscular administration of the broad spectrum antibiotic procaine penicillin of 24mg/kg and dihydrostreptomycine sulphate 30mg/kg(Pen & Strep® Norbrook UK) was administered for five days consecutively.Meloxicam,an anti inflammatory medicatio n,was also given as part of a pain management plan for two days at a dose of 0.3 mg/kg.Parallely wound was dressed by povidone iodine on suture line(Fig .E).It was recommended that the owner should give the calf a laxative diet for a week,refrain from giving roughage ,decrease exercise and make sure the house was clean and free of other animals.During follow up time only small swelling happen but disapper latter.Finally,the skin sutures were removed after 15th post-operative day(Fig .F)

Discussions

A hernia is the consequence of tissue from a body cavity pushing into a spot where the body wall is weak, causing a bulge in the skin. This could happen by accident or as a result of a typical anatomical opening that isn't fully functional (Sutradhar *et al*.,2009).According to Ron *et al. (2004),* umbilical hernia has been documented in a number of cattle breeds,but Holstein Friesians are the breed most frequently affected, which is higher in female calves than males. Predisposing factors can be congenital, such as weakening in the abdomen wall or inadequate closure of an embryonic defect. Hernia causes are also acquired, like trauma falling on the blunt object, constipation, diarrhoea, violent coughing, tympany, and elevated intra-abdominal pressure (Williams, 2012). In the present case, the owner states the calf had a historical background of trauma after falling on a blunt stake.

The surgical methods for umbilical hernia correction involve mesh repair (hernioplasty) and suture approaches (Amaya *et al.,* 2015). One of the most common techniques in industrialised nations is hernioplastic repair, which speeds up healing and lowers the recurrence rate of hernias. But the availability and affordability of those meshes are lower in third-world countries (Wilhelm *et al.,* 2007). In this particular case of an exotic calf, the umbilical hernia

was reducible, painless, and showed no palpable signs of infection. In order to address the issue, open herniorrhaphy was employed. This report is in agreement with the work of Bibek *et al*. (2009), which was conducted at the Veterinary Teaching Hospital, Chittagong Veterinary and Animal Sciences University, Chittagong, Bangladesh. However, the inverse suturing technique (closed) is also reported by Fatima *et al*. (2022) in six calves.

In this specific case, the hernia's contents were forced back into the abdomen.Local infiltration was used by 2% lignocaine hydrochloride ,to desensitize the surgery site after restraining the calf in dorsal recumbency.After that, an elliptical incision was done on the hernia ring.Then ring was examined and freshened with a scalpel blade.Similar procedures also done by the authors Athira *et al*., (2021).In contrast,Woldegiorgis,(2020) performed a linear skin incision on the swelling at Veterinary Teaching Hospital of Addis Ababa University. In the presented case, chromic catgut was used to close the ring and subcutaneous tissue. This point disagrees with the report of Kitessa (2019), in which sterilised silk was used to suture the hernial ring and abdominal wall. Eventually, the calf recovered without any complications, despite experiencing only mild swelling that quickly decreased. This might be due to the presence of good surgical technique, followup, and management. But in other reports, like Haile *et al.* (2017), post-surgical complications were mentioned.

Conclusion and recommendation

An umbilical hernia is common in field conditions. Holsten heifers are more prone to umbilical hernia. A surgical procedure called herniorrhaphy is used to treat umbilical hernias. A complication can happen if it is not treated on time. It was prevented by avoiding usage of sharp materials around cattle's places of residence.

3.5. Surgical Management of Prolapse

3.5.1. Rectal prolapse in the kitten

Abstract

Rectal prolapse refers to the rectum's double-layer evagination into the anal canal. This case report's purpose was to identify and surgically treat rectal prolapse due to untreated diarrhea. A 3-month-old, weighing approximately 1, 4 kg, domestic kitten of a local breed was brought to the Jimma University College of Agriculture and Veterinary Medicine open veterinary clinic. The owners said that the kitten was in appetent because of untreated diarrhea that lasted for a week. The kitten's vital signs are normal during a standard physical examination. Appropriate dosages of general anesthesia were administered. The everted rectum was cleaned in a warm saline solution to prepare it for manual repositioning to the pelvic cavity using a perineal approach. A purse-string suture was used to close the perirectal tissue. Broad-spectrum antibiotics, anti-inflammatory drugs, and appropriate owner counseling were used as part of the post-surgical follow-up treatment. The prolapse did not recur during the postoperative period, and the kitten made a full recovery. The anus suture was removed a week later. Repositioning of the rectum was used to solve the prolapse problem. To avoid further issues, the owner must periodically check on the cat and bring it into the clinic when it has any irregularities. The owner also advised being given cat rehydration food.

Keyword: *Kitten, Perineal approach, Purse-string, Repositioning rectum*

Introduction

The word prolapse it originates from the Latin word "prolapsus," which means "slipping forth." It refers to the falling out or sliding out of a viscous substance (Chaliha. 2006). Pelvic Organ Prolapse (POP) is the protrusion of the anterior, posterior, uterine (cervix), or vaginal apex (Haylen *et al.,* 2016). There are various types of protrusions through the vagina, including those from the bladder, uterus, and rectum (Jelovsek, 2007). Rectal prolapse is the sticking out of one or more rectum layers through the anus. It is classified as complete when all rectal layers protrude or incomplete when only the rectal mucosa is everted. (Fossum T., 2007) the primary cause of colitis, tumors, urethral obstruction, urolithiasis, prostate disease, dystocia, or perineal hernia; disorders of the rectum (lacerations, diverticula, sacculation,

foreign body ingestion); and parasite infestation (Gallagher, 2020). All breeds and sexes of animals are susceptible to prolapse, but most cases affect younger animals. According to Fossum (2010), cats are more prone to prolapse because of the weakness in their anus muscles. Prolapse treatment can be handled surgically or non-surgically. The rectum is amputated and resected during the surgical procedure, whereas rectal resection is performed if prolapse manifests as necrosis, on the other hand. Repositioning the rectum is done if rectal prolapse is mild and the mucosa is only slightly damaged. Abdominal and perineal approaches can be used. Perineal recto sigmoidectomy, first used by Mikulicz in 1889, became popularized by Altemeier in the 1970s and allows for perineal approach resection. (Mehrvarz. 2013). Identifying and solving the main source of straining as well as providing appropriate prolapse treatment are all parts of the treatment for rectal prolapse. (Barr and, 1999). A manual reduction of the prolapse and the insertion of anal purstring suture, which is left in place for 24 to 48 hours, typically comprise the initial treatment for a reducible rectal prolapse (Demetriou and Welsh, 1999). This instance of repositioning the rectum using perineal approaches was selected because the kitten arrived 24 hours before the rectum became necrotized.

Case history and physical examination

In the present case, a three-month-old domestic kitten estimated weighing 1.4 kg of a non-descript breed was presented to the Jimma University College of Agriculture and Veterinary Medicine open-air clinic. When the owner returned home, they noticed a mass hanging from the cat's back end, which shocked them. Due to untreated diarrhea that persisted for a week, the kitten was inappetent, as stated by the owner. During a routine physical examination, the kitten's vital signs, which included a temperature of 38.30 °C, a heart rate of 166 beats per minute, and a respiratory rate of 28 breaths per minute, were all within the normal range. A perianal examination identified a prolapsed mass. The prolapsed organ appeared fresh, and there was no sign of infection.

Anesthesia and control

The kitten was premeditated before the start of the surgery. Atropine sulfate was given as a predictor at a dose of 0.04 mg/kg (Which is manufactured by: Ciron Drugs & pharmaceuticals

Pvt, Ltd. India?) To achieve general anesthesia, diazepam(Intas pharmaceutical Ltd., India) @0.15mg/kg and 5 mg/kg of ketamine (Ketamine Hydrochloride, Germany) @5mg/kg were injected intravenously (IV) using a single syringe for indication. While the patient remained on the operating table, a half-dose of a combination of ketamine and diazepam was administered to facilitate aseptic control during the surgical procedure under general anesthesia for maintenance**.**

Preoperative Preparations

The surrounding area was prepared with soap and water. Warm water was diluted and applied to the salvageable rectal surface along the salt solution to decrease the volume of the prolapsed rectum. Additionally, the everted rectum was prepared for manual repositioning to the pelvic cavity by washing it in warm saline solution (Fig .A).

Surgical procedures

The prolapsed mass was aseptically prepared, and the kitten was stabilized using perineal approaches. Applyed a hyperosmotic solution topically for a brief period reduces edema. Then the everted rectal mass was gently pushed through the vaginal opening and into its normal position using manual pressure (Fig. B). Parts of the rectum were replaced gradually. The perirectal tissue was sutured through a purse-string method using silk 1–0 (Fig. C). The rectal opening was secured with two fingers to prevent prolapse recurrence and facilitate the passage of feces.

Figure 10. Repositioning the rectum in cat :

(A) In perineal recumbency, the prolapsed region was aseptically prepared. (B) The rectum was slowly pushing. (C) Applyed purse string suture suture (D) after surgery (E) The puppy completely recovered and the suture was removed after a week.

Post-operative care and complications

Once the process was completed, (Fig.D) the cow received penicillin (24 mg/kg) and dihydrostreptomycin sulphate (30 mg/kg) (Pen & Strep® Norbrook UK) I.M for three days in a row. 1% Povidone Iodine was used to dress the Suture Line. The owner was advised to check for any discomfort related to the suture pattern for at least a week, and to limit the cat's diet to milk and gruel. In order to lessen fecal contamination and the severity of suture-tract

infection, the purse-string-suture is taken out one week after it is placed. The kitten recovered without any complications, and the prolapse did not reappear during the follow-up period (Fig .E).

Discussions

Pelvic organ prolapse (POP) is when one or more pelvic organs deviate from their typical position and extend in the vagina. Depending on which part of the body dropped out, there are several types of prolapse with different names. Cystocele (bladder prolapse), Enterocele (small intestine prolapse), Uterine prolapse and Rectocele (rectal prolapse) (Jelovsek, 2007). In the present case, the owner states rectal prolapse in kitten. It is managed the rectal repositioning method. After carefully inserting the rectum by hand, the anus is sutured using a purse string pattern. Due to the present prolapsed rectum, there is minimal damage to the mucosa. In agreement with the research (Tizazu, 2020) carried out at Addis Ababa University's Veterinary Teaching Hospital. However, it is disagrees with (Sarkar., 2019) Indonesia Medicus Veterinus Juli. In this case the method of choice for the severed rectum was rectal amputation because of the ulcers present.Rectal prolapse operations performed on the abdomen are thought to be a lower recurrence rate than perineal procedures, but supposed higher morbidity: Consequently, for patients who are considered unsuitable for abdominal repair, perineal procedures are advised (Bouet., 2013). Perineal techniques were used in the current case to perform surgery on the kitten in accordance with (Omer Besalti and Irem Ergin., 2012) However, this method contradicts the technique of (Jiyoung.,2022).

In the end, the kitten bounced back without experiencing another prolapse. As the result of excellent surgical technique, follow-up care, antibiotics, and advice given to the owner on how to properly care for the cat. Agreement with the work (Monsang *et al., 2014)* .However, this work is contradict with the case report of (Passamonti. 2010). Because anal abnormality (myiasis-related destruction of the anal sphincter muscles) and inappropriate post-operative care were the main causes.

Conclusion and recommendation

The current case report aimed to identify rectal prolapse and treat them surgically. Due to untreated diarrhea that lasted over a week. So that the owner must regularly checked on the cat and bring it into the clinic if there were any abnormalities to prevent further problems.advised cat needs to eaten rehydration food.

3.6. Surgical Management of Tail

3.6.1. Tail docking in puppy

Abstract

The procedure known as tail docking involves amputating all or part of an animal's tail. It is typically done on puppies at 3 months. The current case report intends that the owner was interested in surgical tail docking due to the cosmetic outcome. At two months and five days old, Puppy, estimated weighing 3 kg and belonging to the German shepherd breed, was brought to the JUCAVM open-air veterinary clinic. Vital signs were found to be within the normal range. After shaving the hair and washing with Savlon and water to prepare the skin, atropine sulfate (0.04%) and xylazine (2 mg/kg) made up the premedication, while ketamine hydrochloride (5 mg/kg) was administered intravenously (IV) as the induction. Using a tourniquet, 2 % lignocaine hydrochloride was caudally infused at the site of the intended amputation. A V-shaped skin incision was then completed. The dorsal and ventral skin flaps were pulled cranially with the scalpel blade to create a tension-free closure. A simple interrupted pattern was used to suture the skin using Slik. Three days of antibiotics—penicillin (24 mg/kg), dihydrostreptomycin sulfate (30 mg/kg), and antipen meloxicam (0.5 mg/kg) were administered to control pain and postoperative complications. The suture was removed on the 12th day. The puppy recovered uneventfully without any complications. Advised the owner to keep a puppy in a clean area and wear a collar to prevent it from licking the surgical area.

Keywords: *Cosmetics surgery, Puppy, Tail docking, V-shape incision.*

Introduction

The definition of convenience surgery is a combination of surgical treatments for companion animals, which, in the context of veterinary medicine, are not justified. These techniques consist of de-barking, de-clawing, tail-docking, and ear-cropping *(*Quartarone *et al.* 2012*).* Docking is a management technique used on farm animals, including pigs, sheep, and cattle, to prevent fly strikes in sheep, prevent tail biting in swine, enhance cleanliness, and reduce mastitis in dairy cattle. Canine tail docking also occurs for cosmetic reasons *(*Schrader *et al.,* 2001*).* Tail docking has been done for centuries, and while it could be painful, anesthetics is frequently not used *(*Johnson. 2009*).* In many European and USA, veterinarians, animal breeders, pet owners, and animal welfare organizations remain to disagree on the issue of tail docking in animals, particularly in dogs *(*Bennett*,* 2003*). (Hedland.* 2007*)* Although tail docking is illegal in the UK, there is an exception made for certified working dogs that need it for prophylactic and therapeutic purposes*. (*Morton*.* 1992*)* Manche developed nations, including the USA and most of Australia, to have legalized and widely accepted docking. *(*Noonan*.* 1996) African nations are starting to take a stand against cosmetic tail docking, with South Africa being the leader in this regard. Other African nations have not yet adopted legislation opposing the practice *(*Joseph*.* 2014*).* We have not come across any reviews or guidelines in Ethiopia pertaining to the care of domestic animals. Besides the prohibitions of public cruelty stated in the Criminal Code.

Currently, tail docking is performed for either preventative or cosmetic reasons Some breed of dogs, like terriers, herding dogs, and hunting dogs, can have tails that gather foxtails and burrs, which can lead to pain and infection , due to the tail's wagging, may be subject to abrasion or other injury **(**Cagri*.,*2017*).* The two handling methods can be used for tail-docking. Using a rubber bandage, the first method stops the blood flow until the tail collapses. In the second, a scalpel or surgical scissors are used to amputate the tail. Breed standards frequently specify the length of tail docking, though this varies from breed to breed (AWVT. 2000). When a puppy is three months old or younger, a surgical amputation using a scalpel is typically carried out under general anesthesia (Hedland, 2007). However, some breeders used tight rubber rings around the tail to perform tail docking without anesthesia. (Lefebvre. 2007 and Bennett. 2003).To prevent bacterial complications and pain, post-operative care is

maintained with courses of antibiotics and analgesics, respectively (Looney *et al.,* 2008). The successful amputation of a puppy's tail is stated in the current case-report.

Case history and Physical examination

A two-month-old and five-day-old estimated weighing 3 kg, German shepherd breed puppy was presented to the Jimma University College of Agriculture and Veterinary Medicine open-air veterinary clinic. Due to the desired cosmetic result, the owner wants their puppy's tail amputated (Fig. A). During the physical examination, the dog's vital signs were measured using the appropriate equipment and were found to be within normal limits for temperature (38.7 C), heart rate (110 beats per minute), and respiration rate (30 breaths per minute). Finally, it was decided to perform a tail amputation under general anesthesia.

Preoperative Preparations

The dog was segregated from food and water for 12 and 6 hours before to surgery, and it arrived at the clinic on an appointed day. The puppy was confined by covering its mouth with gauze. The skin was prepped by shaving and trimming its hair (Fig .B). Next, diluted Savlon was applied to the skin, and the process was repeated until all debris was eliminated. To the base of the tail root, apply a tourniquet.

Anesthesia and control

Atropine sulfate (0.04%) (Which is manufactured by: Citron Drugs & pharmaceuticals Pvt, Ltd. India) and xylazine (2 mg/kg) made up the premedication, while ketamine (Ketamine Hydrochloride, Germany) @5mg/kg was administered intravenously (IV) as the induction dose. The site of the envisioned amputation was given a caudal infiltration of 2 % lignocaine hydrochloride at the tourniquet.

Surgical procedures

Following the appropriate anesthetic procedure and aseptic preparation of the region, at the base of the tail, 1-2 cm caudal to the joint space at the planned amputation site, a V-shaped skin incision was made (Fig.C). Cranial ligation of the medial and lateral caudal arteries with chronic catgut 2-0 at the site of amputation, both dorsally and ventrally, the coccygeal

vertebrae disarticulated, and the coccygeal muscles were transected. Using the scalpel blade, the dorsal and ventral skin flaps were pulled cranially to produce a tension-free closure. Using Silk, a non-absorbable material, the skin was sutured in a simple interrupted pattern (Fig. D). Ultimately, the region was thoroughly cleaned and treated with a 1% povidone-iodine solution.

Figure 11. Tail amputation in puppy**:**

(A) Germany Shepherd breed puppy before surgery (B) Surgical site shaved and prepared aseptically (C) V-shaped skin incision (D) closed skin by simple interrupted pattern (E) after complet surgery (F) puppy was completely recovered after a few day days

Post-operative care and complication

The tail incision site was treated with oxytetracycline wound spray after the surgery, and the region was bandaged with iodine-containing gauze (Fig .E). Additionally, to control pain and post-operative complications, IM, SID (once daily) administration of antibiotic Penicillin (24 mg/kg), dihydrostreptomycin sulfate (30 mg/kg), (Pen & Strep® Norbrook UK) , and antipen Meloxicam (0.5 mg/kg) was given for three days. The Suture was removed on the 12 Th Day. The puppy recovered uneventfully without any complications. After postoperative management, a telephone follow-up was conducted, and no problems were reported (Fig .F).

Discussions

The surgical removal of the tail's distal section is known as a caudectomy. To reduce the possibility of tail injuries, it was done on hunting and combat dogs (Brewster, 2014). The purpose of tail-docking can be cosmetic or injury-related. In this instance, describe the use of cosmetic surgery. This is consistent with the results (Hassan *et al.,* 2018). Which was carried out at Addis Ababa University Veterinary Teaching Hospital? However, according to other researchers, tail amputations are done on dogs whose tails have been injured (Kebamo, 2019). Addis Ababa University Veterinary Teaching Hospital. Puppies typically have their tails amputated using a rubber band or scissors (a knife) (WSAVA, 2001). The puppy's tail with the rubber ring attachment is shown in Eyarefe and Oguntoye (2016). However, surgical blood was used with the current technique. This point concurs with the findings of the report (Fesseha, 2020). The tail of the two-year-old dog was severely injured in a fight with another dog. However, the puppies in the present case are 2 months and 5 days old, German Shepherd-breed, healthy, and free from any injuries. According to Joseph (2013), there are 64 practices in the public and private sectors overall.

A considerable proportion of breeders docked their animals due to tradition (74.4%), while some performed so to enhance their appearance (53.6%). Comfort and enjoyment (46.4%), improved hygiene (28.0%), ease of mating (14.2%), higher levels of aggression (7.1%), and

avoiding injury (7.1%). On the other hand, clinical records by practices showed that 2.3% and 97.7 percent were docked for therapeutic and elective purposes, respectively. Post-operative complications that were most frequently observed by respondents were self-mutilation (20.9%) and infection (37.2%). The majority of practices (72.0%) did tail docking without using anesthesia, and 60.5% never used analgesics after surgery. The total recovery of the puppy in this instance might be linked to the execution of aseptic methods while managing the case and the giving of antibiotics and analgesics during the healing phase.

Conclusion and recommendation

Owner's requested for surgical tail docking. because of the cosmetics outcome. the work was completed effectively. Aseptic procedural method was most likely to blame. Additionally, The owner demonstrated a good dedication to follow the advised points, such as placing a collar on the dog's neck to avoid licking the surgical region and placing a tom in a clean place.

3.7. Surgical Management Extirpation

3.7.1. Extirpation of eye in sheep

Abstract

Extirpation removes everything that is inside the orbit, such as the lacrimal gland, muscles, adipose tissue, and globe. The goal of the current case report was to identify and treat ocular injuries carried on by an animal attack. A five-month-old lamb was brought to the JUCAVM open-air veterinary clinic with unilateral blindness and an eye injury. According to the owner, within two days, the monkey attacked the lamb's eye, causing a bulge in the eyeball. A general physical examination was normal. However, the left eyeball, which was completely necrotized and highly infected, leaked foul-smelling and bloody fluid. It becomes easily excited due to the pain and loss of vision on one side. Salona was applied to clean the injured eye after shaving. A 1% povidone-iodine solution was used. Then a retrobulbar nerve block applying 2% lignocaine hydrochloride was used to induce anesthesia. The palpebral borders of the eyelids were temporarily sutured together. A conjunctival sac was punctured with an elliptical cutaneous incision located 1 cm from the lid margin. The eyeball was bluntly dissected to release it from the bony orbit, and together with its muscles, the skin was sutured with simple interrupted pattern. Antibiotics and painkillers were administered for post-

operative care. The wound was simultaneously dressed with a povidone-iodine sutured line. The gauze was taken out, and the orbital cavity was implanted every 48 hours for one week. The preset case report concludes that the sheep was treated with an extracted eyeball. Bring the animal to the veterinarian clinic as soon as possible, and keep it away from wild animals. Help prevent more complications.

Key words: *Extirpation, Lamb, Ophthalmology, Retro bulbar.*

Introduction

Ophthalmology is one of the most significant fields of Islamic medicine for treating humans (1402/1982). Arabs have a special credit for ophthalmology since they carry out practically all eye surgeries. Avicenna was the first to use probing to treat lachrymal fistulas, and he was aware that lens opacity was the cause of cataracts (Shobhan., 1402/1982). Ibn Al-Haitham's anatomy is the first attempt to define the optical axis, convexity, and forward position of the lens quantitatively in terms of the eye's structure. He also looked into the functional significance of the various components of the eye as an optical system (Mohsin and Shoaib, 2012). When looking into veterinary ophthalmology's historical component, it is similar to medicine in general, but it is incredible how little precise information was available for literally thousands of years before the 20th century. One of the authors of documents referring to eye disorders in dogs and cattle that were discovered in Hippiatrica around the year 1000 AD was the veterinarian Apsyetus. However, comparable diseases of the same species were mentioned in ancient Egyptian papyri. Around 450–510 AD, Vegitius wrote about "moonblindness" in horses in Arstis Veterinarian save Mulomedicinae. There wasn't much factual information available during this time (Wyman. 2001).

Eye injuries that can occur from browsing include corneal edema, a common clinical sign of corneal ulceration; keratitis, anterior uveitis, and many other systemic diseases; neoplastic growth of the eyeball and surrounding tissues; ocular contents escaping through punctured eye wounds; irreversible damage; and supportive destruction of the eye (Whittaker *et al.,* 2007). Trauma, either direct or indirect, can cause orbital injuries. The extent of the damage can range from an orbital fracture to a straightforward contusion or skin abrasion. (Das *et al.,* 2008*;* Khan *et al.,* 2014). Eyeball injuries are treated surgically using different techniques,

such as extirpation and enucleation. Both methods are indicated for irreversible ocular trauma (with or without the loss of globe contents). Technically speaking, enucleation is the removal of the globe, leaving behind muscle and adipose tissue. However, everything inside the orbit must be removed during extirpation (Potter, 2007).The animal stays in lateral recumbence, with the injured side up. Along with sedation, retro bulbar and auricular-palpebral nerve blocks. The retro bulbar injection approach has a higher risk of complications than the Peterson nerve block, but it is more reliable and provides a contrast medium to the target nerves and surrounding structures more widely (Simon *et al.,* 2003). The current case was identified as having severe exophthalmos and irreversible damage to the right eye. The optimal course of treatment was extrapolation of the eye with tarsorrhaphy, which resulted in no post-operative complications and a full recovery for the sheep.

Case history and Physical examination

A five-month-old lamb with an injured eyeball and unilateral blindness was brought to the JUCAVM open-air veterinary clinic. According to the owner, the monkey attacked the lamb's eye, causing the eyeball to bulge before two days (Fig. A). An overall physical examination revealed pale mucous membranes, a normal heart rate of 80 beats per minute, normal respiratory rates of 29 breaths per minute, and a temperature of 38.5 °C. But there was a bloody, foul-smelling discharge emanating from the severely infected and fully necrotized left eyeball. Because of the pain and loss of vision on one side, it becomes easily excited.

Preoperative Preparations

After the animal was placed in a lateral recumbency position with its injured eye on its upper side, the eye was shaved and cleaned with Savlone to get it ready for aseptic surgery. After that, a povidone-iodine solution was applied to the surgical site.

Anesthesia and control

A four point retro bulbar nerve block was applied around the eye using 2% lidocaine (20 mg/manufactured by jeil pharma. co.Ltd. Korea) at the middle point on the upper and lower eye lids, as well as the lateral and medial canthi.

Surgical procedures

The procedure was performed in the lateral recumbency posture and appropriately restrained. The affected eye skin was sterilized, the hair around the eye was clipped, and anesthesia was achieved with a retrobulbar nerve block using 2% lignocaine hydrochloride. The eyelids' palpebral borders are temporarily sutured together (Fig .B). An elliptical cutaneous incision, 1 cm from the margin of the lids, was made into the conjunctival sac. The eyeball, along with its muscles, was detached from the bony orbit by blunt dissection.The extent of the optic nerve's transection was achieved while the bleeding was under control. Excess ocular muscles and orbital fat were removed along with the globe (Fig .C). Gauze was inserted into the orbital cavity, and the eyelid margins were sewn together in a simple interrupted pattern using non-absorbable silk suture size 1-0 (Fig .D).

Figure 12. Extirpation of eye in the lamb:

(A**),** injured eye prior to surgery, (B) surgical site cleaned and ready for aseptic procedures, (C) Sutured eyelids,(D) Taken out the eyeball (E) skin sutured in an interrupted pattern (F) After two weeks, the lamb's eye recovered completely.

Post-operative care and complications

Following the procedure, intramuscular injections of the broad spectrum antibiotics dihydrostreptomycine sulphate (30 mg/kg) and procaine penicillin (24 mg/kg) (Pen & Strep® Norbrook UK), was given for five days in a row. Additionally, 0.3 mg/kg of the anti-inflammatory drug meloxicam was administered for two days as part of a pain management

regimen. In parallel, a povidone-iodine suture line was used to dress the wound. Every 48 hours for a week, the gauze was removed and the orbital cavity was inserted. The eye fully recovered after two weeks (Fig .E)

Discussions

Extirpation removes everything that is inside the orbit, such as the lacrimal gland, muscles, adipose tissue, and globe. It is indicated in severe cases of proptosis, squamous cell carcinoma, lymphangia, and irreversible trauma, among other conditions. Ocular diseases that necessitate extirpation include squamous cell carcinoma (85%); retro bulbar lymph sarcoma (4%), globe proptosis (4%), and globe rupture (2%) (Schulz, 2010). Acquired traumatic eye injuries occur more frequently than congenital diseases. (Das et al., 2008; Ahmed and Hassan *et al*, 2012). A variety of non-domestic animals can cause eye injuries, including bears, monkeys, jackals, foxes, snakes, insects, and birds. Ocular injuries sustained by the victims included adnexal injuries, open globe injuries, lid lacerations, and complicated cases of retained intraocular foreign bodies (Rajendra *et al.,* 2022). Research on injuries caused by monkey bites across the globe shows that in 33% of cases, there were severe cuts, wound infections, and long-term effects (such as exude contractures, osteomyelitis, and encephalitis) (Goldstein, 1995).

The current reason Accidental trauma's primary cause that's the monkey attacking the lamb. Which agrees with Stephanie (2011) at the National University Hospital. However, eye extirpation was used to treat ocular squamous cell carcinoma by Rahil (2012) in the University of Baghdad's Veterinary Medicine department in Baghdad, Iraq. Petersen nerve block and retro bulbar nerve block are the two possible local anesthetic techniques for extraction. (Potter, 2010). Animals are at present controlled by retro bulbar nerve block. This concurs with Zahid (2020) and Jayakrushna *et al.,* (2016), Department of Animal Husbandry, Kashmir, India, and Orissa University of Agriculture and Technology, Bhubaneswar, Odisha, India, respectively. Disagrees with the report of Kapok *et al*, (2017), College of Veterinary Science, Rajendranagar, Hyderabad, Telangana, India. The optimal course of treatment is complete and permanent tarsorrhaphy, typically followed by extirpation, with no postoperative complications and a good prognosis (Khan *et al.,* 2014). Since no post-operative complications were discovered, this finding is consistent with the present case report.

Conclusion and recommendation

The present case report aimed to diagnose and surgically manage eye injuried causing attacked by another animal. The accident happen before two day veterinarian visited which was foul-smelling discharge and fully necrotized. As a result, advise the owner to take the animal to the clinic immediately after an accident for a well-treated surgical area. Additionally, keep the sheep a safe distance away from any wild animals.

3.8. Surgical Management of Eterotomy

3.8.1. Entrotomy in cat

Abstract

An enterotomy is a surgical procedure that involves making an incision in the intestines. During abdominal surgery, acute mechanical bowel obstruction is a common surgical emergency. Some of the causes of obstruction are distention, constipation that leads to obstruction, nausea, vomiting, and abdominal pain. The object of the current case study was to identify the foreign body causing the intestinal blockage and to treat it surgically. A one year old queen estimated weighing 1.2 kg was brought to JUCAVM open air veterinary clinic, the owner claimed the cat had not any feces in the previous six days. A general physical examination and the results indicated that it had pale mucous membranes, a moderate fever, depression, dehydration, and severe constipation, among other abnormal body conditions. The animal was placed in a dorsal recumbent position and allowed to feel pain when its abdomen was palpated. General anesthesia was used to control it. Following aseptic preparation, on surgical site. The skin of the ventral midline was incised linearly. After milking the contents of the intestine, place intestinal forceps 5 cm apart from each side of the foreign body on the intestine's loop. On the antimesentric side, make a sufficiently length incision over one end of the foreign body, and then remove the feces using forceps. The wound was closed in Cushing and lamberts chromic cat -gut 3-0 was applied after a thorough cleaning with normal saline. Antibiotics were prescribed for five days to support post-operative care, but the queen died on the next day. Because of delay in the treatment. Therefore, when symptoms first developed, the owner should have taken the animal to the clinic immediately.

Key word: *Bowel obstruction, Cat, Eterotomy, Foreign body.*

Introduction

The intestine is the principal organ for digestion and absorption of nutrients, and it is also a major site of microbial infection (Bai *et al*., 2019). An intestinal incision is made during a surgical procedure called an enterotomy. In addition to removing foreign bodies, it is frequently used to treat intestinal obstructions, wounds, or infections. (Tyrrell & Beck, 2006). Intestinal obstruction is defined as a blockage that prevents food or liquid from passing through the small intestine or large intestine (colon). All parts of the gastrointestinal tract can become blocked by intestinal obstruction, but it most frequently happen distal to the duodenum (Davies., 2002). The classification of the obstruction can be based on the anatomical site of the obstruction (proximal or distal), the degree of the foreign body obstruction (partial

or complete), and pathophysiologic changes (simple or mechanical, versus strangulating. (Papazoglou and Rallis, 2003). Acute mechanical bowel obstruction is a frequent surgical emergency and a problem in abdominal surgery (Miller, 2000). Causes of obstruction include distention, constipation leading to obstruction, nausea, vomiting, and abdominal pain. Consequently, this blocks the regular flow of broken-down food. Surgery on the small intestine is most often indicated for small bowel obstructions, which are more common than large bowel obstructions (van Steensel., 2016; Behman., 2018). Resulting in a potentially fatal condition brought on by severe electrolyte, fluid, acid-base, and hypovolemia imbalance (Fossum, 2012; Mahesh *et al.,* 2019). To diagnose intestinal obstruction, a history and clinical palpation of an abdominal mass are useful. To correctly identify the blockage inside the GIT and provide an accurate diagnosis, radiography is used. (Chandler *et al.,* 2004). Under general anesthesia, the enterotomy procedure was carried out using the accepted surgical technique (Anwar.,2017). A ventral midline laparotomy, is the most frequently performed and beneficial surgical procedure for the GI tract in cats, which offers more effective access to all intra abdominal organs (Schnüriger.,2011). Depending on the diagnosis and clinical examinations the case was decided to be performed as an emergency surgical manipulation by a enterotomy.

Case history and Physical examination

A 1-year-old queen weighing 1.2 kg was brought to JUCAVM by the owner, who reported that the cat had been experiencing acutely frequent emesis, dull mentation with lethargy and generalized malaise, anorexia, and no stools passing for six days before the presentation (Fig. A). Before the surgery, the cat received a thorough general physical examination and results showed that it had an abnormal body condition, moderate fever, depression, dehydration, Severe constipation, and pale mucous membranes. Pain was felt when the abdomen was palpated, and a solid mass in the center of the abdomen was discovered by abdominal probing during a clinical examination. The decision was made to carry out an urgent enterotomy.

Preoperative Preparations

After sedation, the animal was put in a dorsal recumbent position on the surgical table. The site ventral midline incision was chosen, and then aseptically prepared with savlon and waiter then 1% povidone-iodine was used to clean the surgical site three times, from the center to the outer edges.

Anesthesia

Atropine sulfate (0.04 mg/kg) (which is manufactured by: Citron Drugs & pharmaceuticals Pvt, Ltd. India) was premedicated IM then An induction diazepam (Intas pharmaceutical Ltd., India) @0.15mg/kg and 5 mg/kg of ketamine was then given IV. A maintenance intravenous half dose of ketamine (Ketamine Hydrochloride, Germany) @5mg/kg I.M was given during the surgical procedure. A program of fluid treatment was initiated by intravenously administering normal saline.

Operative procedures

Caudal ventral midline skin incision was made while the animal was in a dorsal recumbent position (Fig .B). The abdominal cavity was then opened, and the abdominal wound was sealed with sterile gauze.Select which intestinal segment will require surgery. Raised to a midline ventral abdominal incision (Fig .C). After Milk the contents of the intestine, using two intestinal forceps on the intestine's loop, 5 cm from each side of the foreign body. Make a long enough incision over one end of the foreign body on the antimesentric side, then used

forceps to remove the stools (Fig .D). After a thorough cleaning with normal saline, incision was closed in Cushing's followed by lamberts chromic cat gut 3-0. Lina Alba was closed as the first layer using the chromic catgut 2-0 through a simple interrupted. Muscle closed with simple continuous pattern using catgut 2-0,subcutaneous a simple continuous pattern by using chromic catgut 2-0 and Simple interrupted skin sutured using non-absorbable silk suture size 1-0(Fig .E).

Figure 13. Enrerotomy in cat:

(A) Dehydrated cat ,(B) A skin incision made ventral midline , (C) Enterotomy across the portion of the antimesenteric border that is blocked (D) Intestine's foreign body being removed (E) Colon suturing using Cushing and Lambert techniques (F) Once all layers have closed, the region is treated with antibiotic spray.

Post-operative care and complications

Sprayed (3.58%oxy viocid w/w palath/Ankara/turkey) on the wound to prevent microbial complications (Fig .F) Following surgery, the queen received intramuscular injections of procaine penicillin G (24 mg/kg) with dihydrostreptomycin sulfate (30 mg/kg) (Pen & Strep® Norbrook UK) I.M and was supported by Ringerlactet intravenous. But the cat died the next day.

Discussion

Indigestible, slowly digesting foreign substances can impede food pathways (Gibson, 2020). Foreign substances found in the digestive tract are the most common cause of intestinal blockage in dogs and cats (Papazoglou *et al.,* 2003). A bowel obstruction is a potentially fatal disorder that can arise from obstructions in the small or large intestine. The large intestinal bowel (colon) is the current case. 24 % had a large intestinal obstruction, according to Tsoukas. (2007). Comparable to this case study, 76% of participants in the study had small bowel obstructions. A study was carried out at the University of Athens, Vasilissis Sofias, 114 Avenue, Athens, 11527, Greece. Bowel blockage can be simple, complex, partial, or complete. While complete obstruction prevents all bowel contents from passing through the point of obstruction, partial obstruction permits some liquid and gas contents to pass through (Minesh., 2022). The current cases are complete obstruction by the study conducted by the Sowjanya (2022) College of Veterinary Science, Pvnrtvu, Rajendranagar, and Telangana, India. However, there are differences in the results. Partially gastrointestinal blockage, which was reported by Nandini (2017) at Veterinary College Hebbal, Bangalore, Karnataka, India. About 60% of cases of large intestinal blockages are caused by cancer (Rago *et al.,* 2014); the remaining 30% are caused by diverticular disease and volvulus. (Cappell et al., 2008) The other 10-15% of bowel blockages are caused by a variety of other conditions, including carcinomatosis, endometriosis, inflammatory bowel disease, stenosis, etc. (Roses, 2018).

According to Erawati, (2023), Universitas Udayana, Jl. Pb. Sudirman, Denpasar, Bali, Indonesia, An enterotomy was performed in order to remove the foreign object. Based on symptoms, palpation, and radiographic contrast evaluation, the diagnosis was made that the foreign body was causing intestinal blockage. Anorexia, poor appetite, vomiting, and weakness were seen in a case study. Similar to the current case report, the primary symptoms were loss of appetite, vomiting, constipation, abdominal distension, abdominal discomfort, and difficulty passing stool. The cat performed enterotomy surgery in this instance. Dorsally recumbent, the animal had a caudal ventral midline skin incision under general anesthesia. This statement is in agreement with M. Vijayakumar (2023), who reports that the animal was restrained with a caudal mid-ventral incision and in a dorsal recumbence. Although the current situation was handled correctly, the queen passed away on the second day as a result of delayed treatment. Large intestinal obstructions need to be regarded as surgical emergencies, even if surgery might not always be required. It can occur anywhere in the colon and rectum due to various causes, and if left untreated, it has a 100% mortality rate. This is the reason it needs to be identified and treated as soon as possible (Agha. 2020).

Conclusion and recommendation

Surgically managed a foreign body that was causing intestinal blockage. However, the cat died the next day because the time was delayed for treatment it was the worst stage. As a result, owner should have visited a veterinarian clinic before entering a bad situation.

3.9. Surgical Management of Rumenotomy

3.9.1. Rumenotomy in sheep

Abstract

Sheep play a significant role in improving the lives of low-income people, especially in developing nations, reducing poverty, improving food security, and improving soil fertility for agricultural production. Chronic indigestion is the primary indicator of decreased productivity and difficulty reproducing. Finding and treating rumenotomy surgery brought on by persistent indigestion was the aim of the current case report. In 2 years old sheep, estimated to weigh 24 kg in the mere owner's residence, as the owner complained, the sheep was treated for a month at the clinic but did not get better. It kept losing weight, causing decreased rumen

contractions, frequent abdominal distension, and lower fecal output. After a thorough examination, vital signs were determined to be normal. The case was tentatively diagnosed as "ruminal impaction" based on the history and clinical observation. We decided to have surgery. A surgical preparation of the left paralumbar area and a regional anesthetic known as an inverted L block were injected. A vertical incision was made 3 centimeters from the transverse lumbar process and behind the final rib. Using an inverted continuous sutured technique, the skin incision's cut edge was secured to the rumen wall. After the incision of the rumen, plastic bags and a short, indigestible rope were taken out, and the contents of the rumen were examined with a gloved hand. After carefully cleaning the rumen with regular saline solution, the wound was closed using Cushing and moved back to the rumen, where it originally resided. Broad-spectrum antibiotics and anti-inflammatory drugs were administered as part of the post-surgical follow-up. On the 15th day, the suture was removed. The sheep's owner should feed it rehydration feed instead of foreign objects.

Keyword: *Inverted L Block, Plastic Bag, Rumenotomy, Sheep*

Introduction

Sheep were domesticated by their wild ancestors around 9,000 BC in Iraq (Zygoyiannis, 2006). It is mostly used for their meat, milk, hair, and skin. In many parts of the world, particularly the temperate zones, meat is the primary food source, and the importance of meat production on a worldwide scale is growing. In Australia, the value of producing meat keeps increasing. It's the world's greatest producer of fine wool. In the Mediterranean and Eastern European countries, ewes are also raised for dairy production (De Rancourt *et al.,* 2006). Sheep promote soil fertility for crop productivity, food security, poverty alleviation, and low-income households' general standard of living, especially in developing nations (Lebbie. 2004). Since most animals in traditional smallholder production systems roam and look for food on their own, the animals identified by Diseas (Devendra, 1999). Animals that eat indigestible materials may experience health problems, lose production, and have difficulties with reproduction (Dodia *et al.,* 2014; Ramaswamy, 2011).

Common foreign objects that are consumed include plastic, non-metallic, ropes, and pieces of old clothes (Bassam. 2017). The most common indigestible foreign body in the rumen is

plastic bag materials (Bakhiet. 2008). The consumption of plastic waste products is significantly influenced by risk factors such as scarcity in minerals, industrialization, Floods and drought the type of pasture system, negative energy balance The economic state of the country and the ban on killing certain animals (Noshed *et al.,* 2012; Triune ., 2010; Barrie ., 2015 and Priyanka., 2018).To remove foreign objects from the stomach and treat other tissues with the ruminant forestomaches, rumenotomy surgery can be a safe and successful solution (Andrew., 2008). Rumenotomy is the most effective surgical procedure. For the diagnosis and treatment of various rumen disorders in ruminants, large ruminants are frequently treated. Even small ruminants are also treated with this technique (Sergio. 2021). It is regarded as a clean-contaminated surgical method. Approach the left paralumbar fossa for easy access to the rumen. A vertical incision is made approximately three centimeters from the transverse lumbar process, and directly beyond the final rib (Dharmaceelan *et al.,* 2017). The present case report describes the effective treatment of rumen impaction in stray sheep caused by plastic debris

Case history and Physical examination

Received the owner's request for help in solving the domestic sheep problems, who lives near Jimma town. The owner was feeding the animal exclusively on the areca sheaths. 2 years old sheep, and estimated to weigh 24 kg (Fig .A). According to the owner, the sheep was treated a month ago at the nearby clinic. I went to the clinic and tried to ask for information. The veterinarian attempted medical correction of the condition by administering indigestion powder and antibiotics, but the animal did not get better. It kept losing weight. The owner also told us the sheep was suffering from decreased rumen contractions, frequent abdominal distension, reduced fecal output, and progressive weight loss. Vital organ measures, including pulse, respiration, heart rate, and mucous membrane, were examined in further detail and found to be normal. Furthermore, the sheep showed signs of pain and suffering during the pinch grip. Based on the history and clinical observation, the case was tentatively diagnosed as “ruminal impaction." We decided to be surgically treated.

Preoperative Preparations

The sheep were kept without food or water for 24 hours and 12 hours, respectively. in order to reduce the possibility of vomiting and aspiration while under anesthesia. Fluid therapy with a balanced electrolyte solution was administered during the process. The hair surrounding the left paralumbar area was initially clipped with sharp scissors and shaved with surgical blood. After that, the area was cleaned with soap and water to perform an aseptic treatment. Then, scrubbing the region three times with a 1% povidone-iodine solution to reduce the microbial burden, the area was allowed to dry until Rumenotomy was ready.

Anesthesia and Animal Control

The sheep was in a right lateral recumbent position with all four legs secured to the operation table. An inverted L block regional anesthetic was applied to the left flank using 2% lidocaine hydrochloride (20 mg/mlmanufactured by jeil pharma. co.Ltd. Korea) before beginning surgery, the operative site was given a last scrub using 1% povidone iodine in a circular manner, starting from the center to outward. Lastly, drape using a towel clamp.

Surgical procedures

The surgical site was prepared aseptically, and local anesthesia was achieved with the inverted L-block technique. The left flank was incised vertically, 3 cm caudal, parallel to the final rib, and ventral to the lumbar vertebrae's transverse processes. After blunt dissection of the skin from the subcutaneous tissue, the incision was continued chronologically through the external abdominal oblique muscle, the internal abdominal oblique muscle and the transverse abdominal muscle. After that, the muscle was gripped using tissue forceps to avoid severing the rumen, and a nicked incision was expanded with scissors or a sharp blade to allow entry into the peritoneal cavity (Fig .B). The rumen wall was exteriorized from the abdominal cavity to prevent the possibility of ruminal contents contaminating the cavity (Fig .C). The skin incision's cut edge was secured to the rumen wall using an inverted continuous suture technique. The rumen was incised by using various straight and curved hemostatic forceps, sterile gauze was used to control bleeding during the procedure. Then, a gloved hand was put through the rumen wall incision, the contents of the rumen were examined and plastic bags and a short, indigestible rope was removed (Fig. D). The rumen and surroundings were then

completely cleaned with normal saline solution, and the wound was sealed with Cushing and a lambert suture using cromic catgut size 1-0 and replaced to its original location in the rumen. Drape was removed, and contaminated gloves were swapped out for new ones. A simple continuous suture and a continuous lockstitch pattern were used to close the peritoneum and abdominal cavity, respectively. Using 2-0-size sterile absorbable cromic catgut. Subcutaneous fascia and the skin were then closed with a horizontally interrupted mattress by using 2-0-size non-absorbable silk. Finally, the region was thoroughly cleansed and treated with a 2% povidone-iodine solution. The sheep was standing immediately after surgery (Fig .E).

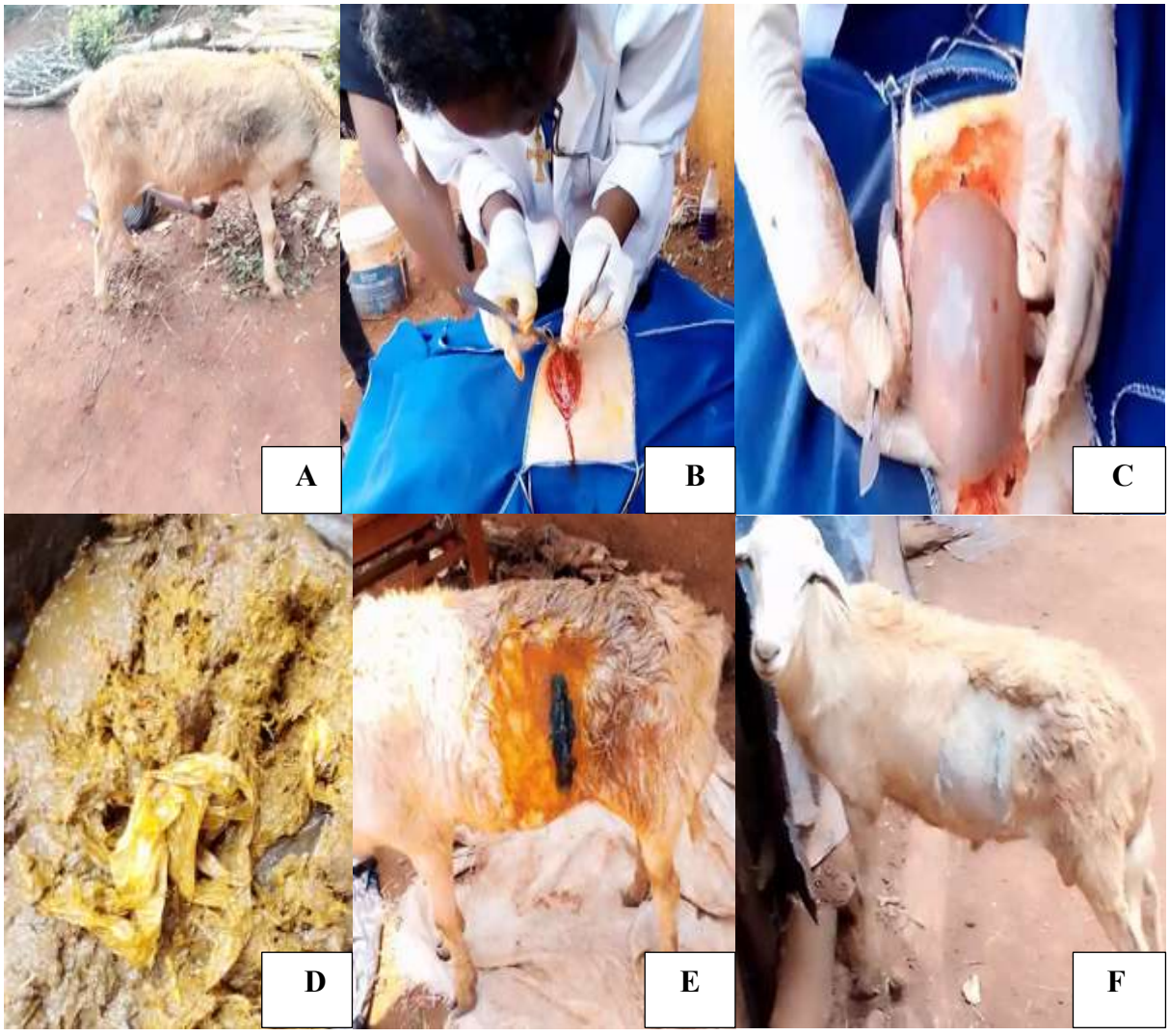

Figure 14 . Rumenotomy in sheep

(A) cow before surgery (B) Incision was applied to the left flank (C)Extrorayesed rumen (D) display of pastic foreign objects removed from the rumen(E) after surgery, the sheep was standing (F) queen surgical site observation on day 15

Post-operative care and complications.

After the surgery, oxytetracycline (3.58% oxyviocid with or without palath, Ankara, or Turkey) was sprayed on the wound to avoid microbiological problems until the wound healed completely. Penicillin (24 mg/kg) and dihydrostreptomycin sulfate (30 mg/kg) (Pen &Strep® Norbrook UK) systemic antibiotic treatments were administered for three days. Additional medication was provided to reduce the pain: Tramadol 4 mg/kg I.M. (2% Tramadol Hydrochloride, Sakar Health Care Pvt. Ltd., Gujarat, India). Soft food was recommended to the owner. The suture was removed on the 15th. After postoperative management, a telephone follow-up was conducted, and the sheep recovered without any problems (Fig. F).

Discussion

Rumenotomy surgery is a safe and effective way to address several problems with the ruminant foregut and remove foreign objects from the stomach (Andrew. 2008). Rumenotomy is indicated in cases of bloat, foreign body ingestion, esophageal obstruction, and traumatic reticuloperitonitis (Haas, 2010; Niehaus, 2008; Patel. 2012). Inadequate nutrition and difficulties managing food are common results of surgical diseases of the ruminant forestomach caused by swallowed foreign materials, a condition that is being studied almost worldwide. The animal's reticulum and rumen may develop various abnormalities as a result (Radostits *et al.,* 2007; Ramaswamy. 2011). Sileshi *et al.,* (2013) report that 36 clinical cases involving rumen problems required surgery. Foreign bodies were present in 8.6% of cases overall. There is a higher occurrence of non-penetrating foreign bodies than piercing ones. According to Raidurg (2010), "non-penetrating foreign body" refers to rumen impaction in cattle caused by plastics, resin, leather, and cloth. It also aligns with the current case report. Other researchers, such as Fesseha (2020), have documented the removal of metallic foreign materials from the Rumen at the Veterinary Teaching Hospital of Mekelle University.

When performing rumenotomy on large ruminants, the animal is usually standing, but with small ruminants, the procedure is carried out when the animal is lateral recumbent

(Dehghani., 1995; Geehan., 2006). According to Niehaus (2008), a rumenotomy is executed through the left flank. The current case report the rumenotomy was performed by inverting the L block and infiltrating 2% lignocaine hydrochloride. This protocol aligns with the research conducted by Mahla (2020), Veterinary Sciences and Animal Husbandry, AAU. However, Rashmi (2022) disagrees, administering a paravertebral nerve block. There are two methods to perform a rumenotomy: either suture the rumen to the skin beforehand or use

Fixation devices like a Weingarth's ring to support the rumen (Hendrickson, 2013). In the present instance, in accordance with Andrew (2008), College of Veterinary Medicine, Ohio State University, the rumen wall was sutured to the skin prior to exteriorization of the rumen. However, Kumaresan *et al.,* (2017) supported the rumen using fixing tools such as Weingarth's ring. In this instance, rumen suture Cushing was followed by lambert applying a 2-to-0-cromic catgut agreement with Ravi Raidurg (2019). The sheep had only slight swelling at the time of surgery, which rapidly subsided, but eventually recovered without any problems. This may be the result of using appropriate surgical technique, monitoring, and care.

Conclusion and recommendation

In the present case, surgery was used to treat rumenotomy, a common field condition in ruminants. Advised that the sheep's owner be given rehydration feed and keep them away from feeding it foreign material

3.10. Surgical Management of Abscess

3.10.1. Huge abscess in cow

Abstract

An abscess is a pus-filled pocket. A pocket forms as a result of inflammation brought on by the accumulation of pus. The most frequent type of bacterial infection is Staphylococcus aureus. This case report surgical treatment of a large abscess that developed in a local breed cow due to a pus buildup. In 6-year-old local breed cow weighing 120 kg was brought to the JUCAVM open veterinary clinic .A clinical examination revealed the presence of a swollen mass. As it grew older, it changed from being hot, hard, and painful to becoming erratic and

soft. Aspiration of fluid with a sterile needle revealed a significant amount of pus, which helped identify the abscess and help differentiate other swellings. After aseptic preparation with water and savlon, the swollen region was scrubbed with 1% povidone-iodine. Administered 2% lidocaine in the sacrococcygeal space to prevent straining. The abscess tip was cut using a sterilized scalpel, and a large amount of pus was drained. Leftover pus, dead tissue, and debris were removed, and diluted 1% povidone-iodine filled the cavity. After that, gauze soaked in 1% povidone iodine was inserted into the cavity, with one end of the gauze protruding to allow pus to drain out of the wound, and the skin left openly. After the surgery, parenteral and topical antibiotics were used to prevent microbial complications until the wound completely recovered. Cow was recovered in a period of 17 post-operative days. The predetermined case report leads to the conclusion that a pus accumulation was drained out. It was essential that the animal be brought to the veterinary facility as soon as possible. To avoid contamination, the owner was advised to keep in a cline area and isolate from other cows.

Key word: *Abscess, Cow, Perianal Region, Pus.*

Introduction

Poor animal management methods, such as overcrowding and inadequate nourishment, are hallmarks of animal husbandry in impoverished nations (FAO, 2011). This leads to an accumulation of stress due to fatigue or injury. The immune system of the animal fights the infection by attacking it. White blood cells migrate to the infection site and gather in the damaged tissue (Cosivi *et al.,* 1998). Inflammation brought on by this accumulation results in the formation of a pocket. A pocket of pus is called an abscess, typically brought on by a bacterial infection. Anywhere on your body, abscesses can develop. An abscess infection severely impairs a farm animal's capacity to produce meat, skin, and wool; this is very dangerous for the cattle (Alharbi and Mahmoud, 2012 and Fontaine., 2008). Usually, a bacterial infection is the cause, with Staphylococcus aureus being the most common form. when the skin is punctured or damaged by an injury that allows the Staphylococcus aureus germs to enter the body through a hair follicle. Rarely, a virus, fungus, or parasite may be the source of an abscess (Blood *et al.,*2000 and Radostits., 2006). The development of either superficial or deep abscesses is a common feature of many infectious diseases (Sadan., 2019). Depending on where in the body an abscess forms, different symptoms will appear. An

abscess inside the body is more challenging to diagnose. When an abscess is close to the skin's surface, symptoms may include swelling, redness, and tenderness, pain in the affected area, warmth, and constitutional symptoms. If the abscess is deeper, patients may also experience pain (Misk. 2008). The development of perianal abscesses results from the anal gland's propensity to suppurate and get obstructed (Sender, 2013). Depending on the nature and size of the abscess. The three major courses of treatment are Antibiotics, drainage, and surgery (Kofler. 2004 and Hassan *et al.,* 2019). In this case, the swelling was treated surgically after disinfection and treatment with antibiotics

Case history and physical examination.

A 6-year-old local breed cow weighing 120 kg was brought to the Jimma University College Of Agriculture and Veterinary Medicine open veterinary clinic.The owner reported that the swelling had gotten worse during the preceding few weeks and that there had been a gradual reduction in feed intake and water consumption. Upon clinical inspection, a swollen mass was discovered. It was first heated, hard, and painful, but as it matured, it became fluctuating and soft. The cow had a normal temperature of 38.6 °C, a heart rate of 65 beats per minute, and a respiratory rate of 30 breaths per minute. To differentiate this condition from other types of swelling, a sterile needle was used to aspirate the fluid from the enlarged lump. Found the swelling to be filled with a significant amount of gas and was followed by a creamy discharge that helped in the abscess's confirmation (Fig .A). Depending on the history and clinical diagnosis, it was decided to perform surgery for the complete removal of the pus to relieve the cow from this condition, and it was surgically treated.

Preoperative Preparations

The swollen area on the perineal region was shaved with surgical blood after the animal was optimally positioned in a recumbent position and aseptically prepared by using water and savlon, and finally scrubbed using a 1 % povidone iodine solution.

Anesthesia and Animal Control

For physical restraining, the cow was restrained with a rope in lateral recumbency with the affected side placed upwards. Due to the perineal abscess surgery, chemically, the animal was first sedated with diazepam, (Intas pharmaceutical Ltd., India) @0.15mg/kg and caudal epidural anesthesia was given. Applying 2% lidocaine hydrochloride (20 mg/mlmanufactured by jeil pharma. co.Ltd. Korea) at 0.22 mg/kg in the sacrococcygeal space to prevent straining.

Surgical procedures

After the cow had been appropriately restrained, the surgical location was cleaned, and a local anesthetic was applied. The abscess tip was cut using a disposable, sterilized scalpel (Fig .B). A large amount of pus was drained, and any leftover pus, dead tissue, and debris were removed, and a diluted 1 % povidone iodine filled the cavity (Fig .C). After that, gauze soaked 1 % povidone iodine was inserted into the cavity, with one end of the gauze protruding to allow pus to drain out of the wound, and the skin was left openly.

Figure 15. Huge Abscess in Cow:

(A) Physical observation of a swollen (B) skin incision (C) draining the area (D) aplayed syclo spray (E) The sutures were removed after 17 days.

Post-operative care and complications.

Dressed with 1% povidone-iodine for the first 5 days following surgery, then alternately for the next two weeks, a sprayed (3.58% oxyviocid w/w Palath/Ankara/Turkey) was administered consecutively (Fig .D). Penicillin (24 mg/kg) and dihydrostreptomycin sulfate

(30 mg/kg) (Pen & Strep® Norbrook UK) I.M was provided for 5 days. The cow completely recovered after 15 days (Fig .E).

Discussion

A constricted inflammatory lesion known as an abscess is defined by a purulent pus-filled discharge surrounded by a membrane that restricts movement. This membrane is called the pyogenic membrane. An abscess occurs anywhere on the body (Saharan *et al.,* 2020). Misk (2020) reports that a total of 790 animals of various breeds were examined. The results showed the location of the abscesses on the body. Whereas in the parotid region (16.33%), mandibular (15.19%), sub-conjunctival (4.56%), cheek (4.18%), ear (1.27%), neck (5.95%), thoracic limbs (9.11%), thoracic wall behind the elbow (4.30%), abdominal wall (7.59%), umbilical 68 animals (8.61%), gluteal (5.70%), pelvic limbs (12.91%), tail (2.03%), and vulvar lips (0.63%). Khanday (2021) reported the management of an abscess in the right para Lumber Fossa region describes, however, a pelvic abscess region that was managed in the current case report. Large superficial abscesses could require draining through an incision to remove the infection. and used antibiotic treatment but in small skin abscess didn't need was naturally drain, dry up, and disappear without treatment (Hassan *et al.,* 2019).In this case report, large superficial abscesses were treated with a 1 % povidone-iodine antiseptic patch, intramuscular antibiotic administration, oxytetracycline wound spray and frequent pus drainage. This procedure is in agreement with the work of (Fesseha. 2020 and Sogebi., *et al* 2016). In this instance, 0.5 mg/kg of diazepam was used to first sedate the animal, and 2% lidocaine hydrochloride (Jeil Pharma Co. Ltd., Korea) at 0.22 mg/kg was administered as a caudal epidural local anesthetic in the sacrococcygeal region. However, Xylazine Hydrochloride at 0.03mg per kg b.wt. Intravenous and 2% lignocaine hydrochloride were infiltrated along the site of incision as a local anesthetic used by Saharan,(2020). Because of the aseptic method was used and appropriate antibiotic follow up was maintained, complications did not occur.

Conclusion and recommendation

In this case report, a huge abscess resulting from a buildup of pus in a local breed cow was diagnosed and surgically treated. Before a few weeks' contact with the veterinarian, the cow showed symptoms of an abscess, and the pus buildup had gotten worse. In order to prevent infection in the surgical area, the owner was recommended to keep the cow in a cline and isolate it from other cows.

3.11. Surgical Management of Hematoma

3.11.1. Link ear hematoma in dog

Abstract

The medical condition known as "cauliflower ear," or auricular malformation, arises from an auricular hematoma that is not properly treated. The main signs and symptoms include tilting the head to the affected side, shaking the head vigorously, and firm swelling. This case report to remove clotted blood in the ear, ear cropping was performed. In the ear. In 5-year-old exotic breed, weighing approximately 15 kg. The owner of the dog, who lived in Ginjo Guduru Kebele Four in Jimma Town, invited me to help with the situation at home. The owner complained of an untreated ear hematoma that had persisted for the previous two weeks, causing the ear to clot with blood. Using the appropriate equipment, the dog's vital signs were checked during the physical examination, and it was found that they were within the normal range. The right ear of Swallollen felt painful and warm to the touch. All of these ailments were taken into consideration when diagnosing auditory ear cropping in dogs. The dog fasted for 12 hours and 6 hours, respectively, before the surgery. After administering general anesthesia, the pinnae of the enlarged ear were aseptically prepped by shaving, cleaning with Savlon, and scrubbing with a solution of iodine tincture. Antibiotics and analgesics were used to treat post-operative problems and discomfort. Additionally, 2% of the povidone and cyclo sprays were applied to the area of the incision. The suture was removed on the eighth day following the treatment after the surgical site had healed. It was in good shape after a month of observation. In this case report Ear cropping was done to treat clotted blood in the ear. When hematoma symptoms first occur, the owner should take the animal to the vet right away.

Key word: *Auricular hematoma, Cauliflower ear , Dog, Ear cropping* **.**

Introduction

"Cauliflower ear," or auricular deformity, is the outcome of an auricular hematoma that is either never cured or is not treated all that well (Ashraf, 2022). Cauliflower-ear dogs are susceptible to a common condition that affects many different breeds. When a dog's ear is injured or traumatized, the ear's delicate blood vessels may burst, causing blood to collect in the space between the skin and the cartilage. If it is not treated properly or is not treated at all, the blood will slowly clot and finally resorb. This may result in the ear flap becoming deformed, tissue necrosis, and extensive scarring. A severe malformation of the earflap can

Lead to deafness and a chronic blockage in the ear. Additionally, this makes eventual medication and treatment of ear problems more difficult (Alex crow. 2024; Ivana, 2022). Inflammation in dogs can result from a variety of factors combining together. The ear's shape is also a significant factor. Dog pinnae differ significantly in size and form. Some breeds have long, floppy pinnae, whereas other types have short, erect pinnae. Due to their high pain sensitivity and abundance of nerve endings, ears are often cropped under general anesthesia. Before measuring and identifying the area of the ear that requires cutting, the cutting wounds are cleaned and sutured. Antibiotics and painkillers are given since postoperative care is necessary. After surgery, the ear must be positioned as intended until the cartilage and muscles are fully healed and can maintain this position on their own. Due to surgical problems such as bleeding, swelling, or wound infection, the ears may need to be operated on again. Perhaps leading to the total disappearance of the outer ear (Duran Cuartero *et al.,* 2016). In this case, cropping the dog's ears has reportedly been used as a management technique for cauliflower.

Case history and Physical examination

Received an invitation to help with the male dog problem at home from its owner, who resided in Saris Kebele Four in Jimma Town. A five-year-old dog and an estimate weighed around 15 kg of exotic breed. The owner complained of an ear hematoma that had not been appropriately treated for the previous two weeks, causing the ear to clot with blood (fig A). The dog's vital signs, which included its temperature (38.2 C), heart rate (110 beats per minute), and breathing rate (31 breaths per minute), were monitored using the appropriate

equipment during the physical examination and were found to be within normal ranges. Swallollen's right ear was warm to touch, and feeling pain. The dog's diagnosis of auditory ear cropping was made based on the conditions listed above.

Preoperative Preparations

Before the surgery, the dog refused food and drink for 12 hours and 6 hours, respectively.The swollen ear's pinnae were aseptically prepared by removing the hair, shaving both convex and concave sides of the ear, properly moisturizing the area with savlon and water, After administering a sedative, the dog was put on the table in a sternal-recumbent position. Finally, drape using a towel clamp. The external ear canal opening was blocked with sterilized gauze to stop the hematoma fluid from bleeding into the external ear. An iodine solution tincture was given to the pinna and then cleaned with a sterile brush to eliminate any leftover solution and dry the surgical site.

Anesthesia and Animal Control

The pre anesthetic part of the procedure involved injecting 0.04 mg/kg of atropine intramuscular (which is manufactured by: Ciron Drugs & pharmaceuticals Pvt, Ltd. India). Following an intravenous induction diazepam (Intas pharmaceutical Ltd., India) @0.15mg/kg and ketamine (Ketamine Hydrochloride, Germany) @5mg/kg, the animal was transferred to a table for aseptic preparation. For maintenance during the procedure, half of the induction dosage of ketamine was administered at a rate of 5 mg/kg.

Operative procedures

After thoroughly cleaning the ears, the dog was positioned on the operating table in a sterile recumbency position with sterile cloths draped around its head and ears (fig B). A deformed ear flap was adjusted to the correct shape by applying forceps from the higher to lower locations of the flap. Using forceps pull the ear flap laterally to create a concave curve (fig C). The region that needed to be cropped was 2/3 of the deformed ear flap's defined area. Cutting along the line of demarcation on the medial side allows the lateral section of the malformed ear flap to be removed (Fig. D). Mopping and ligating were used to control the bleeding from the cut surfaces. A simple continuous suture pattern using nonabsorbable suture silk size 3-0

closes the upper layer of the skin. Simple interrupted sutures was used to close the incision's lower section to avoid puckering of the skin edges. Immediately, the dog was raised (Fig. E)

Figure 16 . Link ear hematoma in dog:

(A) Cauliflower ear dog; (B) The ear was properly draped with towel clamps; (C) Hemostatic forceps applied at demarcation were removed; (D) The ear flap was removed; (E) The skin was sutured in a simple interrupted pattern; (F) The dog recovered after 10 days.

Post-operative care and complications

Oxytetracycline, topical antibiotic, (3.58%oxy viocid w/w palath/Ankara/turkey) and an antiseptic 1% iodine solution was used to irritate .Until the wound heals completely and returns to normal. In Procaine penicillin (24 mg/kg), dihydrostreptomycin sulfate (30 mg/kg) (penstrep® Norbrook UK), and tramadol (2% Tramadol Hydrochloride, Sakar Health Care Pvt. Ltd., Gujarat, India) antibiotics and an anti-pain drug that were administered for three and two days, respectively. In addition, the owner was advised to monitor the dog closely. On the eighth day after the procedure, the suture was taken out once the surgical site had healed (Fig. F). After a month of observation, it was in good condition.

Descution

The permanent condition known as cauliflower ear occurs when the ear is injured on the outside and a blood clot or other fluid accumulation forms behind the perichondrium. There are two main causes of cauliflower ear in dogs, such as excessive head shaking, which may cause blood vessels in the ears to explode. Some dogs even experience an inappropriate immune system reaction that results in aural hematomas (Ivana, 2022). An aural hematoma that was left untreated resulted in a severe auricular deformity. Early drainage is important for maintaining appearance and promoting early healing because aural hematomas within the auricular cartilage are not quickly absorbed but instead are replaced by vast volumes of granulation tissue, which worsens the contracture (Dye ., 2002; Lanz., 2004). In this particular case, an untreated ear hematoma causes the outer ear to permanently expand and become deformed, giving the appearance of a cauliflower. The degree and severity of the condition usually determine the course of treatment for dogs with cauliflower ears. There are several methods for treating dogs' cauliflower ears (Alex Crow, 2024).

The surgical removal of the ear flaps, known as ear cropping, involves cutting through the skin, blood vessels, cartilage, and extremely sensitive nerve endings. Only veterinarians with the requisite training and expertise should undertake this surgery. More widely applied Cosmootics' outcome (Mikawa *et al.,* 2005). However, ear cropping may also help treat ear infections by increasing airflow. The erect ear stays dry and has a lower risk of developing health issues. Otitis externa, or ear irritation, is the most typical issue. It is an extremely painful disorder for dogs (Murphy, 2001). In this instance, ear cropping was done for medical

purposes. On the other hand, disagreements among Arnold et *al.,* (2020) that carries out surgery at Cosmootics outcome. Complications did not arise in this instance because of the use of aseptic technique and appropriate antibiotic follow-up.

Conclusion and Recommendation

Cauliflower ear that caused the ear to clot with blood. The presented dog showed signs of hematoma two weeks before but was not properly surgically treated. As well as so informed the owner that if any signs of a hematoma appeared, the animal needed to be taken to the veterinarian immediately.

3.11.2. Femoral hematoma in horse

Abstract

A hematoma is an accumulation of blood outside of blood vessels. The most common cause of hemorrhages is damage to the veins or arteries, which lets blood leak out and pool together to create swelling. This case report describes a horse that had a history of femoral region hematoma. In 7-year-old queen weighing 280 kg was brought to the Jimma University College of Agriculture and Veterinary Medicine open veterinary clinic. A physical examination of the animal revealed that it was within the norm. There was blood present, and when aspirated and palpated, the enlarged area felt soft and painful. Based on the results of the diagnostic process, hematomas were admitted, a mass of blood was removed, and the horse was sedated with anesthesia. After draining a significant volume of blood, the skin was then left open to let blood flow out. To prevent microbiological problems following surgery, until the wound completely healed, intramuscular and topical antibiotics were used. Following the successful surgery, the horse recovered in 14 postoperative days. Animal should be taken to the vet clinic early; horses must be kept inactive until the wound has fully healed. Animal should be taken to the vet clinic early; horses must be kept inactive until the wound has fully healed.

Keyword: *Blood, Hematoma, Horse, Swelling.*

Introduction

The equine is the second-most significant animal in the world. The global population of equine species is comprised of more than 116 million; 25% reside in the nations with the lowest incomes, including Ethiopia. Equids play a crucial role in the (Food and AOUN, 2022; Starkey., 2006; and Brooke., 2022). Working horses are put to use for several things, including drafting and powering household and agricultural tasks and transporting resources. In certain other countries, it is used for additional functions, including manure, and occasionally for the production of milk, meat, and hides (Leeb *et al.,* 2003). Many factors affect working horses, such as diseases, injuries, nutrition, emotional response, environment, and climate conditions. Equine injuries resulting from falls, kicks, and accidents with objects are quite common. Injury is one potential contributing factor. A hematoma is a severe bruise that develops when an injury breaks blood vessels below the surface and causes bleeding. This blood can create a swelling known as a hematoma by filling the gap between the injured tissue and the surrounding skin (Robert *et al.* 2017).

Aspirating fluid with a needle is necessary to differentiate between hematomas and seromas, or abscesses. A seroma is defined as yellow fluid; that's an abscess if there's pus present; hematomas are defined as pure blood (Kazzam.,2022).There are different kinds of hematomas, which are mostly identified by their origin and location of occurrence, such as subcutaneous, subserosal, intermuscular, etc. Muscular hematomas are simply caused by bleeding within a muscle (Crundwell, 2007; Dohan *et al.,* 2015). Hemostomas are managed according to their location and severity. The majority of smaller hematomas reabsorb if left untreated.Large hematomas require to be opened and drained because they are so big and pendulous (Spintowinrodeo, 2008). This report presents a unique instance of a large intermuscular hemorrhage in the femoral area of a horse.

Case History and Physical Examinations

A 7 year old queen weighing 280 kg was brought to the Jimma University College of Agriculture and Veterinary Medicine open veterinary clinic. The owner's history also revealed edema at the femoral region after a collision with a gatepost and that throughout the first week following the injury, the swelling became bigger. All vital signs measures were within normal ranges: respiratory rate (11 breaths per minute), heart rate (36 beats per minute), and body temperature (38.5C).When the enlarged area was palpated and aspirated, it felt soft, painful,

and blood was found. It was a hematoma, as determined by the investigation above, and surgery was necessary to drain the blood (Fig .A).

Preoperative preparations

After the animal was carefully placed in a recumbent position, the swollen area side up, and aseptically treated with a solution of water, salon, and then scrubbed using 1 % povidone-iodine solution.

Anesthesia and control

The stallion was controlled both physically and chemically using rope. Extending and tying the hind limb with the corresponding forelimb, animals were sedated with Diazepam (Intas pharmaceutical Ltd., India) @0.15mg/kg.

Surgical Procedure

The surgical site was cleaned, the horse was sedated, and the animal was released. Make a little incision on the ventral side of the enlarged hematoma. After draining a significant volume of blood, 1 % povidone-iodine was applied (Fig .B). This process was repeated until no more blood or dead tissue remained (Fig .C). The skin was then left open, and a gauze plug soaked in 1 % povidone-iodine was inserted inside the cavity with one end sticking out to let blood flow out (Fig .D).

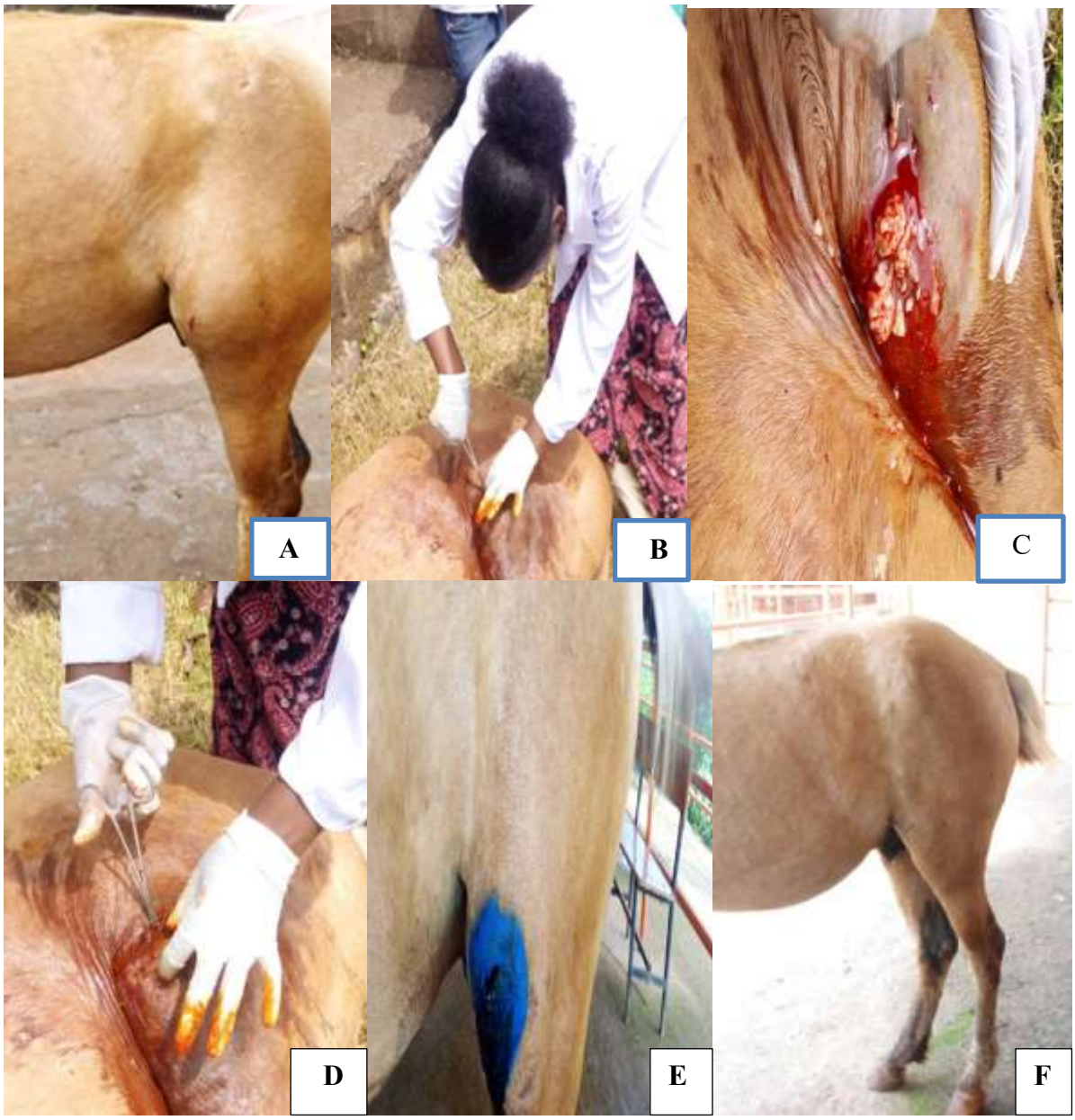

Figure 17. Femoral hematoma in horse:

(A) physical observation of a swollen femoral area (B) application of a forceps; (C) removing clotted blood (D) inserted gauze soaked in 1 % povidone iodine (E) 5 days of post-operative (F) horse surgical site observation on day 15.

Post-operative care and complication

Penicillin (24 mg/kg) and dihydro-streptomycin sulfate (30 mg/kg) (Pen & Strep® Norbrook UK) I.M medication containing 3 days of oxytetracycline (3.58% oxy viocid w/w

palath/Ankara/turkey) was sprayed on the wound to prevent microbial complications until the wound fully recovered to normal (fig E). After 15 day the horse was recovered without any complications (Fig .F).

Discussions

A hematoma is an accumulation of blood that typically begins below the skin's surface and happens outside of blood vessels. The main caused of hematoma are injuries that damage to the wall of an artery, vein, or capillary When Accidents happen, especially where horses are concerned, so it' common for trauma can suddenly discover a large, soft lump on some part of the horse's body. The skin might not be broken but one or more of the blood vessels beneath are damaged and bleeding (Robert *et al*., 2017). This report details a rare instance of a large intermuscular hemorrhage in the horse's femoral and agreed with the work done by Gugjoo.,*et al* (2018) at the Veterinary Sciences and Animal Husbandry department of Sher-e-Kashmir University and the Agricultural Sciences and Technology of Kashmir, Shuhama. On the other hand, Oliveira (2019) used Primary Paranasal Maxillary Hematoma, and Bonnie (2001) reported Progressive Ethmoid Hematoma.Treatment of hematoma depends on the location, symptoms, and clinical situation. The most common and effective surgical procedure involves cutting through the hematoma. To drain all of the blood (Ebright., 2022). According to Pothiappan *et al.,* (2013), the ventral aspect incision is necessary to properly remove the fibrin clot.The current case was used vetral incision This is in agreement with This method was related to Huseen (2018) and is also similar to the current case. Animals received anesthesia with 0.5 mg/kg of diazepam before the vetral incision was performed with a recumbent approach. Complications did not arise during this surgical activity. This might be the result of applying aseptic technique and the proper use of antibiotic follow-up.

Conclusion and recommendation

The horse presented in this case report had a history of hematoma in the femoral area, with clinical indications of hemorrhaging. The inflamed region felt warm to the touch and hurt, drained blood away using a surgical procedure. Horses must be kept calm until the wound has completely healed; animals should be brought to the veterinarian as soon as possible.

4. SUMMARY OF COMPILED SURGICAL CASE REPORTS

In the present case report, 16 domestic animals received surgery. Several surgical procedures were carried out on pets, equine animals, and small and large ruminants. During the study period, the most common surgical treatments were cesarean sections and open castrations. 6 (37.5%) patients followed by ovariohysterectomy 1 (6.25%), umbilical hernia 1 (6.25%), rectal prolapse 1 (6.25%), tail docking 1 (6.25%), Extirpation of the eye 1 (6.25%), cauliflower ear 1 (6.25%), rumenotomy 1 (6.25%), abscess 1 (6.25%), and hematoma 1 (6.25%). Postoperative seroma affected one patient (6.25%), and swelling was the most frequent complication observed in three (18.75%) of the patients. One patient (6.25%) passed away on the follow-up day. Only one animal death occurred during the study period out of sixteen patients, and that was as a result of the owner neglecting to bring the animal in early for the surgical intervention. Good outcomes were observed in the remaining fifteen animals.

Table 1. Number of animal and post oprtative complication outcome for both small and large animals in and around Jimma town open Veterinary Clinics

Species	Numbers	Postoperative complication	Percentage	Survived	died
Large ruminants	**3**	**1**	**6.25**	**3**	**0**
Small ruminants	**3**	**1**	**6.25**	**3**	**0**
Small animals	**8**	**2**	**12.5**	**7**	**1**
Equines	**2**	**1**	**6.25**	**2**	**0**
Total	**16**	**5**	**31.25**	**15**	**1**

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Table 2 : Type of operation performed and complications following the procedure

Animal species	Specific surgical cases	Complications	(%)
Cattle	Caesarean section	inflammation depressed loss of body condition	6.25
	Umblical hernia	_	0
	Abscess	_	0
Sheep	caesarean section	_	0
	Rumenotomy	loss of appetite ,depressed	6.25
Dog	castration	_	0
	Tail docking	_	0
	Cauliflower ear	swelling	6.25
	Ovariohysterectomy	_	0
Cat	castration	_	0
	Caesarean section	_	0
	Rectal prolapse	_	0
	Enterotomy	depressed	
		Seroma	6.25
Horse	castration	Swelling	
	Hematoma	_	0

5. CONCLUSSIONS AND RECOMMENDATIONS

The present surgical case reports, describe a variety of surgical cases that completed procedures and managements with various domestic animals. Castration and cesarean sections were the most common surgical procedures. Postoperative problems after surgical procedures are prevalent and have a low death rate, according to the current report. Were controlled by using anti-pain, antibiotics, antiseptics, pre-management, and sound surgical techniques. After surgery, one animal died as a result of the owner's ignorance of advanced points and delays in bringing the animals in for surgical care. The lack of materials, IV fluid, and anesthetic in the clinic made the work challenging. Despite the observation of a variety of postoperative complications, the overall results of the surgical therapy appear hopeful for patients for whom surgery is appropriate or alternative options have proven ineffective.

Based on the above conclusion the following recommendations are advance:

- The owner should be punctual to make presentations to the clinicians and translate the physician's advice into action.
- Further research should be conducted on factors associated with postoperative complications and surgical outcomes.
- For optimal performance, veterinary clinics must be equipped with a range of surgical instruments, anesthetic drugs, and other necessary antiseptics.

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LIST OF ANNEXES

ANNEX 1 : Clinical parameters of some domestic animals

Animal	Temperature(oC)	HR(Beats/Min)	RR(Breaths/Min)	CRT/ skin Tenting
Cattle	**37.5-38.5**	**60-70**	**30**	**Less than 2sec**
Sheep	**39.1**	**60-70**	**19**	**Less than 2sec**
Dog	**38.9**	**80-90**	**14-22**	**Less than 2sec**
Cat	**38.5**	**100-130**	**20-30**	**Less than 2sec**

Source: (Muir et al., 2000)

ANNEX 2 : Post-operative observations and follow-up format

Examination of days	**Treatment/s**	**Remark/s**
Day 1		
Appetite		
Temperature		
Heart Rate		
Respiratory rate		
Exudates		
Incision sites		
Any other		
Day 2	**Treatment/s**	**Remark/s**
Appetite		
Temperature		
Heart Rate		
Respiratory rate		
Exudates		
Incision sites		
Any other		
Day 3	**Treatment/s**	**Remark/s**
Appetite		
Temperature		
Heart Rate		
Respiratory rate		
Exudates		
Incision sites		
Any other		

ANNEX 3. Recommended dosage for analgesics

Species	Analgesics	Dose	Route
Dog	Meloxicam	0.1 -0.2 mg/kg	IV/IM
Food animals and equines		0.5-2 mg/kg	IV/IM
Cat	Tramadol	0.05- 0.1mg/kg	IV/IM
Small animals and small ruminants		2 - 5 mg/kg IM	IV/IM
Ruminants, small animals, equines and swine	Lidocaine	0.5-5mg/kg	IM

Source: Muir et al. (2000)