



Unilateral Mastectomy as Successful Radical Therapy of Traumatized Udder in an Assam Hill Goat: A Case Report

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Abstract

This communication reports successful surgical removal of an injured quarter of udder in a 3.5-year-old Assam Hill goat. The doe was brought to the Veterinary Clinical Complex following a long-standing tea garden fencing injury on the left quarter of the udder. Clinical examination revealed unilateral protrusion of mammary tissue through the ruptured quarter of the mammary gland along with presence of hard consistency and necrotic tissue at center of the wound. The doe was subjected to unilateral mastectomy followed by supportive therapy, which brought satisfactory uneventful recovery.

Keywords: Goat, Mammary gland, Mastectomy, Quarter, Udder

Introduction

Mastectomy is occasionally done in ruminants to treat irreversible conditions involving the mammary gland and associated structures. It is performed in ruminants either as radical mastectomy or hemi-mastectomy (Phiri *et al.*, 2010). Glandular tissue of the udder is divided into two main halves viz. right and left by complete septum. The suspensory apparatus, blood and nerve supplying the two halves are independent of each other, so ailments of one half or removal of one quarter generally does not affect the other half (Arnold, 1950). Unilateral or bilateral mastectomy is recommended as a pain-relieving procedure for irreversible ailments involving udder like gangrenous lesions, chronic mastitis or other injuries leading permanent damage, neoplasia etc. (Cable *et al.*, 2004). This present communication describes unilateral mastectomy for management of incurable damage to one quarter of the udder in a recently registered indigenous breed of goat.

Case History

A 3.5 years old Assam Hill goat weighing 14 kg was brought to the Veterinary Clinical Complex with a long-standing history of tea garden fencing injury on the left quarter of udder. Physical examination of the animal revealed unilateral protrusion of necrosed mammary tissue via the existing wound and the protruded mammary tissue was hanging on the day of presentation (Fig. 1A). Doe was brought after two days of mammary tissue protrusion. The affected quarter was very hard in consistency, indicative of fibrotic changes as evidenced by post-operative dissection (Fig. 1B) and the hanging part of mammary tissue could be removed with mild traction but no gangrenous condition was noticed. Affected quarter had no milk flow; however, the other quarter appeared normal as indicated by normal milking and negative for mastitis test. On clinical examination, all the vital parameters were normal except mild elevation in rectal temperature (103.9° F) was recorded. As per the owner's report, no therapeutic approach was made to manage the case except application of turmeric and camphor powder. The doe was subjected to unilateral mastectomy on the next day.



Figure 1: A: Protrusion of mammary tissue, **B:** Hard fibrotic mass surrounding the necrotic tissue at the centre

Treatment

The animal was fasted for 12 hours with water withheld for 2 hours prior to surgery. On the day of presentation, a dose of Ceftriaxone, antihistaminic and NSAID along with normal saline as per body weight were administered accordingly. On next day, the surgical site was prepared aseptically for surgery (Fig. 2A) and the doe was sedated with Xylazine Hydrochloride @ 0.05mg/Kg and Ketamine 20mg/Kg body weight (bwt) intramuscularly (IM) mixing in single syringe followed by a field block with 2% Lignocaine Hydrochloride around 1 inch away from the expected site of incision. An elliptical skin incision was made and continued surrounding the affected quarter to cover the circumflex of damaged quarter (Fig. 2B). Following careful blunt dissection, the affected quarter was separated completely without affecting healthy quarter from ventral abdominal and inguinal attachments along with the lymph node (Fig. 2C). All major veins and arteries viz. superficial caudal epigastric vessels, external pudendal and perineal blood vessels were ligated with 2-0 chromic catgut. Using 2-0 Polyglactin 910 suture material and simple continuous suture pattern, the healthy gland was sutured to the ventral abdominal floor. Using sub-cuticular and cross mattress suture pattern the surgical wound was closed; for which 2-0 Polyglactin 910 and 2-0 Nylon was used respectively. Post-operatively Ceftriaxone @ 10 mg/Kg bwt IV (Intacef®: Intas pharmaceutical Ltd.), Meloxicam @ 0.2mg/Kg bwt IM (Melonex®: Intas pharmaceutical Ltd.) for 5 days and Chlorpheniramine maleate @ 0.5mg/Kg bwt IM (ZEET®: Alembic Pharmaceuticals Ltd.) for 7 days along with Tetanus Toxoid @ 1ml IM on

the day of operation were administered. Serrapeptidase 30 mg/day (Inflawin Forte®: Excellar Health Care Pvt. Ltd.) for 8 days together with regular antiseptic dressing was also advised till suture removal. On 10th post-operative day skin sutures were removed.



Figure 2: **A:** Udder prepared for aseptic surgery, **B:** Elliptical incision continued surrounding the affected quarter, **C:** Separation of affected quarter from the unaffected quarter

Result and Discussion

The goat recovered uneventfully without affecting lactation from the remaining quarter in the subsequent kidding after unilateral mastectomy (Fig. 3), as removal of one does not affect other due to anatomical and physiological independency (Arnold, 1950). In goat udder ailments may lead to serious health issues in goat (Nanaboina and Dasohari, 2017). In present case the condition did not aggravate probably due to application of turmeric powder, which had many beneficial effect (Rahmani *et al.*, 2018) and camphor powder is known for its fly repellent action. Again, as the affected quarter had an irreparable trauma due to loss of mammary tissue, unilateral mastectomy was attempted as radical therapy. Previous reports have suggested unilateral mastectomy as the salvage, immediate and effective measure against irreversible or permanent udder injuries (Gautam *et al.*, 2016) although unilateral mastectomy was referred as difficult procedure to perform compared to bilateral mastectomy (El-Maghraby, 2001; Sabuncu *et al.*, 2015; Nanaboina and Dasohari, 2017). Application of catheter to drain any fluid accumulation under suture is generally recommended but in the current case it was not done as subcutaneous sutures were very tightly applied. Similar procedure was also followed by Sabuncu *et al.*, 2015. Moreover, routine careful post-operative medicinal management and antiseptic dressing also played vital role in bringing satisfactory recovery in the current case. The picture (Fig. 3) was taken after six months and on that very day the animal was suffering from skin infection which was treated accordingly.



Figure 3: The unaffected quarter after six months

Conclusion

From the above findings authors could come to the conclusion that unilateral mastectomy can be an appropriate therapeutic measure in managing permanent udder injuries with restoration of physiological health of unaffected quarter.

Conflict of Interests

There is no conflict of interest.

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