

Repair of teat laceration in a cow

^aMakkena Sreenu*, ^bB. Prakash Kumar, ^bP. Sravanthi and ^cK. Sudhakar Goud

^aProfessor and Head, ^bAssistant Professor of Surgery, ^cAssistant Professor of Clinical Medicine, Teaching Veterinary Clinical Complex, College of Veterinary Science, Sri Venkateswara Veterinary University, Korutla, Karimnagar (Dt), Telangana-505 326, India.

*Corresponding Author:

Makkena Sreenu
Email: drmakkena@yahoo.co.in

Received: 08/08/2014

Revised: 12/08/2014

Accepted: 13/08/2014

Abstract

A case of teat laceration with skin and muscularis involment in a cow was presented and its surgical correction was attempted. The muscularis was sutured with series of horizontal sutures and the skin was sutured with cross mattress sutures using cross mattress. The animal made uneventful recovery without any complications.

Key words: Teat laceration, repair, cow.

Introduction

Teat injuries are common in cattle due to direct injury which might even by self inflicting, barbed wires, thorny bushes and some agricultural implements (Singh *et al.*, 2012). Teat injuries can be divided in two categories: external or internal injuries. The external injuries include all types of laceration. The internal injuries include disease of the teat cistern and papillary duct. Trauma to the udder may extend from superficial injuries to deep penetrating wounds. The severity of the trauma is judged by the extent of damage to the udder structures. Management of teat trauma depends on the structures which have been traumatized. Trauma can be broadly categorized into superficial and deep laceration and can be managed by independently with appropriate measures (Roberts and Fishwick, 2010). This paper reports and describes the management of deep laceration of the teat in a cow.

Case History and Management

An adult cow aged 6 years and 6 months pregnancy presented to the clinic with a history of teat injury due to fellow animal attack two days back. Clinical examination revealed that there was a deep lacerated wound of right fore-teat with extending from the base towards the tip with an involvement of skin and muscularis (Fig 1).

There was no evidence of any fistula, leakage, disruption of mucosa etc., except the fibrosed edges of skin and haemorrhage. A superficial laceration on the left hind teat was also noticed. The animal was with normal activity and showed normal physiological parameters (rectal temperature 102°F, respiratory rate 24/minute, Pulse rate 66 / minute and rumen motility of 2/3 minute).

The cow was positioned in a lateral recumbancy and secured all the legs tied together using a rope. Sedation was achieved using Xylazine hydrochloride 2% (Xylaxin®) at a dose rate of 0.02 mg/kg administered intramuscularly with a total dose of 0.4 ml. Anesthesia of the teat was achieved using the ring block technique using local anesthetic i.e. Lignocaine hydrochloride (Xylocaine- ASTRA IDL, Bangalore). The teat and udder were cleaned using chlorhexidine (Savlon®) antiseptic and surgical spirit applied. A rubber tourniquet was then applied at the base of the teat. The anesthesia was given time to take effect. The margins of the laceration were debrided using a scalpel blade to remove the scar tissue that had already formed around it. A series of preplaced horizontal mattress sutures were placed to appose subcutaneous tissue of severed teat surface and tied to obliterate the dead space as subcuticular sutures (Fig 2 and 3). The skin was apposed using a cross mattress suture using polyamide 2/0 suture (Fig 4). A plastic teat siphon was left in place for seven days. Postoperative antibiotics penicillin and streptomycin (Bistrepen®) 5 gm administered intramuscularly and daily dressing of the wound with povidine iodine dips. The cutaneous sutures removed on 10th day (Fig 5) and the animal showed uneventful recovery.

Discussion

The bovine teat is composed of five layers; mucosa, sub-mucosa, highly vascularized connective tissue, muscularis and the skin (Hendrickson, 2007). Teat injuries occur due to trauma, chemical injury, insects, environmental conditions and the milking machine. Several factors contribute to the incidence of teat injuries. The physical characteristics of the teat and udder play a role in predisposing the teat to injuries.

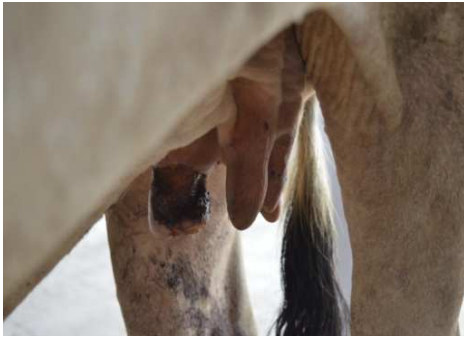


Fig 1: Deep laceration of a teat in a cow



Fig 2: Preplaced horizontal mattress sutures to obliterate dead space



Fig 3: Apposed skin edges following subcuticular sutures

Poor udder conformation, with low hanging teats predisposes the teat to being kicked by the cow causing injuries to it (Dohoo and Martin, 1984). The management of teat lesions will vary depending of the extent of damage to the tissues. Superficial lacerations require cleaning the wounds regularly with mild

antiseptic and/or disinfectant and allowing the teat to heal. Deeper lacerations with penetrating wounds require prompt response to prevent infection. Surgical intervention of the laceration to repair the teat is required for gaping wounds which expose the inner lying structures (Singh *et al.*, 2012).



Fig 4: Application of cross mattress sutures to the skin



Fig 5: Teat under healing process on 10th day of repair

Failure to repair the teat adequately leads to development of teat fistulas. Inability to achieve an impervious seal during apposing will lead to fistula formation. It is required that the suturing techniques used do not perforate the mucosal layer but aim to appose the underlying sub mucosa and muscularis layers (Roberts and Fishwick, 2010). The subcutaneous sutures with chromic catgut and cutaneous sutures with polyamide in the present report properly apposed the tissue edges and helped in early healing process.

Local anesthesia techniques facilitate surgical repair of lacerated and traumatized tissues of the udder (Steiner and Rotz, 2003). Use of sedatives such as

Xylazine may be contraindicated in cases of advanced pregnancy and thus local techniques offer favorable options to anesthesia. There are various techniques used in large animal practice include; ring block, inverted-V block, teat cistern infusion, intravenous regional anesthesia of the teat, and perineal nerve block. The techniques may be used solely or in combination with other techniques to provide analgesia (Lumb and Jones, 1996). Ring block of teat performed in the present report given satisfactory desensitization of the teat for its management

Adequate antibiotics following the surgery were required to prevent mastitis and infection.

References

- Dohoo IR and Martin SW (1984). Disease production and culling in Holstein-Friesian cows III: Disease and production as determinants of disease. *Veterinary Medicine*, 2: 671-681.
- Hendrickson DE (2007). Repair of teat lacerations (Ed). In "Techniques in Large Animal surgery" (3rd Edition). *Blackwell Publishing, Iowa, USA*. Pp 286-288.
- Singh J, Singh P and Arnold JP (2012). The mammary glands In: Ruminant surgery (RPS Tyagi and Jit Singh Eds). *CBS Publishers and Distributors Pvt. Ltd, New Delhi*. Pp 170-171.
- Lumb and Jones (1996). Teat and udder anesthesia of cows In "Veterinary anesthesia by Lumb and Jones" (3rd Edn). *Williams and Wilkins, Philadelphia, Maryland, USA*.
- Roberts J and Fishwick J (2010). Teat surgery in dairy cattle. *In Practice*, 32: 388-396.
- Steiner A and Von Rotz A (2003). The most important Local Anesthesia in cattle-A Review. *Makady Ghamsari Schweiz Arch Tierheilkd*, 145(6): 262-271.

Administration of penicillin and streptomycin (Bistrepen ®) 5 gm intramuscularly and daily dressing of the wound with povidine iodine dips effectively counteracted the secondary bacterial infections and hasten the uncomplicated healing process. The retention of plastic tube in teat might have helped in preventing the obliteration of the teat canal.

Conclusion

The teat laceration with muscle and skin involvement due to traumatic insult can be repaired by suturing and with appropriate antibiotic therapy.