PROCTORRHAPHY AND VULVOPLASTY FOR CORRECTION OF PERINEAL LACERATION DUE TO DOG BITE IN RECENTLY CALVED CATTLE

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ABSTRACT

A 2.5 year old cow was presented to Veterinary Clinical Complex at College of Veterinary Science, RampuraPhul, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, in emergency hours with a chief complaint of dog bite of perineal area on the day of normal parturition. Stray dog had eaten hanging placenta and resulted in severe laceration of rectum, and vulvo-vestibular region. Proctorrhaphy and vulvoplasty was attempted to reconstruct lacerated perineal structures under epidural anaesthesia. Broad spectrum antibiotics and anti-inflammatory drugs were administered intramuscularly for five days and fluid therapy was given for three days. Skin sutures were advised to cut after 12th post-operative day.

Keywords: Proctorrhaphy, vulvoplasty, perineal laceration, cattle, dog bite

Introduction

Perineal lacerations are categorized into first, second, and third degrees. A first-degree perineal laceration affects solely the skin and vulvar mucous membrane. A second-degree perineal laceration encompasses the skin, mucous membrane, perineal body, and constrictor vulvae muscle, whereas a third-degree perineal laceration includes every component affected in the second-degree laceration, in addition to the anal sphincter and all tissues situated between the vagina and rectum Colbern *et al*., 1985; Dreyfuss *et al*., 1990).Dairy cows suffer significant financial losses due to rectovaginal and perineum injuries, such as rectovaginal fistula (RVF), perineal laceration (PL), pneumovagina, and urovagina (Hudson, 1972. Obstetrical trauma, particularly during parturition, is particularly associated with perineal lacerations, which are frequently observed in primiparous cows (Dreyfuss *et al.,* 1990; Kazemi *et al.,* 2010). These injuries are primarily the result of forceful extraction or the expulsive forces which are produced throughout contractions in circumstances of fetomaternal disproportion or fetal malposition (Colbern *et al.,* 1985; Hudson, 1986; Arthur *et al.,* 1996).

The incidence of perineal laceration is typically lower in cattle than mares (Khar *et al.,* 1993; Kazemi *et al.,* 2010). The objective of any surgical intervention is to create a functional separation between the rectum and the vaginal vestibule, and to rehabilitate a functioning perineal body. This will effectively prevent further contamination and enable the treatment of vaginitis, cervicitis, and metritis, which are associated with infertility. Considering the anticipated financial consequences in animal production, it is imperative to identify the appropriate surgical intervention that can effectively restore the fertility of impacted animals (Dreyfuss *et al.,* 1990; Farhoodi *et al.,* 2000). This case report illustrates the surgical repair of a lacerated rectum and vulvo-vestibular region.

Materials and Methods

A 2.5 year old primiparous cattle was brought to Veterinary Clinical Complex at College of Veterinary Science, Rampura Phul, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana in emergency hours, with a recent history of dog bite of perineal region (Fig. 1). It was reported by the owner that a stray dog had eaten the placenta in addition to the vulvo-vestibular region on the day of physiological parturition. According to owner, the animal was dull, anorectic, and off water since parturition. Bleeding was managed by local veterinarian using hemostatic agent (Injection ethamsylate). The clinical examination revealed that the cow had a torn rectum along with to a severely lacerated vulvo-vestibular area. It was found that the lacerated ends were necrotic, and the urethral orifice appeared to be patent. Surgical intervention was planned to correct the defect. Lignocaine hydrochloride (2 %) injection was administered in sacro-coccygeal space for epidural local anaesthesia. The necrotic margins of the wound were debrided and irrigated with a normal saline solution (Fig. 2). For surgical correction of torn rectum, rectal mucosa was pulled out externally and sutured with surrounding muscles in simple continuous manner using absorbable suture material (Polyglactin 910 No. 2). Then muco-cutaneous sutures were applied in simple interrupted pattern using non-absorbable suture material (Polyamide No. 1) (Fig. 4 a & b). Foley's catheter No. 18 F was used for urethral catheterization (Fig. 3). For vulvoplasty, lacerated end of vulvar lips were sutured with Polyamide No. 1 (Fig. 5 and 6).Post-operatively, broad spectrum antibiotics (amoxycillin and sulbactum @10 mg/kg body weight) and anti-inflammatory drugs (meloxicam @ 0.3 mg/kg body weight) were administered intramuscularly for five days. Metronidazole was given intravenously at a dose rate of 10 mg/kg body weight for three consecutive days. Fluid therapy (Ringers lactate and dextrose saline solution) was recommended for three days. Antiseptic dressing of surgical site was advised using liquid betadine solution along with topical application of fly repellant spray (Scavon). Post bite anti-rabies vaccination was recommended on 0 day, 3rd day and 7th day.

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Fig.1: Showing perineal laceration

Fig. 2: Showing debridement of lacerated wound

Fig. 3: Showing urethral catheterization and surgical site preparation

Results and Discussion

The term "perineal laceration" refers to lacerations that occur in the perineal area and are infrequently triggered by the birth of calf in cattle. These lacerations encompass organs within the perineum (Hudson, 1972). Equine practitioners frequently report this condition in conjunction with the lengthy extremities of juvenile animals. However, in present case, cow suffered perineal laceration due to dog bite, which caused severe lacerations of rectum, vulva and vestibular area. Nevertheless, perineal lacerations are exceedingly uncommon in cattle, and they commonly result in infertility in bovine (Vieira-Neto *et al.,* 2016). The surgical correction of perineal laceration would reduce the risk of repercussions such as urine accumulation and subsequent postpartum uterine infections, which can lead to infertility (Youngquist and Threlfall, 2007; Vieira-Neto *et al.,* 2016). Holzmann (2012) claims that the restoration of vulval conformation might encourage effective healing and preserve the usual functionality of the perineal structure. Proctorrhaphy and vulvoplasty were attempted employing simple continuous sutures with absorbable suture material (Polyglaction 910 No. 2) and simple interrupted sutures with Polyamide No. 1, respectively. Skin sutures were advised to cut after 12th post-operative day. This method has been proven to be effective in the reconstruction of the rectum and the vulvo-vestibular region. Epidural anesthesia (2% lignocaine hydrochloride) was efficacious in minimizing straining and facilitating the reconstruction of lacerated perineal structures. Infertility may result from abnormal conformation of the reproductive passage in dairy heifers following a perineal laceration (Vieira-Neto *et al.,* 2016). The microorganisms may be attracted to the anterior vagina due to the accumulation of

Fig. 4 a,b: Showing proctorrhaphy

Fig. 5: Showing vulvoplasty Fig. 6: Showing immediate post –operative perineal structures

Fig. 7: Showing 12th post-operative day.

urine and the sucking of air that may result from abnormal conformation of vulval labia (Hudson, 1972).

Conclusion

The present case highlights the successful surgical management of a rare and severe perineal laceration in a primiparous cow caused by a dog bite immediately following parturition. Prompt clinical assessment, thorough wound debridement, and reconstruction of the rectal and vulvo-vestibular structures through proctorrhaphy and vulvoplasty resulted in satisfactory anatomical restoration. Early intervention in such traumatic injuries is critical to prevent postoperative complications, reduce the risk of ascending reproductive infections, and safeguard future fertility. This case demonstrates that even extensive perineal injuries in cattle can be effectively managed with timely and appropriate surgical and medical interventions.

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