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Surgical Management of Atresia ani et recti in a Buffalo Calf

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ABSTRACT

Atresia ani or imperforate anus is a congenital anomaly defined as the failure of development of anal opening. A two day old male buffalo calf was presented to the polyclinic with the history of not passingfaeces since birth. Based on history and clinical examination the case was diagnosed as atresia ani et recti. It was decided to perform emergency surgery to correct the condition. Surgery was done under epidural anesthesia and local infiltration analgesia using lignocaine hydrochloride 2 %. Skin incision was made in a cruciate pattern. The rectal cul-de-sac was identified by blunt dissection and was sutured to the perineal wall. Reconstruction of anal opening was done. Post-operatively animal was treated with antibiotics and anti-inflammatory drugs for five days. The skin sutures were removed on 11th post-operative day. The buffalo calf showed normal defecation pattern and made an uneventful recovery.

Keywords: Atresia ani, Atresia ani et recti, Buffalo calf, Congenital anomaly, anoplasty

Atresia ani or imperforate anus is a congenital anomaly defined as the failure of development of anal opening. Such congenital anomalies involving anus and rectum are common in young animals (Dreyfuss *et al.* 1989). Atresia ani occurs the urorectal fold to fails to divide the cloaca completely or can also occur due to the failure of the fetal analmembraneto breakdown that divides the rectum and anus during fetal development (Ryu *et al.* 2018). Atresia ani is classified from type I to type IV based on the anatomical position and extend of developmental anomaly of rectum (Ettinger and Feldman, 2005). Atresia ani can only be managed by surgical intervention. Several surgical techniques have been used to correct this congenital condition in domestic animals (Singh, 1989). Immediate anoplasty is indicated in atresia ani since it can become fatal due to the disruption of normal alimentary physiology (Loynachan *et al.* 2006).

The present report document the surgical correction of atresia ani type II (Atresia ani et recti) in a male buffalo calf.

Case History and Clinical Observation

A two day old male buffalo calf (Fig. 1) was presented with a history of not passing faeces. On clinical examination animal was found to be dull, depressed with continuous abdominal straining. Examination of perineal region confirmed the absence of anal opening (Fig. 2). On compression of the abdomen no bulging was observed at the anal region thus ruling out type I atresia ani. Based on history and clinical examination confirmed the case as atresia ani et recti. It was decided to perform emergency surgery to correct the condition and to relieve the straining and discomfort.

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Fig. 1: Two day old male buffalo calf

Fig. 2: Absence of anal opening

Fig. 3: Positioning on the surgical table

Fig. 4: Cruciate incision over perineal region

Surgical Technique

The animal was placed in the surgical table at sternal recumbency with the hind limbs extended to both sides in such a way that the perineum is elevated (Fig. 3). The perineal region below the base of the tail was prepared aseptically by scrubbing with 7.5% povidone iodine. Caudal epidural anesthesia was induced by injecting 2 ml of 2% lignocaine hydrochloride. A cruciate incision was made on the skin of anus region (Fig. 4) followed by blunt dissection so that the muscles of perineum are not damaged.

The blind end of the rectal cul-de-sac was identified and freed from the surrounding attachments. It was then brought to the level ofanal sphincter and was anchored to the external skin by using stay sutures only on the lower half of the circular opening on the external skin. After fixing the rectal pouch to the perineum the rectum was cut open using scissor. The remaining unsutured upper half of the opened cul-de-sac was sutured so that it was attached to the walls of perineum completely to make a permanent anal orifice.

Suturing was done in such a way that the rectal mucosa is everted towards outside over the skin. Suturing between rectal mucosa and skin was done with simple interrupted pattern (Fig. 5) using black braided silk No. 1. After the surgery animal started to pass meconium (Fig. 6).

Post-operatively, Ceftriaxone injection at the dose rate of 10 mg/ kg for five consecutive days and Meloxicam injection at the dose rate of 0.3 mg/ kg for three days were administered through intramuscular route. Topical application of fly

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Fig. 5: Suturing between rectal mucosa and skin done by simple interrupted pattern

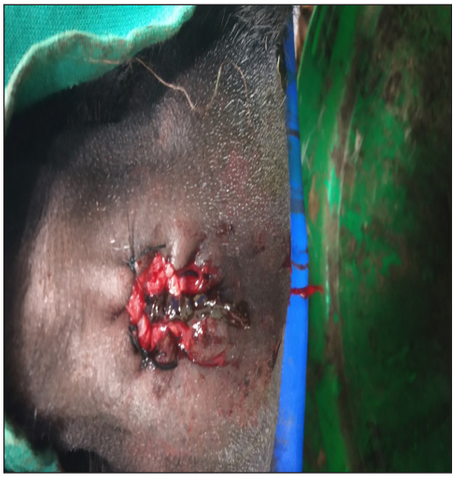

Fig. 6: Passing of meconium after reconstruction of anal opening

repellant was also advised. The skin sutures were removed on 11th post-operative day. The buffalo calf showed normal defecation pattern and made uneventful recovery

DISCUSSION

Atresia ani is a congenital anomaly. It results from the failure of rectum and embryologic cloaca to fuse. Atresia ani is classified into four types. Type I is described as the development of a relatively normal rectum and a patent but stenotic anus. In Type II, the rectum ends in a blind pouch and the developed anus is absent. Type III is defined by the formation of a blind pouch in the proximal rectum and without any anus developing. Type IV is characterized as the formation of a blind pouch in the proximal rectum with a normally developed anus (Veena *et al.* 2016). Atresia ani can be found associated with other congenitalanomalies involving the central nervous system, musculoskeletal and gastrointestinal system. However, in such casessurgical correction won't be sufficient to sustain the life of the animal (Sharun *et al.* 2019).

Atresia ani or atresia ani et recti may be hereditary and due to single autosomal recessive gene (Chaudhary *et al.* 2010). Although many factors are responsible for atresia ani, Durmus (2009) reported that rectal palpation before 40 days of gestation may be a contributory factor that causes congenital atresia of anus.In this case the atresia ani et recti was corrected surgically under epidural anesthesia using lignocaine hydrochloride 2% whereas Durmus (2009) preferred to sedate the animal using Xylazine hydrochloride, Using sedation instead of epidural anaesthesia might have an added advantage when compared to epidural anaesthesia since constant straining by the animal reveals the position of rectal cul-de-sac continuously. This case report describes about the successful surgical management of atresia ani et recti in a male buffalo calf.

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