

## **SURGICAL MANAGEMENT OF CONGENITAL ATRESIA ANI (IMPERFORATE ANUS) LEADING TO RECTO-VAGINAL FISTULA IN A COW CALF**

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**Abstract:** A case of perineal congenital defect (atresia ani) with recto-vaginal fistula in a 15 day old cow calf and its successful surgical management has been reported.

**Key words:** Atresia ani, recto-vaginal fistula, calf.

### **Introduction**

Atresia is the most commonly reported anomaly of the anus and rectum (Roberts, 1986). Anal atresia is the failure of the anal membrane to break down to make an anal orifice and it has been reported as the most frequently encountered anomaly in calves (Das and Hashim, 1996). The causes of this congenital defects may be genetical or environmental of both, but in many cases the cause is unknown (Bademkiran *et al.*, 2009). The most common bovine environmental teratogens include toxic plants consumed by the dam and maternal-fetal viral infections during gestation and the majority of genetic defects in cattle are inherited as recessives (Newman *et al.*, 1999). Four major types of anal and rectal atresia were reported including congenital anal stenosis (Type I), imperforate anus alone (Type II), or combined with more cranial termination of the rectum as a blind pouch (Type III) and discontinuity of the proximal rectum with normal anal and terminal rectal development (Type IV) (REMI-Adewunmi *et al.*, 2007). Occasionally, rectum becomes ruptured due to abdominal straining of animal forming a recto-vaginal fistula, that allows the excreta to pass out through vulvular opening (Muhammad *et al.*, 2015).

### **History and clinical observations**

A 15 day old cow calf was presented to the college hospital with history of faeces passing through vulva. Upon examination of perineal region, revealed absence of anal opening, tenesmus, bulging at the anal region and communication between rectal floor and vaginal roof, through which the faeces was voiding out (Fig. 1). Based on meticulous clinical

observation, the case was confirmed as congenital atresia ani with recto-vaginal fistula and decided for surgical intervention.

### **Surgical management**

The calf was restrained in lateral recumbency. All the 3 anomalies i.e. closing of vaginal defect, closing of rectal defect and reconstruction of anal opening were rectified separately. Firstly the perineal region below the base of the tail was prepared for aseptic surgery. Epidural anaesthesia of 2ml 2% lignocaine was given followed by local infiltration of 2% lignocaine at surgical site. After development of anaesthesia, a cruciate incision was given at anal depression. The incision extended forward to secure the rectum. The muonium expelled to outside. The identified fistulous defect of vaginal roof was closed using catgut No.1-0 by simple continuous sutures. Afterwards the rectal defect was also closed by blind suturing after further evacuating the faeces. The anal opening reconstruction was made by suturing rectal mucosa along with perianal skin using silk at 3, 6, 9 and 12'o clock position. Further, the patency of the anal opening was maintained by inserting a 5ml edges smoothed syringe barrel, sutured to skin by stay sutures (Fig. 2). A course of antibiotics and analgesics were administered for a period 5 day and 3 days respectively. The newly constructed anal opening was washed twice daily with normal saline followed by neomycin ointment application. the syringe barrel was removed after 5 days and the skin sutures were removed on 12<sup>th</sup> postoperative day.

### **Results and Discussion**

The animal recovered well without any recurrence for a follow-up of 4 months. Congenital malformations of the rectum and anus are common reported in all species of animals (O'Connor, 1998). Some deformities are amenable to surgical intervention and some are incorrigible in nature (Shakoor *et al.*, 2011). Congenital rectovaginal fistula is characterized by the communication between the dorsal wall of the vagina and the ventral portion of the rectum, so that the vulva functions as a common opening to the urogenital and gastrointestinal tracts and is usually associated with type II atresia ani, in which the rectum ends as a blind pouch immediately cranial to the imperforated anus (Bademkiran *et al.*, 2009), which was also observed in the present case. Agenesis of vagina, urethra, anus and rectum are discovered rarely and are attributed to the faults lying in chromatin material (Ghanem *et al.*, 2004). The clinical signs observed were according to the findings of Bademkiran *et al.*, (2009). Azizi *et al.* (2010) described a good survival rate in response to atresia ani rectification by removing a circular skin piece and unifying the excised rectal loop

with skin. Recto-vaginal fistula and atresia ani are treated commonly by two surgical techniques. In one method, the defects of rectum and vulvular lips are closed individually after isolating and transecting the fistula (Mahlar and Williams, 2005). Anal opening is reconstructed later on. In the second method, trisection of rectum is done just anterior to fistula, the defective rectal part is excised followed by the suturing of last rectal part with the skin margins of opening carved already at possible anal site. In the present case, all the anomalies were rectified as reported by Mahlar and Williams (2005). The heritability of intestinal atresia is controversial but has been reported to be heritable condition in calves and pigs (Kilic and Sarierler, 2004). Since the clinical signs and physical examination findings were adequate enough to establish the diagnosis, so radiographic studies were not necessary. Surgical repair is the only and best possible solution to overcome congenital anomalies in animals to reduce economic losses to the owners.

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**Fig. 1** A female cow calf with congenital 5ml Atresia ani and Recto-Vaginal fistula patency



**Fig. 2** Reconstructed anal opening using syringe barrel to maintain