

## **ABSTRACT**

A 3 days old male calf with the complain of non-passage of feces since birth was brought to the UVH, Chandanaish. On clinical observation, it was found that the calf was not having anal opening. There was soft subcutaneous swelling below the ischial arch with distension of abdomen .The signs of straining, depression, tenesmus and abdominal pain were observed. The case was diagnosed as atresia ani and referred to surgery. 2% Lidocaine hydrochloride (JasocaineR Jayson Pharmaceuticals Bangladesh) was used for local anesthetics and diazepam for sedation. Then the case was surgically corrected by making a permanent anal orifice. Surgical intervention is the only technique of choice for the treatment in such acute abdominal discomfort and it was attempted successfully in this present case. Postoperative treatment is inj: Strepcin -G @10mg/kg, IM for 5 days and inj: Mel vet 1.5mg/kg, SC for 5 days. This surgery is recommended for all ruminant as it saves life.

**Key words: Calf, Atresia Ani, Congenital Defect, Surgery.**

## INTRODUCTION

Atresia ani is a congenital defects describes absence of a normal anal opening. Congenital abnormalities of anus and rectum are fairly common in young ones. It is fatal unless surgical correction is carried out to provide anal opening. Various surgical technique has been used to correct atresia ani in domestic animals. ( Singh 1988 and Jubb et al.,1993). Surgical treatment of atresia ani is indicated to save the animal life and to improve body wt gain. This reports communicate a case of atresia ani in a male calf , which was treated successfully by surgical intervention. In Bangladesh about 23% congenital cages in calves is atresia ani. Atresia ani is occurred more commonly in indigenous calves than crossbred calves. If we consider it by percentage, indigenous calves affected with atresia ani is about 71.74% and the crossbred were 28.26%.

Atresia ani is a congenital defect of the anorectum, resulting in anal canal closure and /or abnormal routing of feces (Bright & Bauer, 1994). Atresia ani, (imperforate anus) is a congenital abnormality characterized by persistence of the anal membrane resulting in a thin membrane covering the normal anal canal or is the failure of the anal membrane to break down (Merei. et.al, 2001). Among large animals congenital atresia ani most often occurs in pigs and calves. Congenital defects, abnormalities of structure or function present at birth, may be caused by genetic or environmental factors, or a combination of both; in many cases, the causes are unknown (Servet et al., 2009). The most common bovine environmental teratogens include toxic plants consumed by the dam and maternal-fetal viral infections during gestation. Congenital malformation sometimes leads to perinatal mortality, and it may also decrease maternal productivity and reduce the value of the defective neonates. Severe defects results in abortion of the calf or a return to service of the calf and cow.

The term atresia describes congenital occlusion of the lumen of the digestive tract. Failure of the anal membrane to break down during the development gives rise to the condition termed imperforated anus and sometimes termed as atresia ani. (Mc Geady et al., 2006).

There are four major types of intestinal atresia. Type I atresia is a mucosal blockage within the intestinal lumen. In animals with type II atresia, the proximal segment of intestine terminates in a blind end and the distal segment beings similarly with two ends being joined by a fibrous cord devoid of lumen. Type IIIa atresia is similar to type II except that

the Proximal and the distal intestinal segments blind ends are completely separated and there is a mesenteric defect corresponding to the missing segment of intestine. Animals with type IIIb atresia have a coiled distal segment of intestine. Type IV atresia involves multiple sites of atresia ( Kilic & Sarierler 2004; Rahal et al. 2007).

Atresia ani is fatal affection to the male unless surgical correction is carried out to provide anal opening, in female rectum frequently break through to vagina forming a rectovaginal fistula and thus permit defecation via the vulva ( Norrish& Rennie, 1968).

Atresia ani was reported as a possible genetic defect in Swedish Highland Cattle, Holsteins, and other breeds. Atresia ani is the most common intestinal defect in sheep and is believed to be due to an autosomal recessive gene. In a series of 64 cases of atresia ani in sheep, 42 (62%) were associated with defects of other body systems, especially the urogenital and musculoskeletal systems ( Newman et al.1999; Ghanem et al., 2004; Kiliç and Sarierler 2004; Loynachan et al. 2006; Rahman et al. 2006; Magda and Youssef 2007; Bademkiran 2009).

Affected animals may survive for up to 10 days and can be identified by their depression, anorexia, colic, marked gradual abdominal distension and lack of feces. (Radostitis et al., 2000).

Atresia ani should be treated by surgical operation to solve the problem, improve body weight gain, and reduce economic loss caused by this defect. ( Servet et al., 2009).

The present report describes a case of atresia ani and its successful surgical correction in a calf.

## **MATERIALS AND METHODS**

### **History and clinical observation:**

A 3 days old male, on-descript cattle calf, and weight is 18kg. The calf was not having anal opening and non-passage of feces since birth was brought. There was soft subcutaneous swelling below the ischial arch with distension of abdomen. The signs of straining, depression, tenesmus and abdominal pain.

### **Instruments and appliances:**

Surgical handle and blade, straight scissors, forceps, blade, nylon thread, catgut, draping cloth, towel clips, tissue forceps, probe, traumatic needle, needle holder, syringe, anaesthetic agent like 2% Lidocaine hydrochloride (JasocaineR, Jayson Pharmaceuticals, Bangladesh) and antiseptic like 0.001% potassium permanganate (PPM).

### **Preparation of the patient:**

The animal was placed on the operation table in lateral recumbency and was restrained physically by the assistants. The operation site was clipped, shaved and draped using sterile surgical towel. The site was finally painted with tincture of iodine.

### **Surgical procedure:**

The calf was positioned on lateral recumbency. At first diazepam was used for sedation at the dose of 1.8 ml. The perineum was infiltrated with 6-7 ml 2% lidocaine hydrochloride, and after routine aseptic preparation of the surgical field, a cruciate incision ( $2.5 \times 2.5$  cm), was made through the skin and subcutaneous tissue at the site where the anus should normally be situated. Careful blunt dissection was used to locate the rectal pouch, which was secured to the skin edge with 4 full-thickness sutures of nylon, then the rectum was incised and its mucosa was sutured to the skin with simple interrupted sutures. After that, the rectum was irrigated to wash the meconium by 0.001% PPM using Duche Cane. PPM results mechanical irritation to the intestinal mucosa, thus straining occur, which helps in early expulsion of meconium. Finally, the rectal pouch was sutured to the skin.



Fig 1: Absence of anal opening



Fig 2: Incision at surgical area



Fig 3: Making anal opening & Removing feces



Fig 4: Suture around the anal opening



Fig 5: Suture completed

### Post operative care:

After surgery the following antibiotic and anti-inflammatory drugs were prescribed.

- 1) StrepcinG @ 10 mg/kg body weight, intramuscularly for 5 days.
- 2) Melvet@1.5mg/kg body weight, subcutaneously for 5 days.

## **RESULTS**

Anal reconstruction was performed satisfactory. After postoperative period, wounds fully healed without any significant complications. No clinical side effects were observed after surgery except mild sign of digestive discomfort without any need for further treatment. Defecation was normal soon after surgery. Fecal passage was achieved without any need of specific care or interference which improved animal health and body weight gain. Full function anal stroma was achieved after wound healing at about one month after surgery.

## DISCUSSION

Atresia ani has been reported to be a heritable condition in pigs and calves ( Kilic et al. 2004). Based on this all treated animals were not considered for breeding; they were slaughtered at six months of age. A genetic basis has been documented for some cases of atresia ani, but the specific cause in sporadic cases in domestic species and humans is not always known (Johnson et al.,1980; Newman et al.,1999). Some authors Johnson et al. (1983), Leipold (1986) and Noh et al. (2003) reported that the most congenital anomalies of digestive system observed in calves were atresia ani and atresia recti. Besides, the anomalies of urinary system such as renal agenesis, polycystic kidney and skeleton system such as coccygeal or sacral vertebral agenesis were observed at the same time in calves. However, in this study animal was suffering from atresia ani only and was treated by anal reconstruction. Atresia ani is a fatal affection to the male unless surgical intervention occurs to provide new anal stoma. In some females, fecal pressure result in rectum break through vagina forming a rectovaginal fistula and thus permit defecation via vulva, therefore affected female does not require a further care or surgical correction, and may not be identified (Norrish & Rennie, 1968). Four major types (I, II, IIIa, IIIb and IV) of intestinal atresia have been described involving different intestinal segments (Kilic&Sarieler 2004; Rahal et al. 2007). Anal reconstruction was relatively painless using sedation and local anesthesia and was not invasive surgery. In the present study during suckling period the feces was soft and normally excreted, once the newborn animal changed diet a normal pellet like feces was excreted and no postoperative complications were found. This finding showed that the new anal orifice increased in size with age and was able to excrete feces in spite of absence of anal sphincture.

## **CONCLUSION**

Surgical correction (Anal reconstruction ) is the only treatment for atresia ani in newborn animal. This surgery saves life of newborn. It is effective and economic. It is recommended for all ruminant as it saves life.



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