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Reconstruction of anal opening in type-III atresia ANI in a lamb and kid

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Abstract
Day old lamb and kid were presented with history absence of anus. Physical examination revealed atresia ani without bulge upon abdominal compression. Tentative diagnosis of type III or IV atresia ani was made and reconstruction of anal opening was planned. Intraoperatively the blind rectal end was observed approximately 2cm from anal area in both animals. Anal opening was made and both animals passed stools postoperatively without any complications.

Keywords: Atresia ani, lamb, kid, anal opening

Introduction
Atresia can be defined as inborn occlusion of digestive tract lumen. In Atresia ani, anal membrane fails to break down during development [1]. It is also known as imperforate anus. Atresia ani is categorized into four types. In type I, only stenosis of lumen is seen without imperforate anus. In type II, anus will be imperforate and blind rectal pouch is seen. Type III is characterized by presence of blind rectal pouch more than 1.5cm distance from imperforate anus. Type IV is rare with atresia at multiples locations of intestine [2-4]. Various species of animals can be affected with atresia ani but ruminants are more reported with this condition [4]. Along with imperforate anus, other abnormalities such as absence of tail and rectovaginal fistula can be seen. Especially in females, the rectovaginal fistula is commonly reported and presentation of animal for treatment will be delayed in such cases [5].

Materials and Methods
One day old lamb and kid were presented to veterinary dispensary, Betageri, Koppal, Karnataka with history of imperforate anus (Fig 1), abdominal distention and straining. Abdominal compression revealed no bulge at anal region. No palpable blind rectal pouch was seen upon digital palpation at perineal area. Atresia ani type III /and IV were suspected and reconstruction of anal opening was planned.

Both the animals were placed in sternal recumbency and surgical site was shaved and scrubbed. Analgesia was achieved by administering lignocaine at epidural space. Standard criss cross incision was made and subcutaneous tissue was dissected. A blind rectal pouch was observed approximately 2cm cranially from the perineal area. Rectal pouch was retracted by using artery forceps (Fig 2) and stay sutures were applied dorsoventrally. A stab incision was made at blind rectal pouch and evacuation of meconium took place. Rectal opening was sutured to the perineal skin by using horizontal mattress pattern at multiple sites (Fig 3 & 4).

Post operatively both animals were given with amoxycillin-cloxacillin @15mg/kg for 5 days and meloxicam @ 0.2 mg/kg for 3 days through intramuscular route. Fly repellent spray was used for 5 days. Sutures were removed after 12 days and both animals were recovered without any complications.

Discussion
Atresia ani is a congenital disorder characterized by absence of anal opening. It is inherited in swine and lambs and breeding of the affected animals is questionable [6]. Animal will be presented after birth as absence of anus is much evident to the owner. However, in females it usually associated with rectovaginal fistula formation [5] and animal will be presented one or two months after birth. Sometimes atresia ani can be associated with absence of tail and it was reported in buffalo calf [7]. The prevalence is more in males than females in one study [8].

In other study on congenital abnormalities in Awassi fat-tailed lambs revealed that prevalence of atresia ani was about 1.3% [2].

Diagnosis of type of atresia ani is based on history, physical examination, radiography and ultrasonography. Lateral radiograph of caudal abdomen is useful to locate gas filled rectum [4]. However, in present case the atresia ani type was determined by presence of imperforate anus, absence of bulge at anal region upon abdominal pressing and presence of blind rectal end more than 1.5 cm from imperforate anus during surgery. In case of type IV, multiple intestinal locations will show atresia [4]. In that case animal will not defecate even after surgical correction at anal opening. In present cases, both animals showed normal defecation postoperatively. Type II and IV atresia ani cases were reported [4, 9].

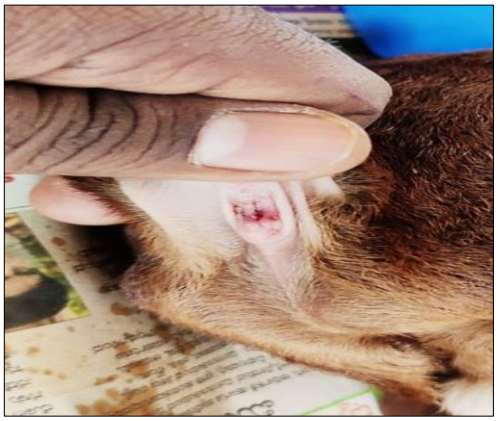

Fig 1: Imperforate anus in one day old lamb

Fig 2: Blind rectal end was retracted by using artery forceps

Fig 3: Reconstructed anal opening in lamb

Fig 4: Reconstructed anal opening in kid

Surgical treatment should not involve stab incision as in later stages it will leads to stricture formation followed by obstruction. Intraoperative difficulty in present cases was multiple attempts in retrieving the blind end of rectal pouch. Common post-operative complication includes fecal incontinence and this is associated with lack of anal sphincter [6]. However, in present cases the fecal incontinence was not observed after one week of surgery. Prognosis is favorable if the rectal blind end is not too away from imperforate anus. In conclusion, the type III atresia ani cases can be diagnosed with presence of blind rectal pouch cranially from perineal area and it can be successfully treated with reconstruction of anal opening.

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