

SURGICAL CORRECTION OF ATRESIA ANI WITH RECTOVAGINAL FISTULA IN LAMBS - A REVIEW OF FIVE CASES

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ABSTRACT

A total of five lambs, 6-8 months old were presented with the history of faeces voiding through vulva and absence of anal opening since birth. Clinical examination revealed a fistulous tract connecting dorsal vaginal wall and rectum. Animal passing small quantity of dung with straining frequently due to small opening. Cases were tentatively diagnosed as congenital rectovaginal fistula with atresia ani. Surgical correction was attempted. All the animals recovered without any complications.

Keywords: Rectovaginal fistula, Atresia ani, Sheep, Reconstructive surgery

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INTRODUCTION

Congenital rectovaginal fistula is distinguished by urine and faeces voided through vulva and there is no separation of vaginal wall and rectal wall. The incidence of congenital anomaly of rectum and anus is more common in all species of animals and recorded about 4.3% (Oconnor, 1998). Rectovaginal fistula associated with atresia ani reported in calves (Mahesh *et al.*, 2014), lambs (Mana *et al.*, 2019) and piglets (Monsang *et al.*, 2014). Congenital

anomaly of gastrointestinal system present at birth might be due to autosomal recessive gene (Bademkiren *et al.*, 2009). Commonly rectovaginal fistula is associated with type III atresia ani where the rectum is completed as blind pouch before the anal opening (Rahal *et al.*, 2007). Atresia ani is improper separation of anorectal fold to cloaca or failure of fetal anal membrane that divide the anus and rectum during fetal development. Affected animals show clinical signs immediately after birth whereas in some cases diagnosis was made at later stage. Cases are diagnosed easily based on the history, clinical signs and physical examination but in some cases plain and contrast radiography is essential to determine the position of the rectovaginal fistula (Wykes *et al.*, 2003). This paper reports the successful reconstructive surgical correction of rectovaginal fistula and atresia ani in lambs.

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MATERIALS AND METHODS

Five lambs aged 6-8 months were reported with history of absence of anal opening, faeces and urine voided through vulva (Fig.1). Owner not noticed at young age since faeces was voided through vulva. All the animals were clinically normal and physical examination revealed no anal opening and faeces and urine passing through vulva. Per vaginal examination revealed 1 cm long opening present at the dorsal wall of vagina which was 1 cm away from the external genitalia. Contrast radiography was done to assess the position of fistulous tract which connecting the rectum and vagina. Right lateral contrast radiograph was obtained at 70 kvp and 6 mAs (Milliampere second) by use of digital X ray unit. For contrast radiograph 30 ml of barium sulphate was injected through infant feeding tube passed through vulval opening and deposited in rectum (Fig. 2). There was no protrusion at the anal region while pressing the abdomen suggested that type III atresia ani and surgical correction of defect was warranted.

Animals were placed on the lateral recumbency and surgical area was prepared aseptically. A circular incision was made at the anal region after lumbo sacral spinal anesthesia using 1 ml of 2% lignocaine hydrochloride. Subcutaneous tissue and muscles were separated bluntly. Rectal mucosa was identified and pulled it to the anal region and sutured at the 2'o clock position with outer skin using silk no 1 with interrupted suture. Ventral portion of rectal mucosa and fistulas tract was dragged up

to the outer wall of anal region and sutured with interrupted suture pattern using no 1 silk (Fig. 3). The rectal mucosa was apposed to the perineal skin region by a simple interrupted suture pattern that covered at 2, 4, 6, 8 and 10'o clock positions using silk no 1. Gamma benzene hexachloride and cetrimide cream ointment (Lorexane, Virbac) were applied on the surgical wound immediately after surgery. Postoperative antibiotic Enrofloxacin 5 mg/kg intramuscular and analgesic meloxicam 0.5 mg/kg were administered intramuscularly once during surgery and enrofloxacin was administered for one week postoperatively. The lambs were found to urinate and defecate normally the day after surgery. The surgical wound was dressed with povidone iodine routinely and Lorexane (Virbac) ointment applied over the wound area. The sutures were removed on 10th postoperative day. The surgical wound healed uneventfully, the rectovaginal fistula closed completely and the animals grow to become normal adult without complication.

RESULTS AND DISCUSSION

Atresia ani is congenital abnormality developed during embryonic period and have been associated with autosomal recessive gene, teratogen, plant toxins and some viruses are considered as complicating factors (Loynachan *et al.*, 2006). Congenital abnormality like absence of anus and rectum was noticed in early stage of life in farm animals. Early diagnosis and prompt treatment required to reduce the unwanted complications. In the present case atresia ani was not noticed by the owner at early life and it become rectovaginal fistula in

later case due to constant faecal pressure at the distal rectal wall caused the abnormal opening between rectum and vaginal wall (Norrish and Rennie, 1968). Animal voided dung through vulva, straining and tenesmus were the major clinical signs in the present case as reported by another author (Monsang *et al.*, 2020). Based on the clinical signs and physical examination the condition can be easily diagnosed however plain and contrast radiographic examination was important to identify the position of the fistula and differentiate various type of atresia ani from Type I to IV (Rahal *et al.*, 2007). Radiography was also important to determine duration of faecal retention and colonic dilatation may be used as prognostic indicator. Contrast radiography revealed that contrast material was passing to vagina through ventral rectal fistulous opening and further confirmed that type III atresia ani (Fig. 2). Atresia

ani with rectovaginal fistulas commonly corrected by surgical methods in that fistula is isolated and transected (via horizontal incision between the anus and vulva); in the other, rectum is transected cranial to the fistulous opening. These approaches were used by various authors (Devi prasad *et al.*, 2016; Ryu *et al.*, 2018). Atresia ani was reconstructed and ventral floor of rectum was pulled and sutured on the outside anal skin so there was no separate suturing done on the fistular tract in the present case. The fistulous tract was 1 cm away from the anal opening in all the cases so same method of surgical procedure was followed. This method was easy and less traumatic. In summary congenital rectovaginal fistulas can be surgically treated but these animals should not be used for breeding purpose to avoid further transmission.

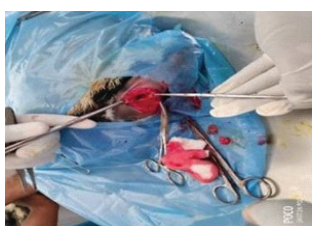


Fig.1. Rectovaginal fistula in lambs



Red arrow shows the fistulous opening connecting the vaginal wall, which is 1 cm away from the anal region

Fig.2. Contrast radiography of rectal vaginal fistula



A. Rectal Cul-de-sac identified after incising rectal mucosa



B. Rectal fistulous opening pulled back to anal region and sutured with the skin



C. Post operatively dung voided through rectum

Fig.3. Surgical correction of rectal vaginal fistula

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