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Case Report

Surgical Management of Type II Atresia Ani (*Imperforate Anus*) in a Madras Red Male Lamb: A Case Report

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Abstract

A one-day old madras red male lamb was presented with complaints of depression, anorexic, abdominal straining and lack of defecation. On examination, it was found that the lamb had severe distension of abdomen appeared very dull with sunken eyes and the anal opening was absent. A tentative diagnosis of Type II atresia ani was made and the animal was sedated with 0.1 mg/kg of xylazine administered intramuscularly and under local infiltration with 2% lignocaine. A circular incision was made at the anal scar area and the blind rectum was retracted caudally. The retracted area were fixed to the perineal skin and four stay sutures were placed dorsally, ventrally and bilaterally using 2-0 non-absorbable suture material. Then, the blind end of the rectum was incised to facilitate expulsion of meconium. The animal was maintained under standard postoperative care and had an uneventful recovery.

Keywords: Four Stay Suture, Madras Red Sheep, Type II Atresia ani

Introduction

Atresia ani is a congenital embryological anomaly in which the hindgut fails to fully communicate with the perineum and thus absence of anal opening. It is fatal unless surgical correction is carried out to provide anal opening. Congenital defects may be caused by genetic or environmental factors, or a combination of both.

Susan (1998) attributed the incidence of Atresia ani (Anal atresia) to faulty lying of chromatin materials during embryonic development of the foetus or the abnormal retention of anal portion of the cloaca membrane. McGeady *et al*. (2006) described the term atresia as congenital occlusion of the lumen of the digestive tract. Further, authors stated that, the 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. It has been classified by Rahal *et al*. (2007) that, 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. Norrish and Rennie (1968) opined that, 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.

Case History and Clinical Examination

The present case of one day old male Madras red lamb (*Ovis aries)* of a farmer registered with the Indian Council of Agricultural Research funded "Network Project on Sheep Improvement-Madras Red Field Unit" in a village named Venpakkam of Kancheepuram district in Tamil Nadu. The owner complained that, the lamb has been dull, anorexic, frequent straining and did not see the lamb passing meconium or feces. On clinical examination, it appeared very dull with sunken eyes, weighing only 2.15 kg and had severe distension of abdomen, and the anal opening was absent (Fig. 1). There was a pronounced protrusion of the perineal region by deep palpation of abdomen besides signs of tenesmus and abdominal pain. The case was tentatively diagnosed as Type II atresia ani and planned for surgical intervention to provide relief and correction to the animal.

Results

Surgical Procedure

The perineal area of the lamb was shaved, cleaned and scrubbed with soap and water and restrained on sternal recumbency on a steel table. The lamb was sedated with 0.1 mg/kg of xylazine administered intramuscularly and local infiltration anaesthesia was performed using injection 2%lignocaine hydrochloride solution at the proposed site of incision. A circular incision was made upon the bulge of the anus and the circular piece of incised skin was removed to create an anal opening. The blind ended rectum was externalized after blunt dissection of the perineal canal. Then, the blind end of the rectum was pulled back caudally, and fixed to the perineal skin, four stay sutures were placed dorsally, ventrally and bilaterally between rectal mucosa and skin using 2-0 non-absorbable suture material (silk). Furthermore, a series of simple interrupted sutures was also placed all around the rectum using 2-0 non-absorbable suture material holding the entire layer of rectum with the perineal skin to ensure prompt contact (Fig. 2). Then, the blind end of the rectum was incised to facilitate the expulsion of the intestinal content. The animal passed 200 grams of meconium. After the expulsion of the meconium, the lamb was weighing 1.95 kg.

Postoperative Care

Post-operatively, the surgical wound was cleaned and dressed regularly with povidone iodine and applied Himax Ointment (Ayurvedic Product of Indian Herbs Specialties Private Limited, Noida, Uttar Pradesh, India) and Topicure Spray (Natural Remedies, Bengaluru, Karnataka, India) till 9 days and Injection Cefotaxime was given intravenously, Injections Meloxicam@ 0.5 ml and Chlorpheniramine maleate@ 0.5 ml were given intra muscularly on the first day immediately after surgery and Cefpodoxime dry syrup@ 50 mg twice daily from 2nd day onwards for 4 days. The suture was removed 15th day of postoperative. As mentioned in the surgical procedure, anal reconstruction was performed satisfactorily (Fig. 3).

Figure 1: Absence of anal opening

Figure 2: Applying stay sutures after making the circular incision

Figure 3: Reconstructed anus

The lamb's defecation improved slowly and exhibited remarkable improvement in defecation and general behavior within 3rd day of surgery and uneventful recovery within 15th post-operative day. In overall, the animal health improved and the body weight on the 15th post-operative day was 2.54 kg.

Discussion

Based on the signs and clinical examination, we tentatively diagnosed it as atresia ani. Further to confirm, exploratory colostomy was performed to confirm the diagnosis. Anal reconstruction was performed satisfactorily and the lamb started showing improvement signs such as defecation, exhibition of general behavior within 3rd day of Surgery and apparently normal within 15th post-operative day. Similar to this case of atresia ani with or without involving other parts and uneventful recovery were after surgical intervention have also been reported in lambs by Soundararajan and Iyue (2006); Daradka (2013) and Mallesh and Sampath (2017). Usually, the affected lambs initially will stand and suckle normally after birth. And, afterwards, the time for onset of clinical signs of this condition may vary from 1 to 3 days. While taking the case history from the owner, the foremost observation was that, the owner did not see the lamb passing meconium or feces. In this case, it is learnt that, it was almost one day and the meconium was not expelled. Suthar *et al*. (2010) affirmed that, surgical intervention is the main technique of choice for the management of atresia ani, which was successfully executed in this present case. The success in these surgical procedures shall be attributed to early report of the case, prompt diagnosis, surgeon's expertise, strict aseptic procedures and standard post-operative management.

Conclusion

It is concluded that surgical reconstruction is an effective treatment for atresia ani as the intervention is simple, safe, economical and helps to improve the overall well-being of the animals. However, the farmers are advised not to put such animals for breeding purposes so as to reduce the incidence of atresia ani in the flock.

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Conflict of Interests

There is no conflict of interest.

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