Congenital atresia of vulva and anus in a lamb: A case report

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Abstract

Structural abnormalities present at birth are obviously congenital anomalies, may be genetic or non-genetic in origin involving single organ or part of body. Atresia ani may occur either alone or associated with other defects like atresia recti, rectovaginal fistula, vaginourethral agenesis. Vulvar atresia may occur separately or simultaneously with vaginal atresia. Atresia of vulva with atresia ani is rare occurrence in sheep. This case describes atresia of vulva and anus and its successful surgical treatment in a lamb. A new born lamb was presented at referral veterinary polyclinic, Indian Veterinary Research Institute, Izatnagar, Bareilly, U.P with a history of straining, arched back and neither voided meconium nor urine since birth. However, it suckled milk twice. Compression of the abdomen revealed bulging of the perineum due to the absence of vulvar and anal orifices. Both vulva and anus were surgically corrected under epidural anaesthesia with post-operative care. After creation of orifices of anus and vulva, lamb had normal defecation and urination. Atresia of vulva with concurrent atresia of ani is described in the buffalo. It may occur due to chromosomal abnormalities or as retention of anal portion in the cloacal membrane and failure of rupture of urogenital membrane.

Keywords: Atrsia ani; Vulvar atresia; Congenital anomalies; Lamb; Retention of urine

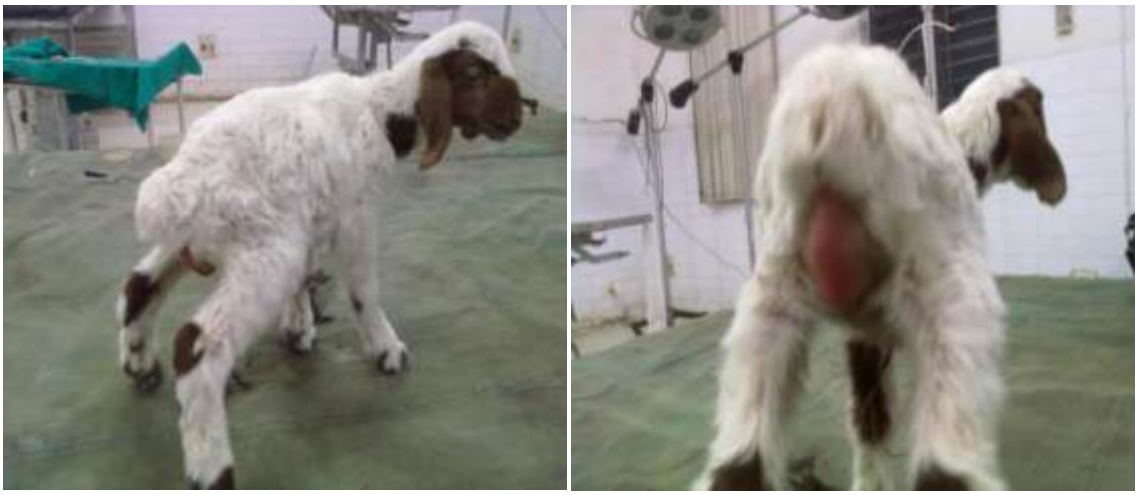
Introduction

Abnormalities of structure and function, which are present at birth, are obviously congenital deformities (Badawy, 2011). Congenital defects, abnormalities of structure or function present at birth, may be caused by genetic or environmental factors, or a combination of both (Shukla *et al*., 2007); in many cases, the causes are unknown. Congenital malformation sometimes leads to perinatal mortality, and it may also decrease maternal productivity and reduce the value of the defective neonates. Before the period of pre-attachment, the zygote or embryo is resistant to agents that can cause congenital malformations (teratogens) but is susceptible to genetic mutations. During the embryonic period, the embryo is highly susceptible to teratogens, but this decreases with embryonic age, as the critical periods for the formation of various organs are passed.

Atresia ani develops when a dorsal part of the cloacal plate fails to form and is the most common intestinal defect in the sheep that is believed to be due to an autosomal recessive gene. Atresia ani has been reported to be a heritable condition in the pigs and calves (Kilic and Sarierler, 2004). Vulvar atresia is the absence of normal opening of vagina with fused outer labia covering over normal canal. Atresia ani may be found solely or sometimes observed along with other defects like vulvar atresia. The presence of two conditions together is not reported in the lamb. The present case report describes the concurrent occurrence of atresia of vulva and atresia ani and its surgical management.

Case history and observation

A new born Dumba (fat tailed) lamb (*Ovis aries)* of 4.5 kg was presented at referral veterinary polyclinic, Indian Veterinary Research Institute, Izatnagar, Bareilly, U.P with a history of neither passing meconium nor urine since birth but, suckled milk twice. On general inspection, the lamb was straining (Fig. 1A) with arched back with a pouch like bulging on the perineal region that extended below the ischial arch (Fig. 1B). Close examination of the perineum revealed absence of anal opening and fusion of vulvar labia. Abdominal compression aggravated the bulging and straining. Based on the findings, a diagnosis of atresia of vulva with anus was made.



(A) **(B)**

Fig 1. (A) Lamb in straining posture and (B) Pouch like bulging on the perineal area

Treatment and Discussion

The perineum of lamb was prepared aseptically for surgery and epidural anaesthesia was administered using 2% lignocaine hydrochloride. A circular incision was given at the bulge formed on pressing the abdomen and circular incised piece of skin removed. Rectal *cul-de-sac* was freed from its surrounding attachment with blunt dissection and brought to the level of incision to fix it with the skin. Rectal wall was sutured with skin by simple interrupted suture using braided silk. A nick incision was given at the middle of the fused vulvar lips to create an orifice. Reconstructed vulvar lips were fixed to the underlying connective tissue using interrupted silk suture (No. 1). The recto-vestibular fistula was repaired in the standard procedure. The animal started urinating immediately after surgery and passed meconium. Post-operative care was given for 5 days. The lamb showed normal defecation, urination and recovered uneventfully.

The congenital deformities may be lethal, semi-lethal or compatible with life causing aesthetic defects or having no effect on the animals (Badawy, 2011). Tyagi and Singh (1999) attributed the atresia ani or atresia recti to chromosomal abnormalities. Lakshmipathi *et al.* (1983) reported a case of atresia ani with vulvar

agenesis in a lamb. Sreenu *et al.* (1998) reported a case of atresia ani with recto-vestibular fistula and vulvar agenesis in a non-descript buffalo calf.

During embryonic development, the urorectal septum grows caudally and separates the cloaca into dorsal and ventral chambers with dorsal portion forming anal folds while the ventral one forming urogenital folds. Failure of the differentiation of cloacal folds into anal and urogenital folds results in the malformation of the anus and vagina (Noden and deLahunta, 1985). Surgical intervention is the best choice for the treatment in such congenital abnormalities. This paper reports rare type of congenital anomalies in a newborn lamb and its surgical correction.

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