

# Congenital *atresia ani* associated with recto-vaginal fistula in Ongole calf

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## Abstract

A female cow calf aged about 5 months was presented with congenital atresia ani and recto vaginal fistula along with the signs of cystitis. Under epidural anaesthesia, the anal orifice was reconstructed and the fistulous tract was closed successfully. The animal had uneventful recovery.

**Key words:** Ongole; calf; atresia-ani; recto-vaginal fistula

## Introduction

Congenital abnormalities of gastro intestinal tract in animals are not uncommon with an incidence of about 4.3% (Leipold et al., 1972). Atresia ani is one such developmental anomaly due to autosomal recessive gene (Bademkiran et al., 2009) characterized by absence of anus and may be associated with recto-vaginal fistula, recto-cystic fistula, vagino urethral agenesis, taillessness, hypospadias (Singh et al., 1993) and diphallus (Loynachan et al., 2006). Recto – vaginal fistula or anus vaginalis is an inherited lethal abnormality in which, there is an abnormal passage between rectum and vagina, and faeces are voided through the latter due to imperforate anus (Oehme and Prier, 1974). Atresia ani associated with recto-vaginal fistula was reported in many species, viz. calves (Shakoor et al., 2012, Mahesh et al., 2014), lambs (Kamalakar et al., 2014), dogs (Rahal et al., 2007), Pigs (Monsanget al., 2014) etc. This condition needs early correction to avoid infections of urogenital system like pneumovagina, cystitis, vaginitis, cervicitis, endometritis, etc. (Farhoodi et al., 1987). In the present case, congenital atresia ani associated with recto – vaginal fistula in an Ongole calf and its successful surgical management is reported.

## Case history and clinical examination

A 5 month old Ongole cow calf was presented to the Department of Veterinary Surgery and Radiology, College of Veterinary Science, Sri Venkateswara Veterinary University, Proddatur (A.P.) with a history of absence of anal opening and abnormal defecation through vagina (Fig 1) since birth. As the condition progressed, the calf showed symptoms of colic, tenesmus and turbidity in urine.



**Fig 1.** Atresia ani and recto-vaginal fistula in Ongole Calf with passage of dung through urogenital route

On clinical examination, the calf appeared dull, with arched back showing symptoms of oliguria and dysuria indicative of cystitis. Exploration through vagina revealed presence of abnormal opening between rectum and vagina. On applying pressure on abdomen bulging was noticed at the sub ischial region. Based on these observations the condition was diagnosed as congenital atresia ani associated with recto – vaginal fistula and reconstructive surgery was opted to correct the condition.

## Treatment

Pre operatively, the owner was advised to give laxatives to the animal for 2 days and to keep the animal under fasting for 8 hrs prior to Surgery. Fluid therapy was initiated with 500 ml DNS and pre emptive analgesia was

achieved by Ketoprofen @ 3mg/ kg BW. The rectum and vagina were evacuated and area was prepared aseptically. The surgery was carried out under caudal epidural block using 2% lignocaine hydrochloride and the animal was controlled in right lateral recumbency. A circular incision was made on the skin at the bulging area at the sub ischial region and the rectal cul de sac was identified by exploration (Fig 2). The rectum was opened and the contents were cleared. The fistulous orifice, which was about 4cm in diameter and 2” away from anus, was reached through anal route and was closed in simple interrupted pattern with chromic catgut no.1. The area was irrigated with Normal Saline and rectal mucosa was sutured to the skin in simple interrupted pattern using black braided silk. A sterile 20ml syringe barrel was cut at non winged end and two holes were made at the centre of each wing. The non winged end was lubricated with liquid paraffin and inserted into rectum to maintain patency. The wings of barrel were secured to the perineal skin by passing nylon suture material from skin through hole in that side wing and tied to outside using simple interrupted sutures (Fig 3).



**Fig 2:** Surgical procedure with finger guided rectal cul de sac identification.



**Fig 3** showing placing of cut barrel of 20 ml syringe in rectum, whose wings were sutured to perineal skin.

Post operatively 500 ml Ringer Lactate, 500mg ceftriaxone I/V, 3ml B complex and 3ml chlorpheniramine maleate I/M were administered to the calf for next 4 days. The owner was advised to continue laxatives for one week and offer 100g Raagi malt for a period of one month. Sutures, along with the cut barrel inserted in rectum were removed on 10<sup>th</sup> post operative day and no complications were reported.

## Discussion

Cattle embryos are more susceptible for chromosomal aberrations between 14 – 42 days age leading to mutations (Bademkiran et al., 2009). Atresia ani is one of such congenital and hereditary anomaly at embryonic period resultant of autosomal recessive gene (Loynachan et al., 2006). Though other reasons like environmental teratogens, plant toxins (Bademkiran, 2009) and viral infections (Loynachan et al., 2006) were stated as causative factor of atresia ani in calves, in the present case the reason could not be ascertained and unspecific as reported by Johnson et al. (1980). The increased faecal pressure causes an abnormal opening between rectal wall and vagina in females forming recto-vaginal fistula and thus permitting defecation via vulva (Norrish and Rennie, 1968). Atresia ani is frequently associated with recto-vaginal fistula between dorsal wall of vagina and ventral wall of terminal rectum. Though this condition was persisting in calf since birth, ano rectal fistula was not formed, as the farmer was clearing dung in the cul de sac of rectum regularly. The cystitic signs might be attributed to the ascending infection from the faeces in vagina. This calf was suffering from type II atresia ani in which rectal cul de sac formed cranial to imperforate anus (Kilic and Sarierler, 2004). Passing of dung through unnatural route was not apparently causing much discomfort to the animal as was reported by Purohit et al., (2006) which may be due to larger fistulous orifice which could accommodate 3 fingers against size of one finger as reported by Ali and Youssef (2007).

Epidural anaesthesia could achieve sufficient desensitization to complete Surgery as followed by Badawy (2011). However, reports indicated use of ketamine + diazepam (Monsanget al., 2014), local infiltration of lignocaine + adrenaline (Shakooret al., 2012), lignocaine only (Sutharet al., 2010). For correction of recto – vaginal fistula, Fossel's operation was also indicated (Venugopalan, 2009) which was not followed here because the fistulous orifice was in reach. Surgical correction was in a manner similar to that of Shakoor et al. (2012). Fistulous opening was closed in simple interrupted pattern with chromic catgut, but Rahal et al. (2007) reported use of plastic adhesives. Closure of this orifice required including much of wall of rectum and vagina that led to mild stenosis of both lumens, which may not pose serious implication as the calf grows older. Cut barrel of 20ml syringe placed inside the rectum prevented soiling of sutures, reduced pressure on sutures at fistulous orifice and at anal sphincter thus augmented healing. Continuation of laxatives post operatively for one week aided for free defecation that avoided pressure on sutures of fistula. Offering Raagi malt which is rich in calcium and iron had improved the general body condition of the calf that indirectly aided in rapid wound healing.

It could be concluded that reconstructive surgery is the only treatment for correcting atresia ani and recto-vaginal fistula. Moreover breeding of such surgically treated animals should be discouraged.

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