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## CASE REPORT

## Surgical repair of a rare case of Congenital Rectovaginal fistula and Atresia ani in a crossbred piglet

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### Abstract:

A case of recto-vaginal fistula along with atresia ani reportedly unnoticed for the past few months was observed in a three month old crossbred female piglet. On clinical examination, the abdomen was distended and faeces was found coming out together along with urine through common genital opening along with severe degree of straining when the piglet attempted to void faeces. Diagnosis was done based on history, clinical signs and physical examinations. Emergency surgery was initiated following the next day of presentation under ketamine-diazepam anaesthesia. Following proper postoperative care and treatments, the piglet made an uneventful recovery without recurrence of the defects upto 1 and half months of observation.

**Key Words:** Rectovaginal fistula, atresia ani, piglet, ketamine-diazepam

### Introduction

Developmental malformations occur relatively frequently in swine, especially in comparison to other domestic species. The defects may be lethal, semi-lethal, or compatible with life, causing aesthetic defects or having no effect on the animal. Most common congenital defects reported in swine consist of umbilical and inguinal hernias, cryptorchism, intersexes, and anal atresia (Priester et al. 1970, Mulley and Edwards, 1984, Edwards and Mulley, 1999) and very rarely rectovaginal fistula with imperforate anus. Congenital defects, abnormalities of structure or function present at birth, may be caused by genetic or environmental factors, or a combination of both; in many cases, the causes are unknown.

The deformities of external genital organs are of special premonition because of their repercussion on the future generations. Congenital anomaly such as atresia ani has been reported in all domestic animals. It is one of the quite frequently found defects of intestine among sheep because of recessive gene (Suthar et al. 2010). Recto-vaginal fistula is another congenital problem characterized by the communication between the dorsal wall of the vagina and the ventral portion of the rectum, so that the vulva functions as a common opening to the urogenital and gastrointestinal tracts. Usually, the abnormality is associated with type II atresia ani, in which the rectum ends as a blind pouch immediately cranial to the imperforated anus. The co-existence of these conditions in young piglets are rare and has not been reported so far in literature as far as our knowledge is concerned.

Clinical signs include passage of feces through the vulva, vulvar irritation, tenesmus, cystitis, and megacolon, among many others. In cows, recto-vaginal defects may cause pneumovagina resulting from stretched, ruptured, deformed and horizontal vulva which may introduce fecal material, urine and air into the vagina leading to vaginitis, cervicitis, endometritis, failure of conception and repeated breeding (Cox, 1987; Frank, 1981; Ricketts, 1991; Roberts, 1986). Diagnosis is based on history, clinical signs, and physical examination. Radiographic examination with contrast medium infused through the vagina or fistula may be useful for determining the position of the fistula and terminal rectum.

### Case History and Observations

Three months old crossbred female piglet was brought to the Referral Polyclinics, Indian Veterinary Research Institute, Bareilly, Izatnagar (UP), with the complaint of inability to void faces normally along with difficulty in normal urination since her birth. On careful visual inspection, normal anal opening was absent and faeces mixed

with urine was found coming out through common genital opening (Fig.1). The abdomen was distended with presence of severe degree of straining when the piglet made its attempt to evacuate the undigested materials. The piglet was mildly dehydrated with less appetite. On the basis of meticulous observations and explorations, the case was diagnosed as recto-vaginal fistula cum atresia ani. Keeping in view, the serious nature of the condition, emergency surgery was planned for next day under ketamine-diazepam anesthesia to repair the congenital defects to relieve the animal from discomfort and provide ease for normal defecation and urination.



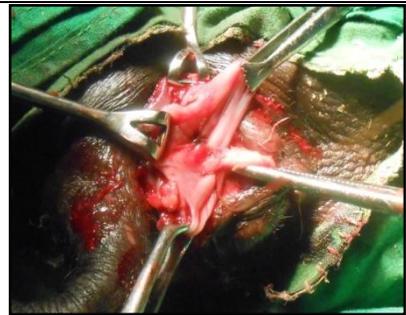
**Fig.1:** Atresia ani and rectovaginal fistula; faeces seen coming out through genital opening.



**Fig.2:** Criss-cross incision at the point of anal opening.



**Fig.3:** Identification of fistular opening between rectum and vagina (Note: forcep)



**Fig.4:** Closing the fistula by chromic catgut #1 in double layer simple continuous pattern.



**Fig.5:** Fixing of rectal mucosa to the skin at four distinct points for easy evacuation.



**Fig.6:** Surgical recovery of the piglet after surgical interventions.

## Treatment and Discussions

Surgical plane of anesthesia was achieved after administration of Diazepam @2 mg/kg BW, IV, as preanaesthetic, followed by Ketamine Hcl @ 5 mg/kg bw, IV, administered 10 minutes after diazepam administration (Hall et al., 2001; Thurmon et al., 1996). Under aseptic condition, a criss-cross incision was made over the skin and subcutaneous tissues at the approximate site of anus (Fig.2). Carefully, a blunt dissection was carried in forward direction to identify the blind end of rectum. After proper identification, the rectal culde sac was grasped caudally with the help of tissue forceps to give a small incision for complete evacuation of rectal passage. The rectal mucosa was fixed to the skin at four distinct points with the help of black braided silk (No.1) in simple interrupted suture pattern (Fig.5). Similarly, the fistula communicating the rectum and vagina was identified (Fig.3) and closed in double layer simple continuous pattern with absorbable chromic catgut #1 (Fig.4). The animal recovered from anesthesia without any complications (Fig.6). Postoperatively, a course of antibiotic (Inj. Cefotaxime, 250 mg) and NSAID (Inj. Meloxicam @ 0.2mg/kg BW, IM) was constituted for 5 and 3 days, respectively. Additionally, the newly constructed anus was recommended was regular antiseptic dressings and lubrications. The silk sutures were removed on 12<sup>th</sup> day postoperative. The animal made an uneventful recovery without any complications and there was no report of recurrence even after 1 and half months of observation.

Atresia ani is a commonly found deformity owing to genetic disorders (Ghanem et al. 2005). Some authors (Newman et al. 1999; Johnson et al. 1980; Prieur and Dargatz, 1984) state that failure of the anal membrane to perforate, failure of the bowel to canalize, failure of the proctodeum to invaginate, and interruption of the blood supply to the anus or to the intestine during embryonic development can produce atresia ani or intestinal atresia, respectively. Atresia ani may develop when the dorsal part of the cloacal plate fails to form, and in females this is occasionally accompanied by a recto vaginal fistula. The resulting fistula connects the dorsal wall of the vagina with the ventral portion of the terminal rectum and provides a path for defecation. A genetic basis has been documented for some cases of atresia ani, but the specific cause in sporadic cases in domestic species and humans is not always known (Newman et al. 1999; Johnson et al.1980). Atresia ani has been reported to be a heritable condition in pigs and calves (Kilic et al. 2004). Similarly, a report of different anomalies (Recto-vaginal fistula, imperforate anus and vulvular non-formation) in a buffalo calf has been reported (Aslan et al. 2009).

Recto-vaginal fistula and atresia ani are treated frequently by two surgical techniques. In one method, the defects of rectum and vulvular lips are closed individually after isolating and transecting the fistula (Mahlar and Williams, 2005). Anal opening is reconstructed later on. In the second method, trisection of rectum is done just anterior to fistula, the defective rectal part is excised followed by the suturing of last recta part with the skin margins of opening carved already at possible anal site. Closing the rectovaginal fistula by numerous purse-string sutures along its length and the use of plastic adhesive in the treatment of rectovaginal fistula induced experimentally have also been reported (Rahal et al. 2007; Farhoodi et al. 2000; Mahlar and Williams, 2005). However, in our present case, the defects were rectified individually as reported by Rahal *et al.* (2007).

Since the history, clinical signs and physical examination findings were sufficient to establish the diagnosis in our case; radiographic studies were not considered necessary. However, radiographs are considered important to determine the position of the fistula and to differentiate that beforehand the 4 types of congenital atresia ani (Rahal et al. 2007). Any flaw or defect or aberration in the process of differentiation at the embryological level (cloacal folds into anal and urogenital folds) may lead to congenital defect in the formation of various organs like anus, vagina and urethra etc (Bademkiran et al. 2009).

In conclusion, the causes of these congenital defects as genetical or environmental have not been determined yet. However, prompt surgical intervention at appropriate time is the only possible solution to correct such undesirable congenital defects. This may proved beneficial in saving the life of the animal to large extent and also improve the profitability of the owners.

## References

- Aslan L; Karasu A; Genccelep M; Bakir B; Alkan I (2009). Evaluation of cases with congenital anorectal anomalies in ruminants. *YYU Vet Fak Der*, 20: 31-36.
- Bademkiran S; Icen H; Kurt D (2009). Congenital recto vaginal fistula with atresia ani in a heifer: A Case Report. *YYU Vet Fak Der*, 20: 61-64.
- Cox J.E. (Ed.) (1987). *Surgery of the Reproductive System in Large Animal*. Liverpool University Press, Liverpool, pp. 86–190.

- Edwards M.J; Mulley R.C (1999): Genetic, developmental, and neoplastic diseases. In: Diseases of swine. 8th edn. Eds B.E. Straw, S. D´Allaire, W.L. Mengeling, D.J. Taylor. Oxford, Blackwell Science. pp. 695–712.
- Farhoodi M; Nowrouzian I; Hovareshti P; Bolourchi M; Nadalian M.G (2000). Factors Associated with Rectovaginal Injuries in Holstein Dairy Cows in a Herd in Tehran, Iran. *Preventive Veterinary Medicine*, 46, 143–148.
- Frank E.R. (Ed.) (1981). *Veterinary Surgery*. Publishers and Distributors, India, pp.287–311
- Ghanem M.E; Yoshida C; Nishibori M; Nakao T; Yamashiro H (2005). A Case of Freemartin with Atresia Recti and Ani in Japanese Black Calf. *Anim Reprod Sci*, 85, 193–199.
- Hall L.W; Clarke, K.W; Trim, C.M. (Eds). 2001. *Veterinary Anaesthesia*, 10th edn. Philadelphia, W. B. Saunders.
- Johnson E.H; Nyack B; Aston M (1980). Atresia ani and rectovaginal fistula in a goat. *Vet Med Small Anim Clin*, 75: 1833–1835
- Kilic N; Sarierler M (2004). Congenital intestinal atresia in calves: 61 Cases (1999–2003). *Revue Méd Vét*, 155 (7), 381-384.
- Mahlar S; Williams G (2005). Preservation of the fistula for reconstruction of the anal canal and the anus in atresia ani and rectovestibular fistula in 2 dogs. *Vet Surg*, 34, 148–152.
- Mulley R.C; Edwards M.J (1984): Prevalence of congenital abnormalities in pigs. *Aus. Vet. J.* 61, 116–120.
- Newman S.J; Bailey T.L; Jones J.C; DiGrassie W.A; Whittier W.D (1999). Multiple congenital anomalies in a calf. *J Vet Diagn Invest*, 11, 368–371.
- Priester W.A; Glass A.G; Waggoner N.S (1970): Congenital defects in domesticated animals: General considerations. *Am. J. Vet. Res.* 31, 1871–1879.
- Prieur D.J; Dargatz D.A (1984). Multiple visceral congenital anomalies in a calf. *Vet Pathol*, 21, 452–454.
- Rahal S.C; Vicente C.S; Mortari A.C; Mamprim M.J; Caporalli E.H.G (2007). Rectovaginal fistula with anal atresia in 5 dogs. *Can Vet J*, 48, 827–830.
- Ricketts S.W. (Ed.) (1991). *Caslicks Vulvoplasty for Correction of Pneumovagina in Mares*, *Equine Practice*. Bailliere Tindall, London, pp. 27–39.
- Roberts S.J (Ed.) (1986). *Veterinary Obstetrics and Genital Diseases (Theriogenology)*. Edwards Brothers, Woodstock, VT, p. 354, p. 359, pp. 553–556.
- Suthar D.N; Chaudhary S.R; Patel P.B; Mistry J.N; Patel J.B; Nerurkar S.S (2010). Surgical management of atresia ani in a cow calf. *Vet World*, 3: 380-381.
- Thurmon, J.C; Tranquilli, W.J; Benson, G.J. (Eds) 1996. *Lumb and Jones’ Veterinary Anaesthesia*, 3rd edn. Philadelphia, Lea & Febiger.