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Clinical Report

Atresia Ani Type II with Rectovaginal Fistula in a 6-Week-Old Kitten

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ABSTRACT

Atresia ani is a developmental defect within the cloacal region, resulting in anal canal closure and abnormal routing of feces. There are four types of atresia ani including congenital anal stenosis (Type I), imperforate anus alone (Type II), imperforate anus with more cranial termination of the rectum as a blind pouch (Type III), Lack of contact between the cranial rectum, and terminal rectum (Type IV). Type II atresia ani is mostly combined with a rectovaginal fistula between the dorsal wall of the vagina and the ventral portion of the rectum. A 6-week-old female Persian cat was presented with anorexia, depression, and voiding of feces through the vulva, diagnosed with Atresia ani type II associated with rectovaginal fistula which was confirmed by radiographic examination with contrast medium. Surgical correction was performed under general anesthesia. The cat was able to control defecation and start to gain weight and no long-term complications were observed.

Introduction

Atresia ani is an uncommon condition in dogs and cats[1]. Female cats are more likely affected than males[2]. Anorectum congenital malformations are the results of a failure in physiological embryologic differentiation of the cloacal region. Failure of the urorectal fold to separate the cloaca completely or unsuccessful anal membrane rupture in order to forming the anus results in atresia ani.[1,3]

Common clinical signs of atresia ani are defecating feces through the vulva, vulvar irritation, abdominal distension, cystitis, absence of anal orifice and megacolon.[2,4] Urinary tract infections are more frequent in the presence of rectovaginal fistula and cystitis associated with *E. coli* and *Proteus* species [5,6]. Diagnosis is based on history, clinical signs and physical examination. Radiographic examination with contrast medium is helpful to determinate the position of the fistula and terminal rectum.[2]

Four anatomic types of atresia ani have been reported in dogs and cats. Type I classification denotes anal stenosis without an imperforate anus.[7] In type II anomalies, external anal sphincter and anal sacs are usually developed normally while in type III anomalies agenesis of the external anal sphincter, anal sacs or tail

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are reported. .[1,4] Occasionally dogs and less frequently cats with type II and more uncommonly with type III atresia ani may be associated with rectovaginal fistula between the dorsal wall of the vagina and the ventral portion of the rectum[1,8] (Figure. 1). Animals with type III atresia ani associated with rectovaginal fistula are also reported as having an ectopic anus. Although, it is unclear if type IV atresia ani has ever been reported in dogs and cats.[1]

Surgical correction is considered the only treatment for atresia ani. Anatomical typing of atresia ani should be performed to help determining the type of surgical correction for each case. However, nonsurgical management may also be applied for type I cases.[1] Anoplasty is the most common procedure performed. The aim of surgery is to restore anorectal continuity, to preserve the external anal sphincter and restore colonic function, and to eliminate any rectovaginal or urethrorectal communication[1]. The perineal approach is used for all surgical corrections of atresia types I-III.[1] Surgical treatment should be prompt and performed before colonic atony or megacolon associated with chronic and prolonged distention or possible urinary tract infection ensues.[1,9] Animals with atresia ani type II and III that are unable to defecate if not treated surgically will die because of bowel stasis.[1]

Case Description

A six-week-old female Persian cat was presented to the veterinary clinic (Figure 1). The history included voiding of feces through the vulva. Anorexia, depression and presence of watery feces in vaginal canal were observed in clinical examination. Fecal accumulation at the end of rectum were observed in lateral abdominal radiography (Figure 2). The CBC showed a mild increased in WBC. The cat was diagnosed with Type II atresia ani and surgical correction was recommended.

Treatment and Outcome

Food was withheld for 8 hours and water was withheld for 2 hours. The cat was pre-medicated with combination of ketamine (5 mg/kg IM, Alfasan, Woerden, the Netherlands) and acepromazine (0.05 mg/kg, IM, Alfasan, Woerden, the Netherlands). The surgical procedure was performed under general anesthesia with ketamine (5 mg/kg, IV) and diazepam (0.03 mg/kg, IV, Caspian Tamin Pharmaceutical Co., Iran). Cefazolin (30 mg/kg, IV, Exir Pharmaceutical Co., Borujerd, Iran) used as prophylactic antibiotic.

The cat was placed in ventral recumbency with the tail held out of the way, the perineum was clipped, prepared, and draped for surgery (Figure 3), and the

Figure 1. Atresia ani type II along with rectovaginal fistula.

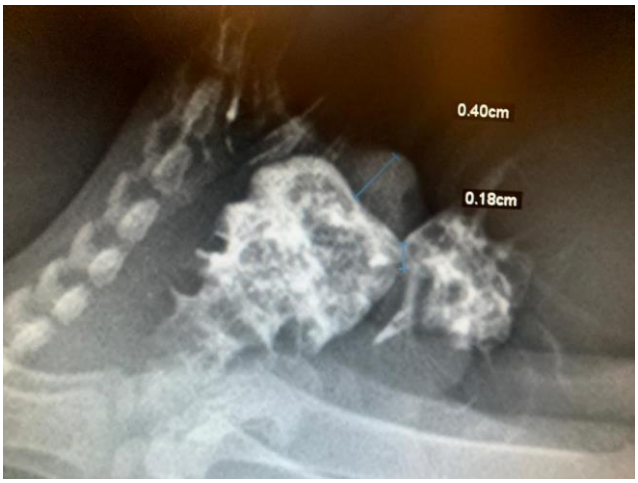

Figure 2. Lateral radiography has taken after oral administration of contrast medium, showing fecal material in the colon, terminal rectum and over the vagina level. The distance between the blind rectal pouch and the perineal skin is 0.40 cm and the fistulous opening is 0.18 cm.

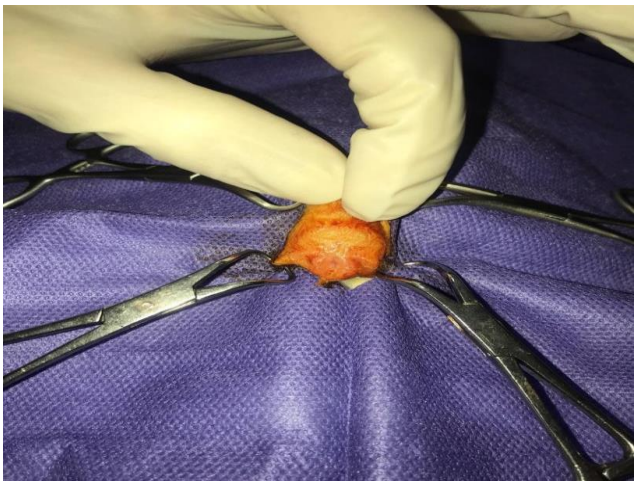

Figure 3. Dimple of anus associated with type II atresia ani.

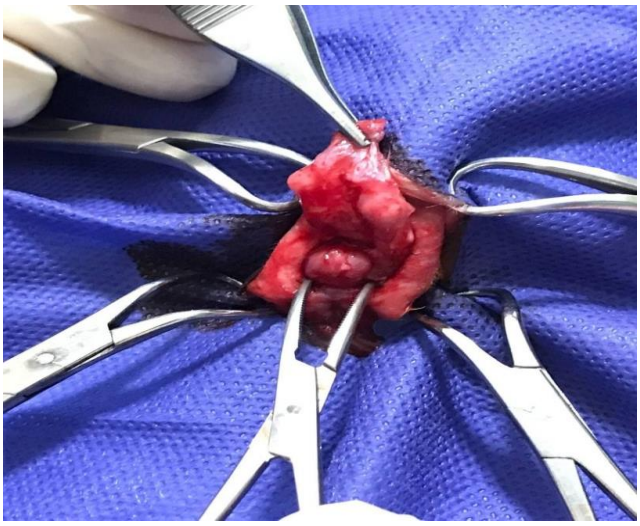

Figure 4. Anal sacs removal, correction of rectovaginal fistula, and atresia ani.

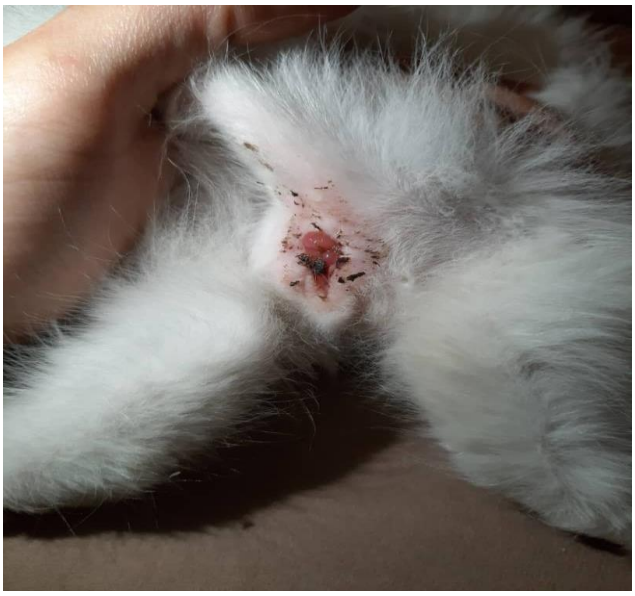

Figure 5. The anal Sphincter function return and the cat can defecate normally.

skin incision was made in the center of anal dimple. The rectal pouch and rectovaginal fistula were identified through the incision. The rectum released and pulled backward, both anal sacs were removed (Figure 4), and the fistula was cut in the middle of the terminal part of rectum and sutured to the skin at the level of the external anal sphincter using simple interrupted suture with 4-0 nylon and the suture line was rinsed with warm sterile saline.

After the surgery, cefazolin (30 mg/kg, q12h) was administered intravenously for 5 days and the perineal area was cleaned daily. In the following days after surgery the kitten was started to defecate normally with no complication like tenesmus, fecal incontinence, wound dehiscence, stricture of anoplasty, colonic atony, megacolon, or rectal prolapse, and there was no sign of passage of feces from the vulva (Figure 5).

Clinical Relevance

Although type I cases can be applied to non-surgical management, the only available curative treatment for other types of atresia ani is surgical correction. Regardless of the type of anomaly, postoperative complications may include fecal incontinence related to a congenital absence of functional external anal sphincter or surgical trauma to the sphincter muscle innervation during dissection.[1,10,11]

External anal sphincter and anal sacs are usually developing normally in type II anomalies.[10] Evaluation of external anal sphincter muscle presence and function is important for prognostic purposes.[1] In animals with type II or greater atresia ani, the anal region should be carefully examined to locate the anal dimple and ducts of the anal sacs and, if present. These were used as landmarks for anoplasty.[4] In the present case, the skin incision was made in the center of the anal sphincter. Anal sacculectomy was performed to prevent sacculitis due to anal sac impaction. In this case, five days after surgery the anal sphincter function returned and the cat produced formed semisolid feces.

Conflict of Interest

The authors declare that they have no conflicts of interest.

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