

## Rectovaginal fistula and atresia ani in a kitten: a case report

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### Summary

Rectovaginal fistula with atresia ani is a congenital condition that affects the anal opening and rectum by the formation of an abnormal connection between the rectum and vagina. This was diagnosed in a domestic short hair kitten. The presenting physical abnormalities included depression, dehydration, partial tail agenesis, anal atresia and a discharge of watery feces from the vaginal opening. The kitten died before surgery because of her poor general condition. Necropsy confirmed the diagnosis that was proposed after the clinical and radiographic findings.

### Introduction

Congenital abnormalities of the anus and/or rectum with associated urogenital malformations originate from abnormal embryonic development within the cloacal region. The cloaca is a common opening for the gastrointestinal, urinary, and reproductive tracts (Suess *et al.*, 1982). Rectovaginal fistulae are correlated with a failure of the urorectal fold to divide the embryonic cloaca properly. The sinovaginal bulbs may incorporate a persistent cloacal opening and, during their migration, may carry this rectal opening to the vestibular region or to any level of the vagina. The fistula connects the dorsal wall of the vagina with the ventral portion of the terminal rectum, which often ends as a blind pouch (Suess *et al.*, 1982).

Atresia ani is a congenital condition that affects the anal opening and rectum and may occur in both puppies and kittens. Several anatomical variations of atresia ani have been classified from type I through to type IV, but all result in an abnormal anal outlet and/or rerouting of feces from the rectum to another outlet. Pets with type I atresia ani, otherwise termed imperforate anus, have a membrane over the anal opening, but the rectum ends as a blind pouch just cranial to the anal opening. Type II is similar to type I, but the rectal pouch ends much more cranially to the anal opening. In type III, or rectal atresia, the rectum ends in a blind-ending pouch in the abdomen (cranial to the pelvis), and the distal rectum and anus are normal. Type IV atresia ani only occurs in females and may occur with or without imperforate anus; it is characterized by a persistent communication between the rectum and vagina (rectovaginal fistula) or urethra (rectourethral fistula; Ettinger and Feldman, 2005).

Feline congenital abnormalities of the lower gastrointestinal tract are rare. The true incidence of these defects is difficult to determine because many

newborn animals with deformities are destroyed (Suess *et al.*, 1982). Several recent case reports of urethrorectal fistula in cats have been reported in the literature (Suess *et al.*, 1982; Waknitz and Greer, 1983; Holt, 1985 and Van Den Brock *et al.*, 1988).

### Case report

A one-month-old, 1 kg female domestic short hair kitten presented to the Veterinary Teaching Hospital, University of Tehran, with a single opening in the perineum. The owner had observed the kitten defecate small amounts watery feces and urinate through this opening.

On physical examination, the kitten appeared depressed and dehydrated with a distended colon. An anal opening was absent but a dimple was present where the anus should have been located normally. Partial tail agenesis was also observed (Figure 1). Plain radiography revealed a megacolon due to the abnormal distention of the descending colon, which was filled with feces (Figure 2).

Due to the unstable condition of the animal, she was treated with conservative treatment prior to planned surgery. Unfortunately, she died before this could be performed, and a necropsy was carried out. This revealed a connection between the rectum and vagina, which was indicative of type IV atresia ani. There was also marked abnormal distention of the descending colon that confirmed the clinical and radiological findings (Figures 3 and 4).

### Discussion

Rectovaginal fistula is considered to be an embryonic failure of the urorectal septum to separate the cloacae into the urethrovesical and rectal segments. The clinical signs

**Figure 1:** A one-month-old, female domestic shot hair kitten with type IV atresia ani (rectovaginal fistula). The arrow points to an anal dimple, with (a) watery feces and (b) partial tail agenesi.



**Figure 2:** Lateral plain radiograph of a domestic shot hair kitten with marked megacolon. Note the partial tail agenesi.



are often noticed at weaning (between four and six weeks) or even earlier in puppies and kittens that are affected. Type IV atresia ani is often associated with tenesmus but is characterized by the passage of small amounts of watery feces via the vagina or urethra with associated perivulvar erythema and infection. The diagnosis is based on finding the typical physical abnormalities in a puppy or kitten of an appropriate age with a concurrent history of tenesmus or the lack of ability to defecate normally. In the type IV condition, the presence of the fecal material exiting through the vaginal opening is pathognomic.

The only available curative treatment for atresia ani is surgical correction. Regardless of the type of anomaly, young and weak puppies or kitten often do not survive the procedure. In addition, the prognosis is between guarded and poor for the complete return of normal and or rectal function for any type of atresia ani. Also, many affected puppies and kittens have a concurrent megacolon, which develops as a result of persistent fecal impaction. This may be irreversible, requiring indefinite aggressive medical management or a subtotal colectomy (Ettinger and Feldman, 2005).

As with all congenital abnormalities, it is good practice to investigate the animal for additional abnormalities when atresia ani is suspected. In this case, partial tail agenesi was present without further anomalies. In the literature, concurrent disorders, such as congenital hydrocephalus, have been documented

**Figure 3:** Necropsy appearance of a domestic shot hair kitten with type IV atresia ani (rectovaginal fistula); (a) the vaginal opening (white arrow) and internal view of imperforate anus (black arrow); (b) the communication between vaginal opening and descending colon.



**Figure 4:** Necropsy appearance of the severe distention of the descending colon.



(Suess *et al.*, 1982). In one study, all of the three dogs with rectovaginal fistula and atresia ani had partial tail agenesi (Rahal *et al.*, 2007).

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