

Rectovaginal Fistula with Anal Atresia in Two Dogs

Ki-dong Eom, Jin-min Lim, Sang-bum Song*, Jung-hee Yoon**, Jong-man Kim***,
Myung-cheol Kim*** and Young-won Lee'***

Yongma Animal Hospital, Hyundai Animal Hospital

**College of Veterinary Medicine, Seoul National University

***College of Veterinary Medicine, Chungnam National University

개의 항문폐쇄증 2례

엄기등 · 임진민 · 송삼범* · 윤정희** · 김종만*** · 김명철*** · 이영원'***
용마동물병원, *현대동물병원, **서울대학교 수의과대학, ***충남대학교 수의과대학

요 약 : 45일된 암컷 English Cocker Spaniel(0.65 kg, 증례 1)과 60일 된 암컷 진돗개(2.05 kg, 증례 2)가 항문폐쇄증으로 내원하였다. 증례 1은 생후 5일부터 만성적인 설사를 보였으며, 내원 7일 전에 이유시켜 상업용 건사료로 바꾸었다. 내원 당시의 임상증상은 복부팽창, 식욕부진, 항문폐쇄 그리고 질 주위에 오줌과 변으로 오염되어 있었다. 증례 2는 내원 당시 우울증, 복부팽만, 항문폐쇄 등의 임상증상을 보였고 질 주위에 수양성 변으로 오염되어 있었다. 증례 1과 2에서 직장 조영술을 실시해서 직장과 질에 누공이 형성되고, 결장이 팽만되어 있음을 확인하고 수술을 실시하여 누공을 폐쇄하고 항문 형성술을 실시하였다. 증례 1은 수술직후 항문에 변이 불연속적으로 배출되었고, 2달후에는 정상적인 항문괄약근의 운동을 관찰할 수 있었다. 증례 2는 술후 4일에 식욕부진과 원기소실로 폐사하였다.

Key words : 개, 항문폐쇄, 직장, 질, 누공

Introduction

Rectovaginal fistula is a rare congenital malformation of females characterized by passage of fecal material through the vaginal opening and absence or stenosis of the anus^{6,8}. Fistula usually develop between the rectum and urogenital tract. The abnormal development can occur in several forms and may be accompanied by similar atresia at higher levels of the intestine^{1,2,4,7,8}.

The present study reports the results of surgical correction of the anal atresia in two dogs with rectovaginal fistula.

Materials and Methods

Case 1

A forty five-day-old female English Cocker spaniel (body weight : 0.65 kg) was admitted to the Yongma Animal Hospital in Seoul, Korea with distended abdomen, anorexia, abnormal urination, anal atresia, and messed-up vagina with urine and feces (Fig 1). The client complained the chronic diarrhea from the 5th day after birth, but presented normal appetite. The food was changed into commercial dry food 7 days before. At home the dog ate an unusually small meal 2 days before. The owner noticed that the dog was depressed and had a distended abdomen.

On physical examination, the dog was depressed, and the abdomen was moderately distended. The opening of the anus was not present. The dog had a watery feces due to a mixture of the urine with the feces within vaginal tract. A tentative diagnosis of rectovaginal fistula resulted from anal atresia was made.

*Corresponding author.



Fig 1. Photographs of a forty five-day-old English cocker spaniel. A: The hair is shaved in the perianal area. The opening of the anus is not seen. The perivulvar area is stained with fecal material. B: Seven months after surgery. The newly formed anal opening is seen.

Being of the anal sphincter muscle was confirmed with palpation. Normal response of the sphincter muscle could be identified, a good twitch was seen when the area was stimulated with the injection needle (21G) in the location of the anus opening.

Prior to the radiographic examination, blood was collected for packed cell volume (36%) and white blood cell ($16,300 \text{ mm}^3$) determinations. An intravenous catheter was placed and normal saline plus 5% glucose administered. A biochemical analysis was normal.

The opening of the fistula was noticed at the dorsal opposite of the urethral opening with vaginoscopic examination. During exploratory catheterization, fistula was noted and catheter was passed dorsally into it, and contrast media (Omnipaque®, NYCOMED IMAGING AS, Oslo, Norway, 3 ml distilled with 3 ml normal saline) could be injected through the vagina to rectum without resistance. From the contrast radiography, rectovaginal fistula was diagnosed.

From the contrast view, the descending colon in-

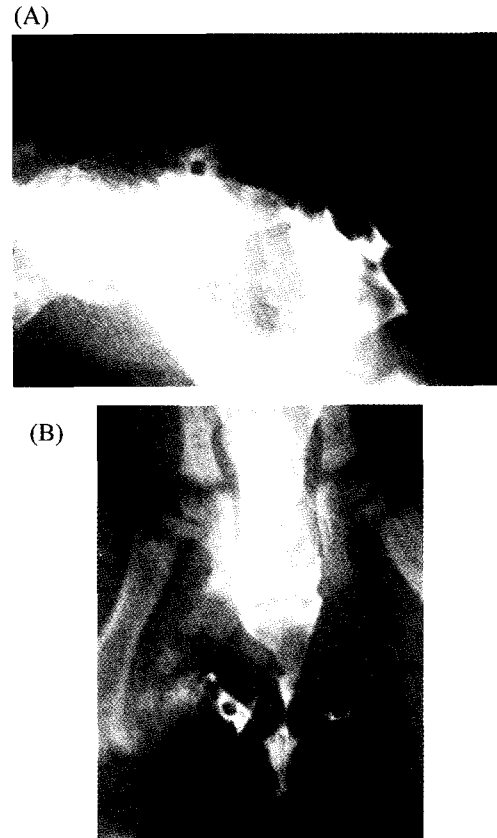


Fig 2. Contrast radiographs in dog one. A: Lateral projection. The colon is greatly distended, and blocked in the end of rectum. The fistula is formed at the ventral wall of the pouch and communicated with vaginal wall. Contrast medium leak is seen in the perivulvar area through the rectovaginal fistula. The sphincter muscle is seen as a band. B: The pouch is formed as a circular cone and continues to vaginal wall.

cluding rectum was shown distended by gas and the end of the rectum blocked. Contrast media leakage from the fistula, the ventral end of the pouch and the dorsal part of the vaginal wall was suspected, and such a leak could be identified by lateral and ventro-dorsal contrast radiography. The fistula was seen wide in the lateral view and narrow in the dorsoventral view (Fig 2).

Antibiotics (penicillin and streptomycin) were injected prior to operation. Avoiding the risk of general anesthesia, only tranquilization (acepromazine maleate) and local anesthesia (lidocaine) was applied.

The incision was performed at the midline between

the anal sphincter ventrally and the labia dorsally 15 mm apart from each other. Palpating the exploring probe (Tomcat catheter, 6 Fr), which was inserted into fistula and an undermine incision was made with the curved metzenbaum scissors around the fistula through mucosa. Then, the probe was removed, and proximal and distal ends of the fistula were ligated. Skin was closed with interrupted sutures of 3-0 nylon.

Skin biopsy punch (diameter 6 mm) was used to make a round opening site of anus. A cruciate incision was made over the imperforate anal dimple. The end of the rectum was pulled through the incision, and the rectal muscularis and mucosa were sutured circumferentially to the surrounding subcutaneous tissue and skin with 4-0 chromic catgut with round needle, respectively^{1-3,5}.

Case 2

A sixty-day-old, female Jindo dog (body weight : 2.0 kg) with a anorexia and distended abdomen was referred to the Veterinary Medical Teaching Hospital at Chungnam National University. Earlier that day the owner had not noticed that the dog's anus was not present.

The dog was depressed, vital signs were normal except for an greatly distended abdomen. The dog had a watery feces within vaginal tract. A tentative diagnosis of anal atresia and colonic distension was made. There was not detected any abnormal signs in routine CBC and chemical analysis.

Severe distended colon was seen on plain radiography. The dog was sedated with 1mg of diazepam, and an attempt was made to pass an feeding tube for injection of contrast media (Omnipaque[®]) through vaginal wall and radiography was performed. It was seen on contrast radiography that the distended colon was filled with contrast media. It could be injected through the vagina to rectum (Fig 3). So rectovaginal fistula was confirmed.

The dog was anesthetized with enflurane. The skin was incised with round shaped in the perianal area and undermined tissue until the anal dimple was noticed in the pelvic canal. The fistula route was ligated in the proximal and distal end. The accumulated stool was extracted with cautiously avoided peritonitis and contamination. The colone was pulled rostrally and

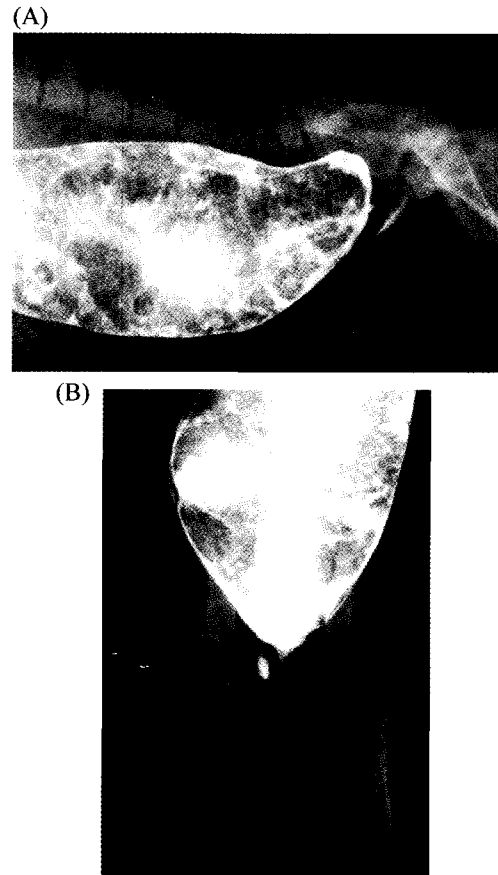


Fig 3. Contrast radiographs in dog two. A: Lateral projection. The colon is greatly distended and occupied abdominal cavity, and blocked in the end of rectum in the pelvic cavity. The fistula is communicated with vaginal wall and contrast medium leak is seen. B: Ventrodorsal view.

the rectal muscularis and mucosa were sutured circumferentially to the surrounding subcutaneous tissue and skin with 3-0 chromic catgut with round needle, respectively. Routine postoperative treatment was performed after surgery.

The dog was expired four days after surgery. The causes of the death has not been revealed because of the owner denied permission for necropsy. The authors suspected the peritonitis or other infection had developed based on the neutrophilia.

Discussion

The rectovaginal fistula in two dogs resulted from

an anal atresia^{6,8}. The authors suspected the urine mixed with feces from the vagina or abdominal distention as the cause of anal atresia, and contrast radiography and exploratory catheterization could successfully demonstrate the fistula. Skin biopsy punch was useful to newly create an opening of the anus in dog ¹. Contrast radiography was helpful to determine the site of the fistula opening prior to surgical repair^{1,2,4,7,8}.

In dog 2, the colon was severely distended, furthermore, the anal dimple was located in the pelvic canal. The authors estimated that the colonic distention made the anus pulled into the pelvic canal. Although the anal opening returned to normal position and shape during the fourth operation, distended colon compromise probably caused avulsion of skin-rectum suture and tissue necrosis, producing a favorable environment for infection.

Anal atresia can occur in combination with rectovaginal fistula. Rectovaginal fistula is a rare congenital malformation of females characterized by passage of fecal material through the vaginal opening⁶⁻⁸. Persistent fecal incontinence through the vagina leads to perivulvar dermatitis⁸. The watery fecal material stained around the perivulvar area and leg, but dermatitis was not recognized in this case. In dog 2, the feces continuously accumulated in the colon, and it gives impetus to the colonic distension.

Abdominal distension usually occurs when puppies begin to eat solid food.^{6,8} Considering from the history taking of this case, the clinical signs such as depressed condition, anorexia or fecal incontinence, and abdominal distension begun with diet change. In contrast radiography, the colon filled with gas rather than feces was extended and completely occupying the pelvic cavity.

During a few days after the operation, the dog 1 showed discomfort when to defecate showing fecal incontinence and suspending feces in anus. The dog was reexamined 7 months later. The owner was pleased that the dog appeared having normal contractile sphincter, was continent and keep its clean in the perineum and perianal area from the 2 months after surgery.

The size and the age of an animal with congenital rectovaginal anomalies affect the chances for success-

ful surgical repair. Prognosis is poor when the condition of newborn animals deteriorates rapidly and animals cannot be maintained sufficiently to allow initial growth^{1-3,6,8}. Though the dog was too young to operate, the result was successful, and the dog could be maintained normal urination, defecation and growth.

Conclusion

The first dog did well after operation and began to eat two days after surgery. Normal urination was identified, however, severe straining to defecate, constipation was observed until suture removed. An enema was applied for constipation once in a week for a month. The anal area has been usually messed-up with feces because of the failure of sphincter ani function. The dog continued to improve, and the normal defecating condition was recognized at 2 months after operation.

The one dog was expired four days after surgery. The causes of the death has not been revealed because of the owner denied permission for necropsy. The authors suspected the peritonitis or other infection had developed based on increased of the neutrophilia.

References

1. Amand WB. Nonneurogenic disorders of the anus and rectum. *Vet Clin North Am* 1974; 4: 535-50.
2. Chambers JN, et al. Applications of a semitendinosus muscle flap in two dogs. *J Am Vet Med Assoc* 1991; 199: 84-86.
3. Greiner TP. Surgery of the rectum and anus. *Vet Clin North Am* 1973; 2: 167-180.
4. Holt P. Anal and perianal surgery in dogs and cats. *In Pract.* 1985; 7: 82-89.
5. McAfee LT, et al. Atresia ani in a dog. *Vet Med Small Anim Clin.* 1976 ; 71: 624-627.
6. Niebauer GW. Rectoanal disease. In: *Disease Mechanisms in Small Animal Surgery*. Philadelphia, Lea & Febiger, 1993: 271-284
7. Rawlings CA, Capps WF. Rectovaginal fistula and imperforate anus in a dog. *J Am Vet Med Assoc* 1971; 159: 320-326
8. Sherding RJ. Anorectal disease. In: *Saunders Manual of Small Animal Practice*. Philadelphia, WB Saunders. 1994: 777-786