

## Surgical Correction of Anastomotic Rectal Stricture in a Dog

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**Abstract :** A 5-year-old male Laika dog was referred with chief complaint of dyschezia and tenesmus. The dog had rectal prolapse and it was corrected with rectal resection and anastomosis, a year ago. On rectal examination, the stricture of rectum was identified. The irregular scar tissues on serosal and muscular layers of rectum were noted and they were dispersed with partial thickness incision around rectum. Then, the colopexy and mechanical dilation with balloon catheter were applied. No recurrence of rectal prolapse and other complications were noted during follow up periods of 1 year. This report described a successfully corrected anastomotic rectal stricture in a dog.

**Key words :** Anastomotic rectal stricture, colopexy, dog, surgery.

### Introduction

The rectal stricture is defined as chronic narrowing or obstruction to the flow of intestinal contents resulting in clinical signs of complete or partial bowel obstruction (3). The common causes of rectal stricture include chronic inflammatory disease and tenesmus, and most of iatrogenic rectal stricture is caused by colorectal resection and anastomosis. Rectal stricture could lead to constipation, diarrhea, and when severely narrowed, large bowel obstruction (2,5).

Rectal prolapse could occur by diarrhea, tenesmus, parasite infection, prostatic disease and neoplasia (4). The anastomotic surgery in anorectal region also could be a cause of rectal prolapse. The high frequency of postoperative rectal prolapse was reported in cats underwent rectal resection, therefore the prophylactic colopexy is recommended in feline rectal prolapse (4).

This report was described a successfully corrected anastomotic rectal stricture with partial thickness incision of rectum, colopexy and mechanical dilation in a dog.

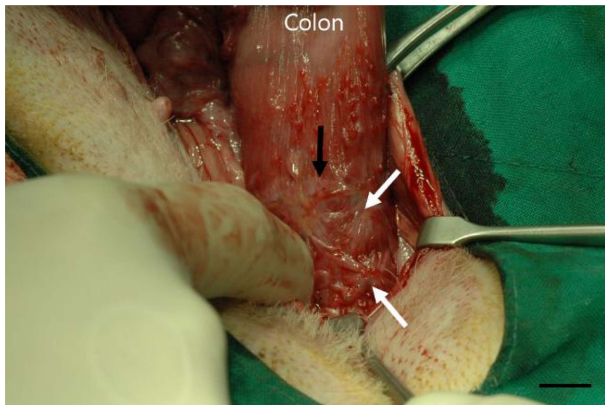
### Case

A 5-year-old male Laika dog, weighing 16.6 kg, was referred to Kyungpook National Veterinary Medical Teaching Hospital. The chief complaint was dyschezia and tenesmus. On history, the dog had rectal prolapse and it was corrected by rectal resection and anastomosis, a year ago. The soft-diet management was applied and no recurrence was noted during a year. The constipation was begun in last several weeks and the rectum was repetitively prolapsed through the anus, because the dog continuously attempt to defecate with exces-

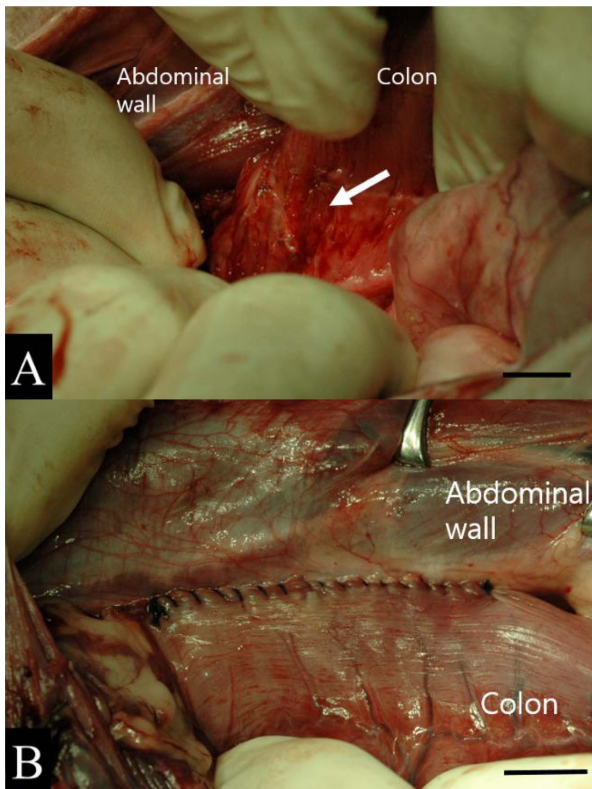
sive straining. The stricture of rectum was identified with digital rectal examination. Mild leukocytosis ( $26.6 \times 10^3/\mu\text{l}$ ; normal range:  $6.7$  to  $18.3 \times 10^3/\mu\text{l}$ ) showed, and hypoalbuminemia ( $1.9$  g/dl; normal range:  $2.4$  to  $3.5$  g/dl) was observed. These changes were suspected as the result by the local inflammation and restricted diet. In fecal examination, parasitic infection was not identified. Moderate volume of gas was identified within the colon on radiographic examination.

The strictured area could not be resolved with either digital dilation or balloon catheter expansion (Foley balloon catheter<sup>®</sup>, 18 Fr, Sewoon medical Co. Ltd., Korea) and the dog severely suffered with prolonged pain related to defecation. Thus, surgical intervention was inevitable. Pre-operative antibiotics was administrated with cefazoline (Chong Kun Dang Pharm, Seoul, Korea, 22 mg/kg, IV). Anesthesia was performed with propofol (Provide 1%, Claris Lifesciences Ltd., Ahmedabad, India, 5 mg/kg, IV) and isoflurane (Ifran<sup>®</sup>, Hana Pharm. Co. Ltd., Korea), and the median laparotomy and closure of abdomen were performed with routine methods. Around rectum, the fibrotic band was visible on serosa of rectum with irregular wound contracture and scaring (Fig 1). The irregular scar tissues on serosal and muscular layers were dispersed with partial thickness longitudinal incision around rectum. The colopexy was performed to prevent recurrent rectal prolapse. On descending colon, the incision of 4 cm was made through the serosa and muscular layers. The descending colon was manually pulled for the proper reduction of prolapse, and nearby left abdominal wall (2.5 cm laterally apart from linea alba) was incised as same size. The each edge of incised colon was sutured to opposite incised sites of abdominal wall with simple continuous pattern of 2-0 absorbable suture material (Fig 2). Metronidazole (Sinil Pharm, Seoul, Korea, 10 mg/kg, BID, IV) and cefazoline (22 mg/kg, TID, IV) were prophylactically administrated at post-operation for prevent bacterial contamination. Lactulose (Duphalac; Choongwae Pharm, Korea, 1 ml/4.5

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**Fig 1.** Rectal stricture due to fibrous scarring. Note the fibrotic band (black arrow) and irregular fibrous scars (white arrows). Bar = 1 cm.



**Fig 2.** Surgical correction of rectal stricture by partial thickness incision (A) and colopexy for prevention of recurrent prolapse (B). Note the dispersed scar layer (white arrow). Bar = 1 cm.

kg, BID, PO) was also treated to soften the feces. The mechanical dilations of rectal stricture with balloon catheter were performed during and after surgery.

The tenesmus was gradually alleviated during 3 days after surgery, and no recurrence of rectal prolapse and other complications were noted during follow up periods of 1 year on physical examinations.

## Discussion

In this case, the tenesmus resulted by postoperative anastomotic rectal stricture induced recurrent rectal prolapse, and repetitive and excessive abdominal pressure exacerbated the symptoms. The repetition of rectal prolapse was considered to consequently lead the additional damage to previously operated lesion. The purpose of the surgery was to stop this vicious cycle.

Although mechanical dilation was reported in dog and cat (1,5), the rectal stricture was not solved by manual or balloon dilation as sole treatment in this case. It was probably because of firm and irregular scar tissue caused by repetitive prolapse. The partial incisions of the fibrin-rich scar tissues on serosal and muscular layers could help to make loose the stricture lesion. Then, the mechanical dilation was performed.

The common stricture-plasty methods of rectum were performed with trans-anal approach, and it includes the methods with stapler and electrocautery. Although these methods were known as effective, these procedures are focused on mucosal layer (2). In this case, the dilation of rectum was limited mainly by fibrotic scar on serosal and muscular layer, therefore, partial thickness incision was applied.

For prevention of the additional damage by the rectal prolapse, the prophylactic colopexy was applied in this case. It was reported as effective treatment in recurrent rectal prolapse in dogs and cats, and the colopexy did not compromise the intestinal function (4).

## Conclusion

In present case, the anastomotic rectal stricture was successfully corrected by mechanical dilation with partial thickness incision of serosal and muscular layer, and the prophylactic colopexy could prevent recurrent rectal prolapse.

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