

## Hypospadias and Megacolon in a Persian Cat

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**Abstract :** A 9-month-old intact male Persian cat (3.2 kg of body weight) was referred with primary complaint of constipation. Diagnostic studies found severe constipation and megacolon. After immediate medical treatment (e.g. enema), the physical examination was performed and revealed that the unusual urethral opening was found approximately 0.5 cm ventral to the tip of the penis where a 3.5 Fr tomcat catheter was easily advanced into the bladder. The case was diagnosed as hypospadias. The cat was treated with castration and medical therapy for constipation. To our best knowledge, this case is the first case report for feline hypospadias complicated with chronic constipation in Korea.

**Key words :** hypospadias, constipation, megacolon, urethral opening, cat.

### Introduction

Hypospadias is a congenital defect of the urethra in the male and is characterized by an abnormal location of urethral orifice (opening). In this condition, the urethral opening locates anywhere along a line (the urethral groove) running from the tip along the underside (ventral aspect) of the shaft to the junction of the penis and scrotum or perineum, instead of opening at the tip of the glans of the penis. Several case reports have been described in domestic animal species, including goats (8), cattle (5) and sheep (1), dogs (6) and cats (3). Hypospadias in cats has been associated with recurrent chronic cystitis due to urinary incontinence and bacterial contamination from fecal materials (3). In this case report, we described the clinical presentation of a case of hypospadias in a male Persian cat suffering of chronic constipation and megacolon.

### Case

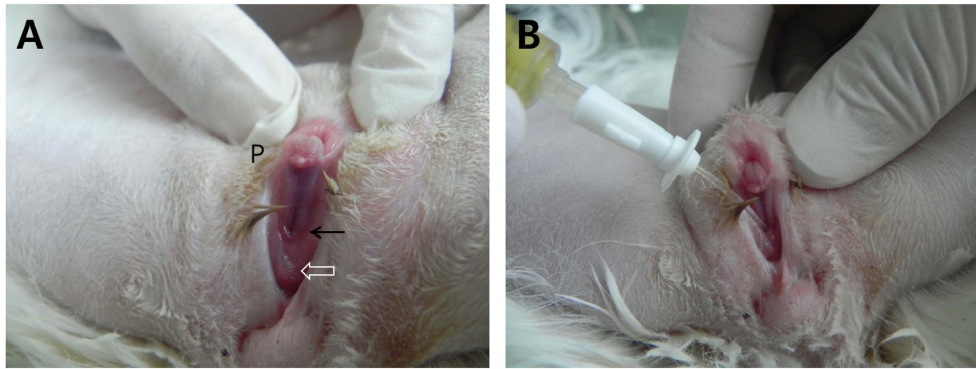
A 9-month-old intact male Persian cat (3.2 kg of body weight) was referred with primary complaint of constipation. According to referring veterinarian, the cat had recurrent constipation unresponsive to lactulose enema. On the physical examination, the cat was slightly depressed but all vital signs were within normal range. The abdominal radiograph revealed massive fecal retention from the colon to the rectum (Fig 1). The blood sample was taken for pre-anesthetic evaluation and found no abnormalities in the hemogram and blood chemistry. The cat was anesthetized using butorphanol (0.2 mg/kg, IM, Myoung-moon, Korea) and alfaxalone (5

mg/kg, slow IV, Jurox, Australia). Warm saline enema was performed to empty the colonic feces in this cat. After immediate medical treatment, the thorough physical examination was performed again and revealed that the unusual urethral opening was found approximately 0.5 cm ventral to the tip of the penis (Fig 2A). The scrotum was found to be divided, with the penis lying within the division of the scrotal sac. The penis was under-developed and not fully covered with prepuce. A 3.5 Fr tomcat catheter was easily advanced into the bladder through the abnormally located urethral opening (Fig 2B). Cystocentesis was performed to collect urine sample. However, urinalysis found no particular abnormalities and evidence of bacterial infection. The cat was released with medical prescription of lactulose (10 mL, PO, BayPharma, Australia), mosapride (1 mg/kg, PO, Roche, Switzerland) and ranitidine (3.5 mg/kg, PO, Glaxo-Smithkline, Korea). After medical treatment, the cat has never been constipated again. Prophylactic castration was performed after week of medical



**Fig 1.** The abdominal radiograph of this cat. The abdominal radiograph revealed massive fecal retention from the colon to the rectum and megacolon.

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**Fig 2.** The hypospadias in this cat. A: Preoperative view of the cat showing the urethral opening (black arrow) and rectal mucosa at the anal opening (hollow arrow). P, penis. B: Preoperative view of the cat showing urinary catheter inserted into the ventral opening of the urethra.

treatment. To date, there were no complications related to hypospadias (e.g. cystitis, constipation). To our best knowledge, this case is the first case report for feline hypospadias complicated with chronic constipation in Korea.

### Discussion

In human, hypospadias can be classified by the location. The first degree hypospadias is defined as the urethral opening locates on the underside of the glans penis (~50-75% of cases), while second and third degree are defined as the urethral opening locates on the shaft and the perineum (~20 and 30% of cases), respectively. In this case, the opening locates at 0.5 cm ventral to the tip of the penis, so that it is close to the first degree of hypospadias in human.

In human, the cause of this birth defect has not been clearly defined, although the treatment with hormones such as progesterone during pregnancy may increase the risk of hypospadias (4). Therefore, increased risk of hypospadias in infant males conceived by in vitro fertilization (IVF) has been defined in human (7). In animals, several teratogenic drugs or chemicals can cause hypospadias by interfering with androgen action in the embryo. However, there has been no study conducted to reveal the risk factor for hypospadias in domestic animals, to date. In this case, we could not clearly rule out the chance of exposure to the external sex hormone or some chemicals causing hypospadias during pregnancy.

Hypospadias in cats has been associated with recurrent chronic cystitis due to urinary incontinence and bacterial contamination from fecal materials (3). However, in this case, the cat had no cystitis and no evidence of bacterial contamination in his urine. Instead, the cat had recurrent chronic constipation. The reason why the cat had recurrent chronic constipation was not clearly understood, although the concurrent rectal and anal structural defects were suspected. However, there were no visible abnormalities in the rectum and anus in this cat, although there would be functional defects in rectal and anal innervation and musculature.

In human, the first degree hypospadias regarded as a cos-

metic defect and have little effect on function except for direction of the urinary stream. However, the second or third degree hypospadias can cause messy urination, impair delivery of semen into the vagina, or interference with erections. Therefore, surgical repair may not be necessary for cat, unless the cat is used for breeding. Surgical repair of severe hypospadias may require multiple procedures and mucosal grafting in human (2).

In conclusion, we described a rare case of feline hypospadias complicated with chronic constipation in a 9-month-old intact male Persian cat. The cat was treated with prophylactic castration and medical therapy for constipation.

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## 페르시안 고양이에서 발생한 요도밀 열립증과 거대결장증

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**요 약** : 9개월령 페르시안종 수컷 고양이(체중 3.2 kg)가 변비를 주증으로 내원하였다. 진단검사상 심한 변비와 거대결장증이 확인되었다. 관장을 비롯한 즉각적인 응급처치를 실시한 후 신체검사를 실시하였고, 검사결과 음경구 0.5 cm 복측에서 비정상적인 요도구를 확인하였다. 이 요도구를 통해 3.5 fr tomcat catheter를 방광내부를 쉽게 삽입할 수 있었다. 영상진단과 신체검사를 통해 본 증례는 요도밀 열립증으로 진단되었다. 본 고양이는 중성화 수술과 함께 변비에 대한 내과적 처치가 실시되었다. 본 증례는 우리나라에서 처음으로 보고되는 만성 변비를 동반한 고양이의 요도밀 열립증이다.

**주요어** : 요도밀 열립증, 변비, 거대결장, 요도구, 고양이