

## A CASE REPORT OF CROHN'S DISEASE WITH SIGMOIDO-VESICAL FISTULA

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Urological complications in Crohn's disease are relatively common conditions. However, a few cases with sigmoido-vesical fistula as a complication of the disease have been reported. We experienced a case of a 16-year-old boy with pneumaturia due to sigmoido-vesical fistula as a complication of Crohn's disease.

**Key words:** Crohn's disease, Sigmoid-vesical fistula

### INTRODUCTION

Many reports have been made on urological complications in Crohn's disease, but only a few reports discuss entero-vesical fistula in the disease.<sup>1,2)</sup> According to these reports the occurrence of entero-vesical fistula was 2 to 4 % of all the urological complications.<sup>3,4)</sup> Among them, colovesical fistula is one of the rarest conditions. We experienced a case of sigmoido-vesical fistula treated successfully by operation. The case and urological complications of the disease are discussed herein.

Case. 16-year-old male.

Chief complaint: pneumaturia.

Present illness: He had been treated conservatively under the clinical diagnosis of ulcerative colitis or Behçet's syndrome until pneumaturia developed in Jan., 1982. Clouded urine and micturition pain were noted in Feb., 1982 and he was hospitalized for evaluation of pneumaturia. His past history was not remarkable but persisting diarrhea and lower abdominal pain had been noted since 1977. Physical examination on admission was not remarkable. Positive laboratory data are: ESR; 25 mm/hr, CRP; (##), urine culture; *St. faecalis*, 10<sup>5</sup>/ml, and pyuria. The others, such

as liver function tests and renal function tests were within normal ranges. Both intravenous pyelographic and cystographic studies revealed no pathological findings. Barium enema disclosed no passage of contrast dye from the lower end of sigmoid colon suggesting a severe stenotic change in the portion (Fig. 1). CT scan was performed but no fistula was confirmed between the colon and vesical cavity. A remarkable adhesion of the intestine to the bladder wall was identified (Fig. 2). Severe inflammatory changes of the vascularity were observed from the ileum end to the entire sigmoid colon (Fig. 3). Under endoscopic study, a broad based flat tumor with partial papillomatous growth was found (Fig. 4). No malignant change was noted from the specimens taken from the tumor. Based on these preoperative studies, under the clinical diagnosis of Crohn's disease with enterovesical fistula, laparotomy was carried out. A fistula was constructed between the sigmoid colon and the bladder wall. In almost entire colon including the cecum, thickening and nodular changes of the large intestinal wall involving all the layers including the serosal layer were observed. From the end of the ileum to approximately 40 cm to the oral side, these pathological changes continued mainly in the mesenterium side. Eight cm up from



Fig. 1. Barium enema.  
No contrast dye moved from the distal end of the sigmoid colon. Severe stenotic changes were strongly suspected.

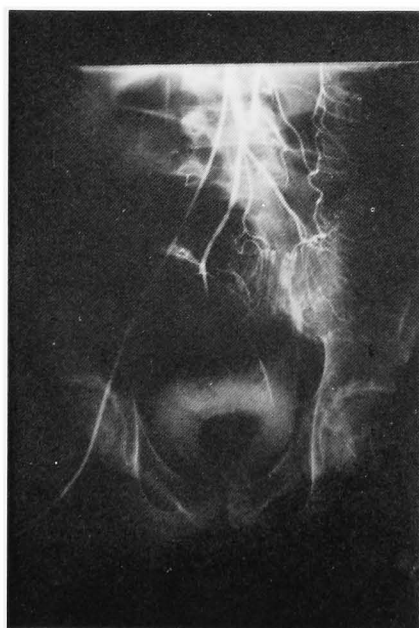


Fig. 3. Angiogram of the inferior mesenteric artery.  
Abnormal running of the vasa recta was prominent and the lesion invaded into all layers of colon.

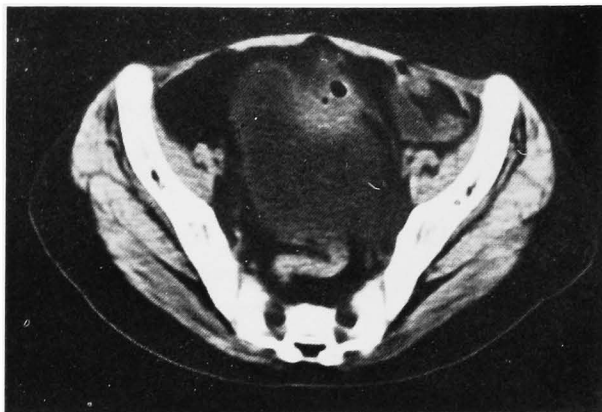


Fig. 2. Computed tomogram.  
Adhesion of the intestine to the right anterior bladder wall.

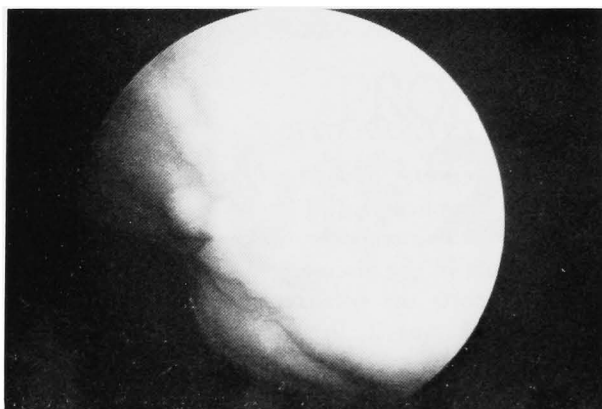


Fig. 4. Endoscopic finding of the bladder.  
An overt smooth surfaced tumor with partially papillomatous growth was disclosed in the posterior wall.

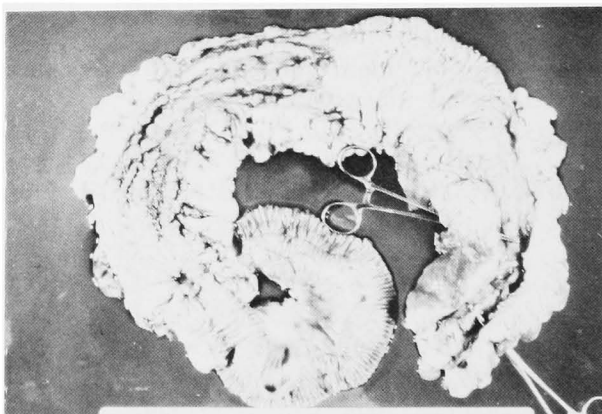


Fig. 5. Macroscopic findings.  
Two fistula were noted where the cramps were inserted and they communicated with the small intestinal cavity and the vesical cavity. This shows characteristic changes to Crohn's disease, namely mucosal tagg, and cobble stone appearance.

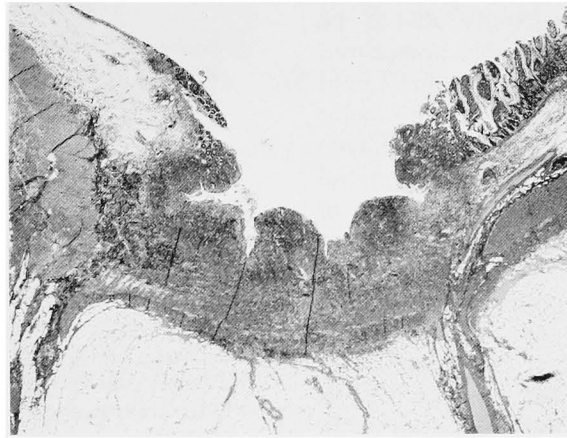


Fig. 6. Microscopic findings.

In the center, a narrow ulcer with fissuration was noted. Around the bottom of the ulcer, inflammatory cell invasion and in some parts granulomatous changes were noticed. These findings were compatible with those of Crohn's disease

the portion where the sigmoid colon was adherent to the bladder, an internal fistula was found between the sigmoid and small intestine which seemed to be a jejunio-ileal junction. Subtotal colectomy to remove 50 cm of the ileum was performed and reconstruction of the gastro-intestinal tract was performed, the ileum being anastomosed to the remaining rectum. Partial resection of the bladder wall was done simultaneously. In operative specimens, two fistulas were confirmed. Granulomatous changes involved the entire intestinal wall and the mucosal layer with longitudinal ulcers, mucosal tags, cobblestone-like appearance which were characteristic to the disease, were noted discontinuously (Fig. 5). Moreover, a clearly demarcated narrow ulcer with fissuration was histologically confirmed in the center of the colon. Around the bottom of ulcer, granulomatous inflammatory changes with a reactive neutrophilic leukocyte infiltration were observed (Fig. 4). Pathological diagnosis of Crohn's disease was established based on these studies. The postoperative course was uneventful.

#### COMMENTS

Underlying diseases which could pro-

duce entero-vesical fistula are trauma, rectal cancer, diverticulitis of colon, Crohn's disease, acute appendicitis, intestinal tuberculosis, amebiasis, candidiasis, Meckel's diverticulitis and foreign bodies in the intestine. Excluding tuberculosis of the intestine, rectal cancer and diverticulitis of the sigmoid colon are the most common causes of the fistula formation together accounting for 80 to 90% of the causes of all cases and this tendency is particularly more prominent in patients over 50.<sup>5-7)</sup> However, in young adults Crohn's disease plays an important role in the formation of entero-vesical fistula. When fecaluria or pneumaturia is seen, Crohn's disease should be suspected.<sup>8)</sup> This was true in our case. In the diagnosis of enterovesical fistula, either pneumaturia and/or fecaluria are confirmed, a fistula should be suspected. Generally, to confirm the fistula, barium enema and other gastrointestinal studies are performed as the first step, but results are not always evaluable. Under endoscopic study, the fistula is not always confirmable. It is not seldom that only an overt tumor like change or inflammatory changes in the epithelium are observed.<sup>6)</sup> In management of fistula, the entire diseased intestine should be resected in case of

systemic diseases like Crohn's disease, and a careful preoperative study should be carried out to justify operative procedures. Angiographic study of the intestine would be a workable procedure from this point of view. Operative treatment is the only curative procedure if there is no special reason against it because resection of entero-vesical fistula<sup>4,8)</sup> can prevent urinary tract infection which can trigger sepsis and resection of stenotic lesion in the gastro intestinal tract is a necessary procedure. West<sup>9)</sup> reported that in the case of young adults, with pneumaturia or fecaluria, operative treatment is a justifiable procedure even if the fistula could not be confirmed. In our case reported herein, angiographic study was valuable to decide on the resectable intestine and the fact that the operative treatment could be carried out in the earliest opportunity after the formation of fistula gave favorable results.

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## 和文抄録

### S 状結腸膀胱瘻を伴ったクローン病の 1 例

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症例は16歳の男性で潰瘍性大腸炎の疑いで入院精査を受けていたが、気尿を生じ泌尿器科を受診した。下部消化管膀胱瘻を疑い、IVP・膀胱鏡検査・膀胱造影・注腸造影・CTをおこなったが、あきらかな膀胱と他臓器との交通は証明されなかった。しかし下痢・下腹部痛・気尿などの症状が持続すること、下部消化管の広範な器質的变化をレ線学的に疑われたことより試験開腹術をおこなった。その結果S状結腸回腸瘻およびS状結腸膀胱瘻を認めたので回腸の一部および全結

腸切除と膀胱の部分切除をおこなった。結腸粘膜には敷石像・横行裂溝・縦走潰瘍を認め、病理組織学的にクローン病と診断された。

クローン病における泌尿器科的合併症の報告は比較的多いが、腸膀胱瘻はまれでありその2~3%を占めるにすぎなく、なかでも結腸膀胱瘻の報告は非常に少ない。われわれは外科的に治癒せしめたクローン病によるS状結腸膀胱瘻を経験したので報告する。