

Case Report
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## A case of colouterine fistula associated with diverticulitis of the sigmoid colon

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### Abstract

The patient was an 81-year-old female with a chief complaint of lower abdominal pain and vaginal discharge. She was consulted in a local hospital. CT scan revealed an abscess of Douglas pouch and a little free gas in the uterus. She was referred to our hospital for further examination. Colonoscopy revealed a stenosis of the sigmoid colon which was considered to be due to diverticulitis, but no evidence of sigmoid colon cancer. Gastrografin enema revealed diverticula and a stenosis of the sigmoid colon with a fistula track connecting to the uterus. We made the diagnosis of colouterine fistula associated with diverticulitis of the sigmoid colon. Sigmoid colostomy and closure of the fistula opening of the uterus were carried out. We analyzed 15 reported cases including our present case in Japan. Our case aged 81 was the oldest one. There is an increasing incidence of colonic diverticulosis in Japan. Colouterine fistula is rare, it should be considered as one of the complications of diverticulitis of the sigmoid colon.

(Key words : colouterine fistula, diverticulitis)

### I. Introduction

In recent years, there has been a tendency of increasing incidence of diverticulitis with westernization of the eating habits in Japan. Diverticulitis, pericolic abscess, perforation, bleeding and fistula formation are reported as complications associated with diverticulitis of the colon. We experienced colouterine fistula due to diverticulitis which is a rare type of fistula complicating with sigmoid colon diverticulitis. In this case report, we present our own case and analyze 15 previously reported cases in Japan.

### II. Case

The patient was an 81-year-old female with the chief complaint of lower abdominal pain and vaginal discharge. There was nothing particular in her past history and family history. In December 2002, the patient recognized lower abdominal pain and vaginal discharge. The patient consulted a local gynecologist but no abnormal findings were pointed out. Afterwards, her

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symptoms did not improve. In January 2003, she was referred to our hospital for further examination. The patient was 144 cm in height and 44 kg in weight with a normal blood pressure of 120/70 mmHg and normal pulse rate of 70 per minute. Body temperature was normal. There was no anemia or jaundice. There was tenderness in the lower abdomen, and vaginal discharge was present. No other abnormal findings were observed in the chest on physical examination. Laboratory data revealed white blood cell count of 14300/mm<sup>3</sup>, C-reactive protein level of 5.5 mg/dl. Urinalysis revealed white blood cell level of 100</HPF. Other laboratory data including urinalysis, blood chemistry were within normal. Fecal occult blood was negative. Electrocardiogram, chest and abdominal X-ray did not show abnormal findings. Colonoscopy revealed diverticula and stenosis of rectosigmoid colon. Because of the stenosis, it was not possible to observe the colon proximal to the stenosis. Gastrografin enema revealed a stenosis of the sigmoid colon and multiple diverticula. An outflow of Gastrografin from the stenotic part of the colon to the uterus was confirmed (Fig. 1). Enhanced computed tomography (CT) scan of the abdomen revealed sigmoid diverticula with a thickened colonic wall, air bubbles in the uterine cavity and an abscess of Douglas pouch probably due to

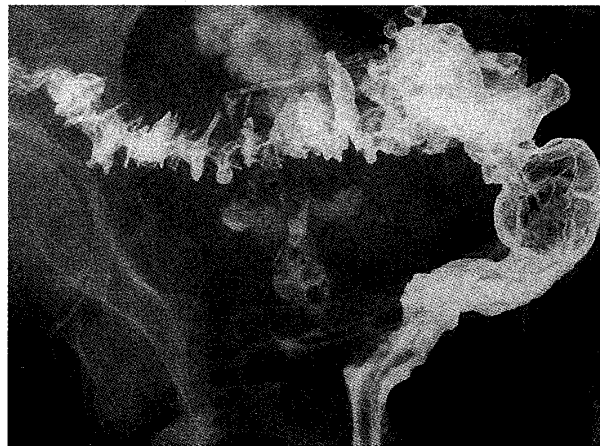


Fig. 1 Gastrografin enema revealed a stenosis of the sigmoid colon and multiple diverticula. An outflow of Gastrografin from the stenotic part to the uterus was confirmed.

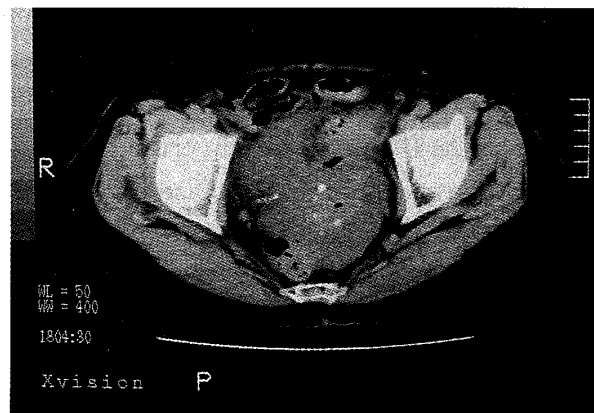


Fig. 2 Enhanced computed tomography (CT) scan of the abdomen revealed sigmoid diverticula with a thickened wall, air bubbles in the uterine cavity and an abscess of Douglas pouch, due to diverticulitis. These findings suggested formation of a fistula between the sigmoid colon and uterine cavity.



Fig. 3 There were strong adhesions between the sigmoid colon and the uterus with severe inflammation. It was difficult to dissect the uterus and the colon from the surrounding structures due to strong adhesion and rolling up ileum. Double-barrelled colostomy was performed.

diverticulitis. It was suggested that there was a fistula formation between the sigmoid colon and the uterine cavity (Fig. 2). We made the diagnosis of colouterine fistula and surgery was performed (Fig. 3). There were strong adhesions between the sigmoid colon and the uterus with severe inflammation. It was difficult to dissect the colon and the uterus from the surrounding structures due to strong adhesions involving the ileum. A loop colostomy was constructed with the consideration of operative invasion and the old age of the patient. The post-operative course was uneventful and the patient was discharged 48 days after hospitalization.

### III. Discussion

Colouterine fistula is a very rare disease. It is generally considered that fistula is formed as a result of inflammation of the sigmoid colon, and that inflammation spread to uterus that is present adjacent to the sigmoid colon. But the true mechanism in the development of colouterine fistula is unclear<sup>2)</sup>. In general, there are various types of colonic fistula such as colovesical fistula, colorectal and colocolonic fistula caused by cancer, diverticulitis, Crohn disease and radiotherapy<sup>8,12,23)</sup>. There are 15 reported cases of colouterine fistula associated with colonic diverticulitis in Japan so far as we could search (Table 1). We analyzed the 15 reported cases. The average age was 73.3 years old, and our case aged 81 was the oldest one. Most of chief complaint were vaginal discharge. From the gynecological point of view, the fistula formation could be related to the elderly age of the patients who have been menopausal for a long time. In such elderly patients, the atrophic nature of the uterus might be one of the reasons for causing colouterine fistula. As for the examination methods to prove the presence of a fistula, there are some reports that charcoal-challenge test and ultrasonography were useful for diagnosis other than direct contrast examination<sup>9,13,15,16)</sup>. There were 11 cases in which fistula were proven. Gastrografin enema and hysterosalpingography were very useful for the diagnosis. The operation was performed on all cases. In our case the fistula was visualized in preoperative examination, but it was difficult to dissect the colon and the uterus from the surrounding structures due to dense adhesions. Therefore loop colostomy was performed to make the operation less invasive considering the old age of the patient. In most the reported

Table 1 Colouterine fistula : 15 reported cases in Japan

Year & Author	Age	Chief complaint	Proof of fistula	Operation method
Moriyama et al. (1977) <sup>1)</sup>	73	vaginal discharge, diarrhea	no	sigmoid colectomy
Ishiguro et al. (1981) <sup>2)</sup>	71	vaginal discharge	yes	left hemicolectomy hysterectomy, oophorectomy
Sato et al. (1987) <sup>3)</sup>	65	fever, constipation	no	sigmoid colectomy hysterectomy, lt.-oophorectomy
Eguchi et al. (1987) <sup>4)</sup>	62	fever, abdominal pain	no	sigmoid colectomy hysterectomy
Hoshino et al. (1987) <sup>5)</sup>	unknown	vaginal discharge	yes	unknown
Ezaki et al. (1996) <sup>6)</sup>	81	vaginal discharge	yes	sigmoid colectomy simple closure of a fistula
Inoue et al. (1996) <sup>7)</sup>	74	vaginal discharge	yes	sigmoid colectomy simple closure of a fistula
Nishi et al. (1997) <sup>8)</sup>	78	vaginal discharge	yes	sigmoid colectomy hysterectomy
Kiyokawa et al. (1999) <sup>9)</sup>	80	vaginal discharge, hematuria	yes	sigmoid colectomy hysterectomy, oophorectomy
Matsumoto et al. (2000) <sup>10)</sup>	74	vaginal discharge	yes	sigmoid colectomy simple closure of a fistula
Takeyama et al. (2002) <sup>11)</sup>	74	vaginal discharge	yes	sigmoid colectomy simple closure of a fistula
Furukawa et al. (2002) <sup>12)</sup>	69	vaginal discharge, B.W. loss	yes	sigmoid colectomy hysterectomy, oophorectomy
Sone et al. (2003) <sup>13)</sup>	69	vaginal discharge, uterine bleeding	yes	sigmoid colectomy hysterectomy, oophorectomy
Kitahara et al. (2005) <sup>14)</sup>	76	vaginal discharge	unknown	sigmoid colectomy hysterectomy
our case (2003)	81	vaginal discharge	yes	sigmoid colostomy

cases in Japan, colectomy was possible because of the weak adhesion and inflammation. But in some reports from Europe and U.S.A., there were more cases of severe inflammation in which emergency surgery was carried out. In such cases the operation methods were diverse including colectomy, colostomy, Hartmann's operation and simple closure of a fistula. We should select the most appropriate method among various kinds of operation methods depending on the situations in individual cases<sup>17~22)</sup>. But there are no definite criteria of operation for colouterine fistula. If the inflammatory site of colouterine fistula could be removed and anastomosis quarantined from any inflammatory site, primary resection and anastomosis can be performed<sup>18)</sup>. In the future, there would be an increasing incidence of diverticulitis in Japan due to the westernization of the eating habits. Pericolonic abscess, perforation, bleeding, fistula formation are reported as complications with diverticulitis of the colon. Although its incidence is low, we should also consider the presence of colouterine fistula as one of the complications of diverticulitis of the sigmoid colon.

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## 結腸憩室炎に起因した S 状結腸子宮瘻の 1 例

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### 要 約

症例は81才女性。下腹部痛，茶褐色様帯下を主訴に当院内科受診。腹部 CT でダグラス窩膿瘍を指摘され，精査加療目的に外科紹介受診となった。大腸内視鏡所見で，直腸 S 状結腸部付近に粘膜病変は認めないものの，腸管の全周性狭窄を認め憩室炎による狭窄と考えられた。注腸造影 X 線検査では，S 状結腸の狭窄及び憩室を認め，更に子宮頸部との交通も認められた。

本例は結腸憩室炎に起因した S 状結腸子宮瘻と診断された。手術は，S 状結腸，子宮及び回腸の一部が炎症により強固に癒着していたため，2 孔式人工肛門造設術を行った。結腸憩室炎は，近年増加傾向にあり，結腸憩室炎に起因した膀胱瘻の報告は散見されるが，結腸子宮瘻は稀である。本邦ではこれまでに14例の報告があるが，81才での発症は最も高齢であった。

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