A Case of Pericecal Hernia with a Hernial Orifice Located on the Lateral Side of the Cecum

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(Received June 24, 2011; Accepted July 12, 2011)

The patient was a female in her 70s without previous laparotomy who visited our hospital for right lower abdominal pain. Marked small intestinal gas was noted on plain abdominal X-ray radiography. The patient was diagnosed with ileus and admitted. On contrast imaging through an ileus tube inserted for decompression, the small intestine was obstructed in the right lower abdominal region, and emergency laparotomy was performed. A hernial orifice was present on the lateral side of the cecum, and the small intestine was partially incarcerated, based on which a pericecal hernia was diagnosed. Since no circulatory disorder was noted in the incarcerated intestine, only reduction was performed without enterectomy. The hernial orifice was left open, considering that there was no possibility of re-incarceration. The postoperative course was favorable, and the patient was discharged on the 7th hospital day. Since this was a rare pericecal hernia case of internal hernia, we searched for and reviewed cases reported in Japan. This was a very rare case with a hernial orifice located on the lateral side of the cecum, not included in the current classification of pericecal hernia.

Key words: Pericecal hernia, ileus, internal hernia

INTRODUCTION

Internal hernia is a rare disease, and the incidence of pericecal hernia is particularly low. We encountered a patient with a pericecal hernia and a hernial orifice located on the lateral side of the cecum, which is not included in the current classification. Herein, we report the case, along with a search for and review of cases reported in Japan.

CASE REPORT

Patient: Female in her 70s.

Chief complaint: Right lower abdominal pain

Past medical history: None in particular including laparotomy

History of present illness: The patient visited our hospital for right lower abdominal pain in late September 2006, and marked small intestinal gas was noted on plain abdominal X radiography. The patient was diagnosed with ileus and admitted.

Status on admission: Height, 156.4 cm; body weight, 46.5 Kg; body temperature, 35.5℃; blood pressure, 110/70 mmHg; pulse, 62/min. The abdomen was flat and soft, and tenderness was noted in the right lower abdomen, but no peritoneal irritation sign was noted.

Blood test findings on admission: A high BUN level (23.2 mg/dl) assumed to be due to dehydration was noted, but there was no other abnormality.

Plain abdominal X-ray radiography: Marked small intestinal gas was noted in the abdomen. Ileus was diagnosed and an ileus tube was inserted (Fig. 1).

Course after admission: After ileus tube placement, the symptoms and abdominal findings improved, but small intestinal gas remained on abdominal X-ray radiography. On abdominal CT, liquid and gas were retained in the small intestine, the small intestine was markedly dilated, and the small intestinal wall was circumferentially thickened (Fig. 2). On ileus tube imaging, dilation and obstruction of the small intestine were noted in the right lower abdominal region, and contrast medium did not pass through to the anal side (Fig. 3). An internal hernia was diagnosed, and emergency laparotomy was performed.

Surgical findings: A hernial orifice with a diameter of 3 cm was present on the lateral side of the cecum. The ileum was partially incarcerated at a 70-cm oral site from the ileocecal valve (Figs. 4 and 5), based on which a pericecal hernia was diagnosed. Since no circulatory disorder was noted in the incarcerated intestine, we performed drawing the incarcerated intestinal wall off without enterectomy. When the surrounding adhering tissue was dissected to reduce the incarcerated intestine from the hernial orifice, the hernial orifice dilated to a diameter of about 4 cm, and the dept was shallow, about 2 cm. Thus, the hernial orifice was left open, considering that there was no possibility of re-incarceration.

Postoperative course: The postoperative course was favorable, and the patient was discharged on the 7th hospital day.

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Fig. 1 Marked small intestinal gas was present in the abdomen.

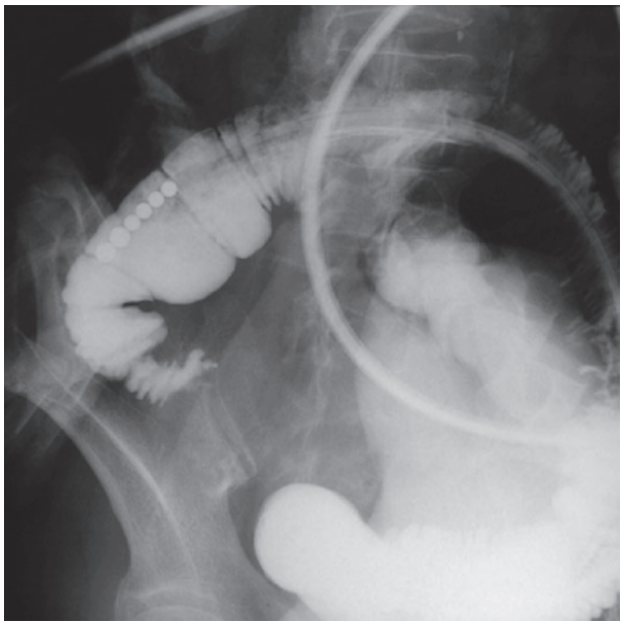

Fig. 3 On ileus tube imaging, dilation and obstruction of the small intestine were noted in the right lower abdominal region.

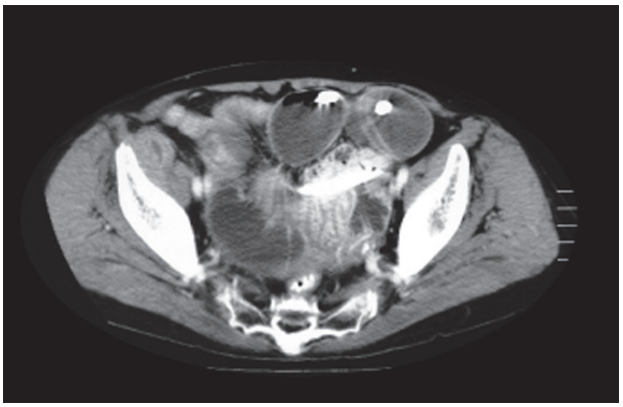

Fig. 2 Liquid and gas were retained in the small intestine, the small intestine was markedly dilated, and the small intestinal wall was circumferentially thickened on the lateral side of the cecum.

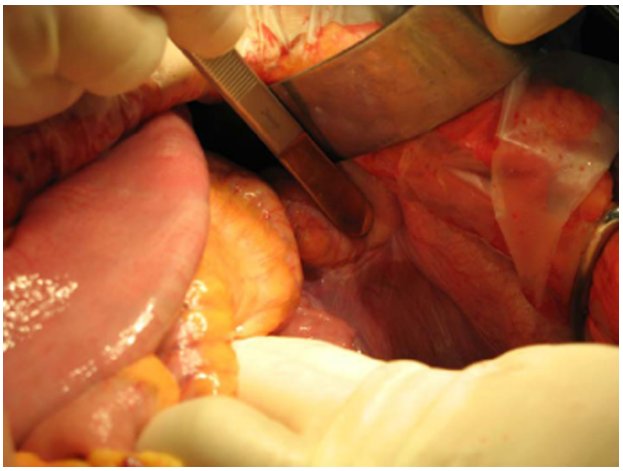

Fig. 4 A hernial orifice with a diameter of 3 cm was present on the lateral side of the cecum. The ileum was partially incarcerated at a 70-cm oral site from the ileocecal valve (the incarcerated small intestine is pressed with tweezers).

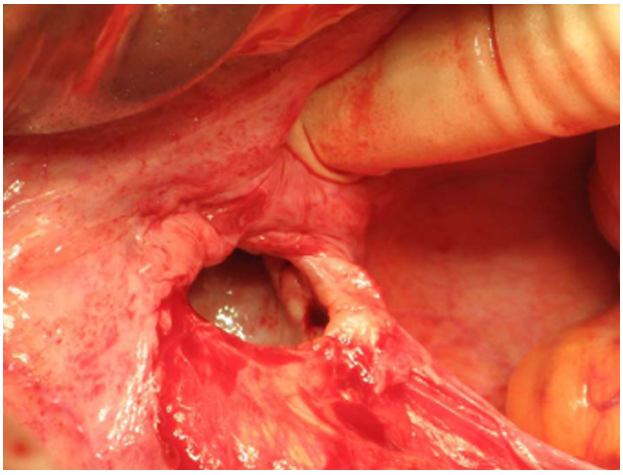

Fig. 5 Hernial orifice after release of incarceration.

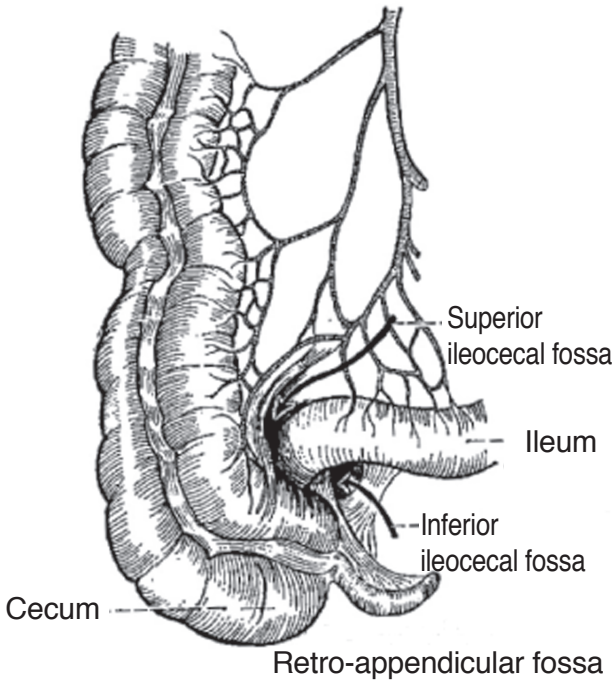

Fig. 6 Developmental sites of pericecal hernia (partially modified) [4].

Table 1 Summary of 54 cases reported in Japan

Gender	Male:female	18:36	
Age	Distribution	23 days after birth-93 years	
	Mean	67.1 years	
Location	Superior ileocecal fossa	2 cases	3%
	Inferior ileocecal fossa	10 cases	19%
	Retrocecal fossa	40 cases	74%
	Lateral side of the cecum	2 cases	4%
	Retro-appendicular fossa	0	0%
Surgery	With enterectomy	32 cases	59%
	Without enterectomy	22 cases	41%
Treatment of hernial orifice	Open	20 cases	37%
	Closed	33 cases	61%
	Unclear	1 case	2%
Outcome	Survived	53 cases	98%
	Died	1 case	2%

DISCUSSION

Since we encountered a rare pericecal hernia case of internal hernia, we searched for and reviewed cases reported in Japan.

This was a very rare case not included in the current classification of pericecal hernia, in which the hernial orifice was located on the lateral side of the cecum.

Reportedly, internal hernias account for 1–2% of acute celiopathy cases [1], of which a pericecal hernia is rare, and the frequency has been reported to be 13% [2]. A pericecal hernia is considered to be an incarceration of abdominal visceral organs in one of the 4 peritoneal recesses (superior and inferior ileocecal fossae and retrocecal and retro-appendicular fossae) [3, 4](Fig. 6).

When pericecal and internal hernias reported between 1980 and 2007 were searched for in the Japana Centra Revuo Medicina, 54 cases of pericecal hernia were found to have been reported in Japan, including our patient (Table 1).

There were 18 males and 36 females, and the age ranged from 23 days after birth to 93 years (mean: 67.1 years). Chir *et al*. also reported that the incidence is high in elderly females [5].

Clinical symptoms manifested as small intestinal ileus because the small intestine was incarcerated in the pericecal hernial orifice [5-7].

The hernial orifice was located in the superior and inferior ileocecal fossae and retrocecal fossa in 2, 10, and 40 cases (3, 19, and 74%), respectively, and other sites in 2 (3%) including our patient. No case of hernia through the retro-appendicular fossa has been reported, and the majority of cases were hernia through

the retrocecal fossa.

In our patient, the ileocecal region was fixed to the retroperitoneum, and the hernial orifice was apparently present on the lateral side of the cecum. Of the cases reported in Japan, pericecal hernia incarcerated in the paracolic gutter on the lateral side of the cecum was reported by Ui *et al*. [8], and pericecal hernia with a hernial orifice 2 cm in diameter located in the paracolic gutter on the lateral side of the cecum was reported as a hernia through the retrocecal fossa in a wide sense by Furukawa *et al*. [9]. Masaki *et al*. also reported a case with a hernial orifice located in the retroperitoneum on the lateral side of the cecum, although it was classified as a hernia through the retrocecal fossa [10]. It is possible that cases with a hernial orifice located on the lateral side of the cecum were included in cases classified as a hernia through the retrocecal fossa.

It was suggested that, in addition to the 4 pericecal hernia development sites, there is another type with a hernial orifice located on the lateral side of the cecum, including this case.

Regarding the cause of pericecal hernia, Waldeyer explained that the lower end of the ascending colon is fixed by adhesion to the retroperitoneum, followed by space formation on the dorsal side of the ileocecal region due to the development and downward movement of the cecum, and the small intestine is incarcerated in the space [11], whereas Broesike stated that the cause is a gap formed by faulty union of the ascending colon or cecum with the retroperitoneum [12]. Although it is unclear which hypothesis is more appropriate, Broesike's hypothesis is more understandable because of the presence of 3 cases of lateral cecum-type pericecal hernia, in addition to our patient.

Pericecal hernias were surgically treated in all 54 cases reported in Japan. In surgery for a pericecal hernia, the prevention of recurrence is important, in addition to reduction. The hernial orifice was left open and closed in 20 (37%) and 33 (61%) cases, respectively, and the treatment was unclear in one (2%). In our patient, the hernial orifice dilated and was shallow when the surrounding adhering tissue was dissected. Thus, the orifice was left open, considering that there was no possibility of re-incarceration. As of 4 years after surgery, no recurrence had been noted.

Treatment was completed with reduction of the incarcerated small intestine alone without enterectomy in 32 of the 54 cases (59%), whereas enterectomy was concomitantly performed because of circulatory disorder of the incarcerated small intestine in 22 cases (41%). The outcomes were favorable. Only one patient (2%) died of sepsis despite enterectomy being performed, but all other patients survived. Early diagnosis and rapid execution of laparotomy may be important for avoiding enterectomy as well as improving the outcome.

Laparoscopy has become widely employed as a new surgical method. It may be useful because treatment can be performed without laparotomy while loading less physical stress on patients [13].

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