

## Strangulated hernia through a defect of the broad ligament and mobile cecum: A case report

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Received: 2005-05-29 Accepted: 2005-08-20

*Gastroenterol* 2006; 12(9): 1479-1480

<http://www.wjgnet.com/1007-9327/12/1479.asp>

### Abstract

We report a case of 28-year-old woman presenting with small bowel obstruction. She had neither prior surgery nor delivery. An upright abdominal radiograph revealed several air-fluid levels in the small bowel in the midabdomen and the pelvic cavity. Computed tomography demonstrated a dilated small bowel loop in the Douglas's fossa, but no definite diagnosis could be made. Supportive therapy with draining the intestinal fluid by a long intestinal tube did not result in improvement, which suggested the possibility of a strangulated hernia. Exploratory laparotomy revealed mobile cecum and a 20-cm length of the ileum herniated into a defect of the right broad ligament. As a gangrenous change was recognized in the incarcerated bowel, its resection was carried out, followed by end-to-end anastomosis and closure of the defects of the broad ligament. The postoperative course was uneventful. Intestinal obstruction is a very common cause for presentation to an emergency department, while internal hernia is a rare cause of obstruction. Among internal hernias, those through defects of the broad ligament are extremely rare. Defects of the broad ligament can be either congenital or secondary to surgery, pelvic inflammatory disease, and delivery trauma. In conclusion, we emphasize that hernia of the broad ligament should be added to the list of differential diagnosis for female patients presenting with an intestinal obstruction. Early diagnosis and surgical repair reduce morbidity and mortality from strangulation.

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**Key words:** Internal hernia; Broad ligament; Intestinal obstruction; Mobile cecum

Hiraiwa K, Morozumi K, Miyazaki H, Sotome K, Furukawa A, Nakamaru M. Strangulated hernia through a defect of the broad ligament and mobile cecum: A case report. *World J*

### INTRODUCTION

Intestinal obstruction is a very common cause for presentation to an emergency department, while internal hernia is a rare cause of such obstruction. Even rare is the hernia through defects of the broad ligament. This report describes a rare case of intestinal obstruction from internal hernia through a defect of the right broad ligament. The diagnosis of this condition was not made preoperatively due to its rarity and nonspecific manifestation.

### CASE REPORT

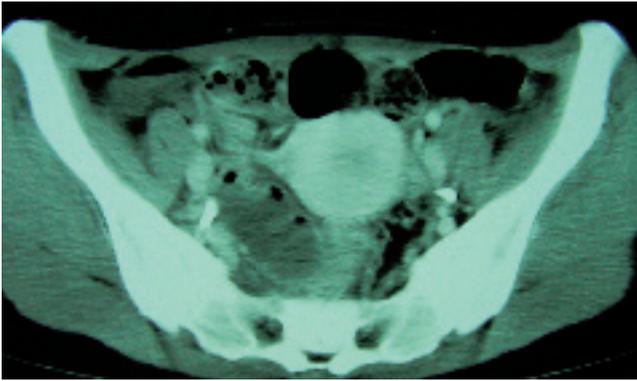
A 28-year-old woman, gravida 0 para 0, presented complaining of acute lower abdomen colicky pain, nausea, and vomiting. She had no prior relevant medical history. On physical examination, her right lower quadrant was tender with mild voluntary guarding and increasing bowel sounds. Rectal examination did not show any abnormalities. Laboratory studies showed no definite abnormalities except for an elevated leukocyte count of  $13\ 800/\text{mm}^3$  with a left shift. An upright abdominal radiograph revealed multiple air-fluid levels in the small bowel in the midabdomen and the pelvic cavity. Computed tomography demonstrated a dilated small bowel loop in the Douglas's fossa (Figure 1), but no definite diagnosis could be made.

Supportive therapy with draining the intestinal fluid by a long intestinal tube did not result in improvement, thereby suggesting the possibility of a strangulated hernia.

The patient underwent an exploratory laparotomy, which revealed two defects of the right broad ligament and mobile cecum. A 20-cm length of the ileum had been herniated into the outer defect. As a gangrenous change was recognized in the incarcerated bowel, it was resected and an end-to-end anastomosis was performed while the defects of the broad ligament were also closed. The postoperative course was uneventful.

### DISCUSSION

Internal hernia is responsible for about 0.9% of intestinal obstruction. Hernia of the broad ligament is extremely rare and accounted for less than 7% of all internal hernias.



**Figure 1** Contrast-enhanced computed tomography demonstrating a dilated small bowel loop in the Douglas's fossa.

The earliest reported case of an incarcerated hernia through a defect of the broad ligament of uterus was in 1861 by Quain, found at autopsy<sup>[1]</sup>. Two types of hernia of the broad ligament have been classified by Hunt<sup>[2]</sup>: the fenestra type that involves a complete fenestration through a defect in the broad ligament; and the pouch type that involves hernia into the pouch from an anterior or a posterior aperture. The defects in our case were of the fenestra type.

Preoperative diagnosis of hernia of the broad ligament is quite difficult. The usefulness of computed tomography has been reported<sup>[3]</sup>, but the causal lesion of the intestinal obstruction could not be detected with computed tomography in our case. Although computed tomography suggests an internal hernia, it may be impossible to diagnose the hernia through a defect of the broad ligament<sup>[4]</sup>.

Although the precise pathogenesis of a defect of the broad ligament remains unknown, its causes are considered to include surgery, pelvic inflammatory disease, delivery trauma and congenital anomaly<sup>[5]</sup>. Our case had neither any relevant medical history nor delivery, thereby suggesting a congenital anomaly in our case. In female embryos, fusion of the paramesonephric ducts forms the broad ligament. The present case showed both incomplete fusion of the broad ligament and incomplete fixation of the ascending colon leading to mobile cecum. These anomalies might have resulted from some abnormalities in a similar embryonic period.

In conclusion, we emphasize that intestinal hernia through a defect of the broad ligament should be added to the list of differential diagnosis for female patients presenting with an intestinal obstruction without any prior history of laparotomy. Early diagnosis and surgical repair reduce morbidity and mortality from strangulation.

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S- Editor Guo SY L- Editor Kumar M E- Editor Ma WH