

## Double Omental Hernia—Case Report on a Very Rare Cause of Intestinal Obstruction

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### Abstract

**Introduction:** We report a case of transomental herniation of the ileum through a defect in the gastrocolic ligament with re-emergence through a defect in the gastrohepatic ligament. This type of herniation is extremely rare and a review of the literature is presented. **Clinical Presentation:** A 41-year-old Chinese male presented with signs and symptoms of intestinal obstruction. **Treatment:** An urgent laparotomy was undertaken and he was found to have a rare form of intra-abdominal hernia. The hernia was reduced and the defects were closed. **Outcome:** Postoperative recovery was unremarkable. **Conclusion:** Urgent operation should not be delayed because of the high mortality associated with strangulation

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**Key words:** Bowel obstruction, Internal hernia, Transomental hernia

### Introduction

Internal hernia is defined as the protrusion of a viscus through a normal or abnormal opening within the confines of the abdominal cavity.<sup>1</sup> This unusual cause of intestinal obstruction occurs in 4% of all cases of acute intestinal obstruction.<sup>2</sup> Transomental hernias are an uncommon form of internal hernia, occurring in less than 1% of all internal hernias.<sup>3</sup> Hernias involving both greater and lesser omentum are even more unusual. We report a case of intestinal herniation through the gastrocolic ligament with re-emergence through the hepatogastric ligament presenting with small bowel obstruction.

### Case Report

A 41-year-old Chinese male presented with cramping epigastric pain associated with abdominal distension after a meal. This was followed by nausea and bilious vomiting.

Past history was remarkable for chronic epigastric discomfort of 5 years' duration, which had been attributed to "gastritis" with no formal work-up. He had no prior history of abdominal trauma or abdominal surgery.

Clinical examination on admission revealed an average-sized, well-nourished male. He was afebrile and his vital signs were stable. Abdominal examination showed mild distension with mild epigastric tenderness; bowel sounds

were slightly hyperactive. Laboratory investigations including a full blood count, serum biochemistry and amylase were normal.

A plain abdominal X-ray showed dilated loops of small bowel with numerous fluid levels seen up to the level of the distal small intestine (Fig. 1). Diagnosis of small bowel obstruction was made and nasogastric suction and intravenous fluid hydration were started.

Following 12 hours of this treatment, abdominal X-ray was repeated. As there was no clinical or radiological improvement, laparotomy was undertaken. At operation, approximately 100 mL of serous fluid was present in the abdominal cavity. An ischaemic loop of terminal ileum, measuring 20 cm in length, was found incarcerated through a 2 x 2 cm greater omental defect into the lesser sac and through a second 2 x 2 cm defect in the hepatogastric ligament (Figs. 2 & 3). The defects were widened and the bowel reduced by gentle traction. Following reduction, the bowel appeared viable with peristaltic activity. There was no evidence of malrotation. The defects were closed with interrupted 2/0-vicryl suture.

Postoperative recovery was unremarkable and the patient was discharged on the 6<sup>th</sup> postoperative day. He was seen in the outpatient clinic after 3 months with resolution of the chronic abdominal pain.

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Fig. 1. Abdominal X-ray of the patient on admission (supine).

Discussion

Internal herniation as a cause of acute bowel obstruction has historically been associated with mortality rates as high as 45%.<sup>4</sup> This could be due to the difficulty in establishing the diagnosis preoperatively with resultant delay in treatment.<sup>5</sup>

They are either congenital or acquired.<sup>5,6</sup> Most frequently, they present as paraduodenal hernias. Other locations include defects through the mesentery, omentum, broad ligaments, paracaecal recesses and the foramen of Winslow. Hernias through both the greater as well as the lesser omentum are exceeding rare. A review of the English literature revealed 7 other reported cases of double omental hernias (Table I). These appear to occur in young males. Most present with complains of epigastric pain and other symptoms of intestinal obstruction.

Several authors have postulated a traumatic aetiology for these omental hernias. Brettel<sup>13</sup> suggested blunt abdominal trauma as a cause in his case report. Lohmann et al<sup>9</sup> suggested that the second defect in the lesser sac might have arose from increased pressure within the sac from excessive eating and drinking. This presumably led to rupture of the posterior, friable layer of the gastrocolic ligament, with a resultant hernia developing in the lesser omentum. In the absence of any significant past history of trauma, most feel that the lesions are congenital in origin.

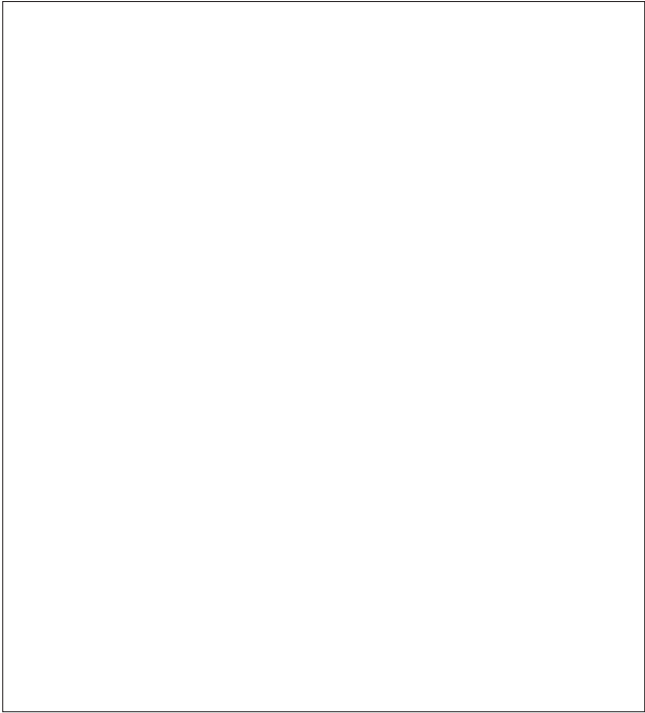


Fig. 2. Schematic diagram showing the course of the lesser sac hernia through the gastrocolic ligament with reemergence through the hepatogastric ligament. L, liver; S, stomach; T, transverse colon.

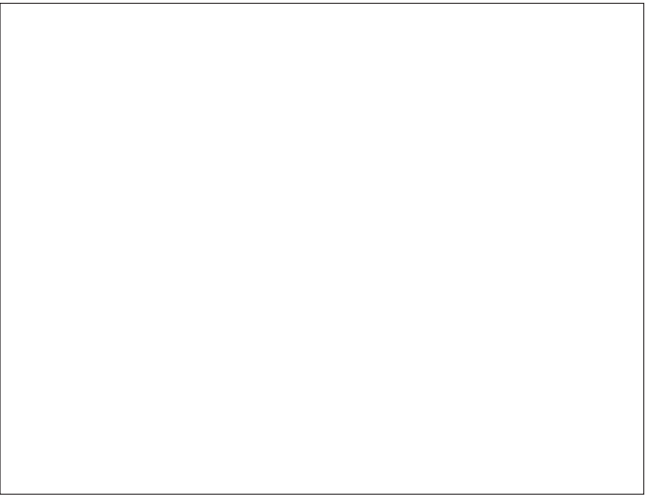


Fig. 3. Picture of omental closure (S, stomach; T, transverse colon).

Of interest, our patient had a long-standing history of epigastric pain, which in retrospect was wrongly attributed to gastritis. This history of chronic abdominal pain has been well documented by others.<sup>5,7,10,12</sup>

Preoperative diagnosis of internal herniation as a cause of intestinal obstruction is very difficult and has been reported rarely with plain abdominal imaging and abdominal computed tomography (CT).<sup>12,14</sup> In the absence of a preoperative diagnosis, it is important that the delay to

TABLE I: REPORTED CASES OF DOUBLE OMENTAL HERNIATION IN THE ENGLISH LITERATURE

| Author                           | Year | Age | Sex | Chief complaint (duration)      | Preoperative diagnosis      | Procedure | Herniated organ |
|----------------------------------|------|-----|-----|---------------------------------|-----------------------------|-----------|-----------------|
| Schnepper & Hanaoka <sup>7</sup> | 1952 | 27  | M   | Nausea and vomiting (3 weeks)   | Benign ulcer                | Reduction | Small intestine |
| Carlisle & Killen <sup>5</sup>   | 1967 | 49  | M   | Epigastric pain (several years) | Chronic gastric obstruction | Reduction | Small intestine |
| Chattopadhyay et al <sup>8</sup> | 1982 | 28  | F   | Abdominal pain (9 years)        | Intestinal obstruction      | Resection | Jejunum         |
| Lohmann et al <sup>9</sup>       | 1985 | 14  | M   | Abdominal pain (48 hours)       | Intestinal obstruction      | Reduction | Small intestine |
| Yasuda et al <sup>10</sup>       | 1989 | 20  | M   | Epigastric pain (5 years)       | Intestinal obstruction      | Resection | Ileum           |
| Liakakos et al <sup>11</sup>     | 1992 | 60  | M   | Epigastric pain (16 hours)      | Mal-rotation of stomach     | Resection | Ileum           |
| Inoue et al <sup>12</sup>        | 1996 | 42  | M   | Epigastric pain (several years) | Lesser sac hernia           | Resection | Ileum           |
| See et al (current report)       | 2001 | 41  | M   | Epigastric pain (5 years)       | Intestinal obstruction      | Reduction | Ileum           |

F: female; M: male

laparotomy be minimised. We feel that any patient who presents with acute small bowel obstruction, without a history of prior abdominal operation, requires laparotomy and that a preoperative CT is not necessary in most cases.

### Conclusion

Acute small intestinal obstruction, in the absence of any obvious aetiology on clinical assessment and with no prior history of abdominal surgical procedures, might suggest the possibility of an internal hernia. Abdominal imaging studies (e.g., CT examination) may rarely confirm the diagnosis and are not essential preoperatively. Urgent operation should not be delayed because of the high mortality associated with strangulation.

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