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A post operative complication of foramen of Winslow hernia with left to right herniation of the small intestine: An extremely rare case report

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ABSTRACT

INTRODUCTION: A foramen of Winslow hernia (FWH) is a type of internal hernias. Generally, the contents of the hernia pass through the foramen of Winslow from right to left. The case presented in this report is very unusual, as the small intestine in the hernia passed through the foramen from left to right.
PRESENTATION OF CASE: A 67-year-old woman developed a sudden abdominal pain 15 days after laparoscopic subtotal colectomy. Abdominal contrast-enhanced computed tomography (CT) examination revealed a FWH, and an emergency surgery was scheduled. The small intestine was found to be herniating from the cavity of the omental bursa through the foramen of Winslow, to the right side of the hepatoduodenal ligament, and was incarcerated. The incarcerated intestine was reduced, and the necrotic part of the intestine was resected. In addition, the foramen of Winslow and the cavity of omental bursa were closed to prevent relapse.
CONCLUSION: To our knowledge, here we report the first FWH of which the contents of the hernia are herniated from left to right, in literature. Whether the Foramen should be closed or not requires discussion, however, we conclude that the foramen should be closed when possible, acknowledging previous reports and the present case.

1. Introduction

The foramen of Winslow is a passage between the omental bursa and the general peritoneal space, which is located dorsal to the hepatoduodenal ligament. Although it is difficult to make a pre-operative diagnosis of a foramen of Winslow hernia (FWH), recent improvements in diagnostic imaging have led to occasional case reports with pre-operative diagnosis. We report a case of which a diagnosis of a FWH was made preoperatively; additionally, an emergency surgery revealed a type of hernia different from the common FWH. We performed an additional step of surgery to prevent relapse, although this is typically not required. We also present a review the existing literature on the topic. This case report was described in line with the SCARE criteria [1].

2. Case presentation

A 67-year old woman underwent laparoscopic subtotal colectomy with ileostomy for steroid-resistant ulcerative colitis. She was discharged eight days after the surgery, with a prescription of oral prednisolone (10 mg). There were no other past medical histories, family history, or allergies. Her body mass index (BMI) was 21.5 kg/m^2. Fifteen days after surgery, she presented with an intense upper abdominal pain of a sudden onset. She was afebrile with normal pulse and blood pressure. Although there was an intense spontaneous pain in the upper abdomen, palpation revealed a soft abdomen without tenderness and there were no signs of peritoneal irritation. The white blood cell count was 12,700/μL, the C-reactive protein level was 9.1 mg/dL, and other parameters were normal. Abdominal contrast-enhanced computed tomography (CT) indicated the small intestine herniating dorsal to the hepatoduodenal ligament. Small intestines lateral to the hepatoduodenal ligament showed poor perfusion (Fig. 1.a, b, c). A strangulation ileus associated with a FWH was diagnosed, and she underwent emergency surgery on the same day.

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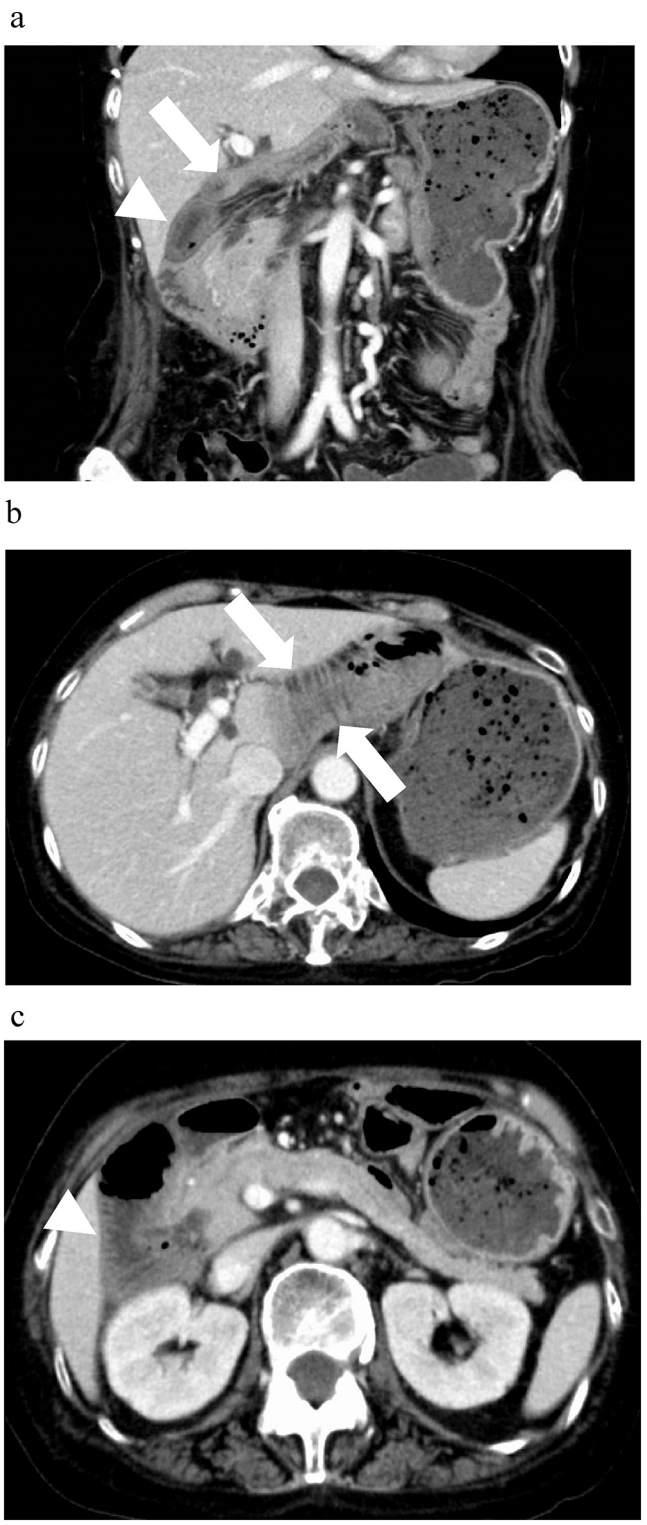

Fig. 1. Abdominal contrast-enhanced CT scans. (a, b, c) The small intestine herniating through the Foramen of Winslow is shown (arrow). A poorly perfused area of the small intestine is seen, lateral to the hernia orifice (arrowhead).

A nasogastric tube was inserted for decompression of the upper gastrointestinal tract pre-operatively. Part of the small intestine found in the right upper abdomen indicated poor perfusion. Due to the poor visibility caused by the dilated intestine, we selected laparotomy for the following procedures. Laparotomy was performed with an upper abdominal midline incision and the small intestine was found to be invaginated into the foramen of Winslow. Tracing the course of the small intestine from the Treitz ligament, the small intestine was found to have traveled dorsal of the stomach and herniated through the foramen of Winslow from left to right (Fig. 2.a– e). Necrosis was observed in the herniated part of the intestine. The ileus was released by exerting traction on the incarcerated intestine. Approximately 30 cm of the necrotic segment was resected, beginning at 40 cm from the Treitz ligament, followed by an end-to-end anastomosis. To prevent relapse, the foramen of Winslow was sutured and closed to the extent possible. In addition, three interrupted sutures were placed between the posterior wall of the stomach and the pre-pancreatic fascia to close the omental bursa.

Oral feeding was initiated three days after the surgery. The patient was discharged from the hospital 8 days after the emergency surgery without complications. She underwent a closure of the ileostomy 4 months after discharge. There has been no relapse of any ileus or internal hernia for 22 months after surgery for the FWH.

3. Discussion

FWHs account for 8% of all cases of internal hernias [2]. Difficulty in pre-operative diagnosis leads to a delay in treatment, with a reported mortality rate of approximately 50% in the 1960s [3]. Because clinical manifestations include abdominal pain, nausea, and vomiting and are not specific to the condition, it is difficult to make a diagnosis based only on clinical symptoms. Advances in diagnostic imaging have enabled early treatment resulting as a decrease in mortality to approximately 5% in 1980s, with fatal cases rarely reported in recent years. Abdominal CT examination is useful for diagnosis, and the evidence of hernia contents passing through the foramen of Winslow leads to a definitive diagnosis. In addition, Pernice et al described narrowing of the portal vein on abdominal CT as a characteristic finding [4]. In the present case, abdominal contrast-enhanced CT examination identified the small intestine moving superior of the Treitz ligament into the omental bursa, which had been opened during subtotal colectomy, as a cord like feature. However, the course of the entire small intestine was difficult to trace.

In recent years, a laparoscopic approach has been used in internal hernias in several cases to diagnose and manage the course and incarceration of the small intestine [5]. Management includes reduction of the herniated contents, resection of the segment with any blood flow disturbance, and closure of the hernia orifices. As for structures such as loosely fixed ascending colon and the like, few sutures for fixation are added to prevent relapse following the closure of the hernia orifices. In the present case, the foramen of Winslow was closed with sutures to the extent possible, and the opened omental bursa was closed as well.

The closure of the foramen has been thought unnecessary as there had been no reports of relapse of hernia through the foramen of Winslow while on the other hand, there had been indications of vascular adverse events associated with the closure of the foramen [6–8]. However, Tjandra et al has reported a case of relapse in the absence of closure [9]. As for the vascular adverse events associated with closure of the foramen of Winslow, the report by Dorian et al is often cited, in which portal obstruction occurred due to closure [10]. However, the report only described that the intestine passing through the foramen of Winslow had caused portal obstruction and does not associate it with closure of the foramen of Winslow. There are no other reports of vascular obstruction due to the closure of the foramen.

The foramen of Winslow usually has a width allowing one to two fingers; it was enlarged to approximately three-finger width in the present case, which may have allowed the herniation [11].