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Hernia Through Winslow Foramen in Cipto Mangunkusumo General Hospital, Jakarta: A Case Report

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Abstract

Hernias through Winslow foramen are extremely rare, occurred for 0.1% of all abdominal hernias and found during laparotomy due to strangulated bowel obstruction. This study aims to describe the hernia of Winslow foramen and its management.
We report the first case of Winslow foramen hernia at Cipto Mangunkusumo General Hospital, Jakarta. A man 54 years in 2019. Ileus was the main clinical symptom and presented epigastric pain, nausea, and vomiting. A plain abdominal x-ray confirmed small bowel obstruction, but the etiology was unclear. Emergency laparotomy was performed, and a herniated loop of ileum was found entering the lesser sac through the Winslow foramen. The loop of ileum was reduced, and viable, the omental patch was put on Winslow foramen as plasty procedure.

Keywords: hernia, Winslow foramen, plain abdominal x-ray

Introduction

The Winslow foramen is a normal communication between the greater and lesser peritoneal cavities, located beneath the free edge of the lesser omentum, and the hepatoduodenal ligament. The posterior, superior, and inferior boundaries of this foramen include the inferior vena cava, caudate lobe, and duodenum, respectively. Hernias through Winslow foramen are extremely rare, occurring 0.1% of all abdominal hernias, and 8% of all internal abdominal hernias.[1] To date, there have been 11 cases of hernia through Winslow foramen reported in the literature, nine of eleven cases were ileal herniation, followed by caecum and gallbladder. Most patients hospitalized with strangulated small bowel obstruction and high mortality as a result.[2] Our case was the first to be reported at dr. Cipto Mangunkusumo General Hospital, Jakarta.

Case illustration

A 54-year-old man came to the emergency room with severe epigastric/colic pain, vomiting, and bowel obstruction. Similar pain has often experienced in the past, and no previous abdominal surgery. On admission, the patient appeared seriously ill, blood pressure 130/80 mmHg, heart rate 110 beats per minute, respiratory rate 24 times per minute, and normal temperature. Signs of bowel obstruction were present, mild tenderness, and distended abdomen, especially in the right upper quadrant. Laboratory results show hemoglobin of 12.4 gr/dL, hematocrit of 34%, white blood cell count of 15,400/µl, with a shift of white blood cell differential count to the left (increase in neutrophils). Base excess of arterial blood gas analysis was within the normal range. Total bilirubin and direct bilirubin increased to 2.8 and 1.8 mg/dL, respectively. A plain abdominal x-ray revealed small bowel obstruction, free fluid/ ascites, and no signs of obturator hernia; a closed-small bowel was trapped/located in the lower sac.

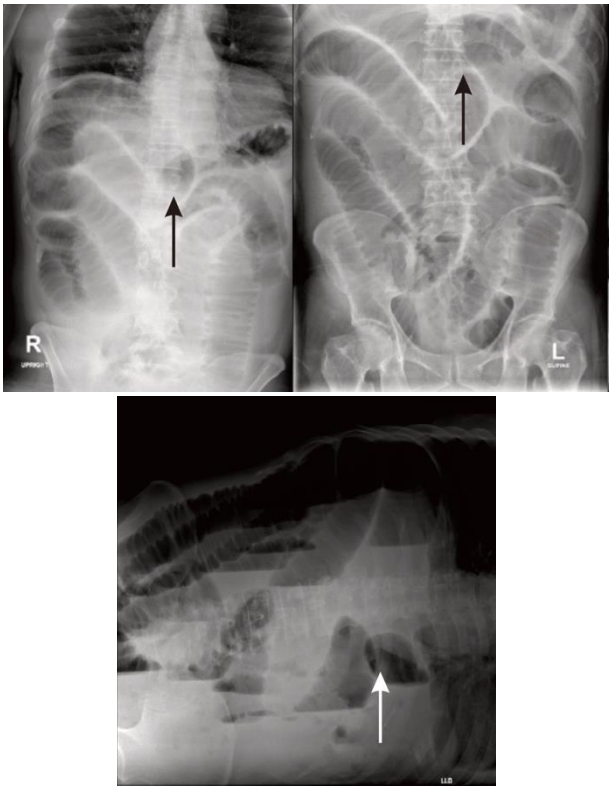

Figure 1. Abdominal x-ray showing bowel obstruction. Arrow shows suspected bowel loop in the lesser sac.

An emergency midline laparotomy performed after optimal fluid resuscitation and pain management. Intraoperatively, a 50 cm long ileum loop found to herniate through the Winslow foramen, the strangulated loop released. The ileum was considered viable and returned to the greater sac (Figure. 2).

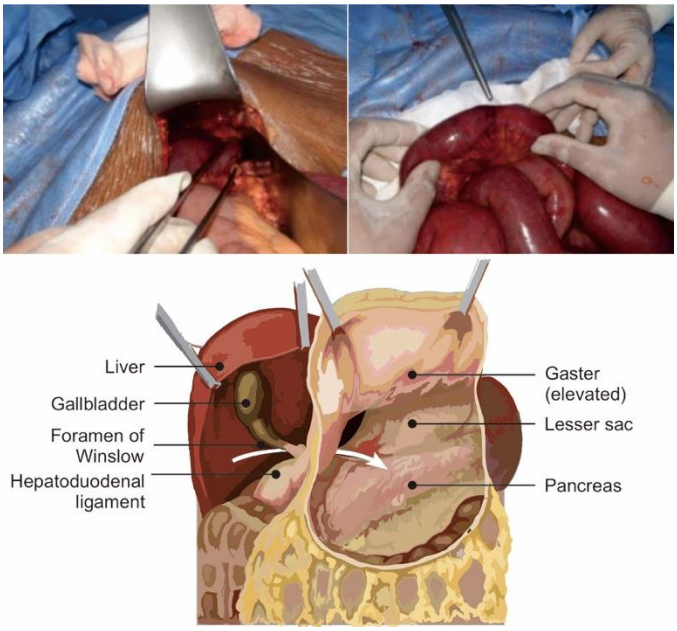

Figure 2. Intraoperative findings and illustration showing the foramen of Winslow (white arrow).

Foramen defect was more than three digits wide, mobile caecum/ascending colon, and redundant transverse colon found. Reducing the Winslow foramen diameter carried out by procedure through suturing duodenal-hepatic ligament to posterior peritoneal layer, and the omental probe placed on the tunnel opening. The patient's postoperative recovery managed according to the ERAS (enhanced recovery after surgery) protocol, and he discharged after five days.

Discussion

Hernia of the foramen of Winslow hernia is first reported in 1834 by Blandin; in autopsies. After that, <200 cases of the foramen of Winslow hernia was reported in the medical literature.[3]The reported demographic for bowel herniation through Winslow foramen is usually men working manual labor, aged between 50 to 60 years old. Winslow foramen hernia can be defined as a particular variant of internal abdominal hernia; it is a normal peritoneal orifice kept closed by normal intra-abdominal pressure that may be permeated by the intra-abdominal viscera.[4]

There are multiple anatomical abnormalities reported as possible predisposing factors for a visceral herniation through this foramen: 1. Abnormally enlarged foramen, 2. The presence of an unusually long small-bowel mesentery or persistence of the ascending mesocolon, 3. An elongated right hepatic lobe, which could be directing the mobile intestinal loop into the foramen, 4. A lack of fusion between caecum or ascending colon to the parietal peritoneum, 5. A defect in the gastrohepatic ligament, and 6. Incomplete intestinal rotations or malrotation.[5] Some have suggested that cholecystectomy and redundant transverse colon might be a risk factor. Erskine has also postulated that the failure to push the right colon retroperitoneally due to changes in the intra-abdominal pressure as a contributing factor.[6]

Symptoms are usually related to small bowel obstruction and occasionally to gastric outlet obstruction. A typical presentation is an acute severe mid-epigastric pain associated with nausea and vomiting. The severity of pain is related to the presence of bowel strangulation with subsequent necrosis. Clinical examination is non-specific, and laboratory findings are rarely helpful. Physical examination suggested bowel obstruction but etiology unclear. A plain abdominal x-ray performed to support diagnosis in our center. Plain abdominal x-ray revealed small bowel dilatated, gas-containing intestinal loops in the upper abdomen part, and medial-posterior to the stomach are suggested intestinal loops through lesser sac. The modality of plain abdominal x-ray as supporting diagnostic recommended in our center, but non-specific. Another modality is abdominal CT with contrast, some studies have been reported more specific as supporting diagnostic.[7] Various, more or less specific findings have been reported, such as an air-fluid collection in the lesser sac or signs of small bowel obstruction associated with the presence of mesenteric vessels stretching anterior to the inferior vena cava and posterior to the portal vein; the absence of the ascending colon in the right gutter and an anterolateral displacement of the stomach. In stable condition patients, we recommend performing abdominal CT with contrast as supporting diagnostic if abdominal x-ray at the first radiologic examination has no specific information. Several studies have demonstrated the accuracy of CT in the detection of small bowel obstruction, with a sensitivity and specificity of 94-100% and 90-95%, respectively.[8]

The treatment invariably requires urgent surgery, and even if symptoms are non-specific, as in our case, it should be considered in order to assess intestinal viability because of the risk of intestinal strangulation. Following immediate resuscitation, surgical management is mainly by surgical reduction. Usually, open surgery is performed. Only a few cases of laparoscopic hernia management have been reported. However, this has led some experienced surgeons to perform initial investigation with laparoscopy. Successful laparoscopic management for Winslow foramen herniation has now been reported.

Treatment is based on the careful inspection of the subsequent hernial reduction, which is frequently possible with simple and gentle traction. Occasionally, this can be difficult; in these situations, the gastrocolic or gastrohepatic ligaments must be opened or a wide Kocher maneuver performed. In the case of massive colonic dilatation, a colotomy for decompression with a suction device can be useful. In the case of overt intestinal necrosis, an adequate resection is obviously mandatory; nevertheless, there is no clear and established consensus on surgical management when the herniated contents are grossly viable.[9] Some surgeons report right colonic fixation or caecopexy to the lateral wall. In contrast, others advocate right colectomy, especially when there is a lack of fusion between caecum or ascending colon to the parietal peritoneum to avoid subsequent volvulus. In order to prevent recurrent herniation, our case was decided to definitively close the foramen of Winslow and omental probe as a plasty procedure.

Furthermore, the debate continues as to whether Winslow foramen should be closed in order to prevent a recurrence. There have been warnings of the potentially significant negative consequences of closing the defect: portal vein thrombosis and obstructive jaundice. This option can, however, lead to meaningful complications such as accretions and portal vein thrombosis. Thus, leaving the foramen open may be justifiable since the post-operative inflammatory adhesions will most often obliterate the foramen entrance and there has not been a report of recurrence.[10]

Summary

The symptoms, clinical examination is non-specific, and laboratory findings are rarely helpful. Retrograde analysis on the plain abdominal x-ray should be considered as abdominal, internal hernia through Winslow foramen. The surgical management of hernia through Winslow foramen based on surgeon preference and the viability of the herniated intra-abdominal contents.

Disclosure

Authors disclosure there was no potential conflict of interest.

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