Transverse Colon Herniation Through the Foramen of Winslow Presenting With Unusual CT Findings

Luigi Maria Pernice, M.D., Maurizio Bartolucci, M.D., Valentina Mori, M.D., Luca Ponchietti, M.D., Alessandro Tedone, M.D.

Bowel herniation through the foramen of Winslow is among the rarest of internal hernias, accounting for less than 0.8%. In its origin, a pivotal role is played by some anatomic variations, or anomalies such as the increased mobility of the right transverse colon, and maybe the exceedingly large bore of the foramen itself. The first case of hernia through the foramen of Winslow was reported by Blandin in 1834. Since then, no more that 200 new cases have been described. Diagnosis usually is established during surgery while treating a bowel obstruction. Only in an exceedingly small group of patients is diagnosis achieved preoperatively on the basis of radiological findings. We describe a preoperatively diagnosed case of transverse colon herniation through the foramen of Winslow, showing a portal vein narrowing and periportal lymphedema at computed tomography (CT). To the best of our knowledge, only a few cases of preoperative CT diagnosis of Winslow foramen hernia have been described in the past. None had the abovementioned CT findings. (J GASTROINTEST SURG 2006;10:1180–1183)

KEY WORDS: Winslow foramen, internal hernia, computed tomography, bowel obstruction, halo sign

CASE REPORT

A 45-year-old female was admitted to the hospital after a 5-hour history of diffuse abdominal pain, especially intense at the epigastria, with nausea and vomiting. The symptoms started acutely while the patient was sleeping. The pain was only partially relieved by the knee-chest position. The patient's past medical history was unremarkable. Upon admission, blood pressure was 100/60 mmHg and heart rate was 76 beats/minute. Serum amylase (29 U/L), electrolyte concentrations (Na^+ 136 mEq/L, K^+ 3.6 mEq/L), liver enzymes (ALT 18 U/L and AST 29 U/L), total bilirubin (1.0 g/L), and white blood cell count (8.08×10^9 L) were all within normal limits. On clinical examination, the abdomen was soft but severely tender in the epigastria. There was no palpable mass. Bowel sounds were hypoactive. The patient's last bowel movement was from the day before. Standard abdominal roentgenograms in the supine and upright positions showed no relevant findings. Ultrasound examination (US) showed the portal vein displaced forward by a mass behind it that narrowed it, and an ectasia of the splenic vein. In addition, circumferential ipoechoic zones were present around the portal vein as well as around the segmental and subsegmental portal venous branches. The US findings showed evidence of portal vein that was at first ascribed to a partial circumferential portal vein thrombosis associated with an expansive mass close to the hepatic hilum.

Subsequently, the patient underwent unenhanced and biphasic contrast enhanced computed tomography (CT). Images in the arterial and portal phases

From the Departments of Medical and Surgical Critical Care (L.M.P., V.M., L.P., A.T.) and Clinical Pathophysiology - Radiodiagnostica I (M.B.), University of Florence, Firenze, Italy.
Reprint requests: Luigi Maria Pernice, M.D., Associated Professor of General Surgery, Department of Medical and Surgical Critical Care, University of Florence, Sct. Clinica Chirurgica Generale e Discipline Chirurgiche, Viale Morgagni, 85 - 50134 Firenze, Italy. e-mail: pernice@unifi.it

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were acquired 25 seconds and 70 seconds, respectively, after intravenous contrast medium (iopromide) administration. The arterial dominant phase showed a transient hepatic attenuation difference involving the lateral segments (i.e., segments II and III) of the left lobe, with good evidence of row through the left hepatic artery. The portal vein was stretched, displaced forward, and narrowed because of an ab extrinseco compression due to transverse colon herniated through the foramen of Winslow. A circumferential hypodensity "halo" was confirmed at the site of portal narrowing. It reached the peripheral branches of the portal vein (Fig. 1). This sign was interpreted as a periportal lymphedema due to the compression of anterior pillar of Winslow's foramen.

At operation, the herniation of transverse colon through the foramen of Winslow was confirmed; the foramen was enlarged enough to allow the introduction of three fingers. The gastrohepatic ligament was so stretched by the herniated colon that it appeared almost transparent. We were able to reduce the hernia by delicate manipulation. The viscus then appeared perfectly viable. Finally, we reduced the size of Winslow's foramen with nonabsorbable stitches between the anterior and the posterior foramen pillars, so that it allowed only a single finger to pass. We did not perform a colopexy. We left no drains.

After operation, the patient did well and was discharged 5 days later. CT control performed 4 days after operation showed complete disappearance of the alterations previously described (Fig. 2).

DISCUSSION

The foramen of Winslow allows communication between the peritoneal cavity and the lesser sac. Bowel herniation through the foramen of Winslow is among the rarest of internal hernias, accounting for less than 0.8%.[1] Three types of internal hernias are described according to the segment of bowel involved in the hernia (small intestine, cecum, and right colon or transverse colon). Hernia of the small intestine is the most common, whereas that of the transverse colon is the rarest.[2]

Moynihan[3] was the first to systematically study the disease. He suggested that this particular internal

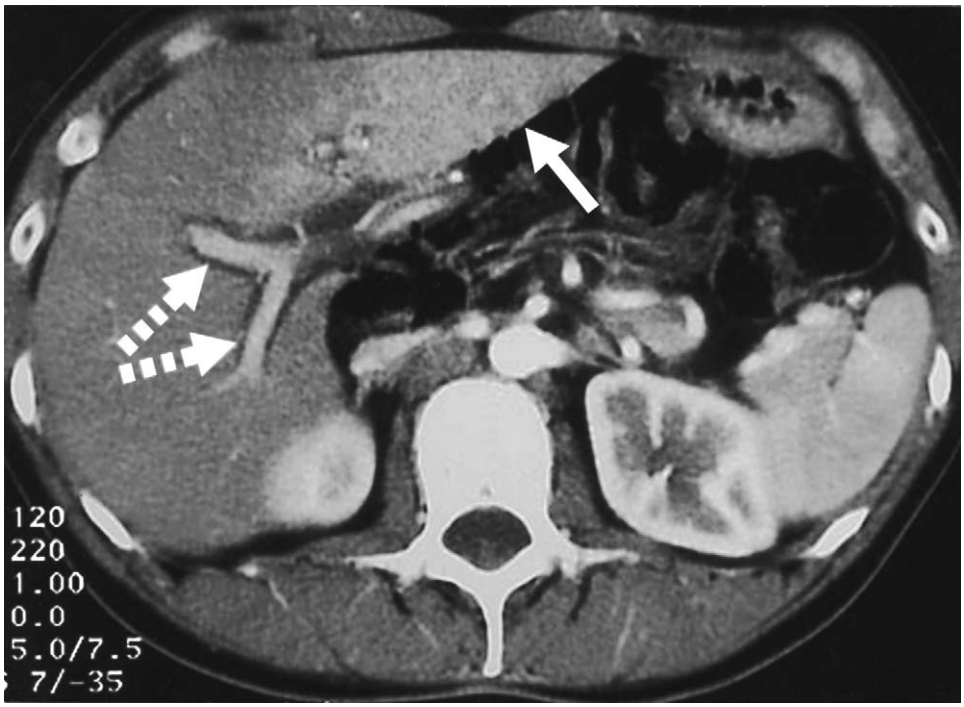

Fig. 1. Contrast-enhanced CT in arterial phase showing the portal vein stretched, displaced forward, and narrowed because of an ab extrinseco compression due to the transverse colon herniated through the Winslow's foramen. The arterial dominant phase shows a transient hepatic attenuation difference (THAD) involving the lateral segments (i.e., segments II and III) of the left lobe (*white arrow*), with good evidence of flow through the left hepatic artery. A circumferential hypodensity "halo" is present around the peripheral branches of the portal vein (*dotted line arrows*), a sign of portal venous narrowing.