Small bowel obstruction secondary to obturator hernia

A 74-year-old female patient consulted at the emergency department due to sudden onset of left lower quadrant pain and two episodes of vomiting. The initial impression was renal colic and plain X-ray abdomen erect/supine was requested. The patient had a history of appendectomy and two caesarean sections.

Imaging Findings:

Plain radiograph in semiupright and supine position showed distended small bowel loops with a maximum diameter of 3.5 cm. There was a transition zone at the left lower abdomen. Colonic and rectal gas was absent. The initial impression was small bowel obstruction. [Fig 1a, b]

Plain CT with stone protocol showed left obturator hernia with a small bowel loop herniating through the left obturator foramen. The hernia sac measured about 3.5 x 2.2 cm in widest axial diameters and was situated between the left pectineus and adductor longus muscles. Minimal fat stranding was seen surrounding the hernial sac. The bowel loops proximal to the hernia were dilated, measuring 3.1 cm in maximum diameter and were fluid-filled, while the distal loops including the colon were collapsed. [Fig. 2a-c]

Discussion:

Small bowel obstruction (SBO) is an emergency condition requiring frequent hospitalization and surgical consultation, representing 20% of all surgical admissions for acute abdominal pain. It occurs secondary to mechanical or functional obstruction of the small bowel, preventing normal transit of its contents.

There are several causes of small bowel obstruction. One of these is obstructed abdominal hernia. Among the abdominal hernias, obturator hernias are very rare and very difficult to diagnose clinically because of low incidence, deep location and infrequent specific sign and symptoms. Obturator hernias typically occur in elderly women or patients with chronically raised intra-abdominal pressure, ascites, COPD and chronic cough. There is a high prevalence of those hernias in females because of pregnancy, which leads to relaxation of the pelvic peritoneum and a wider and more horizontal obturator canal [1].

Pathophysiology: The obturator foramen is formed by the continuity of the pubic and ischial bone. It is covered by the obturator membrane except in the anterosuperior aspect which is pierced by the obturator artery, vein and
nerve. This neurovascular bundle then travels along a 2- to 3-cm oblique tunnel, the obturator canal. It is through this deficiency that an obturator hernia occurs [2]. The layers that the hernial neck passes through include obturator internus muscle fibres, obturator membrane and obturator externus muscle fibres. The hernia will then lie superficial to the obturator externus and deep and inferior to the pectineus muscle. Small bowel is the most common hernial content which predisposes to obstruction, strangulation and perforation.

Obturator hernias are usually asymptomatic. About one third of these patient will develop thigh neuralgia due to compression of the obturator nerve, the Howship-Romberg sign [2]. Also, if the hernia contains bowel, it may be predisposes to obstruction, strangulation and incarceration.

Plain radiography is the initial examination of choice for evaluating small bowel obstruction. An intramural width of the small intestine of 3 cm is considered abnormal. However, radiographs are diagnostic in only 50%–60% of cases and have high sensitivity only for high grade obstructions [1].

Abdominal CT correctly reveals the cause of obstruction and preoperative evaluation of SBO, with sensitivity of 90%–96%, specificity of 96%, and accuracy of 95% [1]. It also aids in diagnosis of obturator hernia when the clinical diagnosis is uncertain. CT also helps to demonstrate strangulation.

In our case, the age and sex of the patient along with imaging findings help to make a diagnosis of the obstructed obturator hernia leading to small bowel obstruction.

**Differential Diagnosis List:** Small bowel obstruction secondary to obturator hernia, Inguinal hernia, Femoral hernia

**Final Diagnosis:** Small bowel obstruction secondary to obturator hernia

**References:**


**Description:** Semiupright, plain abdominal radiograph shows centrally located dilated small bowel loops. No evidence of free air is noted. **Origin:** Manila Med, Medical Center Manila
Description: Supine plain abdominal radiograph shows centrally located dilated small bowel loops. Absence of rectal gas is also noted. Origin: Manila Med, Medical Center Manila
Description: Axial plain CT shows left obturator hernia with a small bowel loop herniating through the left obturator foramen between the left pectineus and adductor longus muscles. Minimal fat stranding is seen surrounding the hernia sac. Origin: Manila Med Medical center Manila
Description: Coronal plain CT shows left obturator hernia with a small bowel loop herniating through the left obturator foramen between the left pectineus and adductor longus muscles. Minimal fat stranding is seen surrounding the hernia sac. Origin: Manila Med medical center manila.
Description: Sagittal plain CT shows left obturator hernia with a small bowel loop herniating through the left obturator foramen between the left pectineus and adductor longus muscles. Minimal fat stranding is seen surrounding the hernia sac. Origin: Manila Med medical center manial