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CASE REPORT

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Strangulated obturator hernia: Report of two cases

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Abstract

Obturator hernia is a rare condition, which can be life-threatening if misdiagnosed. We must consider the diagnosis in case of a bowel obstruction especially in elderly women.

K E Y W O R D S bowel obstruction, hernia, obturator foramen, treatment

1 | INTRODUCTION

Obturator hernia (OH) is more common in women than men owing to their greater width of the pelvis and larger obturator canal. We report two cases of strangulated obturator hernia, which were preoperatively diagnosed, in two female patients without previous history of abdominal surgery.

OH is a rare condition.¹ With an incidence rate ranging from 0.05% to 1.4% of all hernias, it causes 0.2%–1.6% of all small bowel obstructions.² It affects women much more often than men owing to the greater width of their pelvis and larger obturator canal. Called the "little old lady's hernia," OH occurs in elderly women, probably due to enlargement of the obturator canal after pregnancy and age-related increased tissue laxness.³

Given the high rates of bowel incarceration and perforation, obturator hernias are always treated surgically. The classical approach is abdominal laparotomy, although laparoscopic techniques are increasingly being used for the repair of the OH.

2 | CASES

2.1 | Case 1

A frail 83-year-old woman visited the emergency department suffering from an acute lower abdominal pain, absolute constipation, and vomiting. She had never undergone abdominal surgery. Abdominal examination showed a distended abdomen with generalized tenderness. No groin hernias were found and rectal examination was normal. Plain X-rays revealed dilated bowel loops with multiple central air-fluid levels suggestive of complete small bowel (SB) obstruction with no signs of perforation. Urgent CT scan of the abdomen and pelvis performed with contrast revealed a dilated SB loops with a transition point caused by herniation through the left obturator foramen. The colon was normal.

The diagnosis of strangulated small bowel obstruction secondary to a left obturator hernia was confirmed and the decision was to carry out surgery. During laparotomy, a segment of ileum was strangulated in the left obturator hernia defect. The gangrenous small bowel was resected and

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FIGURE 1 Intraoperative imaging of incarcerated bowel in obturator canal



FIGURE 2 CT scan showing right obturator hernia reconstruction

a side-to-side anastomosis was done (Figure 1). The obturator defect was closed with simple sutures. The patient was discharged home on the fifth postoperative day. The patient did not describe any recurrence of pain at 6 months of follow-up.

2.2 | Case 2

A 66-year-old woman with a history of weight loss, anorexia, and vomiting visited the emergency department. She had no history of abdominal surgery. On examination, she was cachectic; she had a distended abdomen and epigastric tenderness. Digital rectal examination was normal. No inguinal hernia was evident. Vital signs were normal. Laboratory tests revealed elevated leukocytes. Plain X-rays demonstrated dilated small bowel. The diagnosis of mechanical small bowel obstruction was made. CT scan with intravenous contrast revealed a left-sided obturator hernia (Figure 2), containing incarcerated small bowel, with no signs of strangulation or perforation. There was no evidence of ischemic bowel on the contrast CT images. The decision was to operate on



FIGURE 3 Intraoperative imaging

the patient urgently. At laparotomy, a segment of ileum was strangulated at the obturator foramen without evidence of ischemia (Figure 3). The obturator defect was closed with simple sutures. The patient did not present any recurrence of the hernia at 6 months of follow-up.

3 | DISCUSSION

An obturator hernia is a rare condition with incidence rates ranging from 0.07% to 1% of all abdominal hernias^{1,2} and 0.2%–1.6% of all cases of intestinal obstruction.^{1,3}

Usually, the small bowel herniates through the obturator duct in pelvis (2–3 cm long and 1 cm wide). The hernia most often occurs in older women, and it is most commonly on the right foramen because the left one is protected by sigmoid colon. Although the condition is rare, it has one of the highest mortality rates of all abdominal wall hernias due to delayed diagnosis (13%–70% of mortality in different studies).^{1,2}

An obturator hernia is a very rare entity that proceeds through the obturator canal, which is approximately 2–3 cm long and 1 cm wide. The obturator foramen is the space between the pubic rami and ischial bones; the obturator membrane covers it in all except of the anterior superior aspect. The obturator nerve, artery, and vein travel through the foramen and canal. The peritoneal obturator hernia sac can develop through a widening defect of the obturator externus and internus muscles.^{1,4}

Obturator hernias are much more common in elderly female and post-pregnancy patients owing to the greater width of the pelvis, larger obturator canal, and increased laxity of the pelvic tissues.^{5,6} The hernia is most often the Richter's type and usually contains ileum.^{2,7}

Embryologically, as soon as formed, the obturator foramen is almost completely closed by the obturator membrane leaving one canal through which pass the obturator nerve, artery, and vein. The obturator hernia is defined as a herniated viscus through this obturator canal³ (Figure 4).

The three stages of obturator hernia formation were described by Gray et al⁸ First, preperitoneal connective tissue and fat enter the obturator canal. Then, a dimple is formed in the peritoneum over the internal orifice of the obturator canal resulting in the formation of a peritoneal sac. In the third stage, visceral organs, mostly ileum, enter the sac.⁸ The hernia usually contains small bowel, but in less common cases it can also contain colon (cecum or sigmoid colon), appendix, greater omentum, Meckel's diverticulum, or urinary bladder.^{4,9}

Clinical symptoms are not specific. A mechanical small bowel obstruction presentation predominates in 90% of the cases.^{4,9} OH should be suspected in thin, multiparous, elderly women with chronic diseases and without surgical history, presenting with a bowel obstruction or pain in the base of the thigh.⁴

Occasionally, a palpable mass is present in the upper part of the medial thigh, with intermittent abdominal pain. Rectal



FIGURE 4 Pathway of the obturator hernia. 1 = pubic ramus,
2 = peritoneum, 3 = obturator nerve, 4 = pectineus muscle,
5 = obturator hernia, 6 = obturator membrane, 7 = external obturator muscle, 8 = internal obturator muscle, 9 = ischium

or vaginal examination may detect a mass in the obturator area. Differential diagnoses include psoas abscess, femoral and perineal hernias, inguinal adenitis, and diseases of the hip joint.

The Howship-Romberg sign (inner thigh pain on internal rotation of the hip) is present in 15%–50% of obturator hernias,^{1,9} but it is not pathognomonic. However, the Hannington-Kiff sign is less well known but more specific.³ It refers to the absence of the thigh adductor reflex due to compression of the obturator nerve.

Up to 50%–60% of cases present with Richter hernias resulting in a partial small bowel obstruction.¹ The hernia orifice is small, so bowel pinching and strangulation are frequent and mortality remains high, ranging from 12% to 70%.⁴ These mortality rates are related to the difficulty in establishing a correct preoperative diagnosis.

In fact, the rate of correct preoperative diagnosis ranges from 21.5% to 31.3%.⁵ The early diagnosis is challenging when the symptoms and signs are nonspecific. Various imaging modalities are applied to establish the diagnosis, including ultrasonography, herniography, and CT scan.¹

Ultrasonography can show a hypoechoic mass reflecting a dilated, edematous portion of the bowel.⁶ However, CT scan has a superior sensitivity and accuracy, showing a mass between the obturator externus and pectineus muscles and



air-fluid levels.^{1,7} In our two cases, the diagnosis was correctly made preoperatively after performing CT scans.

In cases with the progression of clinical signs and symptoms of bowel obstruction or peritonitis, early exploratory surgery is performed to clear the diagnosis without further explorations. These delays result in resecting gangrenous bowel which is associated with high mortality rates.^{10,11}

Several open and laparoscopic techniques are described in the literature to repair the OH. Conventional surgery includes abdominal, retropubic, obturator, and inguinal approaches.⁷ In the emergency setting, the classic low midline incision is most commonly preferred, as it allows the best exposure of the obturator ring as well as the identification and resection of any ischemic bowel.^{12,13}

Recently, laparoscopic techniques (both transabdominal and Extra-peritoneal) are increasingly being used in these high-risk patients: it is useful for both diagnosis and treatment, it enables clear bilateral visualization of the inguinal space, femoral and obturator spaces, a lower rate of postoperative ileus, fewer pulmonary complications, and less postsurgical pain resulting in shorter hospital stays.⁴

In case of no perforation or gangrenous bowel, simple closure with a non-absorbable suture leaving the sac in situ is most appropriate and has an acceptable recurrence rate of less than 10%.12

Large defects require hernioplasty. A suitable reconstruction can be made with a peritoneal fold, the greater omentum, the round ligament, the uterine fundus, the ovary, the bladder wall, or with a mesh made of synthetic material. However, a mesh repair is not advocated if bowel resection has been made.⁴

After reviewing the literature and analyzing our clinical cases, we elaborated a diagnostic and therapeutic algorithm that could help in the management of this rare condition (Figure 5).

CONCLUSION 4

Obturator hernias are a rare cause of bowel obstruction. Preoperative diagnosis is difficult because of the low clinical specificity. The CT scan allows establishing the etiological diagnosis in the majority of cases. The treatment is surgical and must be carried out urgently. Any delay in treatment increases mortality and morbidity.

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CONFLICT OF INTEREST

None declared.

AUTHOR CONTRIBUTIONS

Z Hadrich conceived the idea for the document and contributed to the writing and editing of the manuscript. N Kardoun contributed to the writing and editing of the manuscript. A Masmoudi reviewed and edited the manuscript. H Harbi reviewed and edited the manuscript. S Boujelben contributed to the literature review, manuscript writing, editing, and review of the manuscript. All authors read and approved the final manuscript.

ETHICAL APPROVAL

Personal data have been respected.

DATA AVAILABILITY STATEMENT

Personal data of the patient were respected. No data are available for this submission.

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