



# Obturator hernia: a persisting clinical diagnostic challenge – a case report

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**Introduction:** The presentation of a strangulated obturator hernia is rare, with it accounting for less than 0.04% of all hernias. Delay in presentation and diagnosis results in complications like bowel ischemia, necrosis, perforation, and peritonitis, thereby increasing morbidity and mortality.

**Case presentation:** The authors report the case of an 85-year-old multiparous woman who presented with a 3-day history of abdominal pain and vomiting. Upon examination, she exhibited hypotension, altered sensorium, and a distended abdomen with visible peristalsis. An abdominal pelvic computed tomography scan confirmed the diagnosis of 'intestinal obstruction secondary to an incarcerated obturator hernia'. Subsequently, a lower midline laparotomy was performed, successfully reducing the bowel and repairing the hernial orifice. The patient was discharged on the fourth postoperative day, and there has been no hernia recurrence as of her 3-month follow-up.

**Discussion:** The presentation of a strangulated obturator hernia can be elusive. During clinical examination, both the Howship–Romberg sign and the Hannington-Kiffs sign tests may be negative. Laparoscopic obturator hernia repair has been shown to reduce hospital stay and morbidity. A midline laparotomy has the advantage of easy manual reduction, minimizing bowel trauma, accurately accessing the bowel, and facilitating bowel resection.

**Conclusion:** Obturator hernias constitute rare subtypes of abdominal hernias. They typically occur in older women, and patients often present with poor functional status and multiple comorbidities. The clinical diagnostic tests are uncertain, even in patients with a high index of suspicion. Timely diagnosis and appropriate surgical management are crucial for a favorable outcome.

**Keywords:** abdominal hernia, hernia, laparotomy, obturator hernia

## Introduction

Obturator hernias were first described by Pierre Roland Araud in 1724<sup>[1]</sup>. These account for less than 1% of all abdominal hernias<sup>[2]</sup>. Due to the firm obturator canal ring, these hernias frequently result in bowel incarceration and strangulation. Additionally, these hernias are difficult to diagnose, given the absence of external signs. An abdominal computed tomography (CT) scan is the investigation of choice. The surgical management is determined by the timing of the diagnosis. Delays in diagnosis increase morbidity and mortality.

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Sponsorships or competing interests that may be relevant to content are disclosed at the end of this article.

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Annals of Medicine & Surgery (2024) 86:3698–3701

Received 15 January 2024; Accepted 7 April 2024

Published online 17 April 2024

<http://dx.doi.org/10.1097/MS9.0000000000002073>

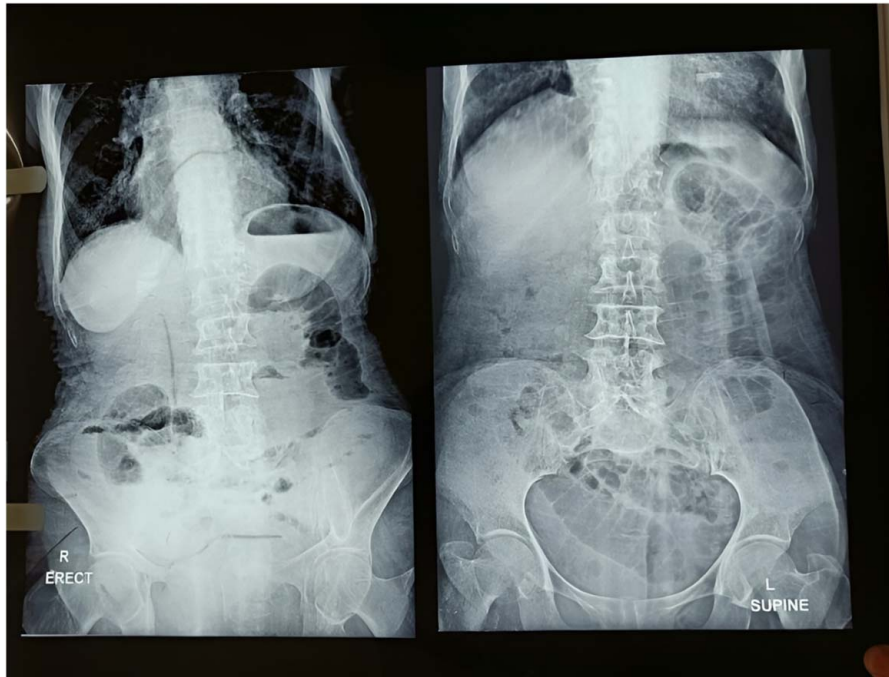
## HIGHLIGHTS

- Strangulated obturator hernia is a rare occurrence, accounting for less than 0.04% of all hernias.
- Common risk factors of obturator hernia include advanced age, low BMI, multiparity, and weakened pelvic floor.
- Obturator hernias lack external manifestations, making diagnosis challenging.
- Surgeons are encouraged to maintain a high index of suspicion, especially when classical clinical signs like the Howship–Romberg sign and the Hannington-Kiffs sign are negative.
- Delay in diagnosis can lead to severe complications, including bowel ischemia, necrosis, perforation, and peritonitis.
- Early diagnosis and prompt surgical management are crucial in mitigating morbidity and mortality associated with obturator hernias.

The case describes an elderly female with a prior history of atrial fibrillation who presented with altered sensorium and hypotension with features of intestinal obstruction secondary to an incarcerated obturator hernia. This case has been reported in line with the SCARE criteria<sup>[3]</sup>.

## Case report

The index patient was an 85-year-old female with a body mass index (BMI) of 16 who presented to the emergency department

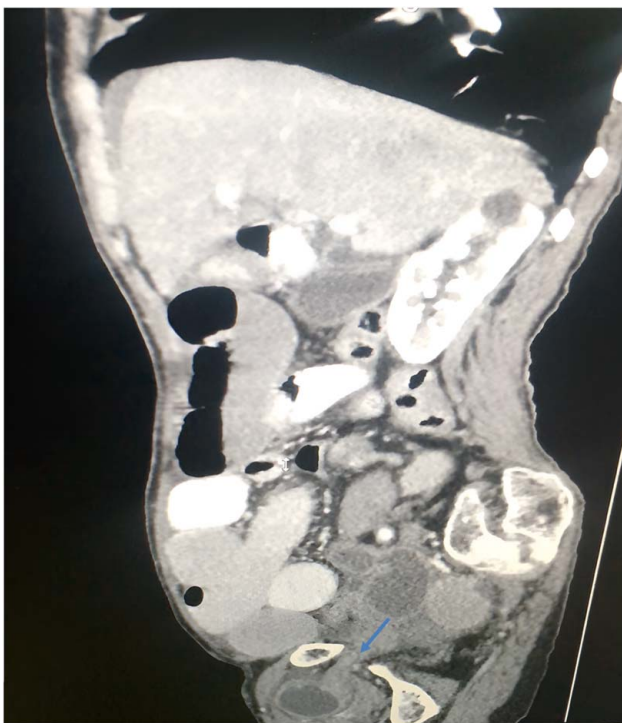


**Figure 1.** X-ray abdomen erect showing multiple air–fluid levels; X-ray abdomen supine showing dilated small bowel loops with valvulae conniventes.

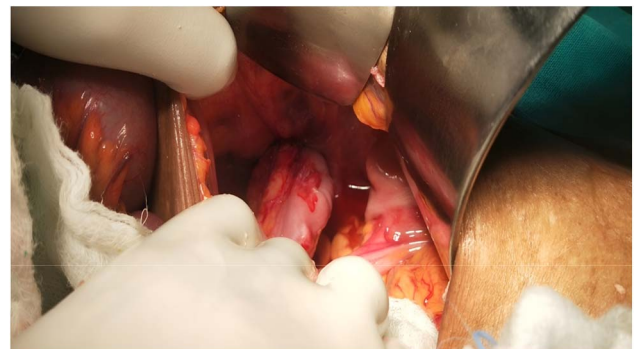
with a history of abdominal pain and vomiting for 3 days. The abdominal pain initially started in the right lower abdomen, radiating to the right thighs, and later, the pain gradually

generalized all over the abdomen. She also gave a history of multiple episodes of vomiting and abdominal distension. She had no history of previous surgeries. The patient’s medical history was significant, with a prior history of atrial fibrillation (under aspirin 75 mg). She had an obstetric history of delivering seven children, all through vaginal delivery.

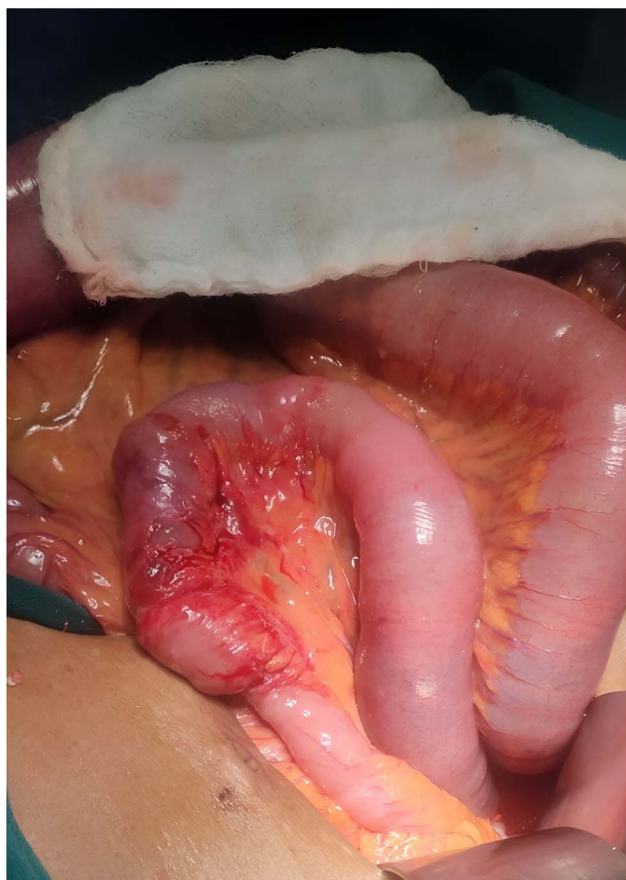
Physical examination revealed an ill-looking, thin-built female with altered sensorium lying in the supine position, with a blood pressure of 80/60 mmHg and a heart rate of 110 beats per minute. Abdominal examination revealed a distended abdomen with visible peristalsis and hyperactive bowel sounds. Hernial orifices were all intact. The patient was resuscitated with IV fluids, IV antibiotics, along with the insertion of urinary and nasogastric tubes. Following resuscitation, with due suspicion of an obturator hernia, we attempted to demonstrate the Howship–Romberg sign and the Hannington-Kiffs sign. The Howship–Romberg sign



**Figure 2.** An abdomino-pelvic computed tomography revealing a loop of small bowel passing through the right-sided obturator foramen (arrow) with features of small bowel obstruction.



**Figure 3.** A lower midline incision laparotomy showing loop of terminal ileum herniating into the right obturator canal.



**Figure 4.** Contused bowel with serosal tear following reduction.

involves pain along the inner thigh when the hip is extended, indicating compression of the cutaneous branch of the obturator nerve. The Hannington-Kiffs sign is elicited by adducting the thigh against resistance, causing pain due to stretching of the obturator nerve. Both tests were negative in our case. She was subjected to routine investigations, including radiological investigations.

The patient had normal blood investigations, including a complete blood count (CBC) and a C-reactive protein (CRP) test. The CBC showed a white blood cell count of 9580/ $\mu$ l, hemoglobin level of 12.3 g/dl, and a platelet count of 264 000/ $\mu$ l. The CRP level was 0.28 mg/dl. An X-ray of the abdomen showed dilated small bowel loops with valvulae conniventes (Fig. 1). An abdominal CT scan revealed 'a loop of small bowel passing through the right-sided obturator foramen with features of small bowel obstruction' (Fig. 2).

A lower midline incision laparotomy was performed, which revealed a herniated segment of a loop of the terminal ileum about 15 cm away from the ileocecal junction into the right obturator canal (Fig. 3). The bowel was slowly reduced; the bowel appeared contused with a serosal tear, but no breach in the mucosa was observed. Primary repair of the serosal tear was done with PDS (polydioxanone suture) 3-0 (Fig. 4). The obturator hernial orifice was repaired with a simple interrupted 2-0 prolene suture. Postoperatively, the patient was started on enteral feeding after 6 h. She was continued on aspirin 75 mg after 24 h of

surgery. She was discharged on the fourth postoperative day. The patient was regular on her follow-ups, and no adverse events were encountered.

## Discussion

The presentation of a strangulated obturator hernia is rare, accounting for less than 0.04% of all hernias<sup>[4]</sup>. The obturator canal is an opening in the superior-lateral part of the obturator foramen. These spaces are filled with fat, along with obturator nerves and vessels. Therefore, the loss of body fat predisposes patients to develop such hernias<sup>[5,6]</sup>. Common risk factors include advanced age, a low BMI, multiparity, and a weakened pelvic floor. As described here, an 85-year-old woman had a BMI of 16, no prior history of abdominal surgeries, and she also had a history of bearing seven children, all delivered through vaginal delivery. The most common presentation of these hernias is with features of intestinal obstruction<sup>[7–9]</sup>.

These hernias are elusive, lacking external manifestations. At the time of presentation, the patient presented with hypotension and an altered sensorium with features of intestinal obstruction. Given our encounter with similar clinical case scenarios in the past, we tried to elicit both the Howship–Romberg sign and the Hannington-Kiffs sign with a high suspicion of an obturator hernia, but both tests were negative. These signs have been mentioned as being positive due to compression of the cutaneous branch of the obturator nerve; they are present in only 15–50% of the cases<sup>[6,9]</sup>. An X-ray of the abdomen was done, followed by an abdominal CT scan, which revealed the diagnosis. The inclusion of an abdominal CT scan played a pivotal role in achieving a precise and timely diagnosis, providing clear visualization of the herniated bowel through the obturator foramen.

Laparoscopic obturator hernia repair has been shown to be feasible and to lessen hospital stay and morbidity in a number of published case reports<sup>[7]</sup>. The decision to perform a lower midline laparotomy, in our case, proved advantageous during the intraoperative phase. We performed a lower midline laparotomy with the view that manual reduction could accurately assess the condition of the bowel and make bowel resection easy. The serosal tear likely occurred during the process of reduction, as the herniated bowel was carefully manipulated back into its anatomical position. While primary repair of the serosal tear was feasible in our case, there remains a risk of subsequent complications such as bowel stenosis, particularly in cases of prolonged ischemia. Therefore, a second-look laparotomy may be warranted to reassess bowel viability, ensure adequate perfusion, and address any evolving ischemic changes. We repaired the hernial orifice with an interrupted suture. We did not use a mesh due to the possibility of mesh infection from pelvic fluid collection and field contamination. According to Khalifa *et al.*<sup>[10]</sup>, placing a mesh over the hernial orifice has been shown to lower the recurrence rate. Autologous grafts have also been used to reinforce the hernial orifice repair following primary repair<sup>[10]</sup>.

Obturator hernias must always be suspected in high-risk patients who present with symptoms of intestinal obstruction. A systematic review by Schizas *et al.*<sup>[11]</sup>, published in 2021, found that postoperative morbidity and mortality of obturator hernias were 26.7% and 11.6%, respectively. We attribute an early diagnosis and prompt surgical management to making our patient's postoperative stay and recovery uneventful. The

limitations of this case report include the inherent rarity of obturator hernias and potential variability in the reliability of diagnostic signs.

### Conclusion

Obturator hernia constitutes a rare subgroup of abdominal hernias. These hernias typically occur in older women, often manifesting in patients with poor functional status and multiple comorbidities. The clinical diagnostic tests remain uncertain, even in patients with a high index of suspicion. Timely diagnosis and appropriate surgical management are essential for achieving a favorable outcome.

### Ethical approval

This is a case report; therefore, it did not require ethical approval from the ethics committee.

### Consent

Written informed consent was obtained from the patient for the publication of this case report and any accompanying images. A copy of the written consent is available for review by the editor-in-chief of this journal on request.

### Sources of funding

The study did not receive any grant from funding agencies in the public, commercial, or not-for-profit sectors.

### Author contribution

All authors were involved in writing the paper, collecting data, revising it critically for important intellectual content, reviewing, and editing.

### Conflicts of interest disclosure

The authors report no conflicts of interest.

### Research registration unique identifying number (UIN)

Not applicable.

### Guarantor

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### Data availability statement

Not applicable.

### Provenance and peer review

Not commissioned, externally peer-reviewed.

### Acknowledgement

Not applicable.

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