



# Obturator hernia (the little old lady's hernia) diagnosed via computed tomography: a case report

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**Introduction and importance:** Obturator hernia is an infrequent clinical entity of abdominal wall hernia, accounting for an incidence rate ranging from 0.073 to 2.2% of all hernias and being responsible for 0.2–1.6% of all cases of mechanical intestinal obstruction. The computed tomography (CT) scan, as an imaging modality, is critical in improving the diagnostic rate of obturator hernia.

**Case presentation:** The authors herein report an 87-year-old thin male patient with a known history of chronic obstructive pulmonary disease who presenting with complaints of abdominal pain for 3 days and constipation for 2 days, as well as one episode of vomiting without any features of peritoneal irritation, which was diagnosed early as a right-sided obturator hernia via CT and managed with exploratory laparotomy with hernia reduction and polypropylene mesh repair.

**Discussion:** Obturator hernia is a rare surgical phenomenon with a varied clinical spectrum, ranging from asymptomatic to presenting as intestinal obstruction. The CT scan plays a critical role in the detection of obturator hernias, which ameliorates the possible significant postoperative morbidity and mortality.

**Conclusion:** This report demonstrates that a high index of suspicion combined with CT imaging aids in early diagnosis and management, thus overcoming the reluctant morbidity.

**Keywords:** case report, computed tomography, imaging modality, little's old lady hernia, obturator hernia

## Introduction

Obturator hernia is an infrequent clinical entity of abdominal wall hernia<sup>[1,2]</sup> accounting for an incidence rate ranging from 0.073 to 2.2% of all hernias<sup>[1,3–5]</sup> and being responsible for 0.2–1.6% of all cases of mechanical intestinal obstruction<sup>[1,5]</sup>. It refers to a protrusion of abdominal or intestinal content (peritoneal or extraperitoneal) between the obturator and the pectineus muscle through a defect in the obturator foramen<sup>[2–4]</sup>. Obturator hernia is also known as 'little old lady's hernia' because it most commonly affects elderly (eighth–ninth decade), thinly built, and multiparous frail women<sup>[1,6]</sup>.

Provided that the left obturator foramen is embraced by the colon that lies above, which has a right/left ratio of 1.3–5 : 1, it frequently occurs more on the right side<sup>[2,5]</sup>. Clinical features are mostly nonspecific, but they may include a spectrum suggestive of

## HIGHLIGHTS

- A rare clinical occurrence of an abdominal wall hernia is an obturator hernia.
- It is responsible for 0.073–2.2% of all hernias and 0.2–1.6% of all mechanical intestinal obstructions.
- Computed tomography scans, as an imaging modality, are critical in improving the detection rate of obturator hernias.

mechanical bowel obstruction when an intestinal segment herniates through the obturator canal and the Howship–Rhomberg sign (pain in the anteromedial aspect of the thigh), which may or may not always be present<sup>[1,6]</sup>.

As it presents with nonspecific clinical features and an indeterminate clinical examination, this leads to challenges in the early diagnosis of this clinical condition<sup>[1,5]</sup>. The computed tomography (CT) scan, as an imaging modality, is critical in improving the diagnostic rate of obturator hernia, thereby avoiding debilitating postoperative morbidity and mortality through early definitive surgical management<sup>[4,5,7]</sup>.

We present a case of a little old lady hernia in a cachectic elderly man who presented with features of intestinal obstruction without any sign of peritoneal irritation. It was promptly diagnosed via CT and managed with exploratory laparotomy, hernia reduction, and mesh repair. This case is reported in accordance with SCARE guidelines<sup>[8]</sup>.

## Case presentation

An 87-year-old male patient (BMI = 17.93 kg/m<sup>2</sup>) presented to the emergency room of our tertiary center with a history of

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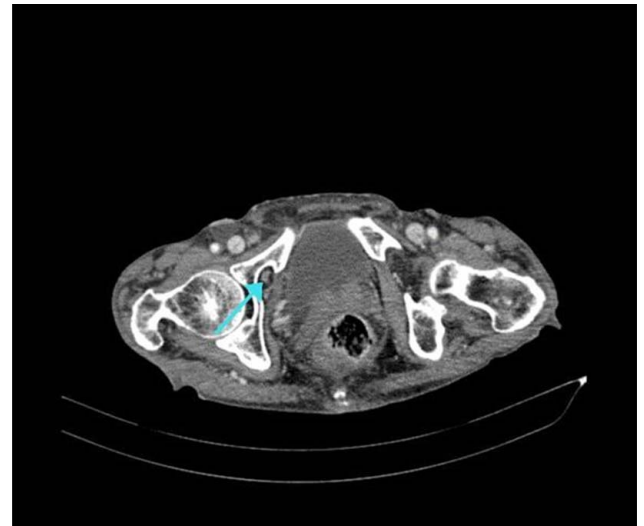
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abdominal pain for 3 days and constipation for 2 days. The pain was in the right lower quadrant, nonradiating, intermittent, and colicky in nature, and was associated with bilious vomiting. There was a history of abdominal fullness, which subsided after an episode of vomiting. He also has chronic obstructive pulmonary disease (COPD) and has been on medication for quite some time. The patient denied any history of burning micturition and urine frequency, loose stool, loss of weight, anorexia, travel history, chest pain as well as pertinent family and allergic histories. He was a former smoker and alcoholic. He denied any prior surgical history.

Clinically, the patient appeared cachectic but well oriented to time, place, and person. His vital parameters were within the normal range for his age. An abdominal examination revealed mild abdominal distension without any signs of peritoneal irritation. Likewise, there are no visible and palpable masses. Light and deep palpation revealed no inguinal or femoral hernias. Pain was absent in the anteromedial aspect of both thighs. There was no obvious blood, fissures, or palpable masses on the digital rectal examination. Other systemic examinations were unremarkable.

His biochemical parameters (complete blood count, comprehensive metabolic panel, calcium, phosphorus, prothrombin time, international normalized ratio, and serology) were all normal. An abdominal radiography revealed multiple dilated bowel loops with minimal air-fluid levels, indicating an intestinal obstruction. To determine the cause of bowel obstruction, a CT (Figs. 1–4) was performed, which reported herniation of the proximal ileal loop between the right obturator internus muscle and the pectineus muscle with dilation of the proximal ileal bowel loops and the jejunum, suggestive of a right obturator hernia with small bowel obstruction. In contrast, the left side appears normal radiologically.

Given the conclusive diagnosis of small bowel intestinal obstruction with an obturator hernia, the patient underwent emergency exploratory laparotomy with obturator hernia repair using polypropylene mesh secured with nonabsorbable sutures,

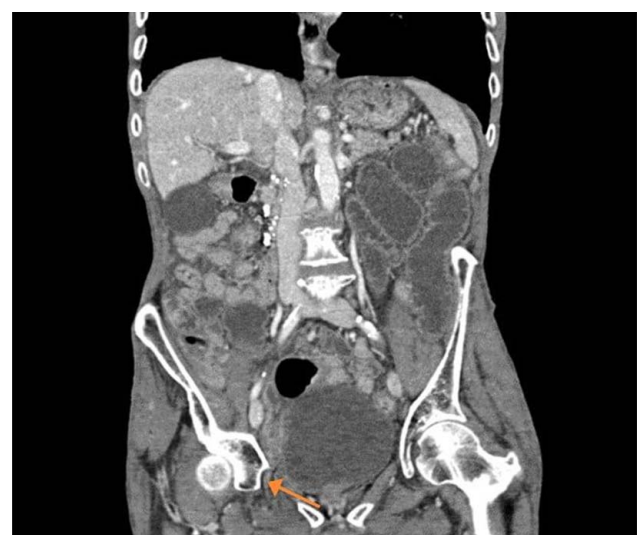


**Figure 2.** Computed tomography of abdomen and pelvis (axial view) showing right-sided obturator hernia.

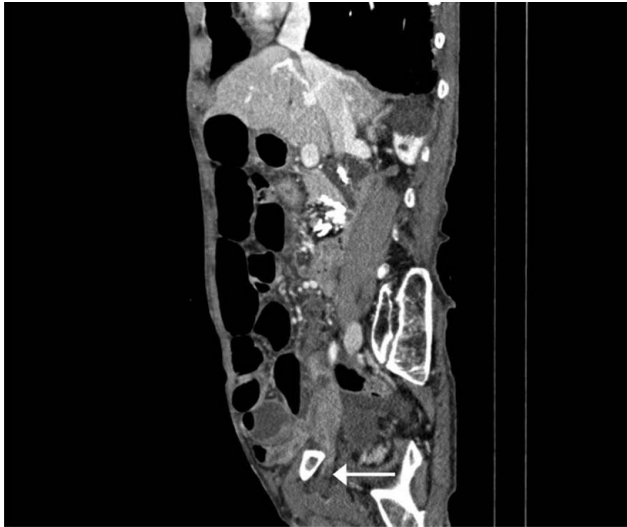
with findings of a right-sided obturator hernia and small bowel (ileum) as content via the defect. The incarcerated bowel segment was gently reduced and critically explored for any sign of bowel ischemia, but the results were negative. A general consultant surgeon with prior experience performed the operation. As per the treating surgeon, noninvasive echo-guided reduction was chosen as an option with the patient representative and was performed; however, it took more than half an hour, so we opted for open surgery. The patient had an uneventful postoperative recovery period and was discharged on the sixth postoperative day with instructions to continue oral antibiotics, oral analgesics, and oral proton pump inhibitors for 1 week, along with protein supplements for 14 days. A follow-up after 2 weeks and 30 days was unremarkable.



**Figure 1.** Computed scannogram of abdomen and pelvis showing dilated bowel loops predominantly in the center of abdomen.



**Figure 3.** Computed tomography of abdomen and pelvis (coronal view) showing loop of bowel segment protruding through the right obturator foramen (i.e. right obturator hernia).



**Figure 4.** Computed tomography of abdomen and pelvis (sagittal view) showing herniated bowel segment through the right obturator foramen (i.e. right obturator hernia)

## Clinical discussion

An obturator hernia is a rare condition in which abdominal contents protrude through the obturator foramen, located in the anterolateral aspect of the pelvic wall. It was first described by Arnaud de Ronsil in 1724<sup>[9]</sup>. The incidence of obturator hernia ranges from 0.073 to 2.2% of all hernias<sup>[1,3–5]</sup>. It is more prevalent in the Asian population than in the western one, while right-sided obturator hernias are more common than left-sided ones<sup>[10]</sup>. However, bilateral obturator hernias have also been described in the literature<sup>[11,12]</sup>.

An obturator hernia occurs when the obturator membrane gets weakened, causing defects in the obturator foramen. Obturator hernias usually occur in the setting of fat loss (as in old age, cachexia, profound weight loss, etc.) and an increase in abdominal pressure in conditions like COPD and intestinal constipation. There is a female predominance in the incidence of obturator hernia, with a female to male ratio of 6 : 1<sup>[11]</sup>. Obturator hernias are more common in multiparous elderly female patients between the ages of 70 and 90 years due to the added risk factor of the broader pelvis, the larger obturator canal, and the greater laxity of the pelvic tissues<sup>[13]</sup>. The hernia sac usually contains small bowels, particularly the ileum. Other contents include the large bowel, omentum, fallopian tube, or appendix<sup>[14]</sup>. Our manuscript describes an elderly, undernourished Asian man with a known case of COPD, diagnosed as an obturator hernia. Blach and Ghosh<sup>[6]</sup> have also reported an obturator hernia in a cachectic elderly male.

Because the signs and symptoms of obturator hernia (OH) are uncommon, proper diagnosis, and management are delayed. The most common manifestation of OH is intestinal obstruction, which causes symptoms such as vomiting and lower abdominal pain. Intestinal obstruction is present in nearly 90% of patients, which may be intermittent or immediate<sup>[14]</sup>. Likewise, there are few signs that aid in the diagnosis of the hernia. Irritation secondary to compression of the obturator nerve by a herniated sac within the canal leads to pain in the medial aspect of the thigh called the

Howship–Romberg sign. It is considered pathognomonic but is positive in only 20–50% of the cases. However, it is absent in our case. The absence of an adductor reflex in the thigh, known as the Hannington–Kiff sign, is a less well-known but more specific sign of OH<sup>[15]</sup>. Another less recognized sign is a faint bruise below the medial part of the inguinal ligament in the femoral triangle due to bowel infarction with exudation of blood-stained fluid. A vaginal examination revealing a tender mass may also be helpful to the clinician in the female patient<sup>[16]</sup>. The clinical spectrum of our patient was consistent with intestinal obstruction; however, no specific signs as mentioned in the literature were noted.

Radiological modalities like CT, ultrasound, and MRI can aid in diagnosis. An abdominal and pelvic CT scan is considered the standard modality of preoperative diagnosis with high sensitivity and specificity. It is important, especially during initial stages of nonspecific symptoms and clinical signs. USG can prove to be very useful in low-income countries like Nepal, where it is widely available and cost-effective. If used by an experienced clinician, it can help establish the level of obstruction, degree of bowel dilation, involvement of the large bowel, and presence of peristalsis<sup>[16]</sup>. MRI is another modality that can be used in diagnosis but is considered inferior to a CT scan. In our patient, an obturator hernia was detected by a CT scan during diagnostic investigation, and a diagnosis was made. In occult hernia, suspected cases, and missed diagnosis in imaging, diagnostic laparoscopy is a modality that can be used both in diagnosis and treatment<sup>[17]</sup>.

However, due to the rarity of cases, there is a delay in the diagnosis of the hernia, which is seldom diagnosed preoperatively. In 25–75% of circumstances, the delay in diagnosis necessitates resection of the gangrenous incarcerated segment, which has been linked with a high rate of fatalities (12–70%)<sup>[7]</sup>. A noninvasive method, such as echo-guided reduction of the incarcerated hernia, can be chosen if it can be completed in 10–20 min or less, reducing morbidity and rendering only thigh bleeding as the major complication. If the echo-guided reduction takes more than 20 min, the patient ought to avoid it, and an emergency open laparotomy should be performed without hesitation<sup>[18]</sup>. Surgery is the only effective method of treatment for obturator hernia. Different approaches to surgical repairs are the open approach (thigh, inguinal, midline extraperitoneal, combined, etc.) and minimally invasive laparoscopic approach (extraperitoneal and transperitoneal). Preoperative diagnosis determines the surgical approach chosen. Traditionally, a lower midline incision has been the preferred approach. Recently, an inguinal approach with mesh repair has also been reported as a less invasive treatment<sup>[4]</sup>. Simple suture repair can be attempted for hernia orifices smaller than 1 cm in diameter. Reinforcement with prosthetic materials or omental patches (for contaminated cases) is required for defects larger than 1 cm. Surgical repair has been associated with morbidity and mortality rates ranging from 26.7 and 11.6%, respectively, with a recurrence rate of about 10% after primary repair<sup>[19]</sup>. In the absence of a surgical approach, mortality from OH may reach up to 70%<sup>[16]</sup>. As per the treating surgeons, our patient had tried for echo-guided reduction, but due to its failure, he was opted to undergo exploratory laparotomy along with reduction of the hernia (as no signs of ischemia were evident) and mesh repair with polypropylene mesh repair without resection of enteral parts.

## Conclusion

Obturator hernias are unusual abdominal hernias, particularly in men, and remain a diagnostic enigma due to the nonspecific presentation of symptoms, resulting in a high mortality rate. So, whenever an elderly patient presents with a high index of scrutiny, clinical diagnosis via high index of suspicion, along with correlation via radiological imaging (CT scan-gold standard), followed by surgical management is needed to overcome reluctant complications.

## Ethical approval

This case report did not require ethical approval from ethics committee.

## Informed consent

Informed consent was obtained from the patient for the use of anonymized clinical, pathological, and radiological information. The patient agreed with written informed consent to anonymously publish medical information.

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## Authors contributions

S.B., S.K., A.G.: manuscript conception, drafting, revision of the manuscript, and manuscript submission. B.U.R., S.R., L.K., A.P.: editing the draft and revision of the content of the manuscript. S.B.R. and S.B.: complete supervision and critical appraisal of the manuscript. B.G.: radiological diagnosis of the case. All authors have approved the final article for submission.

## Conflicts of interest disclosure

All the authors declare that they have no conflicts of interest.

## Guarantor

Sujan Bohara.

## Data availability Statement

The article contains all of the necessary datasets that is available with the corresponding author.

## Provenance and peer review

Not commissioned, externally peer reviewed.

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