



## Case report

## Unusual presentation of obturator hernia: A case report of knee pain mimicking musculoskeletal condition

Shin Yee Lok<sup>a,\*</sup>, Woon Teen Sia<sup>b</sup>, Donald Morice<sup>a</sup>, Amin Tanveer<sup>a</sup><sup>a</sup> Department of General Surgery, Frankston Hospital, Peninsula Health, Victoria, Australia<sup>b</sup> Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia, Malaysia

## ARTICLE INFO

## Keywords:

Obturator hernia  
Bowel obstruction  
Knee pain  
Musculoskeletal

## ABSTRACT

**Background:** Obturator hernia is a rare type of pelvic hernia that often presents with vague symptoms that can easily be confused with other conditions. Delayed diagnosis can lead to increased morbidity and complications. **Case presentation:** A 67-year-old female with a history of rheumatoid arthritis presented with escalating right knee pain, unresponsive to increasing doses of opioids. She also reported mild abdominal discomfort. A knee X-ray was unremarkable, but an abdominopelvic CT scan revealed an incarcerated obturator hernia. Emergent laparoscopic transabdominal pre-peritoneal (TAPP) repair was performed, leading to significant postoperative improvement in her knee pain.

**Discussion:** This case highlights the unusual presentation of obturator hernia with referred knee pain, which could often be misdiagnosed as a musculoskeletal issue. The likely mechanism is obturator nerve impingement caused by the hernia, and surgical intervention successfully resolved the symptoms.

**Conclusion:** Clinicians should consider obturator hernia in the differential diagnosis of unexplained knee pain, particularly in patients with risk factors like advanced age, low body weight and the female gender, to avoid delayed diagnosis and prevent serious complications.

## 1. Introduction

Obturator hernias are an unusually rare type of abdominal hernia that occurs through the obturator canal, accounting for less than 1 % of all hernias reported [1]. It is often characterised by vague and non-specific symptoms, which makes diagnosis particularly challenging. This pathology predominantly affects elderly, underweight and multiparous women, in whom the pelvis has a more oblique position, wider transverse diameter and increased floor laxity caused by pregnancy [2]. Other predisposing risk factors include chronic illnesses like COPD, chronic constipation, and ascites, which can increase intra-abdominal pressure [3]. Despite its rarity, obturator hernias carry a significant morbidity and mortality rate. This could mainly be attributed to poor physiological reserves and pre-existing chronic illnesses often found in the aging population, coupled with delayed diagnosis causing subsequent complications such as bowel strangulation and perforation [4]. The clinical symptoms of obturator hernias is characterised by vague symptoms, including intermittent abdominal pain and obturator neuralgia (pain in groin, medial thigh, and knee) [5]. Additionally, patient may exhibit symptoms suggestive of bowel obstruction, making

it difficult to differentiate from more common causes of abdominal pathology. As such, diagnostic imaging such as computed tomography (CT) imaging is instrumental in confirming the diagnosis of obturator hernia and helps guide appropriate surgical intervention. This case report highlights the challenges of diagnosing an obturator hernia in a patient with chronic lower limb musculoskeletal pain and is reported in line with the SCARE criteria [6].

## 2. Case presentation

A 67-year-old female was brought to the emergency department by ambulance, presenting with worsening right knee pain over three days, accompanied by mild lower abdominal pain and vomiting. She had no history of gout, falls or trauma to the knee. Initially, she was able to mobilise with a walking frame but later reported being unable to bear weight due to increased weakness and pain. Interestingly, she had similar symptoms two months earlier, including worsening knee pain with multiple episodes of vomiting. A knee X-ray at that time showed no abnormalities, and she was discharged when the pain resolved spontaneously in the emergency department. She had a history of rheumatoid

\* Corresponding author.

E-mail address: [zoe\\_lok@hotmail.com](mailto:zoe_lok@hotmail.com) (S.Y. Lok).<https://doi.org/10.1016/j.ijscr.2024.110602>

Received 10 October 2024; Accepted 9 November 2024

Available online 13 November 2024

2210-2612/© 2024 The Authors. Published by Elsevier Ltd on behalf of IJS Publishing Group Limited. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

arthritis, for which she took methotrexate, prednisolone, and oxycodone/naloxone. Her past medical and surgical history also included asymptomatic cholelithiasis and a terminalization of the right index finger at the distal interphalangeal joint in August 2023 due to osteomyelitis of the distal phalanx.

Clinically, she appeared cachectic and frail, with vitals within normal limits. She displayed tenderness over the right lower quadrant. A Pfannenstiel scar was noted from a previous caesarean section, but no masses were palpable in the abdomen. Her right knee was extremely tender to light touch with a limited range of movement due to pain. However, there was no swelling or erythema, nor was it warm to the touch. Initial laboratory blood work showed a raised white cell count of  $21.5 \times 10^9/L$  and platelet count of  $500/\mu\text{litre}$  with a normal C-reactive protein level, 3 mg/L. A right knee X-ray was initially ordered but again did not demonstrate any abnormalities. Contrast-enhanced CT of the abdomen and pelvis was subsequently obtained, confirming a small bowel obstruction secondary to an incarcerated right-sided obturator hernia. There were no reported features of small bowel compromise (Fig. 1).

Following initial management with analgesia, antiemetics,

nasogastric tube placement, and intravenous fluid resuscitation, she underwent an emergent laparoscopic transabdominal pre-peritoneal (TAPP) repair of the obturator hernia. The hernia content was reduced laparoscopically with external pressure applied over the groin. Following reduction, the entrapped segment of the small bowel was found to be bruised but remained viable with no serosal tears. No inguinal or femoral hernias were detected on either side. The parietal peritoneum was opened, with retraction of the redundant sac back into the abdominal cavity. The round ligament was sacrificed before placing a  $14 \times 10$  cm Parietex mesh, which was positioned to cover the hernial defect as well as the femoral and inguinal spaces. The peritoneum was then closed with a running V-Loc suture (Fig. 2). Postoperative recovery was uneventful, with the patient regaining bowel function by the third postoperative day and being fit for discharge on day four. It's worth noting that the patient reported significant relief from her knee pain following the surgery. At the 7-month follow-up, she no longer required a walking frame for mobility and remained pain-free, with no signs of hernia recurrence.

### 3. Discussion

One uncommon, yet non-specific presentation of obturator hernia is knee pain, which occurs due to compression of the obturator nerve as it runs through the obturator canal alongside herniated abdominal contents. This case highlights the importance of considering obturator hernia in the differential diagnosis for patients presenting with unexplained knee pain, particularly those with risk factors such as advanced age, underweight, female gender and a history of previous abdominal surgeries.

The obturator nerve innervates the hip adductor muscles and also provides sensation to the medial aspect of the thigh and knee [7]. In cases of obturator hernia, the herniated intra-abdominal contents can compress the obturator nerve as it passes through the obturator canal, causing referred pain in the nerve's distribution. This atypical presentation could lead to delayed or missed diagnosis, as knee pain is more commonly attributed to musculoskeletal conditions.

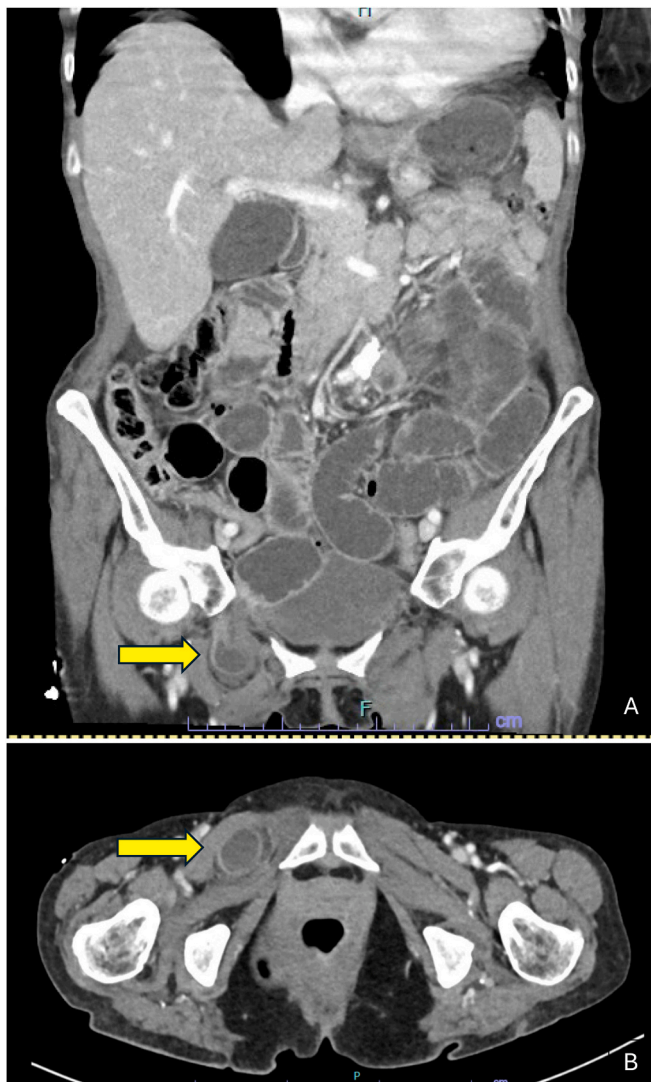
Diagnostic signs such as the Howship-Romberg sign (HRS) and Hannington-Kiff sign (HKS) can provide valuable clues for diagnosing obturator hernia. HRS is characterised by ipsilateral pain and paraesthesia in the hip, medial thigh and knee, while HKS is characterised by the absence of thigh adductor reflex. However, these signs are not consistently present; HRS, for example, is only found in approximately 56 % of affected patients [1]. This inconsistency further adds to the challenge of diagnosing this rare condition. Moreover, our patient's history of rheumatoid arthritis made it especially difficult to isolate the cause of her knee pain, as it could easily be attributed to her existing chronic condition. Imaging plays an important role in confirming the diagnosis of obturator hernia, with CT scans being particularly effective, reportedly outperforming other imaging modalities in detection [8].

### 4. Conclusion

In addition to the typical presentation of groin pain and bowel obstructive symptoms, an obturator hernia presenting with knee pain is a rare clinical entity. Awareness of this atypical presentation among healthcare providers is crucial for avoiding delays in diagnosis and improving patient outcomes.

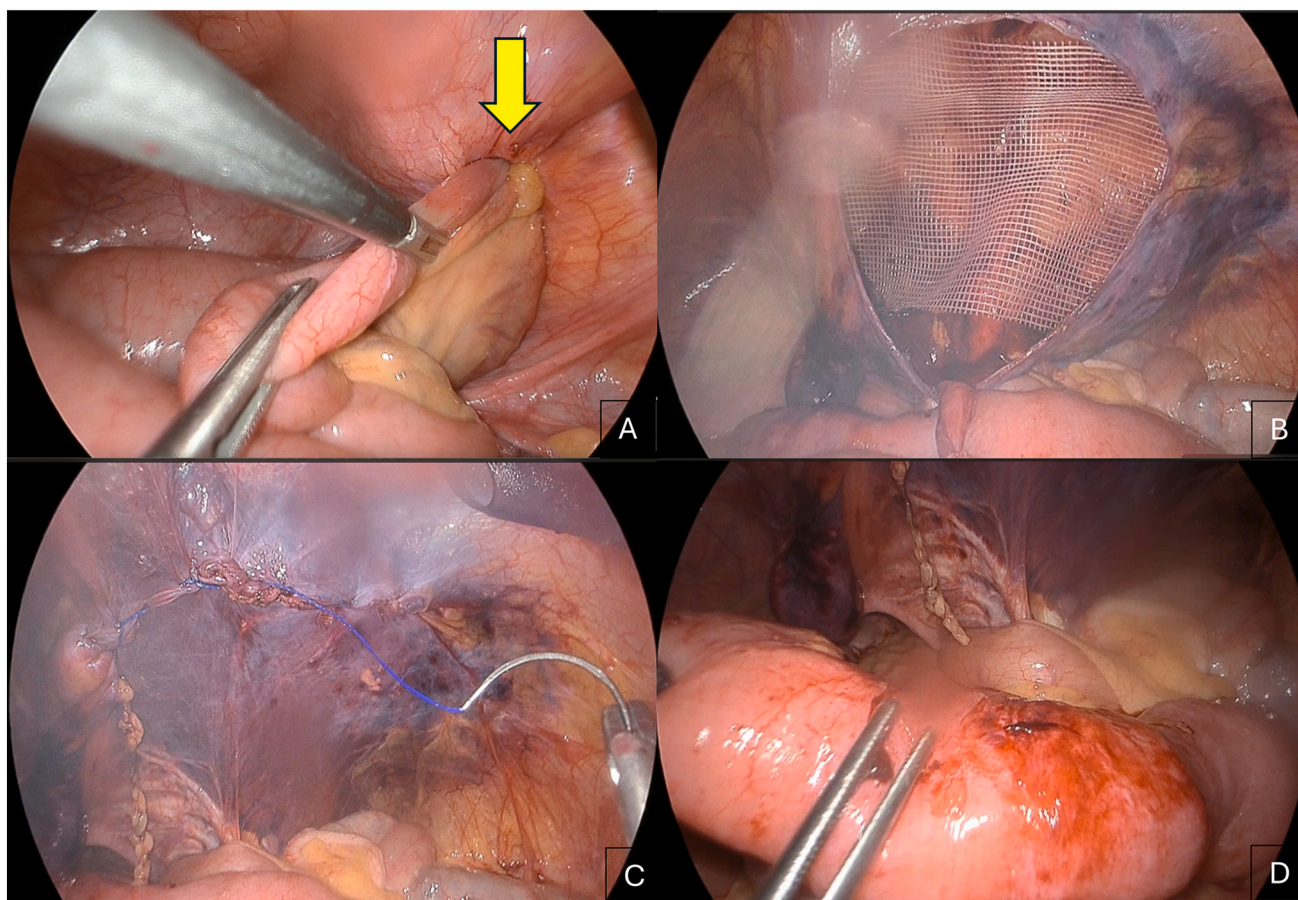
### Consent

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



**Fig. 1.** (A) Coronal CT image showing an incarcerated bowel loop extending into the right obturator canal, resulting in obstruction, as evidenced by proximal small bowel dilation. (B) Axial CT image showing incarcerated small bowel loop between the pectineal and external obturator muscles. Arrows indicate the location of the obturator hernia.





**Fig. 2.** (A) Intraoperative image showing a right-sided obturator hernia with the small bowel incarcerated within the obturator foramen. (B) Laparoscopic placement of a 14 × 10 cm Parietex mesh overlaying the hernial defect, covering both the femoral and inguinal spaces (C) Closure of the peritoneum using a running V-Loc suture (D) Released segment of bowel showing signs of bruising but remaining viable.

### Ethical approval

Ethical approval was provided by the authors' institution.

### Guarantor

Shin Yee Lok.

### Research registration number

N/A.

### Funding

This research did not receive any specific grant from any funding agencies in the public, commercial or not-for-profit sectors.

### Author contribution

Shin Yee Lok: manuscript drafting, including editing and reviewing, directly involved in patient care.

Sia Woon Teen: manuscript drafting

Donald Morice: manuscript editing and reviewing, directly involved in patient care.

Amin Tanveer: directly involved in patient care, manuscript

reviewing

### Conflict of interest statement

There are no conflicts of interest to declare.

### References

- [1] D. Schizas, K. Apostolou, N. Hasemaki, P. Kanavidis, D. Tsapralis, N. Garmpis, et al., *Obturator hernias: a systematic review of the literature*, *Hernia* 25 (1) (2021) 193–204.
- [2] L.F. W. *Hernia: Anatomy, Etiology, Symptoms, Diagnosis, Differential Diagnosis, Prognosis and Treatment*. St Louis, MO 1948.
- [3] X. Cai, X. Song, X. Cai, *Strangulated intestinal obstruction secondary to a typical obturator hernia: a case report with literature review*, *Int. J. Med. Sci.* 9 (3) (2012) 213–215.
- [4] B.T. Fevang, J. Fevang, L. Stangeland, O. Soreide, K. Svanes, A. Viste, *Complications and death after surgical treatment of small bowel obstruction: a 35-year institutional experience*, *Ann. Surg.* 231 (4) (2000) 529–537.
- [5] J. Diab, S. Badiani, A. Di Re, C.R. Berney, *An elderly woman's limp: obturator hernia as a rare cause of small bowel obstruction*, *Aust. J. Gen. Pract.* 50 (8) (2021) 553–556.
- [6] C. Sohrabi, G. Mathew, N. Maria, A. Kerwan, T. Franchi, R.A. Agha, et al., *The SCARE 2023 guideline: updating consensus surgical Case REport (SCARE) guidelines*, *Int. J. Surg.* 109 (5) (2023) 1136–1140.
- [7] C. Sinnatamby, *Last's Anatomy: Regional and Applied*, 12th edn, 2013.
- [8] K.V. Chan, C.K. Chan, K.W. Yau, M.T. Cheung, *Surgical morbidity and mortality in obturator hernia: a 10-year retrospective risk factor evaluation*, *Hernia* 18 (3) (2014) 387–392.