



## Case report

## Obturator hernia: A case report of intestinal obstruction with challenging diagnosis and non-standardized treatment

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## ABSTRACT

**Introduction and importance:** Obturator Hernia (OH) is a rare clinical entity that constitute less than 1% of all abdominal hernias. It happens in elderly thin women malnourished. The diagnosis is usually delayed because symptoms are non-specific, and patients commonly have features of intestinal obstruction. There are no international guidelines for treatment and the best surgical approach still unknown.

**Case presentation:** We report a case of strangulated OH in a 75 year woman who consulted in our service for an acute intestinal obstruction. Intra-operatively findings showed loop of ileum entering through a defect in the right obturator canal. The obturator defect was closed by approximation flap of peritoneum and covered by right ovar and fallopian tube.

**Clinical discussion:** This case is reported because of its an uncommon type of abdominal wall hernia with high probability of bowel strangulation and highest morbidity and mortality rates. There are no international guidelines for treatment and the best surgical approach still unknown.

**Conclusion:** The diagnosis of OH should be suspected every time there is an intestinal obstruction of unknown origin in emaciated elderly women. Open or laparoscopic sutured repair surgery and placement of mesh remain the most common method of repair.

### 1. Introduction and importance

Obturator Hernia (OH) is a rare clinical entity that constitutes less than 1% of all abdominal hernias [1–3]. It occurs when intra-abdominal tissue protrudes through a defect in the obturator canal (OC). The sac usually contains the small bowel but may also contain appendix, bladder, omentum, or fallopian tubes [1]. Most of the time, OH happens on the right side as the sigmoid colon usually protects the left obturator canal [1,4]. The diagnosis is usually delayed because symptoms are nonspecific and patients commonly have features of intestinal obstruction (in about 90% of cases) [5]. Computed tomography (CT) scan remains the *cornerstone of diagnosis* [6]. Surgery is the main treatment. However, there are no international guidelines and the best surgical approach is still unknown [5]. In this work, we report the case of an old woman, 75 years old who had an intestinal obstruction due to OH. This case report is reported in line with SCARE guidelines [7].

### 2. Case presentation

A 75-year-old woman presented to the emergency room suffering from a 24 h history of acute lower abdominal pain and vomiting. She has no history of any previous surgeries or medical illness. Physical examination showed normal vital signs, mild distension of the abdomen with no peritoneal signs. Groin hernias were not found on deep palpation. Blood tests showed a minimal inflammatory reaction. An emergency abdominal computed tomography (CT) was performed and showed dilated small bowel loops with pinching bowel through the right obturator foramen (Figs. 1, 2). The loops down and the colon were collapsed. The diagnosis of an acute intestinal obstruction caused by right OH was confirmed. The patient underwent an emergency laparotomy. Intra-operatively findings showed that a 2 cm loop of ileum was found entering through a 1.5 × 2 cm defect in the right OC. (Figs. 3, 4). The bowel segment looked congested but not ischemic after reduction. The obturator defect was closed by approximation flap of peritoneum and

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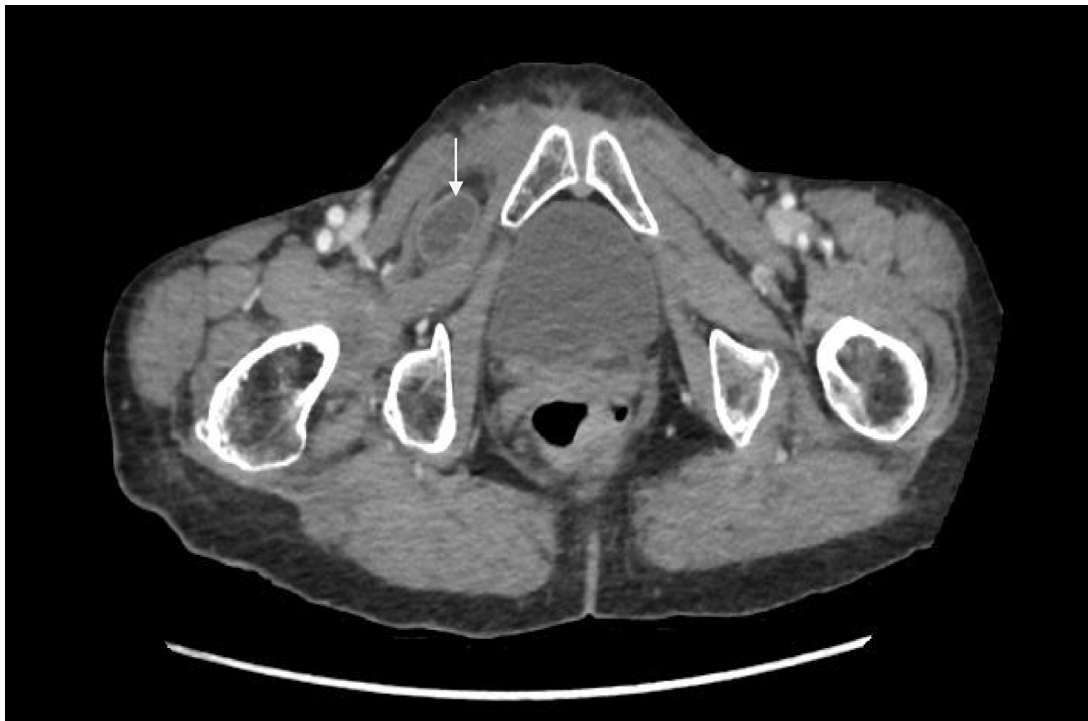


Fig. 1. Axial computed tomography scan showing a right-sided obturator hernia (arrow).

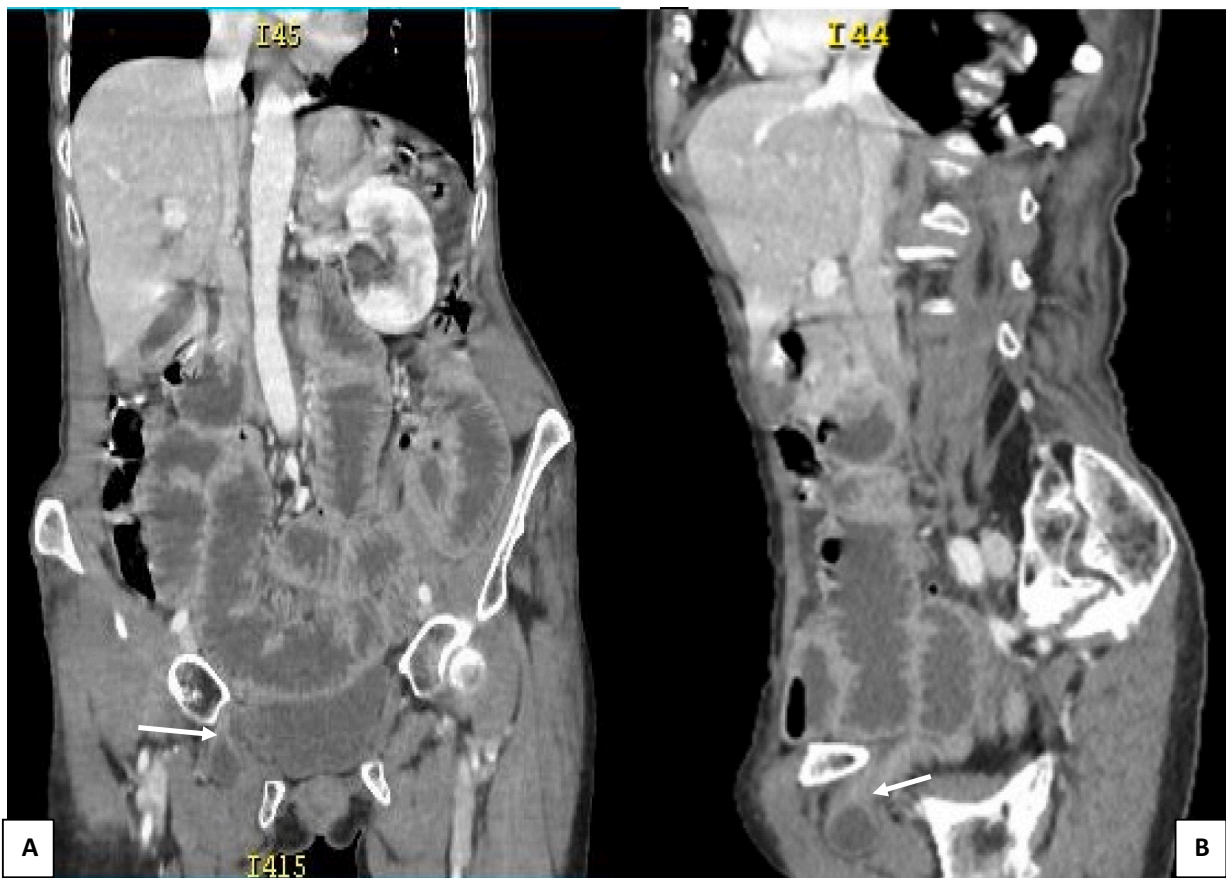


Fig. 2. Coronal (A) and sagittal (B) computed tomography scan showing right-sided obturator hernia with bowel loop as content (arrow: caliber disparity of the intestinal loops).

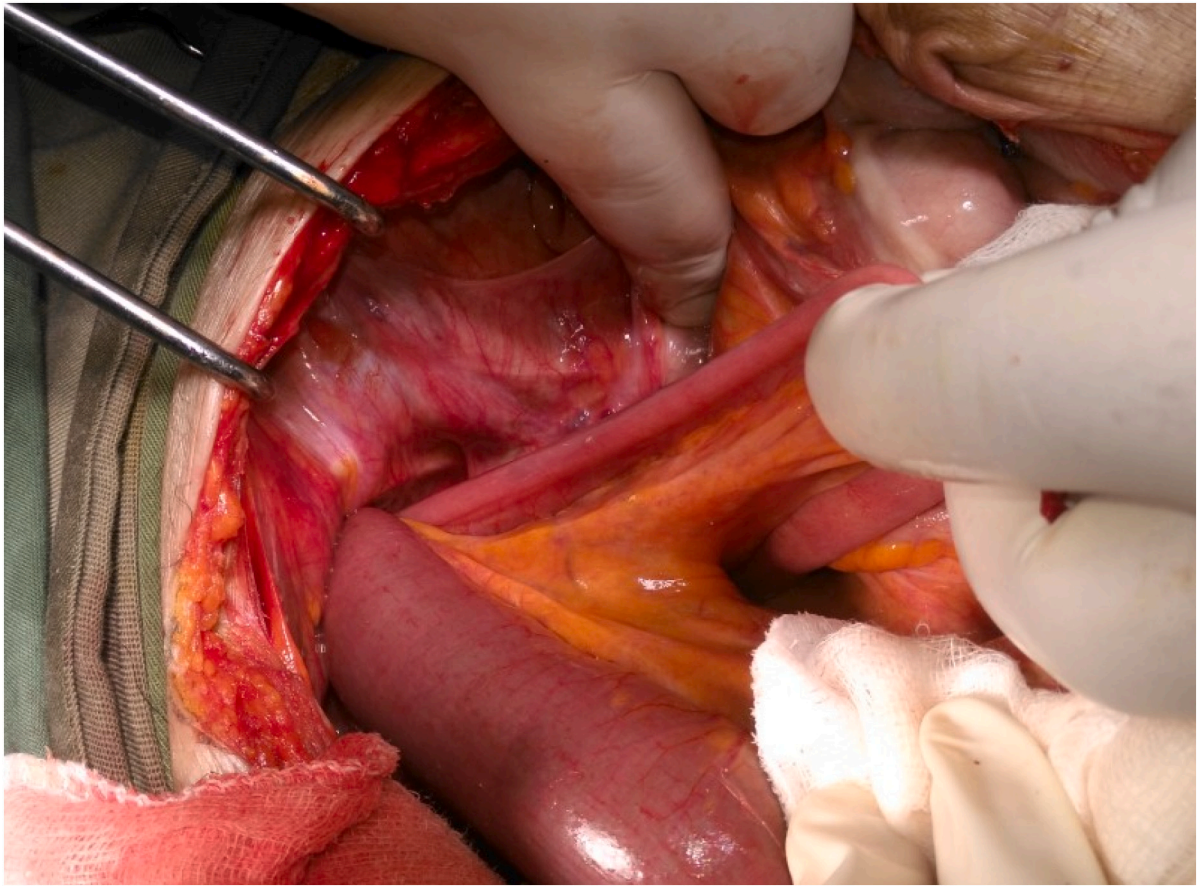


Fig. 3. Intraoperative image showing ileal loops entering the right obturator foramen.

covered by the right ovary and fallopian tube used as patches (Fig. 5). The postoperative course was uneventful and patient was discharged on fourth post-operative day. The patient was followed up in the outpatient clinic for a period of 6 months and no recurrence was mentioned.

### 3. Clinical discussion

OH is an uncommon type of abdominal wall hernia which causes 0.2 to 1.6% of mechanical intestinal obstruction [1–3]. According to a recent scoping review published in 2021 by Mikkel et al. and including a total of 1299 patients, 71% of cases were from ASIA [5]. There are some factors predisposing to OH. First of all, the loss of the protective fat stroma covering the OC due to advanced age and poor nutritional status, then, the increased size of obturator orifice due to grand multiparity and finally, conditions favouring the increase of intra-abdominal pressure such as ascites, chronic constipation and chronic obstructive pulmonary disease [2,6,8]. In fact, OH is nicknamed « little old lady hernia » because it happens in elderly woman aged from 70 to 90 years [2] with a Body Mass Index (BMI) < 18 [1,6]. Symptoms, which happen on women with no earlier abdominal operations, are non-specific unlike the classic features of an inguinal hernia. That's why; diagnosis is usually delayed. The narrowness of the OC leads to high probability of bowel strangulation: 90% of presentations. Intestinal obstruction symptoms include nausea, vomiting and pain [9]. On physical examination, there is always no lump due to the deep location of hernia between pectineus and adductor longus muscles. The Howship-Romberg sign is characteristic for OH and disclose the ache along the obturator nerve due to its squeezing by the sac content. The Hannington-Kiff sign which indicates the absence of adductor reflex in the thigh, is reported as more specific than the first sign however, clinical signs are examiner-dependent (Table 1) [1,2].

A non-recognized OH is fatal because this type has the highest morbidity and mortality rates of all abdominal wall hernias [1,5]. Therefore, the great necessity of complementary explorations facilitating the diagnosis. Different modalities of imaging have been indicated to investigate OH. Plain abdominal X-rays can show distension of intestinal segment and air fluid levels. Actually, Multidetector CT scanning remains the *cornerstone of a rapid diagnosis* [10,11]. The CT scan can show a mass tissue in the OC, referring to the incarcerated small intestine (often ileum) and sometimes severe findings such as ischemic small bowel leading to necrosis and perforation [2]. As soon as the CT scan started being used, preoperative diagnosis rate was enhanced and jumped from 43% to 87% in some reports [11,12]. Our patient had a BMI of 15.4 (<18) with signs of bowel obstruction. The examination of all abdominal hernial orifices was normal. The scanner concluded to a strangulated OH causing a small bowel obstruction without ischemic signs.

The main treatment of OH is surgery [6]. Various approaches are possible: transperitoneal by lower midline laparotomy, elective surgery, Totally Extraperitoneal (TEP) and TransAbdominalPrePeritoneal (TAPP). The lower midline laparotomy is the most used approach in emergency and for patients with unknown bowel obstruction. It ensures perfect exposure, guarantees meticulous manual reduction of hernia contents and eases bowel resection if needed. The hernia repair can be a simple closure of the obturator defect or mesh repair procedure. The simple closure can be with interrupted sutures, continuous sutures or purse string sutures [13]. Sutures can be strengthened by autologous tissue graft such as broad ligament, local obturator fascia, peritoneal patch, uterus patch, muscle flap, bladder patch, ovary patch and omentum patch. Mesh repair procedure was primarily used in the laparoscopic approach [5]. For our patient we practised a simple closure strengthened with the right ovary and fallopian tube patches

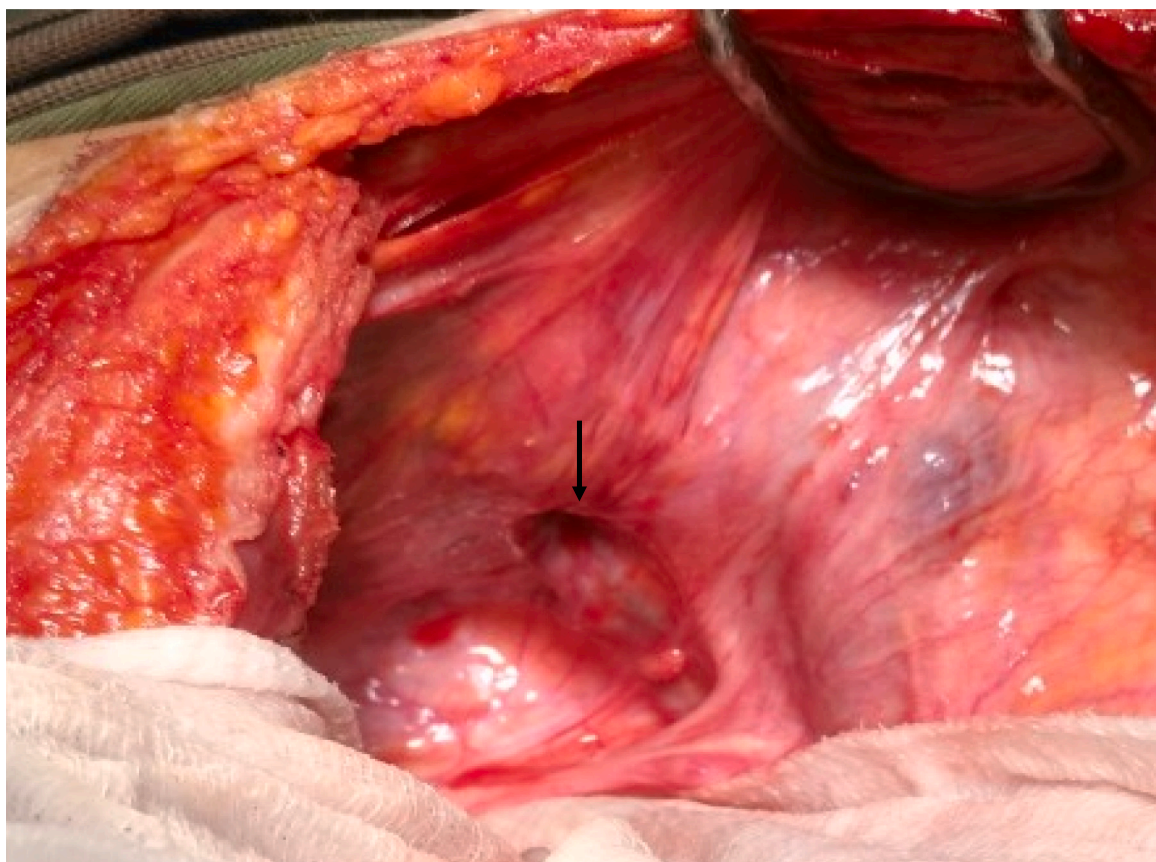


Fig. 4. Hernia defect seen after the reduction of the proximal ileal loop (arrow).

using interrupted sutures. We did not put a mesh because of the occlusion and the local inflammatory conditions with the increased risk of mesh infection. On the other hand, the same recent scoping review showed a recurrence rate of 10% for sutured repair versus 2% for mesh repair in open surgery and no recurrences were reported for mesh repair in laparoscopic surgery [5]. Moreover, another systematic review published in 2021 by Schizas D and al approved that postoperative morbidity and mortality reaches 26.7% and 11.6% respectively, this fact makes surgery very risky and recurrence can be a life-threatening complication for these fragile patients [14]. Therefore, the laparoscopic treatment is preferred if the patient's condition and the surgeons' skill and expertise in hernia repair allow it. A *supplementary* benefit of the laparoscopic approach is the ability to check the entire groin region and find other potentially occult groin hernias and even bilateral obturator hernias. This is very advantageous because it avoids other additional operations in frail elderly and emaciated.

Finally, a very recent modality of treatment was used and consists in ultrasound –guided manual reduction for strangulated OH after excluding intestinal necrosis or perforation by the CT scan. This conservative procedure may avoid emergency surgery and allow a safe elective laparoscopic treatment after assessing a poor general condition [15]. We are not very convinced by the last method because we cannot be very sure and reassured by not only the total and complete reduction of the hernia content but also the absence of necrosis or perforation signs in CT scan, which can make this therapeutic method quite dangerous for the patient. In our opinion, due to the absence of other randomised studies to validate this therapeutic procedure, surgery must be immediate as soon as the diagnosis of strangulated hernia is confirmed.

#### 4. Conclusion

OH is a very rare parietal pathology characterised by a difficult

preoperative diagnosis given to the late clinical signs and non-specific semiology. This type of hernia has the highest morbidity and mortality rates of all abdominal wall hernias. Thus; it should be suspected every time there is an intestinal obstruction of unknown origin in elderly woman. Abomino-pelvic CT scan grants rapid diagnosis and so an early surgical intervention. Open sutured repair surgery remains the most common method of repair but is associated with a high recurrence rate. The laparoscopic placement of mesh is the most suitable therapeutic modality but it requires surgeon's experience and propitious patient's conditions.

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#### Ethical approval

It is exemption from ethical approval because it is an observation report.

#### Consent

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

#### Author contribution

MBK, MM, MG = Study concept, Data collection,  
MBK, RD = Writing - original draft preparation.  
MBK, SH = Editing and writing.

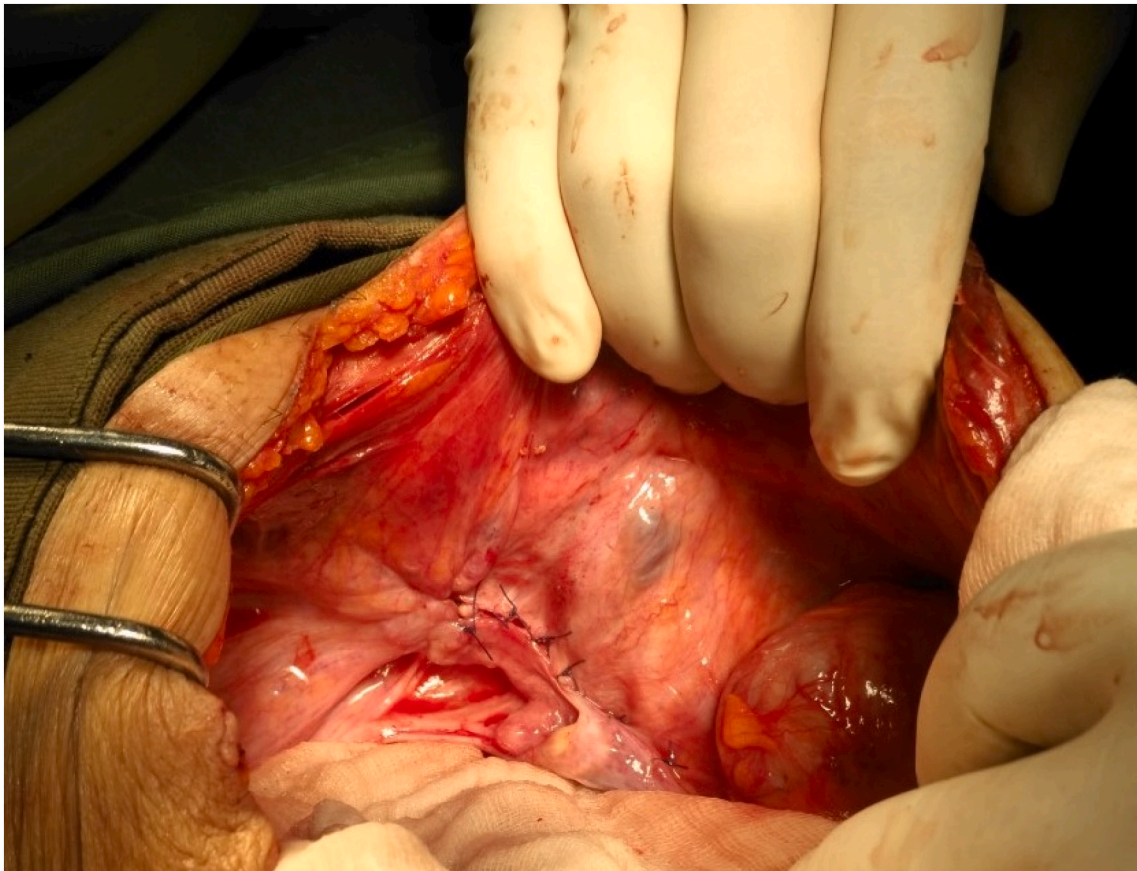


Fig. 5. Obturator defect closed by approximation flap of peritoneum and covered by the right ovary and fallopian tube used as patches.

Table 1

Physical signs revealing the obturator Hernia [1,2].

Signs	Description factors	Limits/weakness
Howship–Romberg sign	Pathognomonic sign for OH defined as a pain in the medial thigh due to the compression of the obturator nerve against the hernia sac. This pain is magnified by extension, adduction or medial rotation of the hip and usually relieved by flexion of the thigh.	<ul style="list-style-type: none"> <li>- Reported in only 15 to 50% of patients</li> <li>- Misinterpreted in patient with arthritis</li> <li>- Difficult to evaluate in patient with total knee replacement arthroplasty or internal fixation for bilateral femur fractures</li> </ul>
Hannington-Kiff sign	More specific. It reflects the absence of adductor reflex  * Percussion of the adductor muscle 5 cm above the knee results in contraction. * Contralateral comparison often shows hyperactivity and normal ipsilateral patellar reflex.	<ul style="list-style-type: none"> <li>- Less commonly seen</li> </ul>

MB = senior author and manuscript reviewer.

Registration of research studies

Not applicable.

Guarantor

Mohamed Ben Khalifa.

Provenance and peer review

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Declaration of competing interest

No conflict of interest.

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