CASE REPORT

Coexisting ipsilateral right femoral hernia and incarcerated obturator hernia

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SUMMARY

Obturator hernia (OH) is an uncommon cause of bowel obstruction and described in elderly females in the literature. The treatment has traditionally been laparotomy because of an acute nature of the condition. However, because of old age and comorbidities that OH is associated with, general anaesthesia may need to be avoided. In the current case, a transinguinal preperitoneal approach and management are presented after delayed preoperative diagnosis of bowel obstruction caused by a coexisting right incarcerated OH and ipsilateral non-reducible femoral hernia. A 91-year-old woman had a 6-day history of nausea and vomiting. She was referred to surgery because of persisting vomiting, but without any abdominal pain. A CT scan showed a hernia in the right groin area but the diagnosis was delayed. The hernias were repaired using a preperitoneal transinguinal approach. Bowel resection was not needed. The obturator canal and the femoral ring were both covered by a Bard Polysoft patch.

BACKGROUND

Obturator hernia (OH) is an uncommon cause of bowel obstruction and described in elderly females in the literature. Clinical and sometimes even radiological diagnosis of OH is known to be difficult. It is under debate whether OH should be approached via laparotomy leading to a violent reduction of the bowel, which may lead to unnecessary bowel resection. Because of old age and comorbidities that OH is associated with, general anaesthesia may sometimes need to be avoided. In the current case, a transinguinal preperitoneal approach and management are presented after delayed preoperative diagnosis.

CASE PRESENTATION

A 91-year-old Caucasian woman had a 3-day history of nausea and vomiting. She had medication (bisoprolol 5 mg 1×1, candesartan 16 mg×1) only for hypertension, lived at home with no additional help and was able to move outside independently. Her medical history showed previous appendectomy, upper midline laparotomy for cholecystectomy and a Phannestiel laparotomy for hysterectomy and salpingo-ovariectomy. She had had one pregnancy but no deliveries. She weighed 54 kg 2 months earlier and was 150 cm tall (body mass index 24). A few months earlier, the patient was diagnosed to have an 8 cm left renal tumour, which was planned to be treated operatively. However, she suffered from *Clostridium difficile* diarrhoea due to previous cefuroxime treatment and was treated in a ward for

the previous 4 weeks, for which the nephrectomy had been postponed.

INVESTIGATIONS

The patient was first admitted to a primary health-care ward because of vomiting, with no visible or palpable inguinal hernia. She was then referred to surgery on day 3 because of persisting vomiting, still without any abdominal pain. A CT scan showed distal small bowel obstruction with a transition zone near the right groin and left lower lobe pneumonia. However, the relative bowel obstruction was disregarded and the patient was treated conservatively by an internal medicine specialist for the next 4 days for the pneumonia and suspected recurrent *C. difficile* infection. On day 3, her C reactive protein was 530 mg/L; it decreased to 220 mg/L on day 7 with piperacillin-tazobactam treatment combined with metronidazole. On day 7, after the onset of vomiting, the abdomen was CT scanned for the second time, showing again the suspected right groin herniation, and a surgical consultation was repeated (figure 1A, B; video 1). The bowel wall was enhanced indicating viability within the CT accuracy. Physical examination by a surgeon showed no palpable mass in the right groin and only mild pain below the inguinal ligament. There was no pain in the medial thigh, either.

Figure 1 CT scan of the abdomen showing (A) the non-reducible femoral hernia and (B) the obturator hernia (arrow) lateral to lower ramus of the pelvis (LR).

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Video 1 Preoperative axial CT scan demonstrating the femoral hernia (slides 80–82) and obturator hernia (slides 85–95).

The abdomen was not distended but the bowel sounds were somewhat frequent with no clear tympanic tension. There was no guarding or rebound tenderness of abdomen in any of the abdominal quadrants. The nasogastric tube was inserted and immediately produced 1200 mL of dark green fluid.

TREATMENT

Because of poor general condition after a week of hospitalisation, an exploration of the right groin was performed under local anaesthesia by infiltrating lidocaine 10 mg/mL with adrenalin, and ropivacaine 7.5 mg/mL in a 1:1 ratio, for a total of 40 mL. An incision was made exactly over the right inguinal ligament in order to visually reach both sides of the suspected

herniation. After the skin incision, a small non-reducible mass of 3 cm was seen by the pubic bone just under the inguinal ligament. After incising the floor of the inguinal canal, a femoral hernia with vital preperitoneal fat was seen and easily reduced. However, this non-incarcerated femoral hernia could not have been the cause of the patient's symptoms. Therefore, the exploration was continued by finger dissection deeper below the Cooper's ligament, where a thick hernia sac was seen entering into the obturator canal (figure 2A). The hernia sac was tightly incarcerated and could not be removed by pulling. This attempt caused considerable pain and the patient was given general anaesthesia. The obturator membrane was cut medially with scissors to enlarge the hernia orifice, a manoeuvre that released the incarceration. After having been reduced, the thick and dark blue hernia sac was opened and found to be empty—the small bowel was probably reduced when reduction of the hernia was first tried by traction alone (figure 2B). The hernia sac was opened and the small bowel was inspected. The occlusion site was clearly visible as a constriction ring and the proximal bowel was enlarged and bluish (figure 2C, D). Bowel resection was not needed but the hernia sac was resected and closed by a continuous absorbable suture. The retroperitoneal and preperitoneal spaces were easily dissected wider. The obturator canal and the femoral ring were both covered by a large (16×9.5 cm) Bard Polysoft patch. The memory ring was removed to better accommodate the patch to three-dimensional pelvic anatomy. The wide end of the patch was set 3 cm behind the pubic bone and on the obturator canal. The patch was fixed to Cooper's ligament with two Vicryl sutures and by three drops of Glubrane tissue glue on iliac vessels. No other fixation was used. The medial part of the patch was turned up beneath the rectus muscle and the proximal, narrow part under the transversal muscle near the anterior superior iliac spine. The floor of the inguinal canal and the external aponeurosis were closed separately by a continuous 2-0 Vicryl suture.

Figure 2 (A) Clamp is inserted from caudal direction through the femoral ring after reducing the femoral hernia. The finger points at incarcerated obturator hernia below upper ramus. (B) Obturator hernia is reduced. (C and D) Small bowel showing the transition zone.

OUTCOME AND FOLLOW-UP

Taking into account the 7-day history with diarrhoea and vomiting, without clear abdominal pain and tenderness, it seems likely that occlusion was not complete until a short time before the operation. Primary recovery was slow but without any major complications. The patient was discharged and transferred to her local healthcare centre ward on the sixth postoperative day. Four weeks later she was still there with quite poor general health but no complications in the operation area. She did not want to be operated on for her renal carcinoma.

DISCUSSION

The OH represents only 0.05% to 1.4% of all abdominal wall hernias¹ and is characterised by high morbidity and mortality.² However, the ageing of a large section of society and the use of modern imaging tools probably increase the incidence of OH. The most typical patient having an obstructed OH is an old woman who has suffered sudden weight loss.³ This was also the case with our patient.

The most common approach to repair obstructed OH in clinically unstable patients is laparotomy^{4–6} and the preoperatively confirmed diagnosis is rare.² However, a transinguinal approach has also been suggested for obstructed OH.⁷ Most reports on OH repair have been produced by Asian clinicians who encounter the hernia more often than Europeans. Since the Finnish Caucasian habitus consists of generally more intra-abdominal and subcutaneous fat in general than the Far East population, the inguinal minimally invasive approach has not become very popular. In our patient's case, she would probably not have tolerated a midline laparotomy. Sometimes the obstructed loop is difficult to reduce without using sufficient force—a manoeuvre that may tear the bowel.⁸ To avoid this, it is better to incise the constricting obturator membrane. As the vessels and the obturator nerve usually lie immediately above or lateral to the sac,^{1 8} the constricting ring can be easily and safely cut inferomedially along the edge of the superior pubic ramus using an inguinal approach.^{9 10}

OH may coexist with other ipsilateral hernias. If the imaging corroborates a suspicion of an OH, it is safe and applicable to explore the area from an inguinal incision, even if the patient's general condition is unstable

Learning points

- ▶ Obturator hernia is a rare but relevant differential diagnosis of a bowel obstruction.
- ▶ Findings in a physical examination may be modest.
- ▶ Abdominal CT is the basis of the challenging preoperative diagnosis.
- ▶ A transinguinal approach to exploration even under local anaesthesia is possible if inguinal or obturator hernia is suspected.

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Contributors TTS and MT operated on the patient. The manuscript of the case report was drafted by TTS and MT.

Competing interests None.

Patient consent Obtained.

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