CASE REPORT

Laparoscopic total extraperitoneal repair of preoperatively diagnosed bilateral obturator and incidental bilateral femoral herniae

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SUMMARY

Obturator hernia (OH), a rare type of hernia, is associated with high morbidity and mortality. Diagnosis is often delayed as clinical symptoms are typically non-specific. OH is frequently associated with other occult inguinopelvic herniae. Early diagnosis is vital to decrease morbidity and mortality. We report the case of a 75-year-old woman who presented to the surgical outpatients' department with non-specific bilateral groin pain radiating to the thighs. CT of the pelvis demonstrated bilateral OH with no radiological evidence of bowel obstruction. Semiurgent elective laparoscopic total extraperitoneal mesh repair was performed. Intraoperative findings confirmed bilateral obturator herniae as well as incidental bilateral femoral herniae. This case highlights the need for a high index of suspicion for such concomitant hernias that, in the presence of OH, may only be identified intraoperatively.

BACKGROUND

Obturator hernia (OH) is a rare type of pelvic hernia that comprises only 0.05–1.4% of all hernias.¹ It is an important, though uncommon, cause of intestinal obstruction, first described in 1724 by Amuad de Ronsil.² Femoral hernia is another distinct, relatively rare form of herniation.³ Both types of hernia are associated with high morbidity and mortality.^{1–3}

OH is most common in elderly, emaciated and multiparous females with a ratio of 6:1 compared with males. It is a diagnostic dilemma due to the non-specificity of clinical symptoms. Thus, a high index of suspicion is crucial for early diagnosis. Early diagnosis and surgical intervention are important to avoid operative delay associated with a high risk of mortality. Mortality rates reach 70% in the setting of acute incarceration and bowel obstruction.^{4 5} CT is diagnostic and valuable for preoperative surgical planning.^{1 2 4} The Howship-Romberg sign, characterised by the provocation of inner thigh pain on internal hip rotation, is highly suggestive of the presence of an OH but is found in only 15–40% of cases.⁶ When detected early, total extraperitoneal laparoscopic repair is a viable treatment option. This case describes an incidental finding of bilateral femoral herniae discovered intraoperatively during a laparoscopic bilateral OH repair. If undiscovered, these herniae can lead to morbidity and even mortality if strangulated. Thus, a thorough examination of all

hernial orifices during laparoscopic OH repair is essential.

CASE PRESENTATION

A 75-year-old woman was referred to the surgical outpatients' department with a 2-year history of lower abdominal pain and bilateral groin pain of mild intensity radiating to both mid-thighs. Although this pain had not increased in intensity over time, it was affecting her quality of life. Her medical background included hypertension, diverticulosis, osteoporosis and an appendectomy 15 years prior to this presentation. On examination, she was a thin, elderly woman. Her abdominal examination revealed bilateral groin bulges with positive cough reflexes. Bilateral groin herniae were clinically suspected.

INVESTIGATIONS

Haematological investigations were unremarkable. In light of her lower abdominal pain and background of diverticulosis, the patient proceeded to have a CT of the abdomen and pelvis, which demonstrated bilateral OH containing small bowel (figure 1).

TREATMENT

The CT findings prompted early intervention and the patient underwent a semiurgent, elective laparoscopic total extraperitoneal mesh repair of the bilateral OH within 1 month of diagnosis. Under general anaesthesia, the preperitoneal space was developed using a balloon expander under direct vision. A 12 mm Hassan port was inserted via an infraumbilical right paramedian incision while retracting the right rectus muscle laterally into the preperitoneal space. Three additional 5 mm ports were inserted under vision in the left iliac fossa, right iliac fossa and lower midline infraumbilically. Intraoperative findings confirmed bilateral OH (figures 2 and 3). The larger right-sided incarcerated hernial sac contained fat and small bowel (figure 3) and the smaller left hernial sac contained only fat. Evaluation of the inguinal structures revealed bilateral femoral herniae. The right hernial sac contained fat and was easily reducible (figure 3). The left was incarcerated and also contained only fat. All hernial sacs were reduced using blunt dissection and mild traction, avoiding damage to surrounding structures (figure 4). Anatomical mesh was inserted bilaterally and fixed with tacks in the standard fashion, taking care to ensure

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Figure 1 CT scan showing bilateral, small bowel containing obturator herniae (arrows).

proper obturator and myopectineal Orifice of Fruchaud covering (figure 5). An additional mesh was inserted in the midline to ensure adequate obturator foramina covering with an acceptable overlap to further reduce the risk of recurrence. Abdominal deflation was completed under vision and closure was performed in the routine fashion.

OUTCOME AND FOLLOW-UP

Postoperatively, the patient developed urinary retention, which was treated with insertion of a urethral catheter. After a successful trial of voiding 24 h later, the patient was discharged home on postoperative day 2 with minimal discomfort and fully back to her baseline mobility. She was recently reviewed in the outpatients' department 12 weeks postoperatively and was feeling very well, pain-free and fully back to her daily routine. She will have a routine follow-up CT scan at 4 months postdischarge.

DISCUSSION

Arnaud de Ronsil first described the OH in 1724. The first successful surgical repair was performed by Obre in 1851. The true incidence of OH is unknown, but estimated to be 0.05–1.4% of all abdominal hernias.^{7 8} Only approximately 600 cases are reported in the literature.^{2 6} This hernia is associated with the highest mortality rate of all abdominal hernias; up to 70% if acutely incarcerated.⁶ OH is difficult to diagnose and is only correctly diagnosed preoperatively in 20% of cases. OH is up to nine times more common in females due to a wider pelvis, a more triangular obturator foramen and a greater transverse diameter. Approximately 6% are bilateral and 60% are right sided. This is likely due to the sigmoid colon protecting the left-sided obturator foramen. Conditions that promote OH include a congenitally large obturator foramen, increased intra-abdominal pressure (chronic obstructive pulmonary disease, constipation, pregnancy, multiparity, ascites, kyphoscoliosis) and an increase in size of the obturator foramen relative

Figure 3 Right-sided obturator hernia (large arrow) and incidental right femoral hernia (small arrow).

to the surrounding adipose tissue resulting from dramatic weight loss.⁹ Femoral hernia is another relatively rare form of herniation, with an incidence of 2–8% of groin hernias, with a female predominance.³ A recent small case series by Yokoyama *et al*¹⁰ reports the highest incidence of both bilateral OH (5 of 8 patients, 63%), and concomitant OH and femoral herniae (7 of 8 patients, 88%).

The clinical presentation of OH is vague and includes symptoms of bowel obstruction including dull, crampy abdominal pain, nausea and vomiting, in approximately 80% of patients. Obstruction is usually partial due to a high frequency (greater than 40% of cases) of Richter's herniation of the small bowel into the obturator canal. Obstruction can be acute or intermittent, which is an important clue to diagnosis.¹¹ Similar to other rare hernias, such as Spigelian hernias, clinical presentation varies with the hernial sac contents and degree of herniation. Owing to the varied presentation of these hernias, clinical examination is frequently inconclusive.¹² The Howship-Romberg sign is the classic sign used for OH diagnosis and is considered to be pathognomonic when present. It is characterised by pain in the medial thigh and sometimes in the hip, exacerbated by hip extension, adduction and medial rotation. This reproduction of obturator neuralgia by compressing the nerve against the hernia irritating the cutaneous branch of the nerve's anterior division is only present in 15–40% of cases. Flexion of the thigh usually relieves the pain. The Hannington-Kiff sign is an absent adductor reflex in the thigh, resulting from obturator nerve compression. This reflex is typically elicited by placing the index finger across the adductor muscle about 5 cm above the knee and percussing onto the extended finger with a patella hammer causing contraction of the muscle.¹³

CT of the abdomen and pelvis is the diagnostic imaging modality of choice. Recent series have reported that definite and early OH diagnosis can be made in 100% of cases with CT of the abdomen and pelvis.¹¹ The management of an OH is

Figure 2 Left-sided obturator hernia, nerve and vessels.

Figure 4 Left-sided obturator foramen posthernia reduction.

Figure 5 Right obturator foramen covered with mesh. A large mesh for appropriate hernia coverage secured with tackers is shown.

surgery. Traditionally, laparotomy has been the most common surgical approach.⁸ Interestingly, in our case, despite clear imaging of the OHs, the femoral herniae were not detected on the preoperative CT. This highlights the additional benefit of laparoscopic hernia surgery, where a thorough examination of all hernial orifices can lead to the detection of herniae (particularly the femoral subtype) that may not have been appreciated preoperatively. The open preperitoneal approach is a viable

Learning points

- Owing to non-specific symptoms, obturator hernia is typically a diagnostic dilemma that often leads to delayed surgery and an increased mortality risk.
- A high index of clinical suspicion for obturator hernia should lead to early CT imaging.
- Laparoscopic intervention reveals concomitant, occult groin herniae, which have a high probability of being overlooked if an open operative technique is employed.

open surgical alternative. Recently, Deeba *et al* reported 28 cases of laparoscopically managed OH. The majority of cases (71%) treated successfully with the laparoscopic approach were elective cases diagnosed preoperatively by CT or an incidental finding during laparoscopic repair of other hernias. The minority of emergency cases (29%) were treated laparoscopically.¹⁴

Competing interests None declared.

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