

## AN UNUSUAL CASE OF SMALL BOWEL OBSTRUCTION

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## ABSTRACT

Obturator hernia is a rare type of pelvic hernia. As the clinical symptoms are non-specific and the physical findings are obscure, a correct diagnosis is often delayed, which can result in significant morbidity and mortality. In this study we present the case of a 92year old lady who presented with an obturator hernia. The case is discussed and a literature review is undertaken of this rare condition.

**KEYWORDS:** Small bowel obstruction, obturator hernia, open repair, laparoscopic repair, herniorrhaphy.

## INTRODUCTION

An obturator hernia is the protrusion of either an intra- or an extra-peritoneal organ or tissue through the obturator canal. The obturator foramen is the largest foramen in the body being formed by the rami of the ischium and pubis. The obturator canal is 2 to 3cm long and 1cm wide. It contains the obturator nerve and vessels.<sup>[1]</sup>

An obturator hernia is a rare entity. The average medical practitioner will most likely not see an obturator hernia during their entire career and even experienced surgeons are likely to encounter one or two cases during their careers.<sup>[2]</sup> The incidence of obturator hernia is low, representing 0.073% (11 of 15,098) of all hernias repaired at the Mayo Clinic in a retrospective study of 15 years.<sup>[3]</sup> The incidence of obturator hernia in the Asian population is higher, representing about 1.6% of the population.<sup>[4]</sup>

Obturator hernia poses a diagnostic challenge as the signs and symptoms are often non-specific, which makes a pre-operative diagnosis difficult. Hernia through the obturator canal is rarely visible or palpable, hence it is usually unsuspected and undiagnosed. Obturator hernia occurs most commonly in elderly females with low body mass indexes and classically presents as an intestinal obstruction or strangulation. The advanced age of the patient, in combination with delayed diagnosis and management and associated chronic diseases result in high rates of morbidity and mortality, with mortality quoted as high as 47% by some researchers.<sup>[5]</sup>

In this case the patient presented with vomiting, abdominal distension, absolute constipation and hip pain. The diagnosis was confirmed by computed tomography

(CT) scan. The patient underwent surgery and made an uneventful recovery.

## CASE REPORT

A 92year old lady was admitted via the emergency department with a 2day history of abdominal distension, vomiting, colicky peri-umbilical pain, and a 1day history of absolute constipation and right hip pain. Physical examination demonstrated a distended abdomen with no abdominal scars nor any obvious external hernias. The abdomen was tense and tender on palpation with no peritonism. Percussion demonstrated a hyper-resonant note and auscultation revealed an absence of bowel sounds. Per rectal (PR) examination confirmed an empty rectum. Admission bloods demonstrated a neutrophil leucocytosis and an acute on chronic kidney injury with a normal lactate and C-reactive protein. An abdominal X-ray as performed and this demonstrated small bowel obstruction (figure 1).

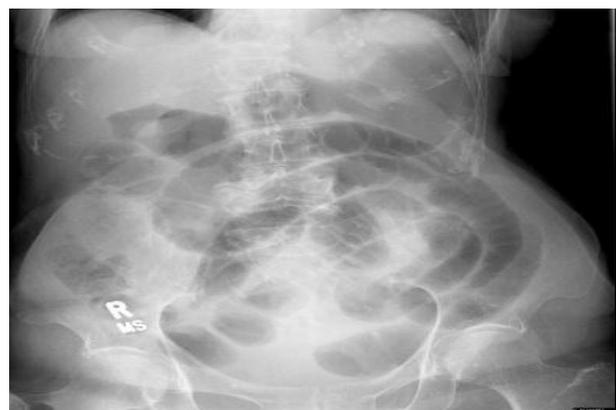
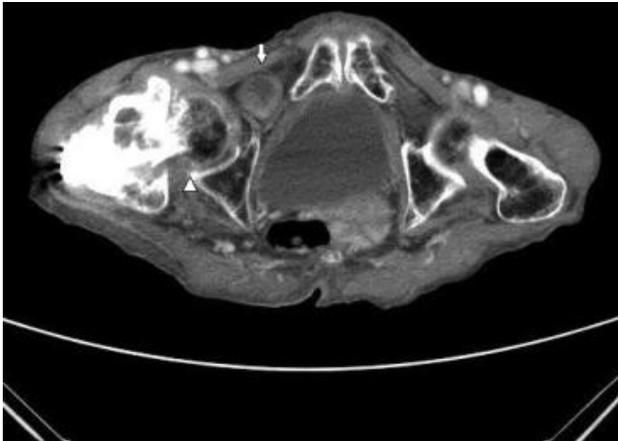


Figure 1: Plain abdominal film demonstrating small bowel obstruction.

An obturator hernia was suspected clinically. The patient was kept nil orally, received intra-venous fluids and analgesia. A nasogastric tube and a urinary catheter were sited and the patient underwent an abdominal CT scan. An abdominal CT scan confirmed the diagnosis of a right-sided obturator hernia with small bowel obstruction (figures 2 and 3).



**Figure 2: CT pelvis demonstrating a small bowel loop descending into the right obturator canal anterior to the obturator externus muscle (white arrow).**



**Figure 3: Coronal CT pelvis image showing the small bowel loop descending into the right obturator canal (black arrow).**

The patient underwent immediate emergency laparotomy. A segment of the small bowel was incarcerated at the right obturator foramen and was reduced without iatrogenic injury. The small bowel was carefully examined and was found to be healthy. After reduction, the obturator foramen was closed with primary sutures as the defect was considered too small for mesh repair. The patient did not experience any post-operative complications and was discharged on day 5 post-operatively.

## DISCUSSION

An obturator hernia is the protrusion of either an intra- or an extra-peritoneal organ or tissue through the obturator canal. The obturator foramen is the largest foramen in the body being formed by the rami of the ischium and pubis. The obturator canal is 2 to 3cm long and 1cm wide. It contains the obturator nerve and vessels.<sup>[1]</sup>

Arnaud de Ronsil first described the obturator hernia in 1724 and Henry Obre performed the first successful operation in 1851.

It is a rare condition with only 541 cases having been reported in the literature by 1980.<sup>[6]</sup> The incidence of obturator hernias in the Asian population is higher, representing about 1.6% of the population. Obturator hernias are much more common in elderly female and post-pregnancy patients owing to the greater width of the pelvis, larger obturator canal, and increased laxity of the pelvic tissues.<sup>[7]</sup> The condition has been nicknamed the 'little old ladies hernia' as it affects this group due to atrophy and loss of the pre-peritoneal fat around the obturator vessels in the canal predisposing hernia formation.<sup>[7]</sup>

Due to its non-specific symptoms, obturator hernia is difficult to diagnose. Most patients undergo surgery because of an intestinal obstruction and are diagnosed intra-operatively. The pre-operative diagnosis rate is reported as only 10-30%.<sup>[1]</sup> More than 90% of patients with obturator hernia present with abdominal pain, vomiting, distension and constipation.<sup>[4]</sup> The Howship-Romberg sign (pain along the medial aspect of the thigh to the knee due to compression of the anterior branch of the obturator nerve by the contents of the hernia) is present in 50% of patients.<sup>[8]</sup> Another clinical sign of obturator hernia is the Hannington-Kiff sign, in which the adductor reflex is absent in the thigh.<sup>[8]</sup>

Recent literature has shown that early diagnosis of obturator hernia can be made with CT of the abdomen and pelvis. CT imaging of bowel herniating through the obturator foramen and lying between the pectineus and obturator muscles is shown to be the best diagnostic clue (figures 2 and 3).<sup>[9]</sup>

A variety of surgical approaches have been described in the literature for the acute management of an obturator hernia. Abdominal, inguinal, retropubic, obturator, and laparoscopic approaches have all been described. The majority of published evidence favours the abdominal approach, utilising a low midline incision. This method allows the surgeon to establish the diagnosis, avoid any obturator vessels, give better exposure of the obturator ring, and facilitate bowel resection if necessary.<sup>[10]</sup> Simple closure of the hernial defect with interrupted sutures or placement of a synthetic mesh are the preferred methods of herniorrhaphy as they are associated with the lowest complication rates.<sup>[10]</sup>

Trans-abdominal and extra-peritoneal laparoscopic repair of obturator hernias have been suggested as these approaches have been shown to be associated with reduced post-operative pain, fewer pulmonary complications and a shorter hospital stay. Given these results, and the fact that obturator hernias classically occur in patients that have limited physiological reserve, an argument could be made for a change in practice from open to laparoscopic repair however further research into the laparoscopic repair of obturator hernias must be conducted to ensure that effectiveness of repair and recurrence rates are comparable to those of open repair before this transition occur.

## CONCLUSION

Obturator hernias carry significant morbidity and mortality rates, therefore rapid clinical and radiological assessment followed by early surgery is critical to successful treatment.

A high suspicion for obturator hernia should be maintained when assessing a patient presenting with bowel obstruction particularly where intermittent symptoms or medial thigh pain are present. A full assessment of the hernial orifices including screening for the Howship–Rhomberg sign should be performed.

Early CT scanning should be considered in cases where inguinal and femoral hernias have been ruled out by clinical examination. This should increase rapidity of diagnosis and reduce complications for example bowel ischaemia and the necessity for bowel resection at the time of surgery.

Open approaches are well documented with good hernial defect repair rates but are not without the complications of open abdomino-pelvic surgery. A drive towards laparoscopic repair may be appropriate in the classical patient group if repair effectiveness and recurrence rates are shown to be similar to those seen following open repairs. Further research into the laparoscopic repair of obturator hernias needs to be conducted before this shift in practice can be made.

## Grant

None.

## CONFLICTS OF INTEREST

We the authors of this case report have no conflicts of interest to declare.

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