

## ORIGINAL ARTICLE

## Obturator Hernia: diagnosis and management under conditions of limited resources

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## ABSTRACT

**Background:** Obturator hernia is rare. Clinical presentation is often non-specific and mortality is high, mostly due to late recognition. Early diagnosis and treatment are needed to reduce mortality.

**Objective:** To present a rare surgical entity with high mortality, and highlight the need for early diagnosis and treatment, even under limited resources.

**Methodology:** Retrospective study using records of patients who had been operated on for obturator hernia from November 1977 to May 2012 in the author's rural practice. Patients' biodata, mode of presentation, intervention and outcome, were studied.

**Results:** Eight patients were operated on for obturator hernia, but only seven, whose records could be retrieved, were recruited in this study. All were women, multiparous, and mostly elderly, with average age of 57.5 years. All had intestinal obstruction. At laparotomy, one (14.3%) had viable bowel, six (85.7%), bowel gangrene; five (85.7%) underwent full resection and anastomosis, and one (14.3%) had partial resection. Hernia defect was closed in four (57.1%). Wound infection was common (71.4%) and three (43%) died.

**Conclusion:** Obturator hernia is mainly a disease of elderly women and is rarely diagnosed preoperatively. The presentation is non-specific and the condition is seldom suspected. Preoperative diagnosis can be aided by advanced imaging modalities such as computed tomography and magnetic resonance imaging, but these are not readily available in areas of limited resources. Most patients present late with intestinal obstruction involving the small bowel, and mortality is high.

**Keywords:** *Intestinal obstruction, Howship-Romberg sign, high mortality*

## INTRODUCTION

Obturator hernia is a rare clinical entity which is often not suspected and so, seldom sought for.<sup>1,2,3</sup> It is due to the protrusion of intra-abdominal contents through the obturator foramen into the obturator canal. The obturator foramen is situated on both sides of the pelvic side wall at the anterior aspect, below the acetabulum and bounded by the rami of the pubic and ischial bones. The

obturator foramen transmits the obturator nerve and vessels and is surrounded by fatty areolar tissue.<sup>4,5,6</sup>

The protrusion of visci through this foramen is enhanced by conditions that decrease the fatty tissue, such as is seen in the elderly, thin or emaciated, multiparous and often malnourished and debilitated women.<sup>2,6,7</sup> It may also be seen in other conditions that

increase intra-abdominal pressure, such as ascites and chronic obstructive pulmonary disease.<sup>8</sup> Such hernias exert pressure on, and so, irritate the obturator nerve, causing pains felt at the hip or knee, radiating on the medial side of the thigh in the area of distribution of the obturator nerve.<sup>5,9,10</sup> Such pain is exacerbated by extending the hip and medially rotating the thigh. This response is the Howship-Rosenberg sign which is pathognomonic of obturator hernia.<sup>3,4,11</sup>

Another pathognomonic sign is the Hannington-Kiff sign which consists of absent adductor reflex in the presence of a positive patellar reflex on the ipsilateral side.<sup>1,3,4,7</sup> However, this is less well known.

Obturator hernia has high mortality rate, and if not detected early and treated promptly as most cases present as intestinal obstruction, often with gangrenous bowels.<sup>12,13</sup> Preoperative diagnosis is difficult because the symptoms are often non-specific, and may sometimes mimic other conditions such as arthritis of the hip, sciatic hernia or radiculitis.<sup>14,15,16,17</sup> Recently, however, computed tomography (CT) has greatly improved preoperative diagnostic yield.<sup>9,12,18</sup> Other diagnostic tools employed include ultrasonography, magnetic resonance imaging (MRI), upper gastrointestinal series and follow-through, and laparoscopy. Such diagnostic armamentarium is not readily available in the resource-limited practices in the rural areas of Nigeria.

Obturator hernia must be thought of when thin, elderly and emaciated women with no history of previous abdominal surgery (and who may give a history of recurrent colicky abdominal pains and distension which resolved spontaneously) present with intestinal obstruction of small bowel type.<sup>12,19,20</sup> This is without prejudice to the fact that younger women, and even men, are sometimes affected. Most patients present as emergency with intestinal obstruction when bowel gangrene has most likely occurred.<sup>12,19,20</sup> Symptoms at this stage include abdominal pains, vomiting and abdominal

distension. Some present in a toxic, debilitated state due to gangrene following bowel strangulation.

Surgery is the only treatment and should be prompt, if diagnosed preoperatively, in order to prevent complications, since mortality rate is high.

#### METHODOLOGY

The case files of all the patients treated for obturator hernia over the nearly thirty-five year period of 1977 to 2012 in the author's surgical practice, in a rural area, were retrieved from all cases of intestinal obstruction, treated within the period. Charts that could be retrieved and had enough documentation were analyzed. Information extracted from the records and analysed included the gender, age, presenting symptoms and signs, duration of symptoms, mode and condition of presentation, diagnostic methods, intervention and outcome. One patient whose hospital records were not found was excluded from the study.

#### RESULTS

Eight cases of obturator hernia were found to have been operated on during the nearly thirty five-year period under study, constituting 4.6% of 175 patients of intestinal obstruction treated during this period. Only 7 (87.5%) of the 8 with obturator hernia had complete records, and were recruited for this study. All the patients were women.

The ages of six of these patients ranged from 35 to 70 years with a mean age of 57.5 (SD) of 2.4, whereas the age of the 7<sup>th</sup> patient was merely documented as "adult". The duration of symptoms ranged 3-5 days. No case was diagnosed preoperatively as a definitive case of obturator hernia. The symptom evolution consisted of gradual onset of low grade colicky abdominal pains, progressing in intensity over 3-5 days, and associated with vomiting, constipation and abdominal distension.

There was no previous history of similar episodes which resolved spontaneously, or of

previous abdominal surgery. No history of hip or knee pain was volunteered. All the cases presented with acute intestinal obstruction. Diagnosis of intestinal obstruction was made on clinical grounds without defining the cause, but the definitive diagnosis of obturator hernia was made only at laparotomy.

Two (28.6%) patients had Richter's hernia; one had a viable gut but the other had gangrenous gut at the anti-mesenteric border. The remaining five (71.4%) had complete bowel entrapment in the obturator canal with full circumferential gangrene of the affected bowel. In one (14.3%) of the patients with gangrenous bowel, there was rupture of the bowel, with the two arms of the loop completely detached. There was faecal soiling and purulent effluent. In the one (14.3%) case without gangrene, the loop of bowel was merely eased out of the obturator canal. In the case with gangrene at the anti-mesenteric border the gangrenous patch was excised and bowel continuity restored. In the five (71.4%) cases with full-wall gangrene, resection and anastomosis was carried out.

The obturator foramen was closed in four (57.4%) cases out of the seven, using monofilamentous nylon size 2 suture, while three (42.9%) were not, because of difficulty in closure. The 5 patient (71.4%) in whom complete resection and anastomosis of gangrenous bowel was carried out had a turbulent postoperative period due to sepsis. Hospital stay ranged between 10 to 28 days, the longer period was due to wound infection. Three patients (42.9%) died from sepsis and septic shock. Follow-up was unsatisfactory as only two patients came back for review after discharge from hospital.

#### DISCUSSION

Obturator hernia is rare in our environment, occurring predominantly in elderly women. In this study, the definitive diagnosis was only made at laparotomy for intestinal obstruction. All our patients presented with intestinal obstruction and mortality was high

because of gangrene of segments of the intestine.

The surgical literature depicts obturator hernia as a rare disease entity.<sup>1,2,7</sup> It is reported to account for 0.73% to 1% of all hernias and 0.2% to 1.6% of all cases of intestinal obstruction.<sup>3,4,14</sup> Over the period November 1977 to May 2012, only eight cases of obturator hernia were seen in our establishment, thus corroborating its rarity.

Obturator hernia was first described by Amaud de Ronsil in 1724 and the first successful repair was carried out by Henry Obre in 1851.<sup>5,8,9</sup> The classical picture of obturator hernia has been well documented. It is that of an old, fragile thin or emaciated woman, aged seventy years and over, often with co-morbidities.<sup>9,11</sup> The condition is more prevalent amongst Asiatics, who have a leaner habitus, than those in the Western world who have more robust features.<sup>9</sup>

Our experience shows that younger women between the ages of 35 and 50 years who are otherwise in good general condition, could equally be affected. The occurrence in younger people has been corroborated by other workers.<sup>21,22</sup> Males, also, have been affected, six to nine times less often than females, though.<sup>8,9,19</sup> However, all our patients were females, a fact related to the wider pelvis in them and the weakness of the peritoneum and pelvic muscles occasioned by the strain of multiparity.<sup>4,6,8</sup>

The symptoms of obturator hernia are nonspecific and seldom recognized before the patients present with intestinal obstruction. More than 90% of patients are said to present with intestinal obstruction.<sup>23</sup> Some patients give a history suggestive of recurrent intestinal obstruction which usually resolved spontaneously.<sup>20,24</sup> The characteristic pain of obturator hernia which can be elicited in the Howship-Romberg sign was not sought for, nor was it elicited in any of our patients. However, this sign is seldom sought for and is found in only 15% to 50% of cases.<sup>9</sup> The Hannington-Kiff sign, which consists of

absence of adductor reflex in the thigh in the presence of a positive patellar reflex on the ipsilateral side, may be found. It is said to be characteristic also of obturator hernia. Sometimes, a mass may be palpable on digital vaginal or rectal examination and lead to suspicion of the condition.<sup>9,12</sup>

Diagnosis on the basis of symptoms and signs alone is uncertain and most patients present with intestinal obstruction, as in our experience.<sup>15,20,25,26</sup> Recently, the use of CT scan has improved the diagnostic yield, sometimes achieving a 100% success rate.<sup>9</sup> Magnetic Resonance Imaging, herniography, upper gastrointestinal series (late film), and laparoscopy have added to better diagnosis. In particular, the lack of CT scan placed considerable limitation on our preoperative diagnostic workup. Also, cultural beliefs and the activities of non-surgeons contributed to delays in patient presentation. Besides, the pain of obturator hernia may be confused with that of other conditions such as sciatica, arthritis of the hip or sciatic hernia.<sup>16,17</sup>

The treatment of obturator hernia is surgical and should be prompt.<sup>3,5,27</sup> All our patients had operative treatment within 24 hours of admission after resuscitation because of acute intestinal obstruction. The abdominal approach was used – a midline abdominal incision, extending from the suprapubic region to well above the umbilicus because we did not make a preoperative diagnosis of obturator hernia. However, a midline lower abdominal incision has been advocated by other workers in this field.<sup>3,9</sup> This is because most cases occur as undiagnosed intestinal obstruction. It affords ample access to the pelvis and enables examination of both pelvic side walls. This is important because obturator hernia has been known to occur bilaterally sometimes.<sup>23,28,29</sup> All our cases were unilateral. Other approaches have been used, including inguinal, retropubic and obturator approaches.<sup>9</sup> However, these approaches are usually not adequate for resection and anastomosis in the presence of strangulation.

Resection and anastomosis is usually performed for gangrenous bowel and all our patients, except one, underwent this procedure. Closure of the hernia defect has been advocated as a necessary measure to prevent recurrence and various methods have been advocated.<sup>2,14</sup> These include simple closure with non-absorbable sutures, mesh patch, use of fascial and muscular tissue, and even the use of body of uterus, round ligament and ovary. In our cases we closed four of the cases with nylon sutures, whereas the rest were left open because of difficulty in closure. The merits of closure and non-closure have not been standardized, but Thanapaisan, *et al* and Mantoo, *et al* have put the recurrence rate after non-closure at less than 10%.<sup>8,9</sup>

Recently, laparoscopic approaches have been employed to repair obturator hernia.<sup>13,30,31</sup> Totally extra-peritoneal (TEP) and trans-abdominal pre-peritoneal (TAPP) approaches have been used. Laparoscopic methods are best in early cases where a preoperative diagnosis was made, before intestinal obstruction supervenes.

Mortality is high.<sup>1,3,7,32</sup> This can be attributed to old age in the patients, advanced and critical nature of their condition on presentation, delay between admission and operation, and complicating cardiovascular and pulmonary events. Majority of patients are old and fragile, have associated illnesses, and when they present in intestinal obstruction with gangrene, the burden of surgery and toxicity from the gangrene often overwhelm them. This was the situation in those of our patients who died. Those who died were aged 65, 70 and 70 years, respectively. No co-morbidity was elicited. We recorded a mortality rate of three out of seven (43%). Others have put the figures of mortality at 10-50%, while some workers have reported 12-70%.<sup>4,12,19</sup>

The future implication of this study is that doctors should employ a high index of suspicion for obturator hernia in the old, thin or emaciated, multiparous women,

particularly if they present with intestinal obstruction. All our patients, except one who was 35 years old, were of slim habitus and their parity ranged from five to eight. Clinicians should start looking for the pathognomonic Howship-Romberg and Hannington-Kiff signs.

It is equally necessary for health policy makers to improve facilities in hospitals, including the provision of CT scan machines, as this will aid an earlier diagnosis of obturator hernia before the onset of intestinal obstruction which carries a high morbidity and mortality rate, especially in rural and suburban hospitals where resources are limited.

#### CONCLUSION

We conclude that obturator hernia is a rare surgical entity, occurring predominantly in elderly women. However, younger, otherwise healthy-looking women can also be affected. Its preoperative diagnosis is seldom made on the basis of symptoms and physical examination alone. Most patients present with intestinal obstruction, and bowel gangrene is usually present at this stage. Surgery is the only treatment and also, may be the only means of definitive diagnosis in resource-limited settings. CT scan is a useful diagnostic tool and can detect cases before these complications occur. Its provision in areas of limited resources is highly desirable. Mortality is high unless preoperative diagnosis is made and surgery done before the complications of intestinal obstruction set in.

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