case report

Perforated obturator Littré hernia in an elderly woman

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Obturator hernia is an uncommon condition. It carries the highest mortality amongst abdominal wall hernias, usually presenting in elderly, multiparous and thin ladies. Meckel diverticulum is a rare cause of intestinal obstruction and its existence in an obturator hernia is extremely rare; our literature search revealed only two reported cases. We report the case of a 70-year-old woman who presented with signs and symptoms of intestinal obstruction and peritonitis. An exploratory laparotomy led to diagnosis of a strangulated obturator hernia. The sac contents included a Meckel diverticulum with a perforation at its base and a loop of the ileum. The ischemic ileal segment including the Meckel diverticulum was resected and a loop ileostomy was created.

Obturator hernias account for just 0.05 % to 0.4% of all hernias.[1] A Littré hernia is the term used for a hernia sac containing a Meckel diverticulum. Even though it is the most common congenital abnormality of the gastrointestinal tract it is rarely a cause of intestinal obstruction.[2] Littré hernia can arise in femoral, ventral, para umbilical, sciatic and lumbar hernias.[3]

The coexistence of Littré's and obturator hernia is extremely rare. The intraoperative appearance of our case prompted us to search the literature and we found only two reported cases.[4,5] Thus, we report the case and discuss significant clinical aspects of a perforated obturator Littré's hernia in an elderly woman to provide a better understanding of this rare phenomenon.

CASE

A 70-year-old woman presented to the emergency department with a 10-day history of constipation, abdominal pain and multiple episodes of vomiting. She had not passed stool or flatus for the past 10 days. On physical examination, she was dehydrated, febrile with a temperature of 37.8 centigrade, pulse of 130/ minute, blood pressure of 100/70 mm Hg and respiratory rate of 26/min. Her BMI was 16 kg/m^2.

She had a history of asthma for which she was on steroid inhalers. On auscultation of the chest there were bilateral rhonchi. The abdominal examination revealed a tense and tender abdomen with generalized guarding. On auscultation bowel sounds were hyperdynamic. Digital rectal examination proved inconclusive.

The total white cell count was 16×10^9/L. An x-ray of the erect abdomen revealed multiple scattered air fluid levels. Ultrasonography showed dilated small bowel loops in the lower abdomen with normal peristaltic activity. A CT scan could not be performed; the deteriorating condition of the patient with signs and symptoms of acute peritonitis warranted an urgent laparotomy. In addition, the CT scan centre of our allied hospitals was located a considerable distance from emergency; hence we proceeded with the surgery to prevent further complications. The time interval between a provisional diagnosis and surgery was about 3 hours; the patient was resuscitated during this period and her blood pressures and electrolyte abnormalities were optimized before the surgery.

With a working diagnosis of acute small bowel obstruction possibly due to a gastrointestinal malignancy an exploratory laparotomy was begun. Intraoperatively, a strangulated obturator hernia was discovered as shown is **Figures 1 and 2**; its contents included a loop of the ileum and a Meckel diverticulum which had perforated at its base as shown in **Figure 2**. About 300 mL of feculent matter was removed from the abdomi-

nal cavity. The ileum trapped in the sac was dusky and ischemic. In the best interest of the patient, two and a half feet of the dusky ileum was resected (**Figure 2**) and the hernia defect was meticulously repaired with non absorbable purse string sutures. A loop ilestomy was created and the abdomen was cleansed with 6 liters of normal saline. Later, retention sutures were applied and abdomen was closed with the skin defect left open.

The patient was transferred to the intensive care unit and kept on a ventilator. Unfortunately, after 3 days in the ICU she expired owing to multiple organ dysfunction and overwhelming sepsis.

DISCUSSION

Obturator hernia is rare accounting for 0.05-0.4% of all hernias.[1] Although uncommon, it is an important cause of intestinal obstruction which is its most common presentation (90%). The estimated mortality is between 11%-70%; the highest amongst the abdominal hernias.[6,7] One of the reasons for this may be the diagnostic and therapeutic difficulties frequently associated with this type of hernia. Important clinical signs used in diagnosis include pain in the right hip radiating to the anterior aspect of the thigh and knee (Howship-Romberg sign), repeated episodes of bowel obstruction that resolve spontaneously and a palpable mass in the proximal medial aspect of the thigh.[5] The Howship Romberg sign is positive in about 50 % of cases and its absence makes the diagnoses difficult.[8] Our patient had the hallmark features of intestinal obstruction but a history of repeated attacks of spontaneously remitting bowel obstruction was absent.

Other less frequent signs include identification through vaginal examination of the obturator canal at 2 o'clock and 10 o'clock positions and the Hannigton Kiff sign (absent adductor reflex in the thigh resulting from obturator nerve compression).[8,9]

Obturator hernia is nicknamed little old ladies' hernia. The 3 words in this statement point to predisposing factors. It is more common in elderly females with female to male ratio of 9:1. This is due to the wider pelvis in females.[10] Multiparity and a low BMI or emaciation also contributes by reducing the amount of protective preperitoneal fat in the pelvis resulting in a larger obturator canal.[11] Our patient was 70 years old, multiparous and had a BMI of 16. She was also asthmatic and had frequent bouts of forceful coughing which is a predisposing factor for any type of abdominal hernia. A past case reported by Zhang et al[8] also had similar characteristics; the patient was also a case of chronic bronchitis.

An obturator hernia is formed by herniation of viscera through a peritoneal defect bounded superiorly by the pubic ramus and inferiorly by the free edge of the obturator membrane.[12] Three stages have been postulated in its formation. First stage includes preperitoneal connective tissue and fat entering the pelvic orifice of the obturator canal. Second stage includes formation of a peritoneal sac and the third is typified by the entrance of an organ, usually the ileum into the hernia sac.[11]

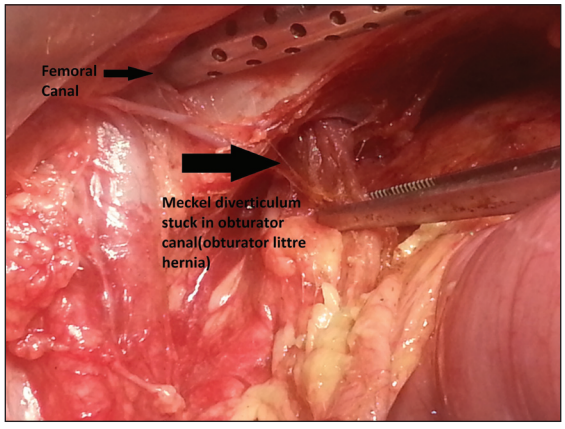

Figure 1. A view of the femoral and obturator canals. Note the passage of the Meckel's diverticulum through the latter.

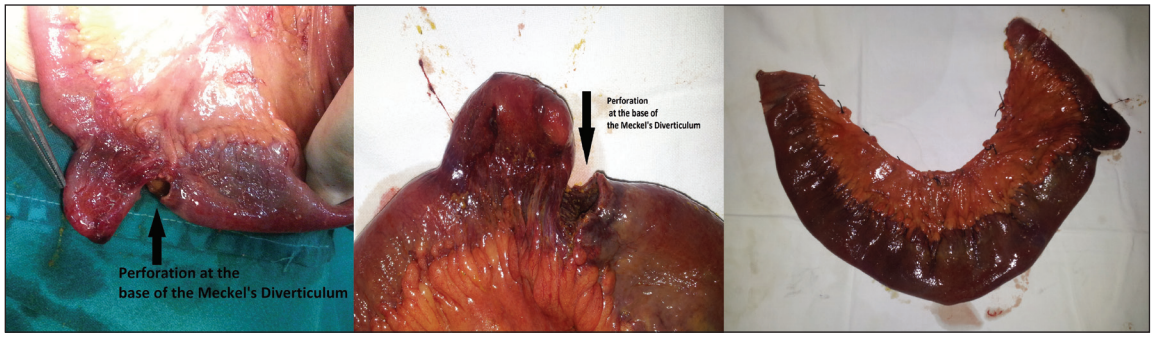

Figure 2. A three-panel image showing the resected gut segment with the Meckel's diverticulum. Note the perforation at the base of the diverticulum in the first and second panel. The third panel shows a segment of the ischemic gut that was resected.

Various imaging modalities have been studied regarding their ability to diagnose obturator hernia. Plain radiography does not have much utility, except for demonstrating signs of intestinal obstruction like dilated bowel loops and air fluid levels.[13] Ultrasonography is reliable; however its use may be limited by natural anatomical factors like small size and deep location of the hernia sacs within the pelvic musculature.[1] In our case, plain radiography revealed the cardinal radiographic signs of intestinal obstruction but gave no information on its cause. Similarly, Ultrasonography could not identify the cause of the obstruction.

CT scan is the modality of choice for diagnosing obturator hernia. It has a documented accuracy of 80%. In a study by Kammori et al almost 94 % patients were correctly diagnosed by CT alone.[14] CT scan was not done in this case due to the deteriorating condition of our patient. This warranted urgent surgical intervention owing to acute peritonitis. In addition the facility was located a considerable distance form the CT scan centre and such a time delay could not be afforded in the best interest of the patient.

We used a trans peritoneal approach in this case; a past study describes this as a favorable approach in intestinal obstruction of unknown cause. In case an obturator hernia has been diagnosed preoperatively an extra peritoneal procedure is favored.[8]

The importance of early surgical intervention in this disease cannot be over emphasized. In a past study by Zhang et al duration of onset of symptoms to surgery was only 3.7 days and patient developed numerous complications including Multi Organ Dysfunction (MODS).[8] Our patient had symptoms for the past 10 days. She came from a far flung area, belonged to a family with low literacy and socio economic status; this might have contributed to the delay and complications. Patient was urgently operated upon arrival after resuscitation; however she expired 3 days later in the ICU due to overwhelming sepsis and her poor general health.

The unique and rare aspect of our case report was the presence of a Meckel's diverticulum in the hernia sac which can be appreciated in **Figures 1 and 2**. It was accompanied by a loop of the ileum and thus formed a mixed Littré's hernia; a true Littré's hernia only contains the diverticulum.[5]

Littré described Meckel's diverticulum in a hernia in 1700.[7] Meckel's diverticulum is a remnant of the vitellointestinal duct and normally obliterates in the 5th – 9th week of gestational life.[15] It may perforate secondary to compromised circulation due to a narrow neck or due to peptic ulceration since it often harbors ectopic gastric tissue.[5,16] Littré's hernia may be found in femoral, sciatic, paraumbilical, lumbar and laparoscopic port site hernias. However, the presence of a Meckel's diverticulm in an obturator hernia is extremely rare.[3]

In conclusion, although very rare, Littré's hernia may also arise in an obturator hernia; to the best of our knowledge, ours is only the third report of a perforated obturator Littré's hernia. Clinically, obturator hernias may be suspected by a history of intestinal obstruction and specific signs, most importantly the Howship Romberg sign. Accurate diagnosis requires CT scan or may be made during laparotomy. Early diagnosis and surgical intervention is pivotal in preventing morbidity and mortality from this disease which is usually very high.

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