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An Interesting Case of Strangulate Left Obturator Hernia with Intestinal Obstruction and Septic Shock

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Abstract

Rare is the obturator hernia. It happens when the content of the pelvic cavity herniates through the obturator foramen. In the emergency room, it might be difficult to diagnose because the symptoms and signs are vague. It frequently affects old, malnourished, and sickly women. Intestinal obstruction accompanied by nausea, vomiting, and abdominal discomfort is the clinical presentation. Surgery is the gold standard of management. The high morbidity and mortality associated with this condition is due to its relatively late presentation because of its non-specific symptomatology. We report the case of an 82-year-old woman with a strangulated left obturator hernia with intestinal obstruction and septic shock. The hernia was diagnosed by an ultrasound of the abdomen which revealed evidence of free fluid in the peritoneal cavity with dilated fluid filled small bowel loops & left pelvic area showed small bowel loops located deep to the obturator muscles. Emergency laparotomy was performed by lower midline approach. We emphasize on the rule of ultrasound to establish a prompt preoperative diagnosis of a strangulated left obturator hernia, appropriate planning of surgical intervention and thus optimizing the outcome. This study aimed to present a case of strangulated left obturator hernia with intestinal obstruction and septic shock.

Keywords: *Bowel Obstruction, Gangrenous Segment, Hernia, Obturator Foramen, Laparotomy.*

Introduction

The rarest form of hernia, known as an obturator hernia (OH), is a pelvic floor hernia that accounts for 0.07–1% of all abdominal hernias and the cause of 0.4% of bowel obstruction. Obturator hernia, common in elderly thin women, should be considered in cases of intestinal obstruction, with CT imaging aiding early diagnosis and improving outcomes [1]. The first documented instance of an obturator hernia was made public by Arnaud De Ronsil in 1724. Obturator hernias have long been recognised as a rare but significant cause of mechanical intestinal obstruction, typically affecting older, malnourished women [2]. It happens when the bowel herniates into the obturator canal through an opening in the obturator foramen [3]. This is distinguished by the hernial sac protruding from the obturator canal, where the muscle and nerve traverse [1]. In anorexic women, this hernia typically develops in the seventh or eighth decades of life, almost six times more frequently than in the other presenting age group [4].

Over 80% of patients with this hernia had symptoms of intestinal obstruction at first [5]. The majority of the time, the contents of the obstruction are small bowel, and the most typical presentation is vague symptoms of acute intestinal obstruction. Because of the occult nature of the pathology and delayed diagnosis, obturator hernias have the potential to be the most-morbid of all abdominal wall hernias. Obturator hernias are difficult to diagnose, which is why

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they frequently manifest with a delayed diagnosis. The diagnosis has been made using a variety of imaging modalities, although the CT scan is more sensitive and accurate. Elective laparoscopic repair after reduction is a useful approach for incarcerated obturator hernias in patients without signs of irreversible ischemic changes or perforation [6,7]. Acute symptoms of obstructed hernia, such as lower abdominal pain, nausea, vomiting, erythematous and painful patches of the surrounding skin, and maybe signs of septic shock, are diagnostic of complicated strangulated inguinal hernia. Due to the rarity and frequent misdiagnosis of strangulated inguinal bladder hernias prior to surgery, older patients with long-standing large hernias should have CT scans performed to avoid problems [8,9,10]. Delays in treatment can result in irreversible harm to the contents of hernias, such as gangrenous bowel, perforation of the viscus, and peritonitis, which can be fatal. An 85-year-old woman's laparoscopic surgery of an obturator hernia, which had been giving her discomfort for a long time, successfully addressed her condition. Early diagnosis and treatment are therefore crucial.

This report details the clinical aspects & management of a rare case of strangulated left obturator hernia with intestinal obstruction and septic shock.

Case Presentation

An 82 years old female with no known comorbidities or previous surgery came to the ER with abdominal pain radiating to the inner aspect of the left thigh, vomiting for 10 days followed by constipation and fever for 3 days. On admission the patient showed features of tachycardia, elevated lactate and leukocytosis with abdomen clinically being distended associated with guarding and rigidity. Emergency laparotomy was performed by lower midline approach. An ultrasound of the abdomen done outside revealed evidence of free fluid in the peritoneal cavity with dilated fluid filled small bowel loops and left pelvic area showed a small bowel loop deep to the obturator muscles. The patient was taken up for emergency laparotomy. The operative principles are followed for hernia repair which include Identification of hernia, Inspection of hernial contents, Possible bowel resection and anastomosis, Hernial orifice repair with primary suture or mesh.

Emergency laparotomy was performed and showed the following findings:

1. Dilated bowel loops till terminal ileum
2. Left obturator sac with small bowel loops as content
3. Content- Gangrenous ileum with perforation and fecal peritonitis
4. Gangrenous segment was 15 cm from the IC junction.

The gangrenous segment was resected and loaded proximal bowel decompression was done by milking out the fecal content. Thorough peritoneal wash was given in view of fecal peritonitis. End to end ileo-ileal anastomosis was done. Obturator sac was identified, ligated and the defect was found to be approximately 3.5cm which was repaired by anatomical repair. ADK drain was placed and the abdomen closed in layers. Post operative period was uneventful and the patient was started on oral liquids on POD 3 and tolerated well. Wound was healthy and the patient was discharged and followed regularly. Suture sites were healthy and were removed on POD 10.

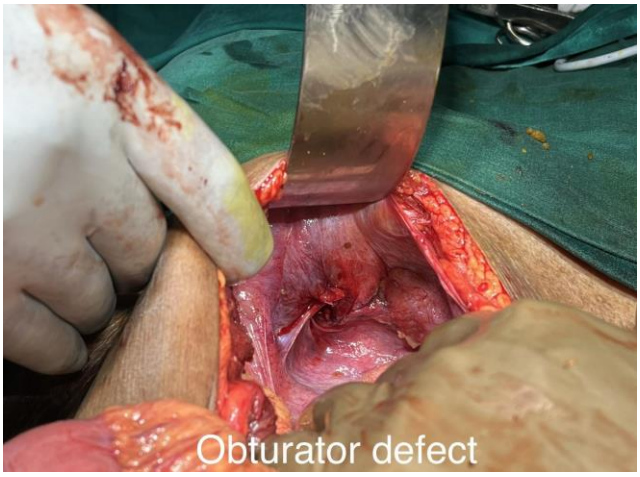

Figure 1. Obturator Defect

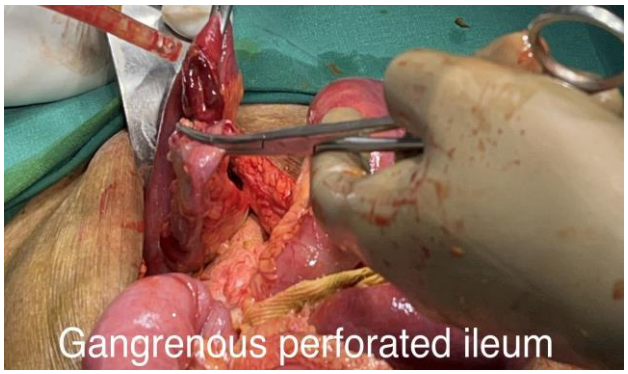

Figure 2. Gangrenous Perforated Ileum

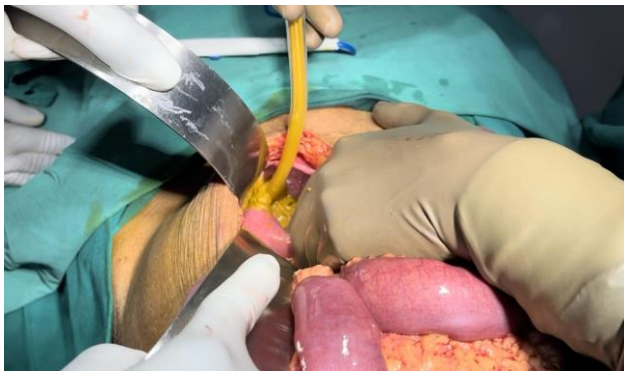

Figure 3. Fecal Peritonitis

Figure 4. End to End Ileal Anastomosis

Figure 5. Anatomical Repair of 3.5 cm Defect

Discussion

Obturator hernias, sometimes known as "the skinny old woman hernia," are an uncommon type of pelvic hernia accounting to 0.04% of all the diagnosed hernias [11,12]. Due to women's wider transverse pelvic anatomy and larger obturator foramen diameters, the incidence was around nine times higher in women than in men [13]. The sigmoid colon may block the left obturator foramen and prevent herniation, the majority of obturator hernias occur on the right side. The use of pelvic CT significantly improves preoperative diagnostic accuracy for obturator hernia, reducing both intestinal resection rates and surgical mortality [14]. In our case, obturator hernia was on the left side. Intestinal or colonic content herniates into the obturator canal between the pectineus and obturator muscles. This canal, which is 1 cm wide and 3 cm long, contains the obturator nerve and vessels. The obturator membrane covers the obturator canal and is pierced by the obturator artery, vein and the nerve. It is a channel created in the obturator foramen by the pelvis and a portion of the obturator membrane. The junction of the pubic and ischial bones produces the obturator foramen. Usually, in the hernia sac the small bowel which might get obstructed, is present; less frequently, the appendix, bladder, or, extremely uncommonly, the ureters are present. This 88-year-old woman had a necrotic small bowel that needed to be surgically repaired. Obturator hernias are difficult to identify and are frequently discovered during surgery [15]. Constipation, ascites, multiparity, and chronic obstructive airway disorders, collagen disorders are additional risk factors [16]. Women who are multiparous are more predisposed to obturator hernias due to ligamentous laxity and obturator membrane weakness [16,17]. Despite being extremely uncommon, obturator hernias have high mortality of up to 70% because of delayed identification and treatment, which results in sepsis, gangrene of the bowel, and perforation as those might be the initial presentation to the emergency department. This inability to diagnose the condition could be caused by nonspecific symptoms and signs. In between 15 and 50 percent of instances, patients may have the Howship-Romberg sign, which is pain on the medial aspect of the thigh up to the knee because of the hernia compressing the obturator nerve. The Hannington-Kiff sign, which is less common but more specific, is associated with the lack of a thigh adductor reflex. The management of obturator hernias requires prompt surgical treatment guided by CT diagnosis; postoperative complications and intestinal resection are important variables contributing to postoperative mortality [12-17].

An obturator hernia progresses through three stages. Preperitoneal fat and connective tissue enter the obturator canal during the first stage. The second is the development of a sac over the peritoneum that starts at the internal obturator canal orifice and continues into the sac formation. The hernia ensues and the pelvic viscera enters the sac during the third stage. Elderly, slender women with symptoms of intestinal blockage should be evaluated for obturator

hernias, which are frequently misdiagnosed and have a high fatality rate. Timely diagnosis and surgery are essential to minimize consequences [18,19]. The Howship-Rhomberg sign, which affects 15-20% of patients, is characterized by discomfort that radiates down the medial portion of the leg to the knee and, less frequently, to the hip as a result of the obturator nerve being compressed and irritated within the canal. Obturator hernias are typically not diagnosed until after a laparotomy is done to treat bowel obstruction or peritonitis because of their vague symptoms and frequently absent physical findings. The diagnosis was formerly made using a variety of imaging techniques like ultrasonography, and barium enema fluoroscopy. An early diagnosis with CT scanning and surgical intervention are necessary to avert a high death rate in cases of obturator hernia, an uncommon illness that primarily affects older women and manifests with nonspecific symptoms of intestinal obstruction [20]. Prompt diagnosis and early surgical intervention could result from emergency multidetector CT scanning, improving the outcome. Meziane et al. initially reported on the use of CT scan in obturator hernia detection in 1983 [21]. Plaque removal should be done carefully, as ultrasonic scaling at 0° angulation decreases the shear bond strength of ceramic brackets. This is especially true in the vicinity of the bracket base. Although there were no statistically significant differences between the intervention and control groups, the qualitative analysis demonstrated that the Forsus FRD appliance and PowerScopeTM produced superior dentoalveolar alterations and better skeletal modifications [22]. The sclerosing stroma in this form of adenoid cystic carcinoma may prevent the tumor from growing and progressing, according to two cases of the disease that were successfully treated and did not return [23]. Because different meals have different histological properties, it is crucial to study the microscopic appearances of frequently implanted food particles to prevent misdiagnosis [24]. β-sitosterol shows strong anticancer potential by causing oral cancer cells to undergo apoptosis, and this suggests that it could be a viable therapeutic alternative [25]. Calotropin inhibits the growth of HSC-3 oral squamous carcinoma cells by inducing apoptosis, halting metastasis, and interfering with aerobic glycolysis, supporting the possibility that it could be utilized to treat oral cancer [26,27]. A cardiac glycoside called calotropin is obtained from Calotropis gigantea. It also promotes apoptosis and cell cycle arrest, obstructs the pathways leading to aerobic glycolysis and metastasis, and possesses anti-cancer properties that stop HSC-3 oral squamous carcinoma cells from proliferating, migrating, and invasive [28-32, 20]. The clinical utility of mineralized artificial materials, including calcium carbonate, PRF, and nano-hydroxyapatite, spans various specialties [33-35]. There are different in silico studies involved in the regulation of the fatty acid, carnitine transporters and inflammation. Surgery is the only way to treat an obturator hernia. The abdominal approach through a low midline incision is preferred in an emergency. Sometimes gangrene or perforation necessitates resection of the affected area of the colon.

Conclusion

The nuanced clinical features of Obturator Hernias demand heightened awareness for timely intervention. Recognition of specific signs and symptoms aids in the identification of incarcerated Obturator Hernia, guiding appropriate management. Imaging modalities contribute to preoperative diagnosis, but clinical acumen remains pivotal for comprehensive patient care. A thorough understanding of the clinical nuances of this condition ensures effective and prompt management with improved patient outcomes.

Conflict of Interest

The authors hereby declare that there is no conflict of interest in this study.

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