

CASE REPORT

An Unusual Cause of Mechanical Intestinal Obstruction: Strangulated Obturator Hernia

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ABSTRACT

Obturator hernia is a rare surgical condition. It is usually presented as the clinical picture of mechanical intestinal obstruction. Positive Howship-Romberg sign, a palpable mass in the groin area and a previous history of attacks can be helpful. Barium enema, fluoroscopy, computerized axial tomography, and herniography have been used in the diagnosis of obturator hernia, but its diagnosis is usually difficult. In most patients, the diagnosis can be made only at the time of exploratory laparotomy. We report a 78-year-old woman presenting to our emergency department with a pre-diagnosis of mechanical intestinal obstruction. The diagnosis of obturator hernia was only confirmed with an exploratory laparotomy. Although obturator hernia is a rare pathology, it should be remembered in every patient who has been presenting as a mechanical intestinal obstruction.

Key words: Obturator hernia, Diagnosis, Surgery

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ÖZET

Mekanik İntestinal Obstrüksiyonun Olağan Dışı Bir Nedeni: Strangüle Obturator Herni

Olgu Sunumu

Obturator herni nadir bir cerrahi durumdur. Genellikle de mekanik intestinal obstrüksiyon klinik tablosu olarak müracaat etmektedirler. Pozitif Howship-Romberg bulgusu, kasık bölgesinde palpabl bir kitle ve önceki atak öyküsü tanıya yardımcı olabilmektedir. Baryumlu lavman, fluoroskopi, bilgisayarlı tomografi, ve herniografi obturator herni tanısı kullanılmaktadır, ama tanısı genel olarak zordur. Çoğu hastada, tanı ancak eksploratuvar laparotomi sırasında konulabilmektedir. Biz mekanik intestinal obstrüksiyon ön tanısı ile acil servisimize gelen 78 yaşındaki bir bayan hastayı burada sunuyoruz. Obturator herni tanısı ancak eksploratuvar laparotomi ile konuldu. Sonuç olarak, obturator herninin nadir bir patoloji olmasına karşın, mekanik intestinal obstrüksiyon olarak gelen her hastada anımsanmalıdır.

Anahtar kelimeler: Obturator herni, Tanı, Cerrahi

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INTRODUCTION

Obturator hernia is an uncommon pathology. It is through the obturator canal, which was firstly described in 1724 by Arnaud de Ronsil^[1]. The first surgical repair was performed by Obre in 1851. Females are affected nine times more often than males because of larger obturator canals in the female pelvis^[2]. It is also called “the skinny old lady hernia” because it is encountered in women in their seventh or eighth decades. The clinical presentation is usually intestinal obstruction^[3]. The clinical diagnosis is often difficult when this sign is absent. Although accurate pre-operative diagnosis was made possible with the introduction of computed tomography (CT), its effect on the morbidity and mortality rates associated with obturator hernia is still unclear. In the present study, we aimed to review obturator hernia cases and to investigate the effects of pre-operative diagnostic modalities on post-operative morbidity and mortality rates.

CASE REPORT

An 82-year-old woman was admitted to our department because of severe abdominal pain lasting for five days, and nausea and vomiting associated with food intake for seven days. She had a mean weight of 38 kg. On admission, physical examination revealed a minimal tenderness localized in the bilateral lower quadrants. She had a history of chronic obstructive pulmonary disease. Complete blood count showed white blood cell 1100 /mm³, platelets 295.000/mm³ and hemoglobin 13.8 g/dL. Erythrocyte sedimentation rate was 50 mm/h on admission. Electrolyte and other biochemical studies revealed a mild increase in alkaline phosphatase (ALP) 135 U/L, while other tests were within normal limits: aspartate aminotransferase (AST) 22 U/L, alanine aminotransferase (ALT) 26 U/L, gamma glutamyl transpeptidase (GGT) 69 U/L, amylase 37 U/L, lipase 25 U/L, and total bilirubin 0.51 mg/dL. Abdominal roentgenograms in the upright position revealed multiple dilated loops of the small intestine with air-fluid levels (Figure 1). The interval between onset of symptoms and operation was approximately seven days.

She had a medical history of gastroesophageal reflux, for which she took ranitidine, and she had no allergies to medications. Her surgical history was negative. Initial vital signs were blood pressure: 100/70 mmHg, pulse: 114/min, respiration: 18/min, temperature: 100.2°F (oral), and oxygen saturation (as



Figure 1. Plain abdominal radiograph reveals the orientation of small bowel loops to the right lower quadrant and dilated air-fluid levels.

measured by pulse oximetry): 99% on room air. The physical examination revealed a soft, nondistended abdomen, which was diffusely tender to palpation without rebound, guarding or rigidity. Rectal examination was normal. The patient's blood and biochemical values and urine analysis were normal. An acute abdominal series was obtained and revealed multiple air-fluid levels and dilated loops of bowel, consistent with a small bowel obstruction (Figure 1). A CT scan with intravenous (IV) contrast was performed, showing a massively distended small bowel obstruction due to incarcerated obturator hernia (Figure 2). The patient was taken to the operating room for urgent surgery with the diagnosis of intestinal obstruction due to incarcerated obturator hernia. During abdominal exploration, a great portion of small bowel was observed as being distended. At approximately 220 cm after Treitz ligament, a loop of small bowel was found incarcerated within the right obturator canal. The small bowel loop was taken into the intraabdominal cavity by loosening the entrance of the right obturator foramen with a clamp. A 2-cm necrotic small bowel segment was resected and end to end anastomosis was established without any distention. No other herniation was seen and the opening of the obturator canal was also closed with suture using 0 polypropylene separately. The patient was referred to the Department of Chest Diseases and Tuberculosis for further management on the fifth post-operative day. Two day later, the patient died from the respiratory deficiency.



Figure 2. Computed tomography demonstrating a loop of small bowel in the right obturator canal and diffused dilatation of small bowel loops.

DISCUSSION

Obturator hernia is a rare surgical pathology. It has comprised approximately 0.073% of all hernias and occurred in approximately 0.4% of mechanical intestinal obstructions^[3,4]. It occurs through the obturator canal in the pelvis. This canal opens in the superior part of the obturator membrane covering the foramen formed by the union of the pubic bone and ischium and through which the obturator nerve, artery, and vein pass from the pelvic cavity into the thigh^[5]. It has been thought to result from progressive laxity of the pelvic floor, which may be associated with advanced age, emaciation, increased intraabdominal pressure, and multiparity^[5-7]. The three stages of obturator hernia formation were described by Gray et al.^[8]. Preperitoneal fat enters the pelvic orifice of the obturator canal, forming a pilot fat plug in the first stage. During the second stage, peritoneal dimple occurs and progresses to the formation of a peritoneal sac. The third stage begins with the onset of symptoms produced by herniation of viscera into this sac^[8,9].

Clinical findings of obturator hernia are often nonspecific, and its diagnosis is sometimes delayed until exploratory laparotomy because of the mechanical intestinal obstruction. The average pre-operative delay has been reported as 2.2 days for survivors and 5.1 days for fatal cases^[10]. Our patient also had recurrent attacks of the partial mechanical intestinal obstruction. Howship-Romberg sign, which is a

pathognomonic physical examination finding, refers to pain along the distribution of the obturator nerve caused by compression of the nerve by the hernia sac. It is reportedly present in 15%-50% of obturator hernia patients^[1,5,6,11]. In addition, the Hannington-Kiff sign, which refers to an absent adductor reflex in the thigh, can also occur in the presence of obturator hernia. It is more specific and less widely known than the Howship-Romberg sign^[1,5,12]. Our patient also had no Howship-Romberg sign. Furthermore, presence of a palpable mass by vaginal and rectal examination should also alert the clinician to this diagnosis^[5,6].

Different imaging modalities such as barium enema, fluoroscopy, ultrasonography, herniography, axial CT, magnetic resonance imaging, and herniography have been used for the diagnosis of obturator hernia^[1,3,6,12,13,14-16]. The herniography is usually used when the hernia is not incarcerated, but CT scan should be preferred in elderly patients with ileus of unknown origin^[5,8,9-12,17]. It is difficult to diagnose pre-operatively, and can be diagnosed correctly in only 10-30% of patients^[1]. Interestingly, the coexistence of an incarcerated femoral hernia is observed in 13% of patients with obturator hernia^[3,10]. In addition to this finding, other authors have also reported obturator hernia in association with contralateral obturator hernia or after a previous femoral hernia repair^[14]. In most cases, diagnosis is made only at laparotomy performed for mechanical intestinal obstruction or peritonitis^[15].

Some authors advocate early performance of laparotomy, whereas others prefer pre-operative noninvasive diagnostic methods such as ultrasonography, CT or contrast radiographs^[8,9-12]. However, there is a general agreement that when an obturator hernia is identified, an initial attempt with nonoperative reduction is indicated for patients without signs of peritonitis or gangrene^[16]. If reduction is unsuccessful, surgical treatment should be immediately considered, because any delay in diagnosis and surgical treatment can require resection of the involved bowel and increase mortality rates up to 33%^[3].

As in our patient, an elderly, small and multiparous woman, CT revealed the incarcerated and occult obturator hernia that caused her mechanical intestinal obstruction lasting for five days. A segmental small bowel resection was performed and continuity was established by end to end anastomosis, because of the correct pre-operative diagnosis has been performed after a long time, and the patient had peritonitis signs.

Different surgical methods have been described for the surgical treatment of obturator hernia. Primary suture of the orifice, muscle flaps, omentum, broad ligament, uterine fundus, prosthetic material, and mesh plug repair can be performed^[5,6]. In case of no repair, recurrence rates can reach 10%^[3]. In case of the strangulated obturator hernia, rates of gangrenous bowel range between 25% and 75%^[16]. In our case, we preferred an abdominal approach because of the possibility of the strangulation of the obturator hernia. After opening the parietal peritoneum, the hernia was repaired. A synthetic mesh was not used because of the strangulated hernia. Recently, laparoscopic surgery has been recommended in patients with low probability of strangulation and with definite pre-operative diagnosis of obturator hernia^[2].

We conclude that although obturator hernia is an unusual cause of mechanical intestinal obstruction, an exploratory laparotomy should be done immediately for a rapid evaluation. Immediate surgical intervention can have a life-saving effect and reduce the morbidity and mortality rates.

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