Computed tomographic diagnosis of obturator hernia and its surgical management: A case series

Munoz-Forner Elena, Garcia-Botello Stephanie, Lopez-Mozos Fernando*, Marti-Obiol Roberto, Martinez-Lloret Alfredo, Lledó Salvador

Hospital Clinico Universitario of Valencia, Department of General and Digestive Surgery, Avda. Blasco Ibáñez 17, Valencia 46010, Spain

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Abstract The obturator hernia is a rare type of hernia which usually presents in thin, elderly women. The preoperative diagnosis is typically difficult, with non-specific signs and symptoms which result in a delay in the diagnosis. It can also be an incidental finding at exploratory laparotomy for a patient with intestinal obstruction. The treatment is surgical.

A series of four females with obturator hernia is presented. All patients presented with a history of intestinal obstruction and the hernia was diagnosed preoperatively by computed tomography. All patients underwent a preperitoneal mesh repair with a favourable outcome. The diagnosis and the surgical approach are discussed.

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Introduction

The obturator hernia is an infrequent type of hernia which represents 0.073% of all hernias.† It presents most frequently in elderly females between the seventh and ninth decade, with a male to female ratio of 1:6. There are three main clinical manifestations: the most frequent is intestinal obstruction, followed by pain in the proximal thigh which radiates antero-medially (Howship–Romberg sign), and a palpable mass in the inguinal area which is associated with abdominal pain. Obturator hernia is the cause of small intestinal obstructions which require surgical treatment in 0.02% of patients.†

The main problem associated with obturator hernia is the difficulty in establishing an early diagnosis. A preoperative diagnosis was made in only in a third of cases while the diagnosis was made during an exploratory laparotomy in 66% of cases. This led to a delay in the diagnosis and surgical treatment, and an increase in morbidity and mortality.‡

Four patients who presented with intestinal obstruction secondary to obturator hernia, and diagnosed preoperatively by computed tomography are presented.

Clinical cases

The data were collected prospectively from four patients with obturator hernia treated between the years 2003 and 2005 at the Hospital Clinico Universitario, Valencia.

The first patient, a 78-year-old female with a past medical history of Paget’s disease, presented to the...
emergency department with a 3-day history of intestinal obstruction. Physical examination did not reveal any hernias. Plain abdominal X-ray demonstrated a marked distension of the small intestine. The full blood count and electrolytes were normal. A computed tomography confirmed small intestinal obstruction secondary to a right sided obturator hernia (Fig. 1). A preperitoneal approach was performed via an infraumbilical midline incision. The hernia sac contained an incarcerated portion of the proximal ileum which was reduced without the need for intestinal resection. An incidental left obturator hernia was found with no contents inside. A bilateral preperitoneal hernioplasty with a polypropylene mesh was performed.

The second patient, a 77-year-old female with no significant past medical history attended the emergency department with a 5-day history of intestinal obstruction. Physical examination revealed no hernias or masses and routine blood tests were normal. Plain abdominal radiographs revealed small intestinal obstruction. A CT scan revealed a right sided obturator hernia containing an incarcerated portion of the terminal ileum (Fig. 2). No gut resection was required.

The third patient, an 81-year-old female without any significant past medical history presented to the emergency department with a 2-day history of intestinal obstruction. Physical examination revealed a distended abdomen but no hernias were palpable. A full blood count revealed an elevated white cell count, otherwise there were no other abnormalities detected. Plain abdominal X-rays revealed small bowel obstruction. CT scan showed the intestinal obstruction to be secondary to an incarcerated right sided obturator hernia (Fig. 3). A preperitoneal polypropylene mesh repair was performed through a right lower quadrant transverse incision. The hernia contained a portion of the terminal ileum which did not require any gut resection.

The fourth patient, an 88-year-old female, attended the emergency department with a 3-day history of pain in the right inguinal region which increased with movements of the right leg. The pain was associated with abdominal pain and she vomited repeatedly for 1 day. Examination revealed a tender and distended abdomen, and plain abdominal films showed small intestinal obstruction. A CT scan revealed marked distension of small bowel loops and a right sided obstruction. Physical examination did not reveal any hernias. Plain abdominal X-ray demonstrated a marked distension of the small intestine.
obturator hernia. A right lower quadrant transverse incision with a preperitoneal access to the hernia was carried out. An obturator hernia was found with a strangulated portion of the terminal ileum, requiring resection of 7 cm of small bowel and a primary anastomosis (Fig. 5). The hernia was repaired with a preperitoneal polypropylene mesh.

Discussion

Obturator hernia was first described in 1724 by Arnaud de Ronsil and is an infrequent pathology, difficult to diagnose and associated with a high mortality. It represents 0.073% of hernias, and is more frequent in females with a male to female ratio of 1:6. Patients tend to present between 70 and 90 years of age and contributing factors are weight loss, pregnancy and neuropathies.

The obturator hernia passes through the internal obturator opening which is situated below the horizontal pubic ramus and above the obturator membrane which is reinforced by the internal ligament. The external opening opens below the insertion of the pectineal muscle and travels through the obturator canal with the obturator neurovascular bundle, which may partly explain the Howship–Romberg sign. Only one patient in this series (Case 4) presented with this sign. There are three main clinical manifestations: the most frequent is intestinal obstruction, followed by pain in the proximal thigh which radiates antero-medially (Howship–Romberg sign), and a palpable mass in the inguinal area associated with abdominal pain.

The most common clinical manifestation is intestinal obstruction which was the main symptom in all patients in this series.

The preoperative diagnosis is difficult. Patients present with non-specific signs and symptoms, and approximately two-thirds of patients were diagnosed after exploratory laparotomy performed for intestinal obstruction. Imaging studies with CT scan have contributed to a more precise preoperative diagnosis as described by Ijiri et al. A CT scan in patients suspected of having intestinal obstruction secondary to an incarcerated obturator hernia can improve the preoperative diagnosis and decrease the rate of intestinal resections, and consequently the postoperative morbidity and mortality. The indications for performing a CT scan in patients with intestinal obstruction are advanced age, no past history of abdominal surgery and no improvement after conservative treatment. CT scan can also help to detect a contralateral obturator hernia when present.

An emergency exploratory laparotomy is fundamental in patients presenting with an acute abdomen. A delay in surgical treatment increases the risk of intestinal gangrene, and morbidity and mortality. Mortality is directly related to a delay in diagnosis and subsequent ischemia of the herniated portion of the intestine, a finding which is very common in obturator hernias, reaching 30% in some series. Therefore, surgical treatment should be carried out as soon as possible with the aim of reducing the morbidity and mortality associated with this pathology. The treatment is surgical though there is no consensus as to the technique of choice. If a clear diagnosis prior to surgery is not established, a midline infraumbilical laparotomy should be performed. This incision or Henry's incision can also be carried out when there is a preoperative diagnosis of bilateral obturator hernia (Case 1) as it allows access for a preperitoneal mesh to be placed covering both orifices. Conversely, a transverse Cheatale incision should be reserved for those cases diagnosed preoperatively.

The management of the internal opening depends on its size. A small orifice can be sutured directly with one or two interrupted stitches. However, if the opening is large, a hernioplasty should be performed using either a segment of aponeurosis (a portion of bladder or uterine wall can also be used) or a preperitoneal prosthesis to cover the entire defect. We prefer the use of a preperitoneal mesh repair regardless of the size of the opening, as this avoids the development of further hernias through other openings. The use of a mesh in a theoretically contaminated field when an intestinal resection is performed is controversial.

We do not believe that an intestinal resection precludes the use of a mesh unless there is a free perforation.

The laparoscopic approach (laparoscopic transabdominal preperitoneal hernioplasty) is an option for obturator hernias as it provides an adequate view of all the hernial orifices of Fruchaud’s myopectineal region and allows access for repair of both indirect and direct inguinal hernias, crural hernias and obturator hernias. Bilateral obturator hernias can also be repaired through this approach. The laparoscopic approach has not been used in any of the patients in this series as we prefer the open approach in patients with advanced age presenting with intestinal obstruction.

Summary

The most frequent presentation of obturator hernia is intestinal obstruction. CT scan is a good option for preoperative diagnosis. Most importantly, early surgical intervention without delay should be performed to avoid the morbidity and mortality associated with this pathology.
References