

UNUSUAL CASE OF TRANSMESOCOLIC HERNIA CONTAINING A MESENTERIC TUMOR

Patricia Monalisa Paraschiva¹, Ş.R. Vagner¹, S. Stănilescu², T. Burcoş^{1,2}, D. Cristian^{1,2}

¹The University of Medicine and Pharmacy “Carol Davila”, Bucharest, Romania

²“Colţea” Clinical Hospital, The Surgery Department, Bucharest, Romania

Corresponding author Patricia Monalisa Paraschiva
Phone no: 0040730610975
E-mail: patricia.paraschiva@gmail.com

Abstract

Internal hernias (IH) have an incidence of less than 1% and they account for approximately 0,5-5,8% of all cases of small bowel obstruction. Transmesocolic hernia (TH) is a particularly type of IH, more likely to develop complications that can be life threatening. Mesenteric cysts are rare benign intra-abdominal tumors, most commonly seen in the ileal mesentery, with an incidence <1/100,000. These conditions are usually discovered accidentally during investigations for other disorders and may be sometimes misdiagnosed. We present a case of an extremely rare transmesocolic hernia containing a mesenteric tumor, discovered incidentally in the course of screening for metastasis in a breast cancer, for which she previously underwent surgery. The patient had no symptoms, no signs on physical examination and no history of abdominal surgery. The imagistic explorations were highly suggestive for a transmesocolic hernia and a supramesocolic cyst of unknown origin. The patient underwent laparotomy in order to ascertain the diagnosis and to choose the most suitable surgical approach and it revealed a transmesocolic hernia with a mesenteric tumor at the site of herniated mesentery. After surgical treatment was provided, the histopathology report confirmed the diagnosis of mesenteric cyst. The post-operative period was uneventful and the patient follow-up showed no recurrence. In order to prevent complications, surgeons must be aware of the existence of this type of hernia, even when the patient is asymptomatic and has no history of abdominal surgery..

Keywords: *internal hernia, transmesocolic hernia, mesenteric cyst*

Introduction

Internal hernias (IH) have an incidence of less than 1% and they account for approximately 0,5-5,8% of all cases of small bowel obstruction [1]. Transmesocolic hernia (TH) is a particularly type of IH, more likely to develop complications that can be life threatening.

A review of literature confirms that most of reported cases were associated with previous abdominal surgery, but it is important to

consider this diagnosis, even in cases with no previous laparotomy.

Mesenteric cysts are rare benign intra-abdominal tumors, most commonly seen in the ileal mesentery, with an incidence <1/100,000. Uncommon sites are the mesocolon and the mesentery of the jejunum [2]. These types of tumors are usually discovered accidentally during investigations for other pathologies and may be sometimes misdiagnosed [3].

To our knowledge, the association of a MC with a TH has not been described yet.

Case presentation

We report a case of an extremely rare transmesocolic hernia (TH) containing a mesenteric tumor in a patient without history of abdominal surgery. A 54-year-old woman was admitted to the hospital because of a mesenteric tumor discovered during the metastatic screening for a breast cancer, for which she previously underwent surgery. She did not accuse any digestive symptoms and the physical examination revealed no abdominal signs. Laboratory assessment on admission was normal and tumoral markers within normal limits.

The abdominal ultrasound exam revealed a 8 x 8,3 cm tumor lateral to the pancreatic tail, having thickened wall and presenting a 5,2 cm hyperechogenic, avascular structure centered by a transonic area (Figure 1). Because these findings were not specific for a certain diagnosis, a contrast-enhanced computed tomography (CT) of the abdomen was ordered.



Figure 1 – Ultrasonography revealing the tumor lateral to the pancreatic tail

The CT scan confirmed the presence of the same 8 cm thickened wall tumor with mixed cystic and solid aspect, next to the pancreatic tail. In addition, the CT revealed clustering of small bowel loops (Figure 2-A) associated with mesenteric vessels abnormality (Figure 2-B) and the lack of omental fat between the loops and the anterior abdominal wall (Figure 2-C), signs highly suggestive for a transmesocolic hernia.

In order to treat the TH and to identify the etiology of the tumor, the patient was prepared for surgery. A median laparotomy was performed and it revealed a TH involving a 7-8 cm defect with a sac containing small bowel

loops and a 10 cm mesenteric tumor at the site of herniated mesentery (Figure 3).

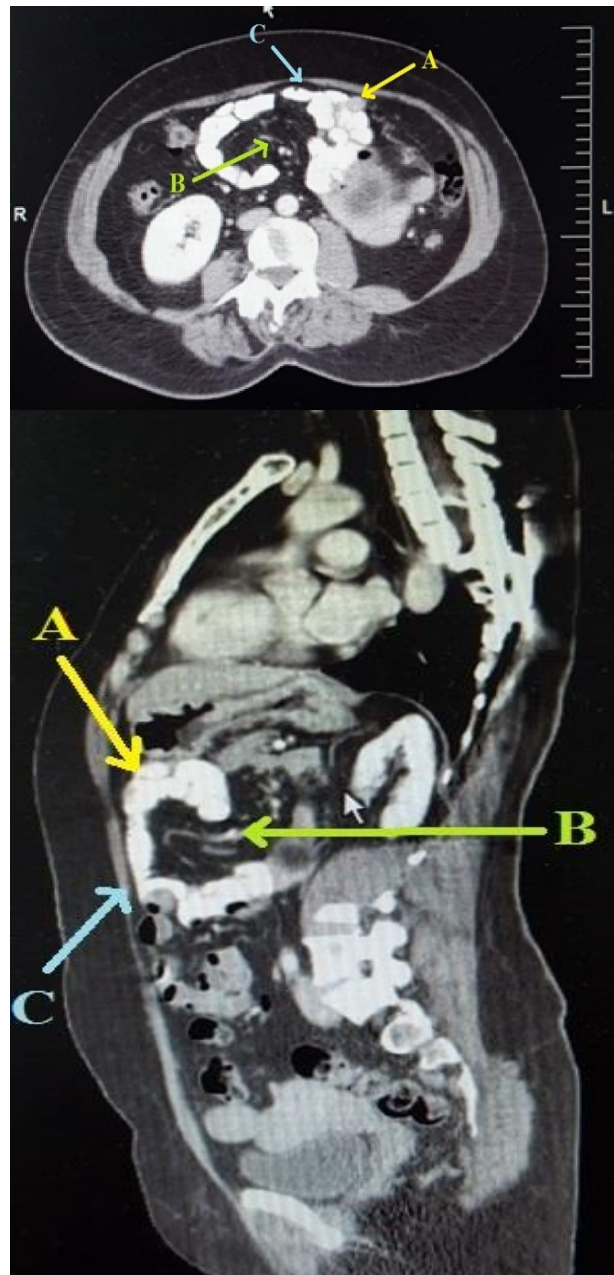


Figure 2 – Axial and sagittal planes CT scan showing: A – clustering of small bowel loops, B – mesenteric vessels abnormality, C – lack of omental fat between the loops and the anterior abdominal wall

The surgical procedure consisted of the partial dissection of the gastro-colic ligament and the minimal dissection and enlargement of the mesocolon aperture in an avascular area, followed by the reduction of both the herniated loops and mesenteric tumor. A segmental enterectomy, including tumor excision with an end-to-end anastomosis was performed (Figure 4).

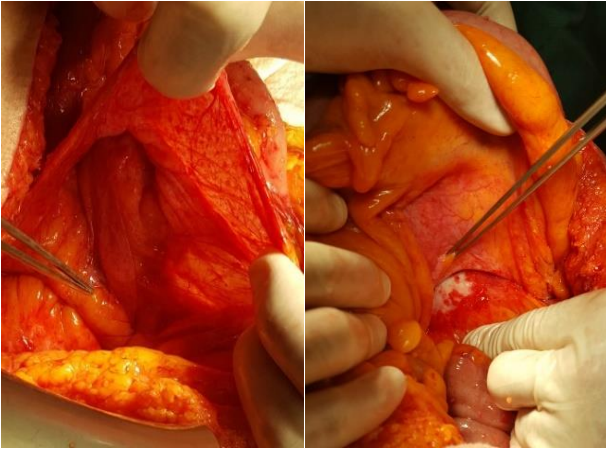


Figure 3 – Intraoperative photograph showing the new discovered transmesocolic hernia containing the mesenteric tumor

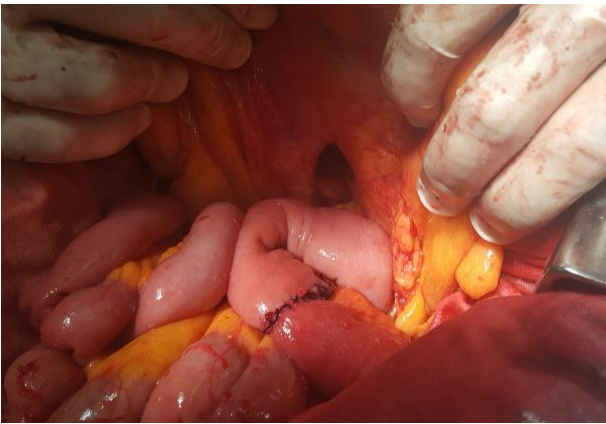


Figure 4 – Intraoperative photograph showing part of the hernial sac and the end-to-end anastomosis

At the end, the transmesocolic defect was closed and the tumor was sent to histopathological examination (Figure 5).



Figure 5 – Intraoperative photograph showing the mesenteric tumor after resection

The exam confirmed the presence of a mesenteric cyst with specific characteristics: fibrous wall lined by endothelial cells, rich chronic inflammatory infiltrate, rare multinucleated giant reaction cells and containing a necrotic, amorphous fluid (Figure 6). The post-operative period was uneventful and the patient follow-up showed no recurrence.

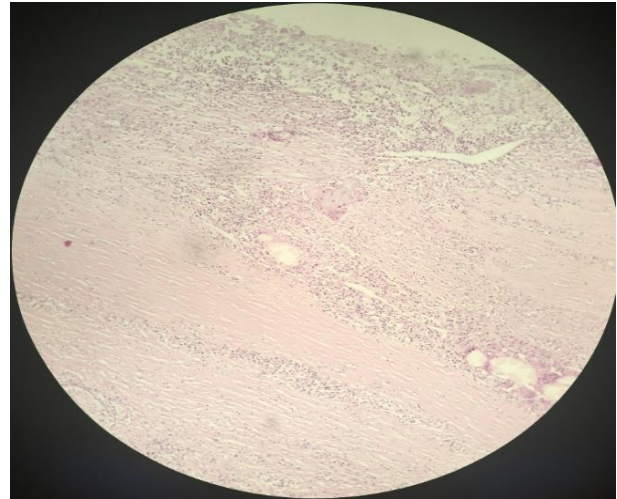


Figure 6 – Microscopic image of the tumor

Discussions

IH is defined as a protrusion of one or more abdominal viscera through an anatomical or pathological peritoneal or mesenteric opening within the abdominal or pelvic cavity. The anatomy of the openings can be normal (foramen of Winslow), paranormal (paraduodenal, ileocecal, supravescical fossa), and abnormal (transmesenteric) [4]. Based on their location, there were many IH types described by Meyers: foramen of Winslow, ileocecal fossa, paraduodenal fossa, transmesenteric, intersigmoid, the broad ligament of the uterus and retroanastomotic with the overall incidence of IH less than 1%. The transmesenteric hernia includes 3 subtypes: through a small-bowel mesenteric defect, transmesocolic (hernia through a transverse mesocolon defect) and Peterson's hernia (hernia through a defect created during a Roux-en-Y gastric bypass procedure) [5].

TH was first described in 1836 by Rokitansky and it is the rarest type of IH and the more likely to develop complications [5]. TH is defined as a herniation, more frequently without a sac, usually through a large defect in the

transverse mesocolon, to the left of the middle colic artery [6]. It can be congenital or acquired, most often caused by surgical procedures (bariatric surgery and liver transplantation), trauma or intraperitoneal inflammation [7]. TH in a person without surgical history is extremely rare [5]. The clinical presentation may range from asymptomatic to non-specific symptoms, including chronic dyspepsia, epigastric or periumbilical pain, nausea and vomiting. The most frequent complications of TH are ischemia, volvulus and strangulation which can lead to small bowel obstruction with subsequent significant morbidity and mortality [5]. The IH account for approximately 0,5-5,8% of all cases of small bowel obstruction [1].

The best diagnostic method is the contrast-enhanced CT of the abdomen, hence the bowel mesenteric defect itself is not visualized. Although, there are four specific CT signs that represent a high degree of accuracy and confidence in recognizing TH: cluster of small bowel loops associated with an abnormality in the mesenteric vessels, lack of omental fat between the loops and the anterior abdominal wall (sensitivity of 92%) and a peripherally located small bowel (sensitivity of 85%) [8]. The absence of dilated small bowel associated with the lack of occlusive symptoms in our patient, made the preoperative diagnosis of TH difficult despite the imaging techniques.

Surgical treatment is required and it includes the following steps: the reduction of herniated structures, the resection of intestinal segments if they present necrosis or perforation and the closure of hernial orifice [6]. Early diagnosis and prompt surgery prevent strangulation and other complications. Age, delayed laparotomy time, massive intestinal necrosis and acute respiratory distress syndrome represent the main factors affecting mortality and prognosis [7].

Another rare disease, with an incidence of less than 1/100.000 are the mesenteric cyst [2]. In 1507, Benevieni first described a mesenteric cyst, in 1842, von Rokitansky described a chylous mesenteric cyst and in 1880, Tillaux performed for the first time a successful resection of a cystic tumour of mesentery [9,10]. Mesenteric cysts are defined as rare benign intra-abdominal tumors, localized all over the mesentery, from duodenum to rectum, most

frequently in the ileal mesentery and rarely in the mesocolon or the mesentery of the jejunum [2]. There are many theories regarding the etiology of this cysts, the most accepted theory as proposed by Gross, sustaining that cysts represent benign proliferation of ectopic lymphatics in the mesentery that lack communication with the remainder of the lymphatic system [3].

The clinical presentation of mesenteric cysts varies from being asymptomatic to non-specific acute or chronic abdominal pain, nausea and vomiting, constipation, diarrhea. They are usually discovered accidentally during investigations for other pathologies and may be sometimes misdiagnosed. Although, it is important to consider the diagnosis when facing a patient with suggestive clinical and imagistic presentation, as various secondary complications may associate with suboptimal surgical management: volvulus, spillage of infective fluid, herniation of bowel into an abdominal defect and obstruction [3].

A variety of diagnostic methods can be used, but the most preferred are ultrasonography, CT and magnetic resonance imaging which are providing most information on the growth size and localization, but not on the origin of the cyst [2]. Diagnosis is proven on laparotomy and has to be histologically confirmed. The treatment consists of complete excision of the cyst and bowel resection if cysts are close to the bowel structures or involve blood vessels that supply the bowel. They rarely recur and the prognosis is excellent [3].

Conclusions

TH represent one of the rarest form of IH, with an almost unknown incidence. They are discovered especially in adults, most commonly in women, by chance or following digestive symptoms. It is important to have a proper diagnosis as this defect can determine complications with high mortality rate.

The particularity of our case is that the patient presented an extremely rare association of a TH with a mesenteric cyst, having no symptoms, no signs on physical examination and no history of abdominal surgery. Most likely the cyst developed as a result of

lymphatic obstruction at the site of a preexisting TH.

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