
Transmesenteric hernia after right nephrectomy: diagnostic and therapeutic management


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Abstract. – Internal abdominal hernias are a rare cause of intestinal obstruction (0.2-0.9%). Transmesenteric hernia is a rare type of internal hernia and usually in adult people is acquired. We report the case of a 44 year-old caucasian female with a small bowel occlusion after right nephrectomy for clear cell renal carcinoma caused by an acquired transmesenteric hernia. We emphasize the role of CT scanning for a prompt diagnosis and a quick surgical treatment in order to avoid intestinal gangrene.

Key Words: Internal abdominal hernias, Transmesenteric hernia, Small bowel occlusion, Nephrectomy.

Introduction

Internal abdominal hernias are a rare cause of intestinal obstruction (0.2-0.9%). The origins can be either congenital or acquired due to inflammation, infectious processes, trauma, and postoperative defects. We can define an internal hernia as a protrusion of a viscus through a mesenteric or peritoneal aperture into a compartment of the abdominal cavity. The most frequent internal hernias (more than 50%) are paraduodenal. Left paraduodenal hernias originate at the fossa of Landzert which is just lateral to the fourth segment of the duodenum and behind the inferior mesenteric vein and ascending left colic artery. Right paraduodenal hernias protrude into the ascending mesocolon, involving the fossa of Waldayer, behind the superior mesenteric artery and inferior to the third portion of the duodenum. Transmesenteric hernia is a rare type of internal hernia (5-10%); it is defined as protrusion of the small bowel, transverse or sigmoid colon through a mesentery defect without any sac. This type of hernia is usually acquired in adult people, and it is caused by prior abdominal surgery, inflammation or trauma. During nephrectomy a mesenteric defect can be created when the colon is mobilized medially as the lateral peritoneal reflection is incised. In these cases of intestinal occlusion a quick diagnosis and treatment, mainly operative, is required. The role of CT scanning is fundamental for an early diagnosis and to plan a rapid surgical treatment avoiding bowel gangrene necessitating intestinal resection. We report the case of a 44 year-old caucasian female with a small bowel occlusion after right nephrectomy for clear cell renal carcinoma caused by an acquired transmesenteric hernia. We discuss the diagnostic and therapeutic management.

Case Report

In October 2012, a 44 year old caucasian female was hospitalized in our Department due to persisting right low back pain, urinary frequency and hematuria. The patient reported only an appendicectomy at age 16 and she denied any drug ingestion. The blood tests were normal. The ultrasonography showed in the hilum of the right kidney a hypoechoic area of 10 cm diameter with inside a solid lesion of 1 cm. The total body computed tomography (CT) scan confirmed in the right kidney a hypodense neoformation of 9 × 10 cm with a solid nodule of 1.5 cm inside which showed positive contrast enhancement. The kidney nodule was biopsied and the histological examination deposed for a clear cell renal carcinoma. The patient underwent right nephrectomy by a median laparotomy. The postoperative course was regular, blood tests were normal without any abdominal pain. During the fourth postoperative day she began liquid diet and the day after she started to complain abdominal pain in the mesogastric region associated with nausea and vomiting. For this reason she underwent a X-ray of the abdomen which revealed a stomach and duodenal

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Internal hernia is defined as a protrusion of intestines in the peritoneal cavity through a mesenteric or peritoneal aperture determining incarceration or strangulation of the bowel. Internal abdominal hernias are not a common cause of acute intestinal obstruction caused by hernias. They represent only a small percentage (up to 0.9%) of all causes of intestinal obstruction. Transmesenteric hernias are a particular type of internal hernias, constituting only 5-10% of all causes of internal hernias. In adult people, transmesenteric hernias are most commonly acquired caused by surgical manipulation of the bowel and mesentery or abdominal trauma. Hensing in 1742 was the first to describe the anatomical variations of internal hernias and F. Treves in 1854 first described mesenteric defects and various fossae. CT scanning in the arterial phase is useful to achieve an early diagnosis. Despite characteristic CT findings such as arterial and venous filling and emptying, transmesenteric hernia is usually a diagnosis of surprise, established on exploratory laparotomy done for intestinal obstruction. Regan et al. reported small bowel obstruction after laparoscopic donor nephrectomy caused by a mesenteric defect. Wong et al. also reported a case of acute intestinal obstruction after laparoscopic nephrectomy in which the cause was an internal herniation via a mesenteric defect. In our report we describe a case of internal hernia after right nephrectomy for cancer that determined an intestinal occlusion. The intestinal occlusion was caused by a mesenteric defect created during the previous nephrectomy. Performing the relaparotomy we found all the small bowel in the right renal fossa, into the space created by the tumor removal. During the nephrectomy a large mobilization of ascending colon and the wide preparation of the inferior cava and aorta during the lymphectomy create the conditions for the internal hernia. The traction of the first jejunal loop on the forth part of duodenum determined an high occlusion with an important distension of the stomach and duodenum. This condition and the initial vascular sufferance configured a surgical emergency. CT scan was an important diagnostic method to recognize the internal hernia and to assess the bowel sufferance. Reviewing the literature, we want to emphasize three aspects: intestinal occlusion caused by acquired transmesenteric hernia is very rare; CT scanning is very useful for preop-

Discussion

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Figure 1. CT scan showing dislocation of the jejunal-ileal loops in the right renal fossa through a mesenteric defect.
operative diagnosis; the surgical management in these cases is a quick laparotomy performed to reduce the hernia, closing the defect and eventually resection of the nonviable bowel.

References


