

Case Report

Bowel obstruction secondary to type IV hiatal hernia: a case report

Ulises Lara Orozco^{1*}, Erik D. Alvarez Sores¹,
Verónica E. Masabanda Celorio¹, Sahid Vargas Paredes²

¹Department of Gastrointestinal Surgery, UMAE Hospital de Especialidades CMN Siglo XXI, Mexican Institute of Social Security, Mexico City, Mexico

²Department of General Surgery, Hospital General de Zona No. 30, Mexican Institute of Social Security, Mexico City, Mexico

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*Correspondence:

Dr. Ulises Lara Orozco,

E-mail: u.laraorozco@gmail.com

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ABSTRACT

Hiatal hernias are classified into four types. Type 4 hernias are not limited to the stomach alone, but involve herniation of the omentum, colon, small intestine, peritoneum, pancreas, or spleen into the chest cavity. Account for less than 5% of all cases. The probability that a patient with a paraesophageal hernia will develop acute symptoms and require emergency surgery is 1.16% per year. We present a case of acute paraesophageal hiatal hernia repair in a patient who developed large bowel obstruction. An 82-year-old female was admitted to emergency room referring abdominal distension, intolerance to the oral intake, vomiting of fecal content, as well as impossibility to pass gas or evacuate. On physical evaluation with tachycardia and acute abdomen, laboratory studies showed leukocytosis, radiographic data of intestinal obstruction, and at the level of the left hemithorax, space occupation by the colon was evident. An emergency surgery was performed finding paraesophageal hernia with involvement of the stomach and transverse colon, and retrograde dilatation of the ascending and transverse colon with ischemic changes. The patient presented hemodynamic instability, so an extended right hemicolectomy was decided, with distal closure, ileostomy, and hiatal plasty performed. She was discharged on postoperative day four without complications. Type 4 hiatal hernia complicated with intestinal obstruction is a condition that carries high rates of morbidity and mortality, so early surgery is mandatory to avoid a fatal outcome for the patient. There are currently no clear guidelines regarding the management of acute complicated paraesophageal hernias.

Keywords: Hiatal hernia, Acute paraesophageal hernia, Large bowel obstruction, Type 4 hiatal hernia

INTRODUCTION

Hiatal hernia involves an abnormal abdominal entry into the chest cavity. It is classified into four types, type 1 represents 85 to 95% of all cases, in which the gastroesophageal junction slides above the diaphragm, type 2 hiatal hernia is the least prevalent and is characterized by the penetration of the stomach into the cavity, while the gastroesophageal junction retains its original anatomical alignment, in type 3, the gastroesophageal junction and gastric fundus herniate

through the hiatus, type 4 hiatal hernia is not limited to the stomach alone, but involves herniation of the omentum, colon, small intestine, peritoneum, pancreas, or spleen into the chest cavity, type 3 and 4 hernias account for less than 5% of all cases.^{1,2}

Most hernias are asymptomatic, or are incidentally discovered, those that present symptoms are usually chronic symptoms, which include gastroesophageal reflux disease, anemia resulting from bleeding esophagitis or ulcers or respiratory symptoms due to the entry of small

particles of food and acid into the airways, paraesophageal hernias can present with acute symptoms and can require an emergent surgery if strangulation, gastric volvulus, obstruction, or hemorrhage occur. The probability that a patient with a paraesophageal hernia will develop acute symptoms and require emergency surgery is 1.16% per year and there is also a 16% risk of death associated with acute intervention.^{1,3-5}

The aim of this paper is to describe a case of type 4 hiatal hernia complicated with large bowel obstruction.

CASE REPORT

An 82-year-old female with a history of type 2 diabetes mellitus and long-standing systemic arterial hypertension, surgical: cesarean operation 43 years ago, intestinal resection with anastomosis 42 years ago secondary to intestinal obstruction without specifying cause. She was admitted to the emergency room for referring two days of abdominal distension, intolerance to the oral intake, vomiting on one occasion of fecal content, as well as impossibility to pass gas or evacuate, on physical examination at admission with tachycardia, in regular general condition, fields lungs with decreased left basal vesicular murmur, abdominal distension, decreased intensity and frequency of peristalsis, generalized pain on superficial and deep palpation, with involuntary muscle resistance. Laboratory tests showed leukocytosis with neutrophilia, thoracoabdominal computed tomography revealed distention of intestinal loops, with multiple air-liquid levels, as well as pneumatosis, at the level of the left hemithorax, space occupation by the colon was evident, with clinical and radiological data of intestinal obstruction, with acute abdomen (Figures 1 and 2).

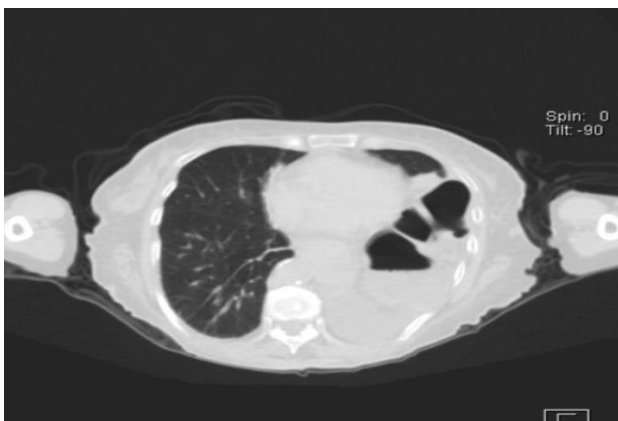


Figure 1: Chest CT scan, lung window; air-fluid levels are observed above the diaphragm with occupation of the left hemithorax by loops of colon.

A surgical intervention was decided, finding a type 4 hiatal hernia with defect of approximately 4 cm of diameter with involvement of the stomach and transverse colon, with retrograde dilatation of the ascending and transverse colon up to 12 cm in diameter, with ischemic changes. During

surgery, the patient presented hemodynamic instability, so an extended right hemicolectomy was decided, with distal closure and ileostomy performed, with also hiatal plasty with separate 2-0 polypropylene sutures. The oral route was started the next day, post-operative course with adequate evolution, so she was discharged on the fourth day without complications.



Figure 2: CT scan of the abdomen and pelvis (a) coronal reconstruction in which dilation of the loops of the colon, pneumatosis, and occupation of the left hemithorax by the colon are observed; and (b) CT scan of the abdomen and pelvis, coronal reconstruction.

DISCUSSION

Type IV hiatal hernia is a rare entity, representing less than 5% of all cases of hiatal hernia.² Old age and overweight are the main risk factors for the appearance of a hiatal hernia, people with a history of esophageal surgery, mainly Heller's myotomy, endoscopic anti-reflux procedures and partial or total gastrectomy, are prone to developing this condition.¹

Clinical presentation can vary, from being asymptomatic to presenting with data of acute abdomen secondary to its complications, in our case it was presented with data of intestinal obstruction, with data of acute abdomen, for which reason it was decided in the first instance the surgical management.^{1,3}

The mainstays of the evaluation of patients with hiatal hernia, particularly before surgery, are upper gastrointestinal endoscopy and barium contrast studies. The role of the various diagnostic techniques may depend on the clinical presentation of the patient. Incidentally detected hiatal hernias or those hernias that are minimally symptomatic can be evaluated by endoscopy and contrast radiology. Computed tomography may be useful in an emergency situation for patients with suspected complications, the hernia site and any herniated organs within the chest cavity are clearly visualized in most cases, if intestinal obstruction and strangulation occur, dilated intestinal segments with air-fluid levels within the thoracic cavity and abdomen will be visualized.^{6,7}

Indications for surgical repair are controversial, but typically fit patients are those who are symptomatic with impaired quality of life or a desire to avoid acute complications. There are currently no clear guidelines regarding the management of acute paraesophageal hernias.³

The surgical repair can be performed transabdominally or transthoracically, the laparoscopic approach is just as effective as open surgery, with less morbidity and shorter hospital stay. The standard for repair is the laparoscopic approach, however, open transabdominal repair may be more appropriate in emergencies when peritoneal contamination or gastric necrosis is suspected.⁶

For acute paraesophageal hernia, the ideal approach, the use of mesh to reinforce hiatal closure with or without an antireflux procedure, gastropexy with or without T-faster or gastrostomy tube, is a matter of debate.^{8,9} In the surgical literature exists a case report about patient who developed a closed loop colonic obstruction caused by a colonic mass in the distal transverse colon within a giant paraesophageal hernia. They successfully performed emergent paraesophageal hernia reduction and mesh repair with extended right hemicolectomy and ileocolonic anastomosis.¹⁰ In our case, given the hemodynamic instability in the transoperative period, it was decided only to perform an extended right hemicolectomy with an ileostomy, as well as a simple hiatal plasty.

CONCLUSION

Type 4 hiatal hernia complicated with intestinal obstruction is a condition that carries high rates of morbidity and mortality, so early surgery is mandatory to avoid a fatal outcome for the patient. There are currently no clear guidelines regarding the management of acute complicated paraesophageal hernias.

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