

PICTURES IN DIGESTIVE PATHOLOGY

Fundoplication intrathoracic migration associated with gastric organoaxial volvulus

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CASE REPORT

A 49-year-old man presented at the emergency department for severe epigastric pain and a 48-hour episode of vomiting with a greatly affected general state. This is a patient diagnosed with Behçet's disease and ankylosing spondylitis, operated for a hiatal hernia two months before his admission, where a laparoscopic Nissen fundoplication and pillars closure were performed. During the immediate postoperative period, he manifested a picture of vomiting and dysphagia after waking up from the anesthetic procedure. Both disappeared with corticosteroid administration.

At the admission to the hospital, the patient showed clear signs of difficulty breathing, paleness, sweating, tachypnea, and tachycardia. On examination, we found no breath sounds in the right hemithorax, and the abdominal exploration revealed signs of rigidity of abdominal wall. Chest X-ray (Fig. 1).

Our differential diagnosis stated hiatal hernia recurrence vs. secondary acute esophageal perforation for abdominal overpressure due to persistent nausea (Boerhaave syndrome). A thoraco-abdominal CT scan was requested (Fig. 2).

An urgent surgery was performed, where we found a complete transhiatal migration from stomach to chest and an associated organoaxial volvulus, as well as a partially disrupted fundoplication. Once the herniated viscera were reintroduced in the abdominal cavity, a proper vascularisation was showed. The fundoplication was rebuilt and the pillars were approached. An abdominal drainage was inserted and removed 4 days after the postoperative period.

DISCUSSION

The Nissen fundoplication is considered as the "gold standard" procedure in patients which are affected by a gastroesophageal reflux disease resistant to conservative management. Thanks to it, efficient clinical and histological results with a low operative morbidity and mortality rates are achieved (1).

Long-term antireflux surgery re-operations are close to 3%, as published in the broadest series shown in the bibliography. Fundoplication intrathoracic migration which determines a persistent clinical outcome is the most frequent cause (27.9%) of re-operation in the late postoperative antireflux surgery. In descending order of frequency are described: disruption of the fundoplication (22.7%), telescoping (14.1%), paraesophageal hernia (6.1%), disruption of hiatus (5.3%), tight fundoplication (5.3%) and stenosis (1.9%) (2,3).

The need for urgent reoperation (excluding those cases of bleeding during the immediate postoperative period or injury to nearby organs) is anecdotal.



Fig. 1. It reveals the presence of a right hydropneumothorax with compressive atelectasis of the lung and contralateral mediastinal shift.

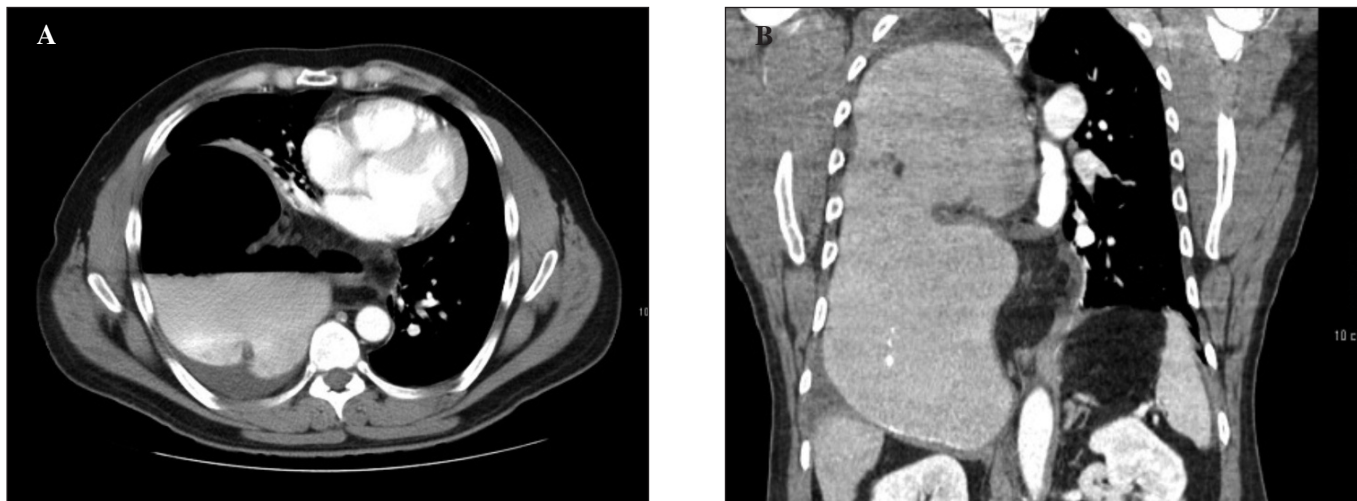


Fig. 2. Thoraco-abdominal CT scan. A. Cross-section. B. Coronal plane. Moderate dilation of the esophagus, visualizing the gastric camera in the right hemithorax with herniated stomach through a huge defect in the esophageal hiatus, which is almost 6 cm in diameter. The stomach is over-distended and has a large air-fluid level without showing wall thickening. The position of the stomach in the right hemithorax is the standard one in the cranio-caudal plane (possible organoaxial volvulus). Significant mass effect on the structures of the right hemithorax with contralateral mediastinal shift, compressive atelectasis of right lung and partial collapse of the superior vena cava.

The differential diagnosis of this report, with cardinal symptoms of dyspnea, epigastric pain, tachypnea and tachycardia coming after a persistent vomiting episode, and associated to the figure of the chest X-ray (Fig. 1) may correspond to either Boerhaave syndrome as a problem related to the fundoplication previously performed. The patient did not show subcutaneous emphysema or pneumomediastinum, which are characteristic findings of transmural distal esophageal perforation. Finally, the CT scan revealed the presence of gastric herniation in the chest cavity.

In order to clarify the diagnosis, the upper gastrointestinal investigation can prove the leak and the anomalous position of abdominal viscera, but it does not provide information concerning the vascular supply, ischemic findings or the existence of collections. However, the computed tomography (CT) does provide crucial information, so that the need for intervention and the choice of approach can be determined (3).

With a view to avoiding this problem, we emphasize the importance of preventing nausea and vomiting in the immediate postoperative period of hiatal hernia repair, since it may condition the disruption of the fundoplication as well as the closing of the pillars in a way that they could cause hernia recurrence and the development of other complications.

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