Caso Clínico / Radiological Case Report

MORGAGNI HERNIA ASSOCIATED WITH HIATUS HERNIA, A RARE CASE

HERNIA DE MORGAGNI EM ASSOCIAÇÃO COM HERNIA DO HIATO, UM CASO RARO

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Introduction

There are only five cases of combined Morgagni and paraesophageal hernias1-5 and one case of combined Morgagni and sliding hiatal hernia6, described in the English literature. The diagnosis of those hernias is made radiographically, namely with Chest Radiography and Computed Tomography7,8. The Morgagni Hernia is a herniation through the parasternal hiatus of the diaphragm, with subsequent herniation of abdominal contents into the thorax7. It is a rare type of congenital diaphragmatic hernia accounting for 3-5% of all diaphragmatic hernias9. The Morgagni hernia usually is small and asymptomatic until adulthood7 and is diagnosed incidentally as a mass or air-fluid interface on a chest X-ray undertaken for unrelated reasons8. The hiatus hernia is a protrusion of a portion of the stomach into the thoracic cavity through the diaphragmatic oesophageal hiatus. It is found in 50% of patients older than 50 years old. The majority of patients are asymptomatic8. Generally, a hiatus hernia is classified into four types. The type I hiatus hernia or sliding hernia is the most common type. The types II, III and IV are all varieties of paraesophageal hernias and are the less common types of hiatus hernia9. We report a case of a Morgagni hernia in association with a Hiatus hernia whose diagnostic was suspected in chest radiography and was confirmed by Computed Tomography.

Case Report

An 81-year-old man presented with progressive dyspnea over the last 6 months. The patient had a seven year history of intermittent, postprandial and substernal pain. The pain was not related to any type of food and was partially relieved by proton pump inhibitor. On auscultation he had reduced breath sounds on inferior half of the right hemithorax. The gasometry revealed mild hypoxemia. The postero-anterior chest radiography showed increased density anteriorly, in the right lower and medial lung fields, extending laterally from the cardiophrenic angle. The presence of radiolucent areas suggested gas-containing bowel. Those findings are suggestive of a Morgagni hernia. The gastric bubble wasn’t at its usual topography, suggesting the presence of a hiatal hernia (Fig. 1).

A Computed Tomography study was performed in order to clarify the diagnosis and it showed extrusion of intestinal contents into the right hemithorax through right anterior cardiophrenic angle, containing loops of the small bowel, colon and epiploic fat, in intrathoracic situation. Simultaneously, a type III hiatal hernia was present, with part of the stomach and the gastroesophageal junction in the thoracic cavity (Figs. 2-3). Despite the indication for laparotomy the patient refused it, continuing its medication with a proton pump inhibitor.

Discussion

The simultaneous occurrence of two separate non-traumatic diaphragmatic hernias is extremely rare because in regular circumstances the intra-abdominal pressure is reduced in the presence of a large diaphragmatic hernia, decreasing the likelihood of a second diaphragmatic hernia1.
The Morgagni hernia occurs due to failure of fusion of the anterior part of the pleuropertitoneal membrane and deficiency in the process of muscularization, causing a defect in the retrosternal region of the diaphragm. The Morgagni hernia is most frequent in women, in obese people and on the right side (90%). It can also be bilateral (8%) or left-sided (2%). The hernia sac contains, in order of decreasing frequency, omentum, colon, stomach, liver, and small bowel. The Morgagni hernia may have a developmental origin, constituting fewer than 10% of congenital diaphragmatic hernias. It may also have a post-traumatic origin, resulting from blunt trauma (traffic accident or fall) or penetrating injuries, or have an iatrogenic origin. Most individuals are asymptomatic. In rare cases complete obstruction, incarceration, or strangulation with necrosis of a hollow contained in a foramen of Morgagni hernia is associated with an acute or subacute presentation.

The diagnosis of Morgagni hernia is made radiographically. In postero-anterior chest radiography it usually appears as a rounded opacity at the right cardiophrenic angle and the lateral chest film localizes this density to the retrosternal space. This rounded opacity is a curvilinear accumulation of fat continuous with the properitoneal fat line of the anterior abdominal wall - "the sign of the cane". In some cases, when the transverse colon, small bowel, or stomach herniates through the defect, air-fluid levels may be seen on chest film. Upper gastrointestinal series or barium enema can confirm the diagnosis in patients with visceral herniation. Computed Tomography is the best diagnostic tool, particularly for symptomatic hernias with potential incarceration and strangulation.

The hiatus hernias are much more common, representing seventy percent of the diaphragmatic hernias. Their etiology can be explained by the repetitive stretching (e.g., vomiting, obesity or pregnancy) of the gastroesophageal junction, resulting in widening of the hiatus, rupture of the phrenoesophageal ligament, and onset of the hernia. On frontal chest radiographs they project behind the heart in the immediate supradiaphragmatic region of the posterior mediastinum. The Computed Tomography (CT) is useful because it can reveal the content of the hernia sac.

In the type I or sliding hernia, the gastroesophageal junction migrates into the posterior mediastinum through the esophageal hiatus. The type II occurs when the fundus herniates through the hiatus alongside a normally positioned gastroesophageal junction. The type III is a combination of types I and II hernias with a displaced gastroesophageal junction as well as hernia sac containing portions of the fundus and or body of stomach protruding through the hiatus, as occurs in our case. The type IV is characterised by displacement of the stomach along with other organs (colon, spleen, pancreas and small bowel) into the thorax.

On a frontal chest radiograph a hiatal hernia can be projected behind the heart in the immediate supradiaphragmatic region of the posterior mediastinum and may contain an air-fluid level. The upper gastrointestinal barium contrast swallow series defines the anatomic abnormality. The computed tomography is useful because it can reveal the content of the hernia sac and can show extension of a portion of the proximal stomach, or other abdominal contents, into the lower mediastinum, and a widening of the oesophageal hiatus with increased separation of the esophagus and diaphragmatic crura.

The herniations through the esophageal hiatus and the foramen of Morgagni have several features in common, which suggest that they develop after complete closure of the diaphragm: symptoms occur usually after the age of fifty, they are more frequent in women and both have true hernia sacs. Nowadays there is no consensus on the best surgical approach of both hernias, partly because the condition is rare. Some authors described an upper midline laparotomy which provided good common access to bilateral hernias in preparation for possible intraoperative findings of ischemic or necrotic bowel.

In conclusion, CT was essential for the diagnosis and characterization of this rare association between Morgagni and hiatal hernias.
References