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Morgagni Hernia as a Differential Diagnosis in an Adult: A Case Report

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Abstract: Morgagni Hernia (MH) is a defect between the transverse septum and the sternum, failing the fusion of the sternal and costal parts of the muscle, representing 3 to 4% of the hernia's diaphragmatic lesions of congenital origin. It is present in 90% of the cases on the right side, 8% on the left side and 2% on the bilateral side. The aim of this article is to report a case on late presentation of MH and to emphasize the importance of this pathology to be analyzed with differential diagnosis in patients with respiratory symptoms. The subject is a patient, male, 62 years old, truck driver, married, with history of dyspnea on medium exertion and mild chest discomfort from 2 years. After 1 year of these symptoms, he evolved with major dyspnea on minor exertion, intense chest pain, without improvement with analgesics or with body positions, making it difficult to perform his usual activities as work and leisure. Multislice Computed Tomography of the Thorax, which showed: diaphragmatic hernia in the left hemithorax, with a ring/diaphragmatic fault located in the anterior and medial pericardial third, and an intrathoracic hernia, notably in the base and middle third in the anterior, lateral and posterior regions, with contents mesenteric and intestinal. The patient underwent thoracotomy in the sixth left intercostal space. A large amount of omentum, transverse colon, stomach, pulmonary atelectasis and small pleural effusion were found. The omentum resection was performed, located hernial ring in the antero-medial portion of the diaphragm, reduction of the hernia, placement of the Malex mesh and apposition of two anterior and posterior thoracic drains. Reports of patients initially diagnosed with pneumonia or treated as chronic dyspeptic, who progressed to intestinal necrosis, respiratory failure or other complications due to late diagnosis, emphasize the relevance of the knowledge of MH as a differential diagnosis of respiratory and gastrointestinal symptoms.

Keywords: Morgagni Hernia; Diagnosis; Respiratory symptoms

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Introduction

Morgagni Hernia (MH) was first described by Giovanni Morgagni in 1761. It is a defect between the transverse septum and the sternum, failing the fusion of the sternal and costal parts of the muscle, representing 3 to 4% of the hernias diaphragmatic lesions of congenital origin. It is present in 90% of the cases on the right side, 8% on the left side and 2% on the bilateral side. It is believed that the pericardium is a determining factor in the lower incidence on the left. Hernia sacs, depending on location, may contain more commonly omentum and transverse colon, and also stomach and liver to a lesser extent.1 The occurrence of MH has been associated with syndromes and/or genetic defects such as Down syndrome, dextrocardia, of Turner, tetralogy of Fallot, Prader Willi syndrome, among others, with high morbidity and mortality.[1,5]

This present study reports the case of Morgagni hernia of late presentation, on the left, in a male and symptomatic patient, bringing MH as an important differential diagnosis in patients with respiratory symptoms.

Case Report

Patient, male, 62 years old, truck driver, married, with history of dyspnea on medium exertion and mild chest discomfort from 2 years. The symptoms were occasional and reported using analgesic medications sporadically with improvement of the condition. After 1 year of these symptoms, he evolved with major dyspnea on minor exertion, intense chest pain, without improvement with analgesics or with body positions, making it difficult to perform his usual activities as work and leisure. Negative fever, cough, weight loss, anorexia, palpitations, lower limb edema and gastrointestinal symptoms. At the physical examination: good general state, hydrated, normocorate, afebrile, acyanotic, anicteric, normal cardiac auscultation, pulmonary auscultation abolished in two thirds of the left hemithorax and air noises in base of left hemithorax. Denies systemic arterial hypertension, diabetes mellitus and other metabolic disorders, lung disease, smoking, heart failure and drug allergy. Deny previous surgeries, previous trauma, congenital or genetic diseases. He sought a medical service, where the first service was performed and requested a chest radiograph showing left basal alveolar

consolidation with signs of pleural effusion and ipsilateral diaphragmatic eventration, heart deviated to the right and right lung with normal transparency. He was then referred to the Outpatient Clinic of Thoracic Surgery for clinical and surgical follow-up. Multislice computed tomography of the thorax was conducted, which showed: diaphragmatic hernia in left hemithorax, with diaphragmatic ring/failure located in anterior and medial pericardium, the failure measuring about 6.2 cm in the anteroposterior axis by 6.2 cm in the lateral side; and intrathoracic hernia sac, especially on the base and middle third in the anterior, lateral and posterior region, with mesenteric and intestinal contents; the hernia sac measures about 20 x 19.4 x 10.7, promoting hypoplasia and partial atelectasis of the pulmonary parenchyma that presents moderate volume reduction in relation to the contralateral lung; right lung without changes; mediastinum deviated to the right; absence of lymph node enlargement, pericardial effusion and pleural effusion. After the diagnostic hypothesis of Diaphragmatic Hernia was confirmed by imaging, it was also classified as Morgagni Hernia. In the preoperative examinations, the patient's cardiological opinion was with low surgical risk and suitable for the procedure, echocardiogram and spirometry within normal normality, liver function, renal function, coagulation and blood count. The patient underwent thoracotomy in the sixth left intercostal space. A large amount of omentum, transverse colon, stomach, pulmonary atelectasis and small pleural effusion were found. The omentum resection was performed, located hernial ring in the antero-medial portion of the diaphragm, reduction of the hernia, placement of the Malex mesh and apposition of two anterior and posterior thoracic drains. After surgical procedure, the patient remained in the Intensive Care Unit for 24 hours in care, responding well to supportive therapy and transferred to the ward. He was discharged for outpatient follow-up on the sixth postoperative day with partial pulmonary expansion in the lower left lobe. After 3 months of the procedure, the patient developed a new computed tomography of the chest with the findings: asymmetry of the hemithorax, with volume reduction of the left lung at the lower lobe, characterized by fibroelastic alterations associated with small irregular densities, nodules calcified and mild bronchiectasis, small left pleural effusion; and histopathological report confirms diaphragmatic content with the presence of a fragment of mature adipose tissue, with areas of ischemia and hemorrhage.

Figure 1: Chest computed tomography with contrast: axial cut at chest level, arrows showing intrathoracic intestinal loops

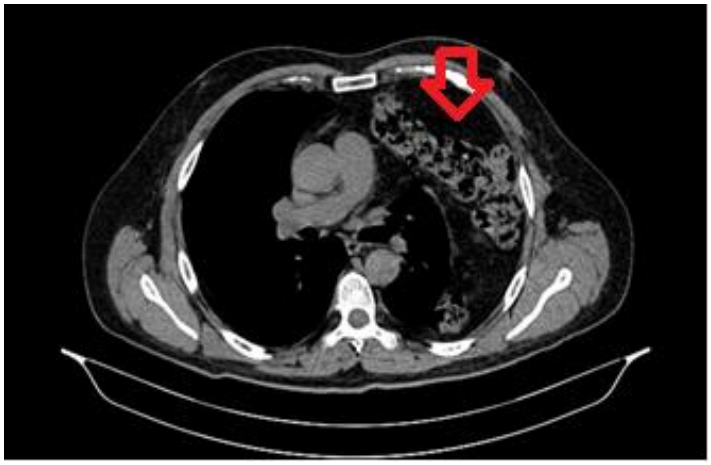


Figure 2: Chest computed tomography with contrast: axial cut at chest level, arrows showing intrathoracic intestinal loops

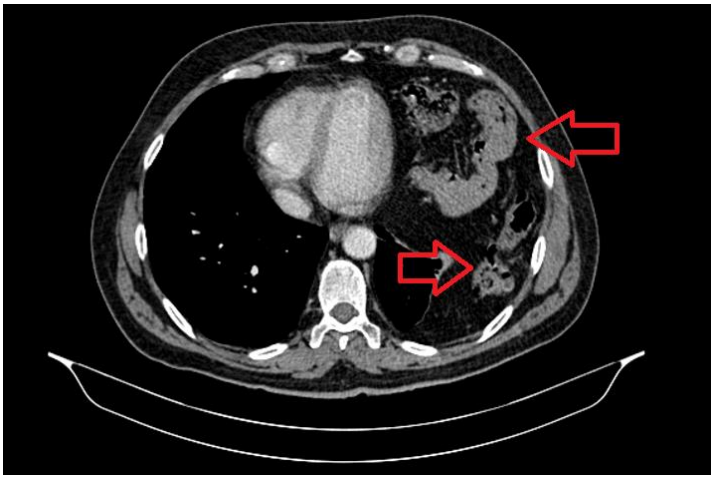
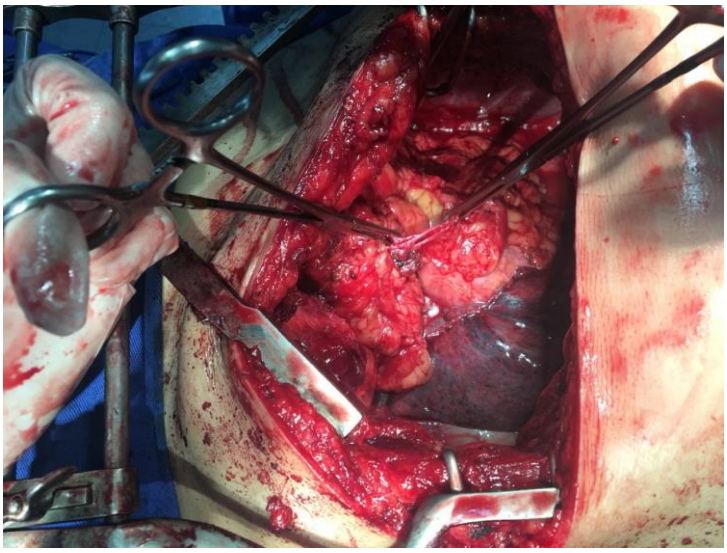


Figure 3: Thoracotomy in 6th left intercostal space, evidencing diaphragmatic failure and Morgagni hernia.



Discussion

Because of its congenital origin, The Morgagni hernia condition is rare in adults. Being present more commonly in women and to the right, going against the reported case, it is a man with MH on the left, which corresponds to only 2% of the cases. The occurrence of Morgagni hernia may be associated with genetic syndromes or factors that increase abdominal pressure in 50% of cases, since like any diaphragmatic hernia, it presents in portions of weakness of the musculature, which increases the abdominal pressure to risk factor. The patient of the case did not present any risk factor for the increase of this pressure, which reiterates its congenital origin.[8,14,15]

Due to cardiorespiratory discomfort and gastrointestinal manifestations, diagnosis and treatment in childhood become more prevalent, making the diagnosis in adult life uncommon, with reports of a higher incidence in females in more than 50% of cases and the mean of age of the diagnosis of 53 years. The clinical picture varies according to the size of the defect and herniated organ, and, unlike the child, the symptoms are chronic, and may present with nausea, vomiting, anorexia, abdominal pain, chest pain, dyspnea, dyspepsia or even asymptomatic – the absence of symptoms due to the fact that the organs are commonly lined by the parietal peritoneum of the hernia sac.[1,8] An analysis of 298 patients concluded that 72% of these patients were symptomatic, with 36% presenting respiratory symptoms.[5] In the case presented, the patient evolved for a year in

an oligosymptomatic way, with chest discomfort and dyspnea on the medium exertion sporadically and ceased with analgesia. A nonspecific chronic clinical picture in which the importance of knowledge about Morgagni hernia as a differential diagnosis of respiratory symptoms would anticipate the surgical intervention in this patient. However, after a year, he developed symptoms more intensely and without improvement with analgesia, hindering his work activities.

In the approach of this patient, the first examination was chest radiography, which evidenced basal alveolar consolidation on the left and ipsilateral diaphragmatic eventration. Chest radiography may present retrosternal opacity with solid areas or abnormal air-liquid levels. Differential diagnosis with thymomas, teratoma, lipoma, thymolipoma and liposarcomas is important.[6] Thoracoabdominal computed tomography (CT) was the best examination for confirm the diagnosis, and magnetic resonance imaging may be considered, but it is little used because of the high cost, presenting as an alternative in cases where CT is contraindicated.[8] In thoracoabdominal CT, inferior chest sections should be obtained, as well as of the abdomen in order to delimit the extension of the hernia, as well as the presence of abdominal organs at chest level, as well as evidence of complications such as base atelectasis and pleural effusion ipsilateral to herniation.[6,7] CT was the exam of choice for confirm the hypothesis raised by the chest X-ray of the case, which confirmed the diaphragmatic hernia, which was classified as Morgagni, in the left hemithorax with mesenteric and intestinal contents, corroborating with the literature on the contents of the hernia sac on the left.

Surgery is the only curative treatment of choice in symptomatic or non-symptomatic patients, being transthoracic, transabdominal, laparoscopic or thoracoscopic. There is also a report in the literature of robotic treatment.[4] In the case of transabdominal surgery, the primary repair was performed in 88% of the cases and in 6% of the cases, the primary repair was performed in 6% of the cases, 29% and in mesh 64% of the cases in the literature and, less commonly, by thoracoscopy.[5]

The thoracic route was the one of choice for the surgical approach, because of its greater ease in the dissection of the hernia sac of the pleural and mediastinal structures and the team's experience. The abdominal pathway contemplates a better reduction of the hernial content and evaluation of the contralateral diaphragm.[8] Robotic surgery has a primary tension-free repair, average time of accomplishment of 199.3 minutes, without reports of complications in the intra- or postoperative period and length of hospital stay averaged 1.6 days.[2]

Resection of the hernial sac remains controversial. Some report the increase of pneumomediastinum and phrenic nerve lesions with resection.[10] Others report an increase in cystic lesions in the chest in cases of retention, defending resection, the latter being the method of choice in specialized service.[1] In the case reported, reduction of the hernia, resection of the hernia sac, placement of the Malex mesh and apposition of two anterior and posterior thoracic drains.

Laparoscopy was completed as a gold standard for uncomplicated MH, because it is minimally invasive, offers good visualization of the surgical field, esthetic benefit, minor complications and shorter hospital stay. The technique of intracorporeal mesh closure has been proven to reduce recurrence of the hernia and adhesions, gaining space in these repairs.[9,13] Reports of MH correction by such a pathway in advanced age patients reiterate their safety, combined with a prior analysis - minute operation[14].

Hospital discharge occurred on the sixth postoperative day, which occurs in approximately 5 days, according to the literature. The recurrence of the hernia is rare in the adult, having a case recorded, because the MH occurs in a less dynamic area of the diaphragm, although it is still exposed to forced contractions that can lead to recurrence.[1,2] After 3 months of the procedure, patient developed asymptomatic, with computed tomography presenting small pleural effusion, already expected in the postoperative period of these patients, with no signs of hernia recurrence.

MH pictures in adulthood become challenging for diagnosis, due to chronic symptoms, inconsistent and common to other pathologies. Reports of patients initially diagnosed with pneumonia or treated as chronic dyspeptic, who progressed to intestinal necrosis, respiratory failure or other complications due to late diagnosis, emphasize the relevance of the knowledge of MH as a differential diagnosis of respiratory and gastrointestinal symptoms.[2,3,12] Por atypical clinical picture and uncommon incidence, the suspicion is an important criterion to reach the diagnosis. Being relevant its inclusion in the differential diagnosis of patients with respiratory and gastrointestinal symptoms, as well as in the asymptomatic patients with suggestive chest X-ray.

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