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(CASE REPORT)

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Morgagni hernia in adult: A case report

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Abstract

Introduction and Importance: Morgagni Hernia is a congenital diaphragmatic hernia, typically diagnosed in neonates or infants, but in rare cases, it can present in adults. This condition results from a developmental defect in the diaphragm during embryogenesis, leading to an opening that allows abdominal contents, to herniate into the thoracic cavity. In adults, the presentation is often subtle and may be overlooked until significant symptoms or complications arise. In this case, we report a 50-year-old female with symptomatic Morgagni hernia, highlighting the importance of early recognition and management.

Case Presentation: A 50-year-old female patient with a history of adult-onset asthma presented with recurrent chest symptoms, including persistent cough and shortness of breath. These symptoms had been ongoing for several months, prompting further investigation. A contrast-enhanced CT (CECT) of the chest revealed omental fat herniated into the right hemithorax, confirming the diagnosis of a Morgagni hernia.

Clinical Discussion: Morgagni hernias are typically diagnosed incidentally on routine chest radiographs when patients are asymptomatic. However, when symptoms do occur, they may mimic various respiratory or gastrointestinal conditions, such as chest pain, cough, or dyspnea, which can be attributed to other more common causes. In the case of adults, the hernia often remains undiagnosed for years or even decades due to the nonspecific nature of the symptoms.

This case represents an adult patient with Morgagni hernia who presented with chest symptoms, a relatively rare but significant clinical presentation. The imaging modality of choice for diagnosing Morgagni hernia is CECT, which allows for precise identification of the herniated contents in the thoracic cavity. Surgical repair of the hernia is advised, even in asymptomatic cases, due to the potential for serious complications such as strangulation or incarceration of the herniated bowel.

In summary, Morgagni hernia in adults, though rare, should be considered in the differential diagnosis of patients with recurrent chest symptoms, especially when conventional causes of such symptoms have been excluded. Early diagnosis and timely surgical intervention are crucial to prevent complications.

Keywords: Morgagni hernia; Congenital diaphragmatic hernia diaphragmatic defect; Computed tomography; Omental herniation

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1. Introduction

The diaphragm is a crucial muscular structure that plays a significant role in respiration. A failure in the fusion of the anterior pleuroperitoneal membrane with the sternum and costal cartilages can result in a defect in the costosternal trigone, which is referred to as the foramina of Morgagni. This defect provides a pathway for abdominal contents to herniate into the thoracic cavity, leading to the development of Morgagni hernia. Morgagni hernia accounts for 1–9% of all congenital diaphragmatic hernias (CDH). Other types of CDH include Bochdalek hernia, diaphragm eventration, and central tendon defects of the diaphragm. While CDHs are often diagnosed incidentally, they can also present with symptoms, particularly nonspecific respiratory or gastrointestinal signs. Although Morgagni hernia is most commonly diagnosed in childhood, it can also present in adulthood, as demonstrated in this case.

2. Case report

A 50-year-old nonsmoker with a history of adult-onset asthma was admitted for evaluation of respiratory symptoms, including persistent cough and shortness of breath. Notably, the patient denied having abdominal pain or other symptoms.

Six years prior, she had been diagnosed with asthma, for which she is on long-term asthma management.

However, her symptoms recurred, prompting further evaluation. A contrast-enhanced computed tomography (CECT) scan of the chest was performed. The scan showed a defect in the anterior aspect of the right hemidiaphragm, through which omental fat had herniated into the right hemithorax. This confirmed the diagnosis of Morgagni hernia (Fig. 1).

3. Discussion

Morgagni hernia is the rarest form of congenital diaphragmatic hernia (CDH), typically presenting in childhood. However, there have been reports of its presentation in adulthood. In the present case, a 50-year-old female was diagnosed with Morgagni Hernia. This was confirmed by a contrast-enhanced computed tomography (CECT) scan of the chest, which showed herniating omental fat in the right thoracic cavity.

Most Morgagni hernias are diagnosed incidentally on a chest radiograph, and they are typically right sided. On imaging, they appear as a homogeneous mass, sometimes with a visible air-fluid level if a hollow viscus is herniated. If symptomatic, the symptoms can mimic respiratory or cardiovascular diseases. Abdominal pain may occur if the herniated viscera become strangulated or incarcerated. The most commonly herniated masses are the omentum, followed by the colon and small intestine. However, in left-sided Morgagni hernias, the stomach is the most commonly herniated organ [11,12].

The investigation of choice for diagnosing Morgagni hernia is a CECT scan of the chest. CECT is preferred because it provides detailed anatomical information about the hernia, its contents, and any associated complications. If a retrosternal mass of fat density, or a combination of omentum and a hollow viscus, is seen, the diagnosis can be established [13]. In cases where the diagnosis is unclear, magnetic resonance imaging (MRI) may be used to differentiate CDH from other mediastinal masses [14].

One of the complications of Morgagni hernia is strangulation, so surgical repair of the defect is recommended even in asymptomatic cases [15]. Surgical repair can be done through an abdominal approach (laparotomy or laparoscopically) or a transthoracic approach [11,16]. There is no clear consensus on the best approach, but abdominal repair via laparotomy is often preferred when strangulation or dense adhesions are suspected. The hernia orifice can be repaired using mesh or non-absorbable sutures. Whether to use mesh depends on the size of the hernia and the feasibility of achieving a tension-free repair without a prosthetic material. A case series involving 36 patients demonstrated successful repair without the use of mesh, with no recurrence [17]. There is no definitive guideline on the hernia defect size that would necessitate the use of mesh. Mesh may be considered when there is significant tissue loss of the diaphragm, making primary repair impossible [10,18].

Although removal of the hernia sac offers advantages such as reduced tissue trauma, lower risk of fluid collection, and reduced recurrence rates, it is generally advised not to remove the sac due to the potential complication of massive pneumo-mediastinum [19,20]. In our case, a drain was used to minimize the risk of fluid collection in the dead space

created by the reduction of the hernia sac, but there is no strong evidence supporting the routine use of a drain in laparoscopic repair of Morgagni hernia.

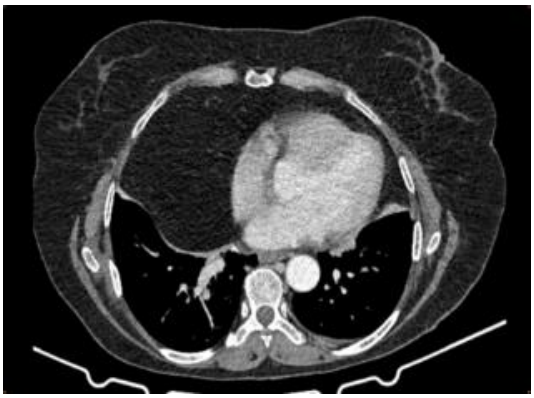

Figure 1 Transverse section of CECT scan of chest showing herniated omental fat in the right thoracic cavity

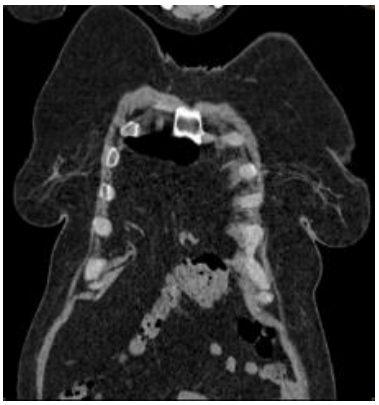

Figure 2 Transverse section of CECT scan of chest showing herniated omental fat in the right thoracic cavity

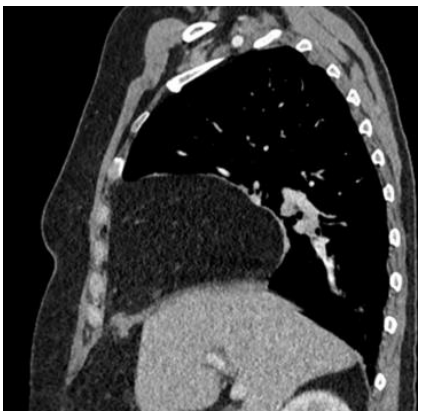

Figure 3 Transverse section of CECT scan of chest showing herniated omental fat in the right thoracic cavity

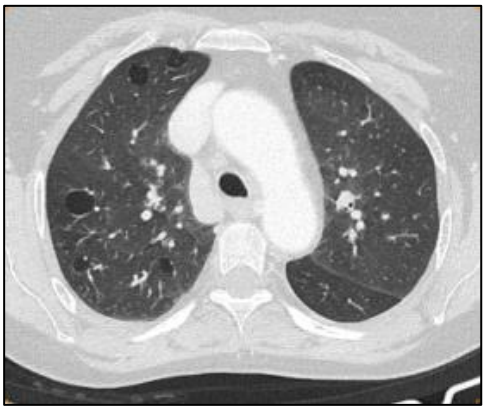

Figure 4 Transverse section of the chest CT in parenchymal window showing pulmonary cystic lesions

4. Conclusion

Morgagni hernia, though the rarest form of congenital diaphragmatic hernia (CDH), can present in both childhood and adulthood, often with nonspecific cardiovascular or respiratory symptoms. It is most commonly diagnosed incidentally on chest radiographs, with a characteristic right-sided presentation. While the majority of cases are asymptomatic, symptoms can mimic respiratory or cardiovascular conditions, and abdominal pain may arise if strangulation or incarceration of the herniated contents occurs.

The investigation of choice for diagnosing Morgagni hernia is contrast-enhanced computed tomography (CECT), which provides detailed anatomical information, confirming the presence of herniated bowel loops or omental fat. In difficult cases, magnetic resonance imaging (MRI) may be used to differentiate CDH from other mediastinal masses.

Surgical repair is the primary treatment for Morgagni hernia, even in asymptomatic patients, due to the risk of complications such as strangulation.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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