



Isolated Omentum Herniation: A Rare Morgagni-Larrey Herniation

Congenital diaphragmatic hernia (CDH) is a congenital anomaly observed in approximately one in 4000 births, with a mortality rate of 60% (1). CDH comprises four types: Bochdalek hernia, Morgagni hernia, diaphragm eventration, and central tendon defects of the diaphragm. Bochdalek hernia constitutes 90-95% of CDH cases, while the remaining percentage involves Morgagni hernia and other types (1, 2).

Morgagni-Larrey hernia, also known as Morgagni hernia, is a relatively rare subtype, accounting for approximately 3% to 5% of all congenital diaphragmatic hernia cases (2). Typically situated anteriorly, it is predominantly observed on the right side of the thorax. Morgagni hernia is commonly diagnosed during pediatric ages; however, in certain instances, it remains asymptomatic until adulthood due to the presence of herniated tissues accompanied by the parietal peritoneum. In the pediatric population, these hernias are frequently associated with anomalies such as Down syndrome, congenital heart diseases, and intestinal malrotation (3). Detection may occur incidentally during routine chest radiography or may manifest with gastrointestinal or respiratory symptoms. Despite its rarity, the presentation of vague and diverse symptoms can lead to diagnostic delays. Diagnostic methods include plain radiography and computed tomography (CT) (2).

In this context, we present an intriguing case of isolated omentum herniation in Morgagni, wherein the patient sought medical attention in the emergency department with complaints of shortness of breath and cough.

Case - A 10-year-old girl with no history of any other diseases was admitted to the emergency department of our hospital with a cough and chest pain. The patient presented with sudden-onset chest pain on the right side, which was intermittent, stabbing, and aggravated in the lateral decubitus position. Cough was also present at the time of admission. On physical examination, no defense or rebound was observed, and bowel movements were found to be normal.

The patient had been admitted to the hospital many times before with the same complaints. Based on the patient's complaints, a lung infection was diagnosed, thought to be bacterial, and antibiotic treatment was prescribed. At the patient's last visit, a postero-anterior and lateral chest radiograph was taken to evaluate the lungs. Opacities were observed in the vicinity of the right lung hilus and in the right anterior mediastinum region (Figures 1, 2).

For further examination, a contrast-enhanced thorax computed tomography (CT) scan was performed. The CT scan showed that the omental tissue herniated into the right hemithorax through a 2-cm defect on the front of the right hemidiaphragm. In light of these images, the diagnosis of Morgagni hernia was made (Figures 3, 4).

The diaphragm is a muscle that plays an active role in the body's inspiration and expiration, formed by different embryonic sources such as pleuroperitoneal folds and somites. The fusion defect of the anterior pleuroperitoneal membrane, sternum, and costal cartilages causes an anatomical defect in the costosternal trigone known as the foramina of Morgagni (3). In 1769, Morgagni described this condition in the autopsy of an Italian stonemason. This hernia has also been given other names such as Larrey's hernia and subcostosternal hernia. Larrey, Napoleon's surgeon, first identified this anatomical space as playing a role in relieving pericardial tamponade (3, 4). Abdominal contents may herniate

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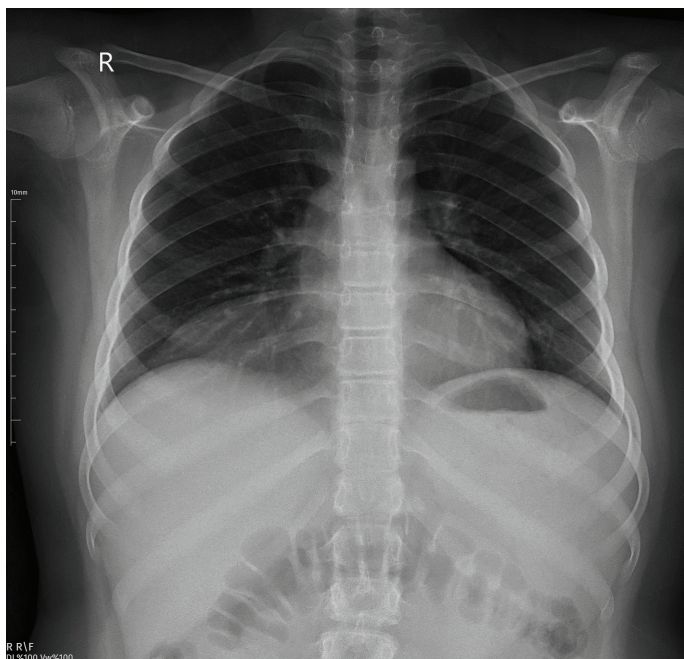


Figure 1. Posteroanterior (PA) chest radiograph demonstrates smooth contoured density in the right paracardiac region.

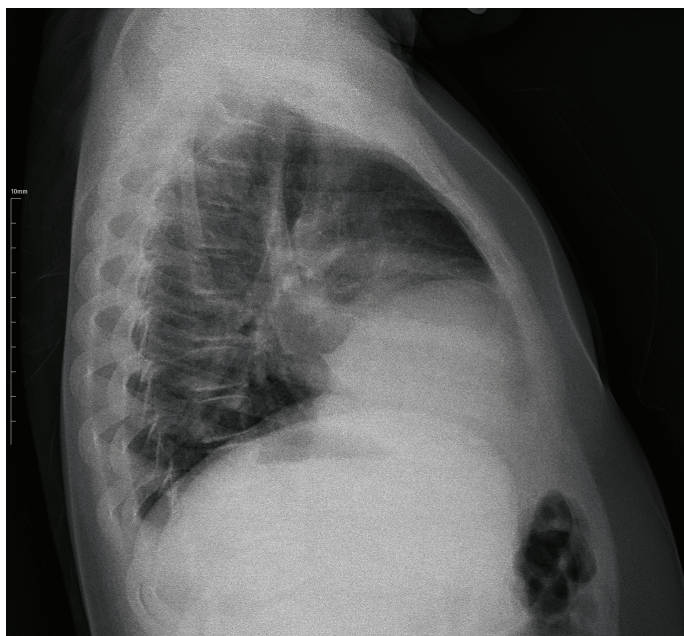


Figure 2. Lateral chest radiography shows increased density superimposed on the heart.

through this anterior space, resulting in a condition known as Morgagni hernia. In a cohort of 263 patients conducted in Japan, it was shown that the most frequently herniated tissues in Morgagni hernias were the greater omentum (42.1%), transverse colon (36.5%), and small intestine (7.3%). Obstruction and perforation were seen in 6.5% of the patients [5]. Although omentum herniation with intestines was seen frequently, the isolated omentum herniation that we diagnosed in this case was very rare in this cohort.

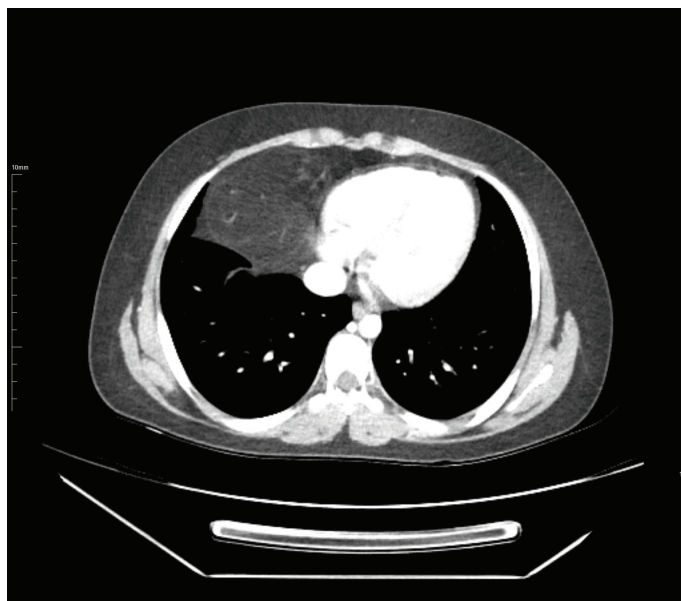


Figure 3. An axial CT image shows herniated omental adipose tissue. No other organs are seen in the hernia sac.

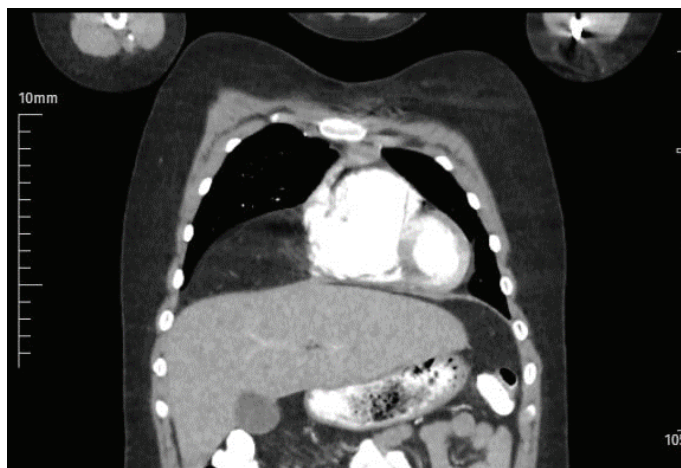


Figure 4. Coronal reformat of the CT scan shows herniated isolated omental adipose tissue as a hypodense tissue in the right anterior mediastinum, suggesting Morgagni hernia.

The first method used in the diagnosis of Morgagni hernias is postero-anterior chest radiography. On plain radiography, bowel loops containing air are usually seen as a pericardial mass or in the thoracic cavity. CT plays an important role in the definitive diagnosis of hernia suspicion on plain radiography. Diagnosis is difficult on direct radiography, especially in cases of herniation of the omentum alone; in such cases, diagnosis is made with CT. In our case, the definitive diagnosis was made with the help of thorax CT. There may be cases where omental fatty tissue cannot be clearly seen on CT. In such conditions, magnetic resonance imaging (MRI), where the fatty tissue is more clearly selected, is preferred (6).

Congenital diaphragmatic hernias (CDHs) are generally asymptomatic; however, patients may present with complaints such as respiratory distress, recurrent pulmonary infections, and gastrointestinal

symptoms (2). In the differential diagnosis of Morgagni hernia, herniation of solid organs such as the liver or spleen, foregut duplication cysts, and focal diaphragm eventration should be kept in mind (7). With the development of radiological imaging techniques, the number of Morgagni hernias diagnosed has increased. Plain radiography or CT are preferred imaging modalities for the diagnosis of Morgagni hernia. In symptomatic patients, surgery should be performed as soon as the diagnosis is made. In asymptomatic cases, laparoscopic surgery should be preferred due to the risk of incarceration and obstruction (7, 8).

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