

LATE PRESENTATION OF CONGENITAL RIGHT-SIDED MORGAGNI HERNIA IN ELDERLY. A RARE PRESENTATION

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ABSTRACT

Morgagni hernia is a rare congenital diaphragmatic defect accounting for a small proportion of diaphragmatic hernias and is infrequently diagnosed in adulthood. Presentation in elderly patients is particularly uncommon, often leading to delayed diagnosis because of nonspecific clinical manifestations. We report the case of a 64-year-old female with a history of type 2 diabetes mellitus, hypertension, and hypothyroidism who presented with abdominal pain, abdominal fullness, early satiety, fatigue, and generalized weakness of one month's duration. Initial chest radiography demonstrated a well-defined opacity in the right cardiophrenic angle. Contrast-enhanced computed tomography of the chest revealed a right-sided anterior diaphragmatic defect with herniation of retroperitoneal fat, omentum, and bowel loops into the thoracic cavity, consistent with a Morgagni hernia. Following preoperative evaluation and optimization, the patient underwent elective laparoscopic repair. Intraoperatively, a large diaphragmatic defect measuring approximately 8 × 6 cm containing the transverse colon and greater omentum was identified. The herniated contents were successfully reduced into the abdominal cavity, and the defect was repaired using non-absorbable sutures reinforced with prosthetic mesh. The postoperative course was uneventful, and the patient recovered without complications. This case highlights the importance of considering Morgagni hernia in the differential diagnosis of elderly patients presenting with unexplained gastrointestinal symptoms and right cardiophrenic angle abnormalities on chest imaging. Early diagnosis with computed tomography and timely surgical intervention can prevent serious complications and achieve excellent outcomes. Laparoscopic mesh repair remains a safe and effective treatment option for adult Morgagni hernias.

KEYWORDS: Morgagni hernia, diaphragmatic hernia, adult congenital diaphragmatic hernia, laparoscopic repair, meshplasty, intrathoracic colon, elderly patient, case report.

INTRODUCTION

Morgagni hernia is a rare congenital diaphragmatic hernia resulting from a defect in the anterior retrosternal portion of the diaphragm and accounts for only 2–5% of all congenital diaphragmatic hernias. Although it is a congenital anomaly, most cases are diagnosed during infancy or childhood, while presentation in adulthood is uncommon and diagnosis in elderly individuals is particularly rare.

Adult patients often present with nonspecific respiratory or gastrointestinal symptoms such as abdominal pain, postprandial fullness, nausea, vomiting, chest discomfort, or dyspnea, leading to delayed diagnosis. Chest radiography may reveal a right cardiophrenic mass, whereas computed tomography (CT) remains the gold standard for confirming the diagnosis and identifying herniated abdominal contents.

We report a rare case of a symptomatic right-sided Morgagni hernia in a 64-year-old female presenting with abdominal pain, abdominal fullness, and early satiety. Imaging demonstrated herniation of the transverse colon and omentum into the right hemithorax through an anterior diaphragmatic defect. The patient was successfully managed with laparoscopic reduction of contents and mesh repair of the diaphragmatic defect. This case highlights the importance of considering Morgagni hernia in the differential diagnosis of elderly patients presenting with unexplained gastrointestinal symptoms and a right cardiophrenic opacity on chest imaging.

CASE PRESENTATION

A 64-year-old woman presented to the General Surgery department with a one-month history of progressively worsening abdominal pain, abdominal fullness, early satiety, reduced oral intake, generalized weakness, and easy fatigability. The symptoms were insidious in onset and gradually progressive. She denied any history of vomiting, constipation, obstipation, chronic cough, dyspnea, chest pain, fever, significant weight loss, or previous thoracoabdominal trauma. Her medical history was significant for type 2 diabetes mellitus of 10 years duration, systemic hypertension for 20 years, and hypothyroidism, all of which were being managed with regular medications.

On admission, the patient was conscious, alert, and hemodynamically stable. Her blood pressure was 130/80 mmHg, pulse rate was 80 beats/minute, oxygen saturation was 97% on room air, and body temperature was 98°F. General physical examination was unremarkable. Abdominal examination revealed a soft, non-distended abdomen without tenderness, guarding, rigidity, palpable masses, or organomegaly. Cardiovascular and respiratory examinations did not demonstrate any significant abnormality.

Routine laboratory investigations demonstrated mild microcytic hypochromic anemia with a hemoglobin level of 10.5 g/dL, hematocrit of 35.4%, mean corpuscular volume of 65 fL, mean corpuscular hemoglobin of 19.4 pg, mean corpuscular hemoglobin concentration of 29.7%, and red cell distribution width of 16.5%. The total leukocyte count was 4,890 cells/mm³ and platelet count was 265,000/mm³. Erythrocyte sedimentation rate was elevated at 35 mm/hour. Renal function parameters were within normal limits, with a blood urea level of 16 mg/dL and serum creatinine of 0.8 mg/dL. Liver function tests showed total bilirubin of 0.68 mg/dL, direct bilirubin of 0.12 mg/dL, AST of 15 U/L, ALT of 18 U/L, GGT of 15 U/L, and serum albumin of 4.1 g/dL, all within normal reference ranges. Serum electrolyte analysis demonstrated sodium of 138 mmol/L, potassium of 4.3 mmol/L, chloride of 104 mmol/L, and bicarbonate of 30 mmol/L. Glycemic evaluation revealed fasting blood glucose of 105 mg/dL, postprandial blood glucose of 121 mg/dL, HbA1c of 5.4%, and estimated average glucose of 110 mg/dL, indicating satisfactory glycemic control. Thyroid function testing revealed T3 of 120.3 ng/dL, T4 of 8.0 µg/dL, and an elevated thyroid-stimulating hormone level of 8.75 µIU/mL. Coagulation profile was normal with a prothrombin time of 11.5 seconds, INR of 0.8, and activated partial thromboplastin time of 28 seconds. Serological testing for HIV and hepatitis C virus was non-reactive. Urinalysis was unremarkable.

A chest radiograph obtained during evaluation demonstrated a large well-defined homogeneous opacity in the right cardiophrenic angle with obscuration of the adjacent cardiac border.



Figure: x ray chest

In view of these findings, contrast-enhanced computed tomography (CECT) of the thorax was performed. The scan demonstrated a defect measuring approximately 18.6 × 15.2 mm in the anteromedial aspect of the right hemidiaphragm, through which retroperitoneal fat, omentum, and bowel loops had herniated into the right hemithorax. No evidence of bowel obstruction, strangulation, pleural effusion, or pulmonary parenchymal pathology was identified. The radiological findings were consistent with a right-sided Morgagni diaphragmatic hernia.

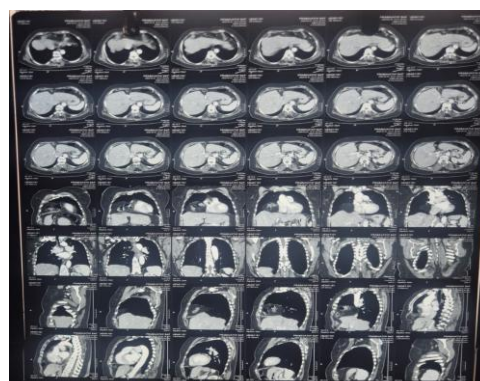
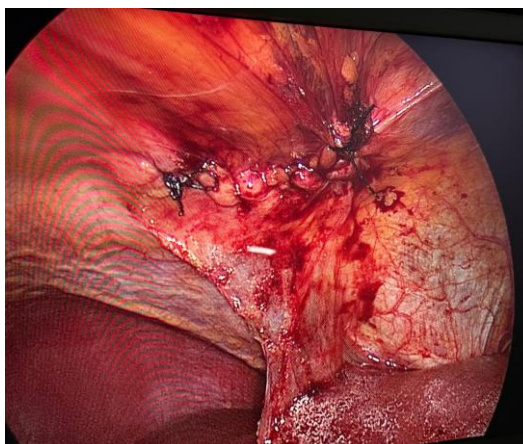
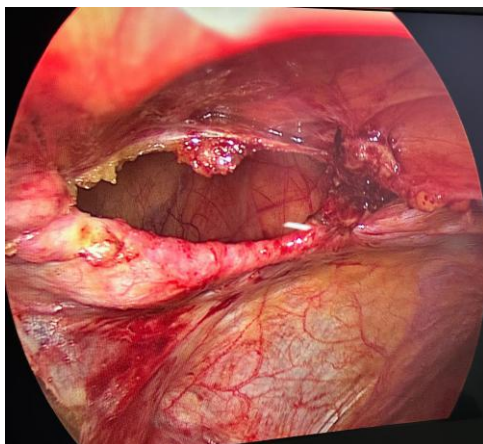
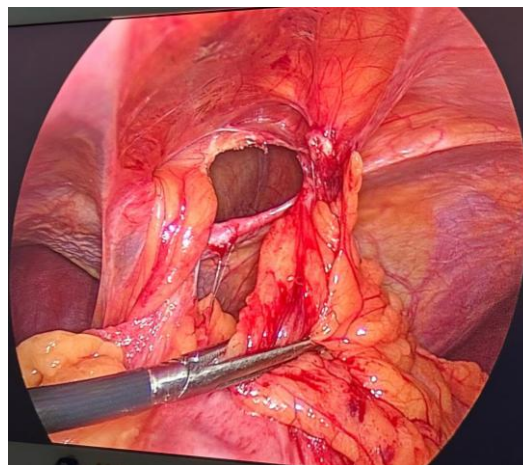
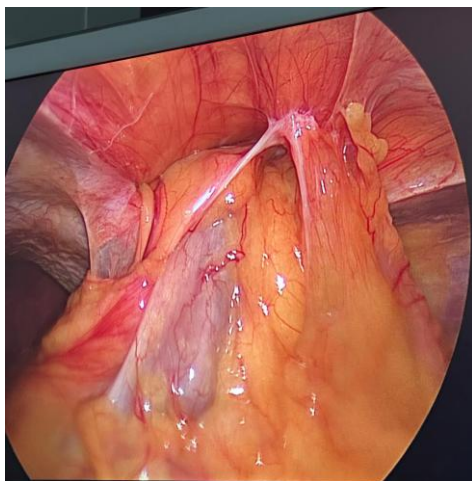




Figure: CECT of thorax

Preoperative cardiac evaluation by transthoracic echocardiography revealed normal cardiac chamber dimensions and preserved left ventricular systolic function with an ejection fraction of 65%. No regional wall motion abnormalities, intracardiac masses, thrombi, or significant valvular lesions were detected, and the patient was considered fit for surgery.

Following optimization of her comorbid conditions, the patient underwent elective laparoscopic repair of the diaphragmatic hernia under general anesthesia. Intraoperatively, a large anterior right-sided diaphragmatic defect measuring approximately 8×6 cm was identified in the foramen of Morgagni. Herniation of the transverse colon and greater omentum into the thoracic cavity was noted. The herniated contents were viable and were carefully reduced into the abdominal cavity without difficulty. No evidence of bowel ischemia, strangulation, perforation, or adhesions was encountered. The diaphragmatic defect was primarily closed using non-absorbable interrupted sutures and reinforced with a 15×15 cm prosthetic mesh, which was secured in position. Hemostasis was confirmed and a drain was placed before closure.



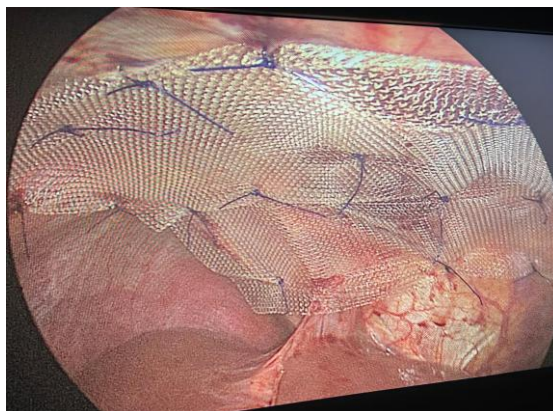


Figure: Intra OP Pictures

The postoperative period was uneventful. The patient demonstrated satisfactory recovery with gradual resumption of oral intake and mobilization. No respiratory complications, wound-related complications, or recurrence-related symptoms were observed during hospitalization. She was discharged in stable condition with advice for regular follow-up.

Final Diagnosis: Adult right-sided Morgagni diaphragmatic hernia with intrathoracic herniation of the transverse colon and greater omentum, successfully managed by laparoscopic reduction and mesh repair.

DISCUSSION:

Morgagni hernia is an uncommon congenital diaphragmatic hernia resulting from failure of fusion of the septum transversum with the costal arches, leading to a defect in the anterior parasternal region of the diaphragm. It accounts for approximately 2–5% of all congenital diaphragmatic hernias and is typically diagnosed during infancy or childhood. Adult presentation is uncommon, and diagnosis in elderly individuals is particularly rare because many patients remain asymptomatic for decades before developing symptoms secondary to progressive herniation of abdominal contents into the thoracic cavity [1].

The present case involved a 64-year-old female who presented with abdominal pain, abdominal fullness, early satiety, fatigue, and generalized weakness. Similar late presentations have been described by Leite et al. [1], who reported a Morgagni hernia in an elderly female patient diagnosed during adulthood and successfully managed laparoscopically. Their report highlighted that congenital diaphragmatic defects may remain clinically silent for several decades before becoming symptomatic. Likewise, Mohamed et al. [2] described an adult patient presenting with atypical symptoms, emphasizing the diagnostic challenge posed by Morgagni hernias in adults. Our patient demonstrated a predominantly gastrointestinal presentation rather than respiratory symptoms, contributing to delayed clinical suspicion.

The clinical manifestations of Morgagni hernia in adults are highly variable and depend on the extent of herniation and the organs involved. Patients may present with abdominal pain, nausea, vomiting, abdominal distension, constipation, postprandial discomfort, dyspnea, recurrent respiratory infections, or chest pain. In some cases, the diagnosis is made incidentally during imaging performed for unrelated conditions [3,4]. In the present case, abdominal fullness and inability to consume adequate meals due to early satiety were the predominant complaints. These symptoms were likely related to intrathoracic displacement of abdominal viscera and mechanical compromise of normal gastrointestinal function. Similar gastrointestinal manifestations have been reported by Kuikel et al. [4], who described an adult Morgagni hernia presenting with nonspecific abdominal symptoms.

An important characteristic of Morgagni hernias is their predilection for the right side of the diaphragm. The protective effect of the pericardial attachment on the left side and embryological factors contribute to the predominance of right-sided defects. Our patient also demonstrated a right-sided diaphragmatic defect. Zaidi et al. [5] reported a right-sided diaphragmatic hernia detected incidentally in an adult patient, further supporting the observation that right-sided lesions constitute the majority of adult presentations. Similarly, Rajkumar et al. [6] noted that most adult Morgagni hernias are identified on the right side and often contain omentum, colon, stomach, or small bowel.

Radiological imaging plays a pivotal role in establishing the diagnosis. Chest radiography is frequently the first investigation that raises suspicion, although findings may be nonspecific and occasionally mimic mediastinal masses, pleuropericardial cysts, pericardial fat pads, or pulmonary lesions. In our patient, chest radiography demonstrated a large opacity in the right cardiophrenic angle, prompting further evaluation. Computed tomography subsequently revealed a defect in the anteromedial aspect of the right hemidiaphragm with herniation of retroperitoneal fat, omentum, and bowel loops into the thoracic cavity. These findings were

diagnostic of a Morgagni hernia. Rajkumar et al. [6] similarly emphasized the value of computed tomography in defining the location of the defect, identifying herniated contents, and facilitating surgical planning. Although Morgagni hernias may remain asymptomatic for prolonged periods, surgical repair is generally recommended once the diagnosis is established because of the potential risk of incarceration, intestinal obstruction, volvulus, strangulation, and respiratory compromise. Mittal et al. [3] reported acute obstructive presentations of congenital diaphragmatic hernias in adults requiring urgent surgical intervention, highlighting the importance of timely management. The World Society of Emergency Surgery position paper published by Giuffrida et al. [7] further emphasized early operative treatment to prevent potentially life-threatening complications associated with diaphragmatic hernias.

Historically, Morgagni hernias were repaired through open laparotomy or thoracotomy. However, advances in minimally invasive surgery have shifted management toward laparoscopic repair, which offers superior visualization, reduced postoperative pain, shorter hospital stay, earlier mobilization, and improved cosmetic outcomes. Predescu et al. [8] reported favorable outcomes following minimally invasive repair of rare diaphragmatic hernias and emphasized its safety and effectiveness in experienced centers. In the present case, laparoscopic repair was selected because of the patient's stable clinical status and absence of bowel compromise. The intraoperative findings in our patient were particularly noteworthy. A large anterior diaphragmatic defect measuring approximately 8×6 cm was identified, containing the transverse colon and greater omentum within the thoracic cavity. The herniated viscera were viable and could be reduced without difficulty. Mardani et al. [9], in their retrospective analysis of adult Morgagni hernias, reported that the colon and omentum are among the most frequently herniated structures. Our findings therefore align with the commonly reported anatomical contents while emphasizing the unusual occurrence of significant herniation in an elderly patient.

Another important consideration is the method of defect closure. Small defects may be repaired primarily, whereas larger defects frequently require prosthetic reinforcement to reduce tension and minimize recurrence. In the present case, the defect was closed with non-absorbable sutures and reinforced using a prosthetic mesh. Silva et al. [10] similarly reported successful management of an adult Morgagni hernia using mesh reinforcement following reduction of herniated contents. Mesh repair is particularly advantageous in large defects where primary closure alone may be associated with increased recurrence risk.

Several features make the present case clinically significant. First, the diagnosis was established in an elderly patient at 64 years of age, despite Morgagni hernia being a congenital condition. Second, the patient presented predominantly with gastrointestinal manifestations rather than respiratory symptoms, demonstrating the variable clinical spectrum of the disease. Third, imaging revealed herniation of the transverse colon and greater omentum into the thoracic cavity through a right-sided anterior diaphragmatic defect. Finally, the patient underwent successful laparoscopic mesh repair with an uneventful postoperative recovery, supporting the growing evidence favoring minimally invasive management in appropriately selected patients.

This case reinforces the importance of maintaining a high index of suspicion for diaphragmatic hernias in elderly patients presenting with unexplained gastrointestinal symptoms and a right cardiophrenic opacity on chest imaging. Early diagnosis through cross-sectional imaging and timely surgical intervention can prevent serious complications and provide excellent clinical outcomes.

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