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# **Morgagni hernia presenting with unexplained hypotension and dyspnea: A case report on successful open surgical repair**

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## **Abstract**

**Objective:** Morgagni hernias are rare congenital diaphragmatic defects, representing a small subset of all diaphragmatic hernias. They are often diagnosed incidentally or through vague, non-specific symptoms in adulthood.

**Case presentation:** We report the case of a 75-year-old female who presented with hypotension, generalized weakness, and dyspnea. Thoracoabdominal computed tomography (CT) revealed a right-sided Morgagni hernia. She underwent open surgical repair with reduction of the herniated contents and placement of a dual mesh to reinforce the diaphragmatic defect. Her postoperative course was uneventful, and the hypotension resolved completely following surgery.

**Conclusion:** This case highlights the importance of including diaphragmatic hernia in the differential diagnosis of unexplained hypotension and dyspnea in elderly patients. It also supports the effectiveness of mesh-reinforced open surgical repair in appropriately selected cases.

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## Introduction

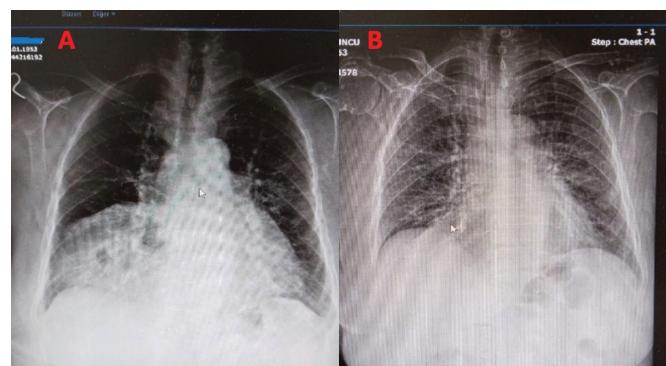
Morgagni hernia, first described in 1769 by Giovanni Battista Morgagni, is a rare congenital diaphragmatic defect located in the anterior mediastinum. It results from herniation of abdominal contents through the foramen of Morgagni, a retrosternal anatomical defect in the anterior diaphragm (1). This type of hernia accounts for only 2–4% of all congenital diaphragmatic hernias, and its etiology remains largely unknown (2).

The herniated contents most commonly include the omentum, followed by the colon and small intestine. In left-sided Morgagni hernias, the stomach is more frequently involved. Although typically diagnosed in infancy or childhood, Morgagni hernias can remain asymptomatic and undetected until adulthood, where they are often discovered incidentally during imaging performed for unrelated symptoms (3,4). Clinical presentation in adults is variable and may include non-specific gastrointestinal or respiratory symptoms such as abdominal discomfort, nausea, dyspnea, or chest pain. In rare cases, complications such as bowel obstruction, strangulation, or cardiopulmonary compromise may develop, necessitating urgent surgical intervention (5, 6).

This report presents the case of a 75-year-old female with a symptomatic Morgagni hernia diagnosed by computed tomography (CT) and successfully treated with open surgical repair using a dual mesh. The case also highlights the importance of vigilant postoperative monitoring in elderly patients with comorbidities, due to the risk of cardiac arrhythmias.

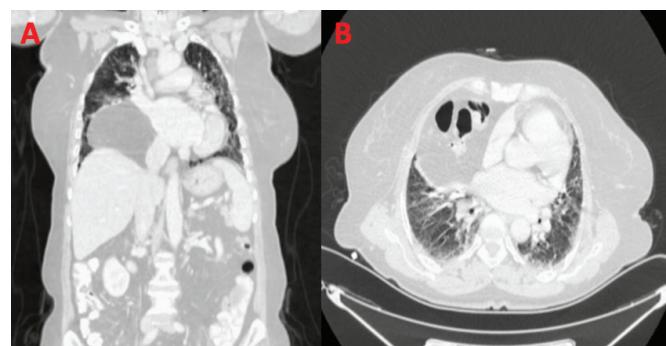
## Case Presentation

A 75-year-old female patient with a history of chronic obstructive pulmonary disease (COPD) initially presented to a local pulmonology outpatient clinic with complaints of progressive dyspnea and generalized fatigue. A chest X-ray obtained during the evaluation revealed elevation of the right hemidiaphragm and a homogeneous opacity in the right lower lung field (Figure 1A), prompting referral to our general surgery outpatient clinic for further investigation.

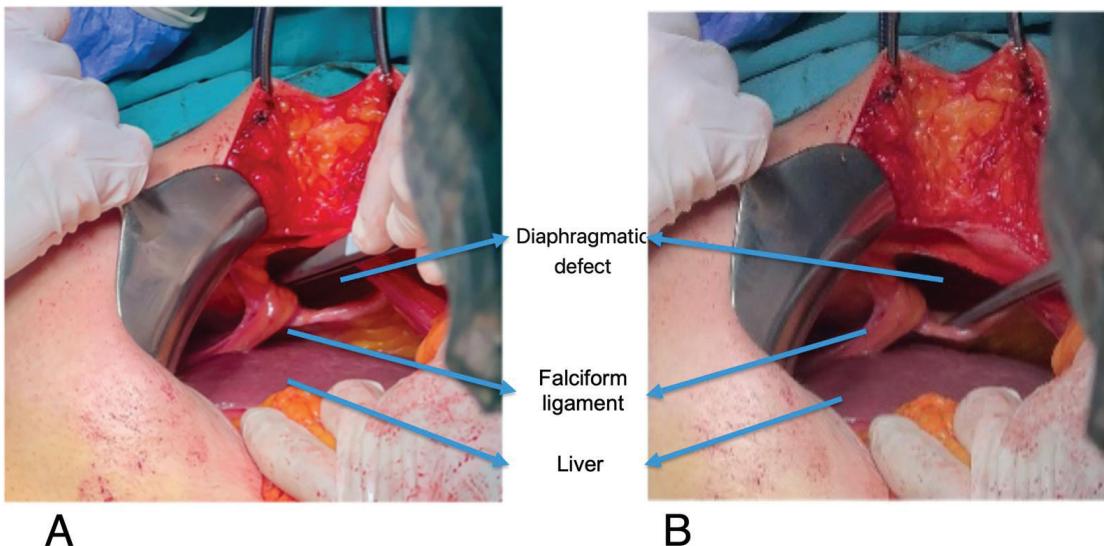


**Figure 1: A:** Preoperative chest X-ray revealing a homogeneous opacity in the right lower lung field. **B:** Postoperative chest X-ray showing resolution of the opacity and re-expansion of the right lung.

At the time of presentation, the patient's oxygen saturation on room air was 88%, and her blood pressure was measured at 80/50 mmHg. As no immediate reversible cause was identified, the patient was hospitalized for further diagnostic evaluation and differential diagnosis. On physical examination, there were no signs of hypovolemia, and despite intravenous isotonic fluid administration at a rate of 70 cc/hour, the hypotension persisted. Her mean arterial pressure remained below 60 mmHg throughout the initial monitoring period. A thoracoabdominal CT scan was performed to further investigate the cause. Pulmonary embolism was excluded. CT imaging revealed a right-sided Morgagni hernia, characterized by herniation of the transverse colon, omentum, and falciform ligament into the thoracic cavity through an anterior diaphragmatic defect (Figure 2A and 2B). Mild collapse of the adjacent right lower lung was also observed, likely secondary to compressive atelectasis due to the herniated abdominal contents.



**Figure 2: A:** Coronal CT view showing a 5 cm Morgagni hernia sac protruding into the thoracic cavity. **B:** Axial thoracoabdominal CT demonstrating herniation of the omentum, transverse colon, and falciform ligament through a right-sided anterior diaphragmatic defect.



**Figure 3: A and B:** Intraoperative view of the diaphragmatic defect after partial reduction of hernia contents, showing the extent of the defect prior to mesh placement.

A cardiology consultation ruled out heart failure. There were no findings suggestive of hemorrhagic or septic shock. Since no alternative cause of hypotension was identified and given the potential for decreased preload secondary to mechanical compression from the herniated viscera, surgical repair of the Morgagni hernia was planned.

Through an upper midline laparotomy, the herniated abdominal contents were partially reduced into the peritoneal cavity. Intraoperative inspection revealed that the hernia sac contained the transverse colon and omentum. The diaphragmatic defect, clearly visualized after partial reduction, is shown in Figure 3A and 3B. The hernial sac was not excised. A dual mesh was used to reinforce the defect and was secured with non-absorbable sutures. The operation was completed uneventfully and lasted 45 minutes.

The patient's hypotension resolved immediately after the surgical repair. Postoperatively, her hemodynamic parameters remained stable, and no complications were observed during the initial recovery phase. A follow-up chest X-ray obtained on postoperative day 2 confirmed the resolution of the right lower lung opacity and re-expansion of the pulmonary field (Figure 1B), consistent with successful reduction of the herniated contents and relief of compressive atelectasis.

On postoperative day 4, the patient experienced a single episode of atrial fibrillation with rapid ventricular response. A cardiology consultation was requested. Medical management with digoxin and oral beta-blocker therapy (metoprolol) was initiated. Sinus rhythm was successfully restored within 24 hours, and no recurrence of arrhythmia was observed during the remainder of the hospitalization. The patient was discharged on postoperative day 6 in stable condition, with a recommendation for continued cardiology follow-up. Oral anticoagulation and antiarrhythmic therapy were prescribed at discharge to reduce the risk of thromboembolic events and prevent recurrence of atrial fibrillation. At three-month follow-up, she remained asymptomatic, with stable hemodynamic parameters and no recurrence of arrhythmia or gastrointestinal complaints.

## Discussion

Morgagni hernia in adults may present with non-specific symptoms such as chest pain, dyspnea, or gastrointestinal discomfort. In rare instances, it may lead to hemodynamic instability. There are limited reports in the literature describing compression of major vascular structures such as the inferior vena cava, resulting in decreased preload and hypotension in adult patients (7,8).

Computed tomography is the most sensitive and specific imaging modality, offering detailed visualization of the hernia contents and diaphragmatic defect size (9). In our case, the hernia included the transverse colon, omentum, and falciform ligament, passing through a 5 cm anterior diaphragmatic defect.

Surgical repair is advised in all patients due to the risk of complications such as obstruction or strangulation. Both laparoscopic and open approaches are well described. While laparoscopy offers shorter hospital stay and reduced postoperative pain, open surgery allows better exposure, easier handling of adhesions, and clear identification of bilateral defects if present. The open approach is especially appropriate in elderly patients, those with significant comorbidities, or when hemodynamic instability is present (10-12). In this case, the presence of COPD and hypotension guided the decision for open repair.

A dual mesh was used to reinforce the defect and prevent adhesion formation. Although there is no consensus on a specific defect size for mesh use, it is generally recommended when tissue approximation is not possible without tension (10-12). On the other hand, some case series report successful primary closure without mesh and no recurrence (13). Therefore, the decision for mesh placement should be individualized.

Although sac excision in Morgagni hernia repair may offer potential benefits such as reducing postoperative fluid collection and lowering the risk of recurrence, it is generally avoided due to the risk of massive pneumomediastinum, which is a serious and feared complication. As a result, most surgeons prefer to perform the repair without removing the hernia sac (14).

Postoperative atrial fibrillation is a common complication following noncardiac thoracic surgery and is associated with increased morbidity and prolonged hospitalization (15). This case highlights the importance of close cardiac monitoring in elderly patients with comorbidities. Prompt medical therapy in our patient resulted in successful rhythm control without recurrence.

## Conclusions

Morgagni hernia is a rare and often underdiagnosed condition in adults. This case demonstrates that even

in elderly patients presenting with atypical symptoms such as hypotension and dyspnea, timely diagnosis and surgical intervention can lead to successful outcomes. Open surgical repair with mesh reinforcement remains a safe and effective option, particularly in patients with comorbidities. Additionally, this case highlights the importance of postoperative cardiac monitoring, as elderly patients may be at increased risk for arrhythmias requiring multidisciplinary management.

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## Contributions

Research concept and design: OA

Data analysis and interpretation: EYK

Collection and/or assembly of data: MOP, EYK

Writing the article: TK

Critical revision of the article: OA

Final approval of the article: OA, EYK, MOP, AKP, TK

All authors read and approved the final version of the manuscript.

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