

Large Bowel Obstruction Secondary to an Incarcerated Morgagni Hernia

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ABSTRACT

Morgagni hernia in adults is a rare entity, accounting for approximately 2% of congenital diaphragmatic hernias. It may be asymptomatic; when clinical manifestations occur, respiratory symptoms are the most common, although acute complications may also develop. Diagnosis is often incidental, with computed tomography considered the gold standard. Surgical repair is recommended, preferably via a minimally invasive approach and on an elective basis, both in symptomatic patients and in those with incidental findings.

We report the case of a male patient presenting with large bowel obstruction secondary to an incarcerated Morgagni hernia. An exploratory laparotomy was performed, with reduction of the herniated colon and primary repair of the defect. The postoperative course was uneventful, with no evidence of recurrence at 12 months of follow-up.

Keywords: large bowel obstruction; Morgagni hernia; incarcerated hernia.

INTRODUCTION

Morgagni hernia is a rare form of congenital diaphragmatic hernia, with an estimated incidence of 0.5 per 1,000 live births. It remains asymptomatic in up to 30% of cases; however, it may occasionally present with potentially life-threatening complications.¹

It results from a congenital diaphragmatic defect involving the anterior retrosternal portion of the septum transversum. Morgagni hernia accounts for approximately 2% of all congenital diaphragmatic hernias.² The right side is most commonly affected (up to 90% of cases), corresponding to the variant originally described by Giovanni Morgagni in 1761. Bilateral forms account for approximately 8% of cases, whereas left-sided hernias are exceptional (approximately 2%), probably because of the protective effect of the pericardial sac. At present, computed tomography (CT) is considered the diagnostic gold standard.

The aim of this report is to describe a case whose distinctive feature was the unusual presentation of

this entity as bowel obstruction secondary to colonic incarceration.

CASE

A 75-year-old man with ischemic heart disease presented with a 48-hour history of complete bowel obstruction associated with abdominal distension and dyspnea at rest. On physical examination, he had asymmetric abdominal distension, more pronounced in the right abdomen, with diffuse tympany and hyperactive bowel sounds.

Chest radiography demonstrated a heterogeneous right lower hemithorax opacity (Fig. 1). CT scan revealed a closed-loop colonic obstruction with a cecum diameter of 12 cm secondary to a Morgagni hernia, with incarceration of the transverse colon (Fig. 2).

Given the marked abdominal and colonic distension, a laparotomy was performed. Intraoperatively, the diagnosis was confirmed, revealing herniation of the right transverse colon and greater omentum, with no signs of ischemia or perforation.

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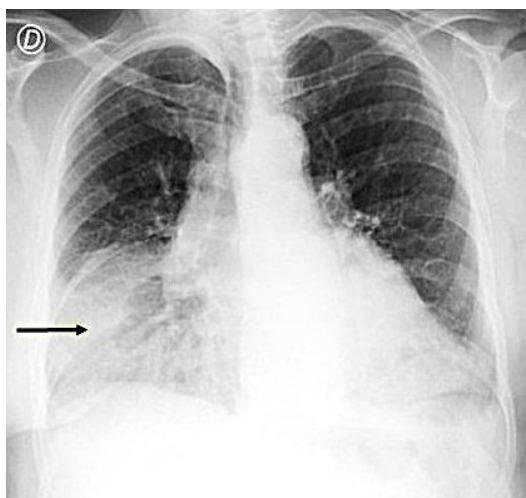


Figure 1. Frontal chest radiograph showing a heterogeneous paracardiac opacity in the lower right hemithorax (arrow).

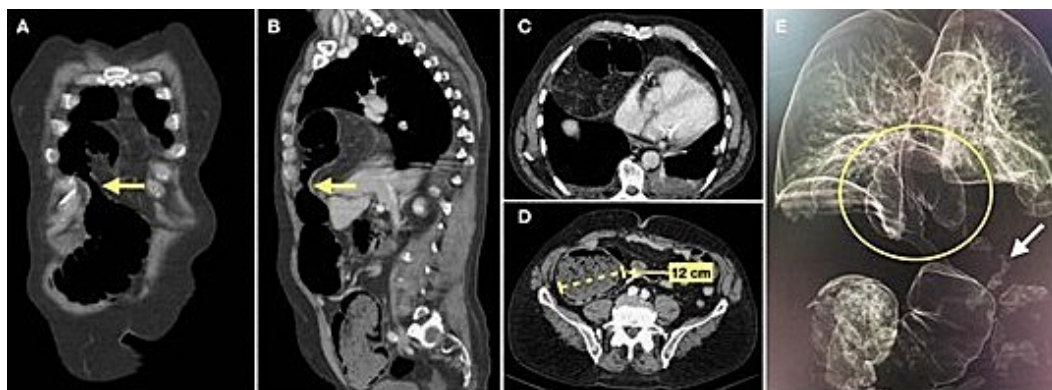


Figure 2. CT scan. Coronal (A) and sagittal (B) images demonstrate the site of incarceration (arrow). Axial images (C and D) show colonic dilation with a maximum cecum diameter of 12 cm. Three-dimensional reconstruction (E) depicts the point of incarceration (circle) and the absence of distal colonic distension (arrow).

The herniated contents were reduced, followed by near-complete excision of the hernia sac (Fig. 3A, B). The diaphragmatic defect, measuring approximately 6 cm in diameter, was then repaired with a running 1-0 polypropylene suture, leaving a portion of the sac in situ (Fig. 3C).

The postoperative course was uneventful, and the patient was discharged on postoperative day 3. At 1-year follow-up, chest imaging demonstrated no evidence of hernia recurrence (Fig. 4).

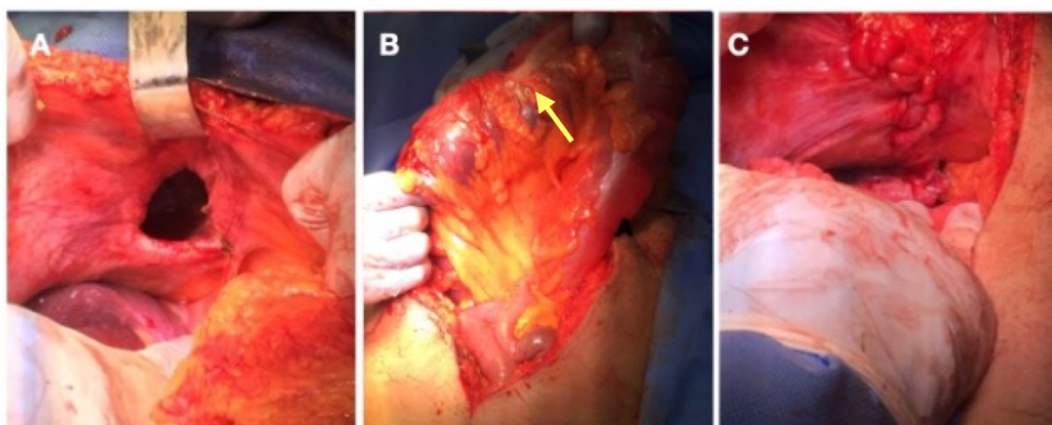


Figure 3. Intraoperative findings. A. Diaphragmatic defect consistent with a Morgagni hernia. B. Herniated transverse colon with identification of the site of incarceration (arrow). C. Repair of the defect with a running non-absorbable suture.



Figure 4. One-year postoperative imaging showing no evidence of hernia recurrence.

DISCUSSION

Morgagni hernia is often incidentally diagnosed on imaging studies such as chest radiography and/or CT.³ On plain radiography, a heterogeneous basal opacity or an air–fluid level may be observed in cases of visceral herniation. The natural history may involve progressive enlargement of the diaphragmatic defect with incorporation of additional abdominal viscera. In decreasing order of frequency, omentum, colon, liver, and stomach have been described.⁴ Clinical presentation is variable, ranging from respiratory to abdominal symptoms, with respiratory manifestations being more common, particularly in the fifth decade of life.

In symptomatic or complicated cases, CT is the diagnostic modality of choice, as it allows accurate identification of herniated contents and assessment of defect size.⁵ Contrast studies may be considered depending on the patient's condition but are generally unnecessary when CT imaging is of adequate quality.

Surgical treatment is generally recommended due to the risk of complications, even in asymptomatic patients.⁶ However, this recommendation remains controversial, particularly in small defects containing only fat or in elderly patients with significant

comorbidities, in whom conservative management may be appropriate. In symptomatic uncomplicated patients, a minimally invasive abdominal approach (laparoscopic or robotic) is preferred,⁷ as it is associated with less parietal trauma compared with open surgery and no significant difference in complication rates.⁸ In the present case, an open laparotomy was performed due to the urgent clinical presentation, advanced age, underlying cardiac disease, and marked colonic distension, all of which increased the anticipated anesthetic and technical complexity.

The thoracic approach is now rarely used. In contrast, the abdominal approach is preferred, particularly in the acute setting, as it allows assessment of bowel viability and exclusion of complications such as ischemia or perforation.

Repair of the diaphragmatic defect should be individualized according to clinical context and available resources. Primary repair without tension may be feasible in small defects, as in the present case. Mesh reinforcement with non-absorbable prosthetic material is an alternative for larger defects; however, its use remains controversial due to reported complications, including fistula formation involving hollow viscera and technical injury during fixation, particularly with tackers.⁹ The use of cyanoacrylate has also been described in selected cases.¹⁰ Composite or coated meshes are additional alternatives.

In the present case, primary repair was appropriate and avoided prolongation of operative time in a high-risk patient. No recurrence was observed at 1-year follow-up.

CONCLUSIONS

Colonic incarceration within a Morgagni hernia represents an uncommon cause of bowel obstruction in adults. Computed tomography is essential for establishing the diagnosis. Surgical repair is uniformly indicated, particularly in complicated cases, and the choice of operative approach should be individualized according to the clinical setting, patient condition, and anticipated technical challenges.

Author Contributions

JC: Conceptualization. Methodology. Research. Data curation. Writing – original draft. Writing – revision and editing. GR: Supervision. Validation. Research. Writing – revision and editing. Final approval of the manuscript.

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