

# Laparoscopic Mesh Repair of Diaphragmatic Morgagni Hernia

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## Abstract:

- Diaphragmatic hernias of Morgagni were first described in 1769 as anatomical defects in the anterior diaphragm that allow herniation of abdominal viscera into the thorax by Giovanni Battista Morgagni, an Italian anatomist and pathologist.
- Patients reported to have previous normal radiographs suggest that these hernias may be acquired through a congenital defect in the diaphragm 4.
- Most hernias of Morgagni are diagnosed late because patients can be asymptomatic or present with vague gastrointestinal and respiratory symptoms and signs.
- USG has been shown to be useful in assessing diaphragmatic hernias but CT is the most sensitive as it gives excellent anatomical detail on the contents of the hernia and its complications such as strangulation
- Once diagnosed, the requirement for surgery is largely dependent upon the presentation
- Repair avoids further complications but it is the timing which is important. Emergency intervention is not always necessary unless there is evidence of strangulation.
- Laparoscopy is an excellent way to confirm diagnosis and to repair non-complicated hernia of Morgagni.
- The hernia sac can be easily viewed through the laparoscope.
- The hernia contents can then be easily reduced once the peritoneum at the perimeter of the defect is incised.
- The sac is usually not removed; as this may result in massive pneumomediastinum with potential respiratory and circulatory complications.

**Keywords:** hernia, Diaphragmatic Morgagni, mesh repair

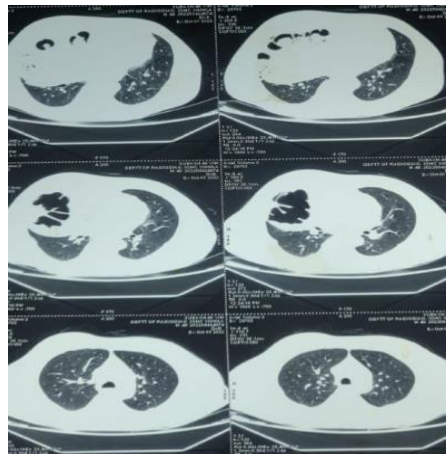
## Introduction

- It is the herniation of abdominal content through the diaphragm into the chest.
- They are classified into congenital or acquired.
- The estimated incidence of congenital diaphragmatic hernia (CDH) is 1 in 2000-5000 live births.
- They are the rarest of CDH1, making up 2-3% of all the diaphragmatic hernia cases .
- The etiology of CDH is unknown, however, 2% of cases have been noted to be familial and another 15% of patients have associated chromosomal abnormalities.
- Presentation may vary from non-specific gastrointestinal symptoms to bowel obstruction and strangulation.<sup>2</sup>

- More than half of patients can be diagnosed incidentally while investigating unrelated problems and most symptomatic cases tend to present acutely.<sup>3</sup>

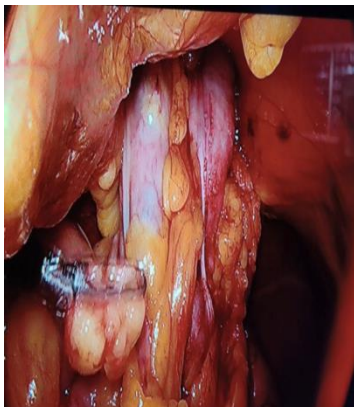
### Case presentation

- 48 year male presented with:
- c/o pain epigastrium on and off for 2 years
- c/o upper abdominal discomfort after intake of meals for 2 months
- History of constipation present for past 2 months
- On examination vitals were stable and systemic examination was within normal limits.
- **On USG abdomen:** Hepatomegaly with fatty change grade 1, supraumbilical hernia, trabeculations in urinary bladder wall.
- **On CECT chest:** Defect in diaphragm on right side( paramedian location) anteriorly of size 4.8 cm x 8.5 cm with herniation of large bowel and omentum into the right thoracic cavity causing displacement of mediastinum towards left side. The hernial bowel loops shows normal enhancement.

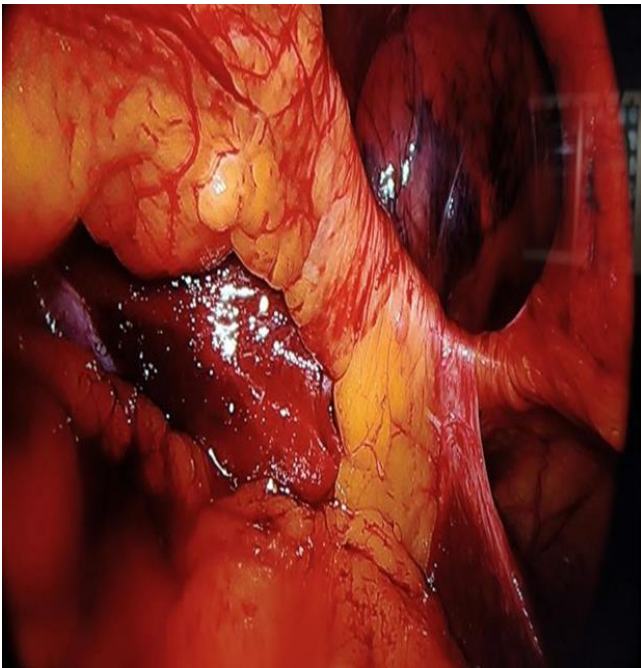


### Intra-Operative Finding

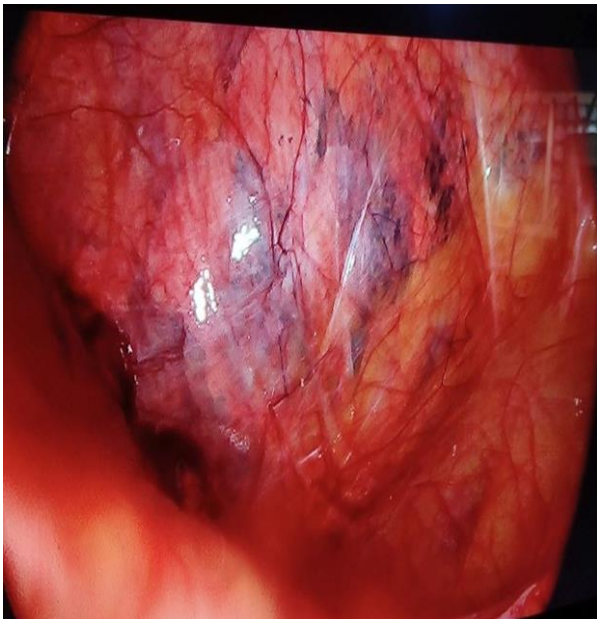
- Defect of 4x7cm identified anteromedially.
- Contents were transverse colon and omentum.
- Contents were reduced



Transverse colon and  
omentum



Diaphragmatic defect



lung with intact  
pleura

### Discussion

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### **Conclusion**

- I would like to highlight that laparoscopic repair is safe, reliable and an excellent way to confirm diagnosis and repair non-complicated hernia of Morgagni.
- Laparoscopic repair should be the first choice in children and adults as well being a useful diagnostic tool in cases of inconclusive imaging.

### **References**

1. Comer TP, Clagett OT. Surgical treatment of hernia of the foramen of Morgagni. J Thorac Cardiovasc Surg. 1966;52:461e468.
2. Harrington S.W. Clinical manifestation and surgical treatment of congenital types of diaphragmatic hernia. Rev Gastroenterol. 18:243
3. Loong TP, Kocher HM. Clinical presentation and operative repair of hernia of Morgagni. Postgrad Med J. 2005;81(951):41e44.
4. Eren S, Ciri F. Diaphragmatic hernia: diagnostic approaches with review of the literature. Eur J Radiol. 2005;54:448e459.