

## Case Report

**Morgagni Hernia and Laparoscopic Repair**

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**ABSTRACT**

Morgagni hernia is very rare and comprises 2.5 - 3% of all the congenital diaphragmatic hernias. We report a case of a 48-year-old lady who presented to us with upper abdominal and chest pain for more than one year. This

was treated successfully by laparoscopic mesh repair. The surgical technique and a short literature review are discussed.

KEYWORDS: laparoscopic mesh repair, parasternal hernia, retrosternal hernia

**INTRODUCTION**

Morgagni - Larrey type hernia occurs through a weakness in the anterior fibres of the diaphragm between its costal and sternal part, in the muscle-free triangular space called the Larrey space. It is also called retrosternal, parasternal, substernal and subcostosternal hernia<sup>[1]</sup>. It was first described by Giovanni Morgagni in 1761. Through this space, pass the superior epigastric vessels, which is usually filled with fat. The pressure difference between the abdomen and the chest accelerate the hernia process. It is observed in, one in 4800 live births<sup>[2]</sup>.

The hernia may be bilateral but it is far more common on the right side since the strong attachment of pericardium to diaphragm renders its occurrence in the left side, extremely rare<sup>[3]</sup>. Although the Morgagni duct is existent since or even before birth, a large number of hernias appear later in adult or old age. The condition is often asymptomatic but it is often diagnosed incidentally during the investigation of other conditions<sup>[4]</sup>. When symptomatic, a wide range of symptoms may emerge depending on the age of the patient and the contents of the sac. The patient may suffer from upper abdominal pain, bloating, discomfort after meal, vomiting, cough, dyspnea, palpitation and retrosternal pressure. Although uncommon, the possibility of incarceration and strangulation of the viscera remains a challenge. Diagnosis needs a high index of suspicion as misdiagnosis and non-correction may end in a catastrophe<sup>[5]</sup>.

**CASE REPORT**

A 48-year-old woman presented with one year history of severe intermittent abdominal pain

associated with right chest pain, nausea and vomiting. The patient also had constipation. Seven months prior to this admission there was a severe episode of pain for which she was admitted to another hospital and diagnosed as gastritis based on endoscopy. Between the two admissions, there were some episodes of pain of reduced intensity and were treated conservatively.

Clinical Examination revealed epigastric tenderness and decreased air entry at the base of the right lung. Her Hb was 7.5 gm/dl and the other hematological and biochemical parameters were within normal limits.

CXR revealed a big shadow in the right basal region with a radiotranslucent area in its center. A possibility of either a diaphragmatic hernia or a lung cyst was considered by the radiologist (Fig. 1). Ultrasound abdomen was unremarkable. A CT scan showed omentum and large bowel in a hernia through the foramen of Morgagni (Fig. 2).

We proceeded to repair the hernia laparoscopically. Surgery was performed through three laparoscopic ports; 2 x 10 mm and 1 x 5 mm. After pneumoperitoneum, the presence of anterior diaphragmatic hernia containing transverse colon and omentum was confirmed. The colon was reduced, the omentum being adherent to the hernial sac was dissected carefully, but the sac was firmly adherent to pleura. So we decided not to excise it (Fig. 3 & 4).

The defect in the retrosternal space was 5 x 10 cm, transversely oriented. This was closed using a Vicryl mesh which was fixed to the edges using staplers (tuckers) (Fig. 5). The operating time was 75 minutes. The patient made an uneventful

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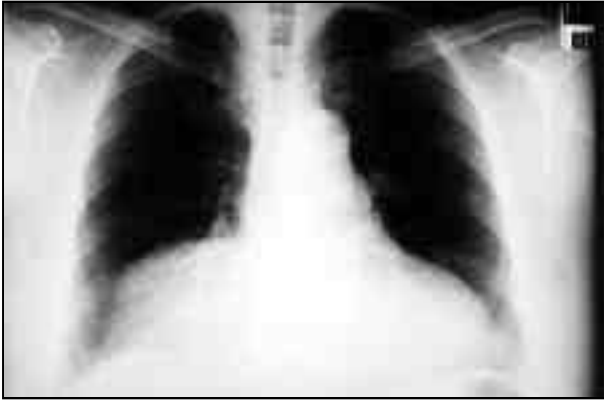


Fig. 1: X-ray Chest showing a large complex shadow in the right hemithorax

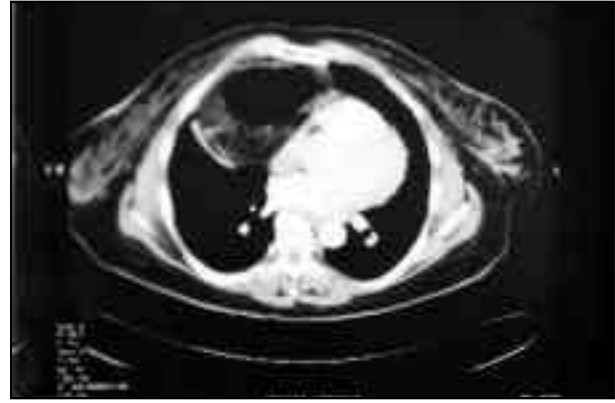


Fig. 2: CT scan showing omentum and transverse colon in the thoracic cavity



Fig. 3 & 4: Intraoperative pictures showing the herniated omentum and the large defect in the diaphragm



Fig. 5: The defect is repaired using a Vicryl mesh

recovery and was discharged from the hospital three days after the procedure. She was seen in the OPD two weeks, three months and one year afterwards; she remained well, free of symptoms and there were no signs of recurrence.

## DISCUSSION

The diagnosis of the Morgagni hernia may be difficult and patients often undergo extensive investigations. However, it may be discovered incidentally during routine investigations for other problems. The diagnosis is usually apparent on a

chest radiograph and can be confirmed with CT or MRI. Barium enema or meal is rarely required as the sensitivity of CT and MRI approaches 100%<sup>[6]</sup>.

Surgical correction forms the mainstay of treatment and elective surgery is advised even when the hernia is asymptomatic to avoid strangulation, particularly in children. The strangulation, although rare, may yet be fatal<sup>[7]</sup>.

Opinions differ as to the surgical approach for Morgagni hernia repair; whether thoracic or abdominal. Trans-abdominal exploration and reduction of the hernia contents followed by suture closure of the hernia defect is commonly performed. However, laparoscopic repair, first carried out by Kustar *et al*<sup>[8]</sup> in 1992 is considered the procedure of choice. We found no difficulty in repairing our patient's hernia laparoscopically as it was not strangulated.

Some authors advise the excision of the hernia sac so as not to leave an endothelial-lined cavity in the chest. However, this is controversial<sup>[9]</sup>. Others do not recommend this, believing that this may result in massive bleeding and pneumomediastinum with subsequent circulatory and respiratory compromise<sup>[10,11]</sup>. Because it was adherent to the pleura, and anticipating this serious complication, we decided not to excise the hernia sac.

There is still debate regarding the modality of closure of the defect. Some authors report a primary repair in cases of small defects (3 - 4 cm) in the same way as the traditional approach<sup>[4,12]</sup>. In the case of large hernias, primary closure with non-absorbable suture material may be difficult since a simple suture can cut through the muscle as a result of tension. However, the availability of a prosthetic mesh has made it easier to close the larger defects safely with no reported complications. The presence of the liver and stomach normally prevent adhesions of the gut to the mesh.

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