Case Report

Laparoscopic repair of right diaphragmatic hernia - A case report

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Abstract

Morgagni hernias are unusual congenital diaphragmatic hernias. Usually the patients are asymptomatic and are diagnosed incidentally. Surgical treatment is recommended once diagnosed, so as to prevent complications. These hernias were traditionally been repaired by open abdominal or thoracic approach. We present one such case, which was managed by laparoscopic approach. In our case, 60 year old female with dyspnea for one month duration, was admitted and evaluated. Chest X-ray and CT thorax showed large anteromedial defect in the diaphragm. We did laparoscopy and the defect was repaired with a mesh placement. Patient recovered uneventfully and was discharged after a short hospital stay.
Keywords: Morgagni hernia, Diaphragmatic hernia, Laparoscopy.

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INTRODUCTION

Congenital diaphragmatic hernias are rare congenital defects. In this, the abdominal contents herniate into the chest cavity through a defect in the diaphragm.

History Of Diaphragmatic Hernia

Lazarus Riverius first described a diaphragmatic hernia in a 24 year old man at postmortem. Congenital diaphragmatic hernia usually presents in neonatal period with respiratory distress. Late presentations or asymptomatic diaphragmatic hernias are difficult to diagnose and poses serious challenges to the surgeon.

Types

1. Anterolateral hernia
2. Posterolateral or Bochdalek hernia
3. Pars sternalis
4. Anteromedial or Morgagni hernia

Out of these, Morgagni hernias are very rare accounting for 3% of all diaphragmatic hernias.[1] Morgagani's hernia was first described by the Italian anatomist and pathologist Giovanni Morgagni in 1769.[2] Comer et[3] almost often found the hernial sac containing transverse colon, omentum, liver, and, less frequently, small bowel or stomach. In our case, the contents were liver, transverse colon and omentum. Herniation of a solid organ e.g. liver, spleen, is recognized as a risk factor for radiological misdiagnosis of late presenting CDH because the typical appearance of bowel herniation may be sparse or obscured leading to a diagnosis of lung disease instead[4] Traditionally, the preferred operation is the abdominal approach where the contents can be reduced and the defect closed by direct suturing. Some prefer thoracic approach either by open or thoracoscopic techniques.[5] We report a case of successful laparoscopic repair of a Morgagni hernia with a placement of Prolene mesh over the defect. Laparoscopic operations have less post operative pain and early return to physical activity.

CASE REPORT

60 year old female, admitted for evaluation of dyspnea, fatigue and right upper abdominal pain which she was experiencing for 1 month duration. She had no history of any previous abdominal and thoracic trauma or previous surgeries. Her physical examination on admission revealed mild tenderness in the right upper abdomen and

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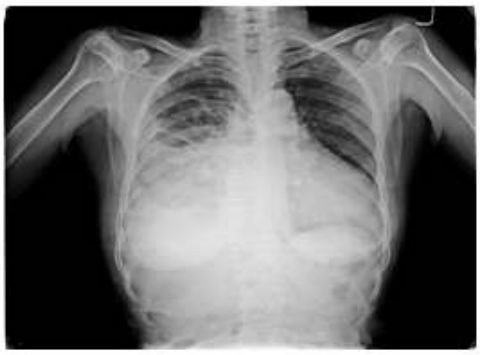
absence of breath sounds in Right hemithorax. Laboratory findings were unremarkable. Chest X-ray taken at the time of admission showed collapsed right lower lobe of the lung and bowel loops in the Right hemithorax. CT thorax and Abdomen was taken and it showed a Right diaphragmatic hernia with herniation of bowel loops into the Right Hemithorax.



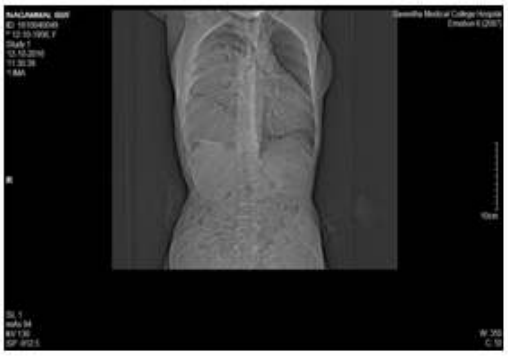


Figure 1: CHEST X-RAY showing collapsed Right base with bowel loops in the Right hemidiaphragm
Figure 2: CT thorax showing Right diaphragmatic hernia

After a chest physician and cardiothoracic consult, we planned surgery for the patient since she was dyspneic. Patient underwent elective laparoscopic hernia repair. 10mm Camera port at supraumbilical position and two working 5mm ports at right and left hypochondrium.

Findings: A diaphragmatic defect of size 7x4 cms present in the right side through which large bowel (transverse colon), omentum and left lobe of liver were seen herniating.

Operative Procedure

The contents were reduced meticulously without puncturing the pleura and the defect was primarily closed with 1-0 loop ethilon. A Prolene mesh of size 10x15cms was placed around the defect and fixed with ethilon. Complete hemostasis was achieved and a drain (10 size suction tube) was placed in Morrison's pouch.

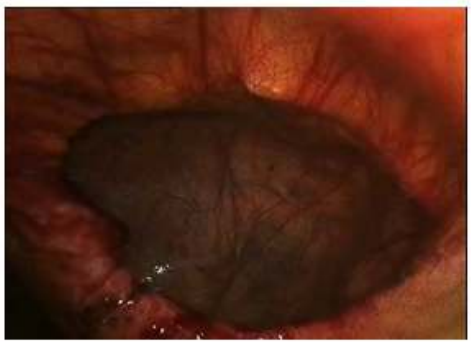


Figure 3: Laparoscopic picture showing the Right diaphragmatic defect
Figure 4: Laparoscopic picture showing mesh fixation

Post operative period was uneventful. Patient maintained saturation and series of Chest X-rays done on POD 0, 1 and 2 showed lung expansion. Drain was nil and was removed on 2nd POD. Patient improved symptomatically and port site sutures were removed on POD 7 and discharged. At follow up, she was asymptomatic and her chest X-ray showed expansion of Right base.

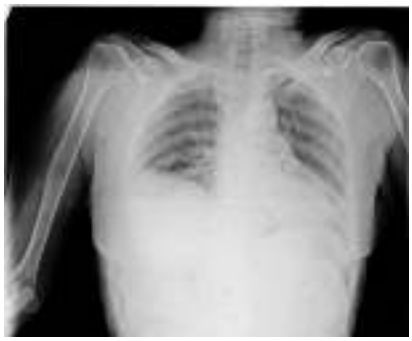


Figure 5: Chest X-ray showing expansion of Right base.

DISCUSSION

Diaphragmatic hernias of Morgagni were first described in 1769. They are the rarest of congenital diaphragmatic hernias, making up 2–3% of cases. They usually present in childhood with respiratory symptomatology.[6] Incidental findings of this condition in adults are less common with only 81 asymptomatic cases reported.[6] Symptomatic adult cases of Morgagni hernias are even rarer with only 12 cases described. The pathophysiology of diaphragmatic hernias is not clear. Patients reported to have previous normal radiographs suggest that these hernias may be acquired through a congenital defect in the diaphragm.[7] The sequence of events is probably herniation of abdominal viscera through a pre-existing diaphragmatic defect. Most hernias of Morgagni are diagnosed late because patients can be asymptomatic or present with vague gastrointestinal and respiratory symptoms and signs.[8] Although physical examination of the chest may reveal an auscultatable bowel sounds or dullness to percussion, the diagnosis is invariably made by radiological means. Chest X-rays provide sufficient evidence for a diagnosis in most cases. CT scan is the most helpful study to differentiate a Morgagni hernia from other mediastinal processes. In our patient, the diagnosis was ascertained by a combination of Chest X-ray and CT. Contrast-enhanced CT is the most useful examination for this diagnosis[9]. Typical findings are fat or soft tissue contour on the upper surface of the diaphragm. Another characteristic of a Morgagni hernia is its anteromedial location. These findings were also present in our patient. Once diagnosed, the requirement for surgery is largely dependent upon the presentation.[10] Repair avoids further complications but it is the timing which is important. Emergency intervention is not always necessary unless there is evidence of strangulation. In these circumstances, it is often better to delineate the anatomy with radiology before proceeding to surgery. Recently, there has been a trend towards laparoscopy which is useful particularly when the diagnosis is unclear.[11] It provides the benefit of an excellent view, minimal tissue trauma with subsequently faster recovery and superior cosmesis. Laparotomy, however, is still the most common approach for repair. In our patient we successfully did a laparoscopic approach for the diaphragmatic hernia. The contents were reduced. Also the defect of size 7x4 cms was closed using 1-0 loop ethilon and a Prolene mesh was placed and fixed through minimal access method.

CONCLUSION

We report a rare case of a right-sided Morgagni hernia in an adult who was treated via laparoscopy. People with a Morgagni hernia may not have any symptoms and it may be detected unexpectedly, or the symptoms may vary from mild to serious complications. Even though rare, this disease should be recognised, examined and treated appropriately to avoid complications.

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