ABSTRACT

A 16 year old female presented with complaints of fever, shortness of breath and upper abdominal pain. Investigation and clinical examination suggestive of empyema thoracis. At thoracotomy Morgagni’s hernia was found. The purpose of this case report is to highlight the incidental diagnosis of Morgagni’s hernia presenting as a thoracic mass in a patient with empyema thoracis. The rationale behind reporting this case is to create educational awareness regarding the rarity of this hernia and its associated presentation with empyema thoracis, both of which were managed surgically during a single procedure.

KEYWORDS: Morgagni’s Hernia, Congenital Diaphragmatic Hernia, Empyema Thoracic, Thoracotomy.

INTRODUCTION

Diaphragmatic hernias may be congenital or acquired. Congenital diaphragmatic hernias can be of two types; Bochdalek and Morgagni’s. The former occurs through a posterior defect in the diaphragm and presents early in life, while the latter is due to a defect in the anterior part of the diaphragm, the foramina Morgagni and presents later in life. In 1969, Morgagni first described the rare anterior, retrosternal diaphragmatic defect that now bears his name. He noted this condition in the autopsy of an Italian stonemason who died from gangrenous colon herniated through an opening beneath the sternocostal junction. Other congenital types include hernia through central tendon of the diaphragm, paraesophageal hernia and peritoneal-pericardial hernia. We are reporting a case of Morgagni’s hernia associated with empyema thoracis which was managed by posterolateral thoracotomy. The rationale behind reporting this case is to create educational awareness regarding the rarity of this hernia and its associated presentation with empyema thoracis, both of which were managed surgically during a single procedure.

CASE REPORT

A 16 year old female presented with complaints of fever, shortness of breath and upper abdominal pain for the last 2-3 months. Her physical examination was normal apart from the chest examination which revealed decreased chest movements and expansion on the right side. There was decreased air entry in the lower right chest. Previously, she had been admitted multiple times to a local hospital with similar complaints and was treated with antibiotics. Ultrasound chest and abdomen was performed which demonstrated fluid collection in the pleural cavity. Chest X-ray PA view showed a homogenous opacity in the right middle and lower zones fig -1. CT scan chest revealed a multiloculated collection of fluid in the pleural cavity and suspected mass in the right hemithorax along the right border of heart fig-2. After preoperative assessment and anesthesia fitness, posterolateral thoracotomy was planned. During surgery, thickened pleura, 1500 ml pus, multiple loculi along with thick fibrous layer over the lung were found. A mass was seen along the right border of heart adherent to the pericardium. Decortication was done, and the mass was dissected from the pericardium. The mass was identified as a hernia sac which contained part of liver and omentum fig -3. All the contents were reduced. The defect was about 5.5 cm in the anterior part of the diaphragm near the sternum. It was repaired with prolene sutures fig -4. A mesh was not used as there was infection in the pleural cavity and the use of mesh is contraindicated in these cases. Post-operative recovery was smooth with satisfactory chest x-ray. The patient is doing alright at 6 months follow up with no evidence of recurrence of hernia.
**DISCUSSION**

Morgagni's hernia is relatively rare, with an incidence of 1 to 6% of all diaphragmatic hernias. Congenital diaphragmatic hernias are overall more common in infants but Morgagni's hernia occurs more frequently in adults as compared to kids. The defect in the diaphragm is generally located on the right side in 90% of the cases. It is common in obese females but in our case the patient was a young girl. Most patients are asymptomatic until adulthood. In these patients, the symptoms are often due to compression of thoracic organs, repeated chest infections or herniation of intra-abdominal viscera which may lead to vomiting, abdominal pain and bleeding. Previous studies have discussed different presentations of Morgagni’s hernia, often in association with another diagnosis. Frederick et al. described a case of morgagni's hernia presenting as acute lung failure. Ryan et al. presented a case of Morgagni's associated with tension pneumothorax secondary to bowel incarceraton and cardiovascular collapse. Fansur et al. published a study about a patient presenting with gastric volvulus associated with Morgagni's hernia. In our case, the patient presented with non-specific abdominal pain and fever due to development of empyema thoracis. The rarity and non-specificity of symptoms make the diagnosis delayed and difficult. Morgagni's hernia can also be misdiagnosed as Chilaiditi syndrome which is symptomatic interposition of the bowel beneath the right hemidiaphragm, is very rare and is usually managed without surgery. It is often diagnosed incidentally during the investigation of other conditions as in our case. CT is the most sensitive as it gives excellent anatomical details of the contents of the hernia and its complications such as obstruction. Omentum, transverse colon and liver are commonly involved, rarely small bowel or stomach may herniate. In our case omentum and part of liver were present in the hernia sac. Morgagni's hernia may cause a number of potential complications like bowel obstruction, strangulation, infection and necrosis. The surgical approaches include transthoracic or transabdominal approach. The transabdominal approach is favoured if the diagnosis is certain because it allows easier reduction of the hernia, especially for bilateral hernias. Other authors advise a transthoracic approach as it provides a wide exposure and easy repair of the hernia sac. We used the transthoracic approach to treat the empyema thoracis and repaired the Morgagni's hernial defect simultaneously. Proline sutures were used due to pleural cavity infection instead of mesh which is the usual standard of practice in such cases. The operative mortality is reported to be 3.9% in children and the recurrence rate after repair is around 1.9%. Newer techniques involve repair of the hernia defect by laparoscopy or thoracoscopy using VATS and application of mesh. We used conventional thoracotomy procedure because our patient had an associated empyema thoracis which was managed simultaneously.

**CONCLUSION**

The purpose of our case report is to highlight the incidental diagnosis of Morgagni's hernia presenting as a thoracic mass in a patient with empyema thoracis. Our aim is to create educational awareness regarding the rarity of this hernia and its associated presentation with empyema thoracis. Even
through Morgagni's hernia can be treated via either transthoracic or transabdominal approach, the transthoracic approach allows simultaneous treatment of empyema thoracis and repair of the hernia defect.

**Contribution of Author:**

Niaz Hussain: Conception and design, critical revision for important intellectual content.

Anum Deedar: Data collection and drafting

Aneeqa Ahsan Zafar: Drafting of the case report

**REFERENCES**