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RESEARCH ARTICLE

A CASE PRESENTATION OF OBSTRUCTED MORGAGNI'S HERNIA IN ADULT AFTER CHEST AND ABDOMINAL TRAUMA

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ABSTRACT

A Morgagni hernia is an exceptionally rare type of congenital diaphragmatic hernia. This only accounts for 2–5% of all hernias in the diaphragm. Morgagni hernia is asymptomatic and usually detected in childhood, however it can be rarely seen in adults with complication. A computed tomography scan aids in the diagnosis of Morgagni hernia. We have presented a case of Morgagni hernia caused by a road accident that was unusual and effectively treated surgically.

Key words:

Congenital Diaphragmatic Hernia,
Diaphragm, Morgagni Hernia.

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INTRODUCTION

Congenital diaphragmatic hernia (CDH) is an anatomical abnormality in the diaphragm that allows abdominal contents to herniate into the thoracic cavity.¹ CDH can be classified into three types: the posterolateral defect [Bochdalek hernia] observed in about 70% of the cases, the anterior defect [Morgagni hernia] seen in approximately 23% and the central defect [hiatus hernia] seen in about 7% of cases.² Morgagni hernia is a congenital abnormality present in the anterior side of the diaphragm between the costal and sternal segments of this muscle.³ It is less common than the other kind of congenital diaphragmatic hernia, accounting for only 2% to 5% of all congenital diaphragmatic hernias.⁴ Due to their lack of symptoms, Morgagni hernias often go undiagnosed until they are accidentally found on an x-ray.⁵ Unlike the Bochdalek hernia, the Morgagni hernia can more frequently be discovered incidentally or as a late-life sign of the respiratory or gastrointestinal system.⁶ Morgagni hernia is frequently seen as a paediatric ailment due to its congenital etiology. On the other hand, there are several case reports and small series of Morgagni hernia in adults. No large retrospective or prospective studies have been conducted on this topic. Morgagni hernia is a rare clinical condition that affects adults and doesn't have a clear prevalence or natural history. Since there are no well-established definitive management techniques, the clinical presentation of this hernia may be confusing. New techniques for repairing these defects have been developed as surgical technology has advanced.³

A new case of obstructed Morgagni's hernia in an adult following chest and abdominal trauma is presented and successfully repaired through surgical means in this case report.

CASE PRESENTATION

A female patient aged 40 years came with history of road accident attaining injury to abdomen and chest. She had minor trauma on left thigh and fracture in left iliac bone (stable fracture). Chest x-ray revealed bowel loops with Ryle's tube inside. Further investigations like CT chest, CT abdomen and Oral contrast CT were performed. CT abdomen revealed left side chest had intestinal segments and Ryle's tube was seen over the left hemi-diaphragm. [Figure 1] Oral contrast CT revealed Ryle's tube and stomach in the chest. [Figure 2] Hence considering all the above findings and diagnosis, the patient was planned for surgical correction.

INTERVENTION

Patient was subjected for left posterior-lateral hemithoracotomy under single lung ventilation. The left hemi-diaphragm appeared normal posteriorly, but the anterior part of the hemi-diaphragm in the paracardiac region was not visible; instead, bowel contents were seen. Bowel contents like omentum, stomach & large intestine were seen. The omentum was attached to the anterior margin of Morgagni's defect.

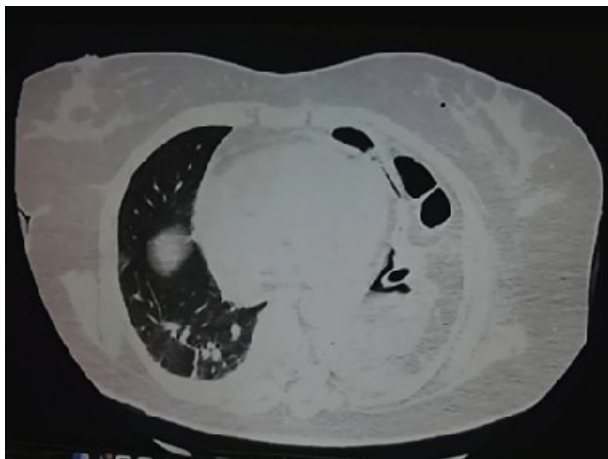


Figure 1. CT scan showing herniation with intestine as content



Figure 2. Oral contrast CT scan showing herniation with stomach as content



Figure 3. Post-operative x-ray with left dome of diaphragm in normal position, no abdominal contents in the chest

All the adhesions were released and all the abdominal contents like stomach with Ryle's tube insitu were pushed back into abdomen. Now the margins of Morgagni's defect visualised except retrosternal and retrochondral area which was deficient. Defect was closed with Trulene polypropylene mesh with using twenty-four size 2-0 pledgetted Trulene polypropylene sutures circumferentially. Anterior margin of Morgagni's defect was deficient and was created by going through Trulene polypropylene sutures thorough periosteum of chondrum and sternum. No residual defect was left. Hemostasis was achieved using Trutie ligating clips. Thoracotomy was closed with size 2-0 Trusynth polyglactin-910 suture in layers. Skin closure was done with size 3-0 Monoglyde poliglecaprone-25 sutures and 2 intercostal drainage tubes (ICD) were inserted.

POST OPERATIVE PERIOD

On post-operative day 2 ICD's removed. Post-operative chest x-ray revealed good lung expansion with no bowel loop in the chest, the left hemi-diaphragm was in normal anatomical position. [figure 3] Postoperatively, chest organs like left lung were well developed, cardia was in normal position. The patient was discharged on the 6th day with the advice of spirometry.

DISCUSSION

Morgagni's hernia is the rarest of the congenital diaphragmatic defects most commonly reported on the right side (90%) due to the presence of extensive pericardial attachments on the left providing extra support, about 2% are reported on the left side and about 8% are reported bilaterally.^{5,7} In our study, Morgagni's hernia was diagnosed in the left side. Females are more likely to experience it than males.

Transverse colon, stomach, omentum, and small intestine are typically found in the hernia sac, however the liver may occasionally protrude into the sac as well.⁷ In our study, hernia sac held the stomach, omentum and large intestine. Most individuals are not diagnosed until later in life because they are usually asymptomatic for a very long time. In almost all cases, Morgagni's hernia is detected with a chest x-ray. (homogenous masses in the right cardio phrenic angle).⁸ It should be noted, however, that plain radiography may be normal, particularly in intermittent herniation. The CT scan is the preferred method of diagnosing Morgagni's hernia.⁷ In our study, physical examination and simple chest x-rays were used to make the diagnosis, which was then validated by computed tomography. All Morgagni hernias should be surgically treated due to the possibility of incarceration; However, the method of repair and the type of repair are still being debated. An abdominal incision or a thoracic incision can be used to access the hernia defect,⁴ as in our patient underwent left thoracic approach. This method is preferred because it allows for more precise view of the defect, allowing for identification of the phrenic nerve and resection of the hernia sac.⁸

CONCLUSION

Morgagni's hernia is a rare condition that can be difficult to diagnose and should be treated as soon as possible in order to avoid any potentially serious complications. Most patients have no symptoms and typically present with complications at a later time. A computed tomography scan can confirm a diagnosis in a suspected case. Early diagnosis and treatment of Morgagni's hernia is key to the successful management of the condition. This case shows why prompt action is required after a possible diagnosis of Morgagni's hernia.

AUTHORS' CONTRIBUTIONS

Each of the authors was involved in preparation of the manuscript: Amith Kiran, Chetan Gotur, Sri Hari Karthik Ram Pingali and Nishith participated in conception, drafting and revising the study. The manuscript has been read and approved by all the authors for submission.

CONSENT

Written informed consent was obtained from the patient for publication of this paper and any accompanying images.

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DECLARATIONS

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