

Adult Morgagni's hernia with intestinal obstruction and strangulation: The need for clinical awareness, early diagnosis and immediate surgical intervention

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Abstract

Diaphragmatic hernias are frequently encountered by radiologists in daily practice. Diaphragmatic hernia in the absence of trauma is very rare in adults. The literature describes less than a dozen such cases of right-sided diaphragmatic hernia [1].

Foramen Morgagni's hernia is one of the rarest of diaphragmatic hernias and seldom present symptomatically. They are usually incidental findings on radiological investigations and rarely presents with features of acute intestinal obstruction with strangulations. Timely diagnosis and management prevents both mortality and morbidity as in obstruction, strangulation or gangrene will result in contamination of thoracic cavity leading to high mortality. To our knowledge, this is the first described adult case presenting with intestinal obstruction and strangulation.

Keywords

morgagni hernia; diaphragmatic hernia; strangulation

Introduction

A Morgagni hernia is herniation of abdominal viscera into the thoracic cavity through a retrosternal diaphragmatic defect. The reported incidence of congenital diaphragmatic hernias is estimated to be 1 in between 2000 to 5000 births. Morgagni hernias comprise 2% of diaphragmatic hernias. Most Morgagni hernias in children are repairable. It is estimated incidence of Morgagni hernias in adults is 5%. They are usually asymptomatic and often found incidentally on chest radiography. Symptoms of these hernias are attributable to the herniated viscera. Morgagni hernias containing bowel may require repair on presentation because of the risk of incarceration [2].

We present an adult Morgagni's hernia case with acute abdominal symptoms secondary to transverse colon herniation and intestinal obstruction as a consequence.

Case Presentation

A formerly healthy, 75 year old lady was admitted to the emergency for absolute constipation and distention of abdomen since four days, sudden onset colicky abdominal pain which was diffuse and moderate in intensity, accompanied with one episodes of bilious vomiting and no associated fever. There

was no history of trauma and previous surgeries. On examination the elderly female was well oriented with space, time and person but looked dehydrated with pulse rate of 100 per minute. Abdomen was distended and tender in right hypochondrium, with no guarding or rebound tenderness. Bowel sounds were exaggerated. Rest of her general physical and systemic examination was unremarkable. On digital rectal examination, the rectum was collapsed and empty. The patient had prolapsed vagina.

Abdominal radiographs in standing and supine position showed multiple gas-filled, abnormally distended small and large bowel loops. Air is identified in the rectum. The findings are likely due to ileus. On chest radiograph showed opacity in right lower lung silhouetting the right heart border and the right hemidiaphragm likely suggesting right middle and lower lobe pneumonia. An abnormal air lucency likely a bowel loop is identified in the right lower lobe possibly representing hiatus hernia. Redemonstration of gas-filled distended bowel loops in the abdomen.

CT scan showed right sided diaphragmatic hernia containing transverse colon, peritoneal fat with fuffiness and fluid in the right hemithorax. It was displacing the mediastinum and heart towards the left side. The transverse colon in this herniated part was strangulated with evidence of proximal dilatation and distal collapse of bowel loops. Diagnosis of acute strangulated intestinal obstruction with diaphragmatic hernia on right side was made and patient was prepared for exploratory laparotomy.

She underwent exploratory laparotomy, reduction of large bowel / repair of diaphragmatic hernia right side. Intraoperative findings included mild clear ascitic fluid, grossly distended small bowel, caecum, ascending colon and transverse colon loop with omentum entrapped in a small 3 x3cm right sided diaphragmatic hernia. Large bowel and omentum were reduced gently and attempts were made to separate it from hernial sac. Fluid was aspirated and hernial sac was resected. Diaphragmatic hernia was repaired and 28 Fr chest tube was placed in pleural cavity. Postoperatively patient remained vitally stable, analgesics, antiemetics and antibiotics were started. Patient was mobilized and physiotherapy was done. Patient was discharged as planned.

Discussion

In 1761, Giovanni Battista Morgagni, an Italian anatomist and pathologist described this hernia as a defect through the triangular space (Lary's space or sternocostal hiatus or foramen of Morgagni) located between the muscle fibers from the xiphisternum and the costal margin fibers that insert on the central tendon. The reported incidence of hernia of Morgagni is 3-4 % of all congenital diaphragmatic hernias [3]. Symptomatic adult cases of Morgagni hernias are even rarer with only 12 cases described [4]. The pathophysiology of diaphragmatic hernias is not clear. Most hernias of Morgagni are diagnosed late because patients can be asymptomatic or present with vague gastrointestinal and respiratory symptoms and signs [5].

These hernias are mostly congenital but can be acquired following trauma or in obese. Embryological failure of development or fusion of muscles of diaphragm can lead to its formation. Frequently seen on right side, may be bilateral and rarely on left side. Association with Down's syndrome, Prader Willi syndrome, Turner syndrome, Ventral septal defects, Tetralogy of Fallot and Congenital abdominal wall defects has been seen with this anteromedial or Morgagni hernia. Contents found in hernia sac are colon, omentum, stomach, liver or small bowel [6]. Differential diagnosis includes

intrathoracic tumour, pneumonia, atelectasis, or pericardial cyst [7].

The diagnosis of Morgagni hernia can be made radiographically. Generally, a mass containing solid areas or fluid levels at the cardiophrenic angle is detected in the retrosternal space by lateral radiography. Contrast enema examinations are also useful, but CT is the best imaging method for demonstrating omental fatty tissue and intestinal air out of their localization without the need for contrast medium [8]. Magnetic resonance imaging is also considered to be a useful noninvasive modality for evaluating lower anterior mediastinal masses demonstrating fat density on CT [9].

Treating morgagni hernias through thoracic approach has reported to be more successful. It is believed that the best way of approaching the herniated sac is by posterolateral thoracotomy in the absence of previous laparotomy, acute abdomen, or bilateral Morgagni hernias. Because the herniation is always into the thoracic cavity, opening the sac, reducing the viscera, and closing the diaphragmatic defect can be safely performed by the thoracic approach. Moreover, procedures that allow for re-expansion of the lung can be performed by drainage of the space resulting from the sac in the thorax [10]. The recurrence rate after surgery for Morgagni hernias is very low and results are excellent. Thus, it should be borne in mind that surgical repair will prevent complications even in asymptomatic cases [11].

Figures

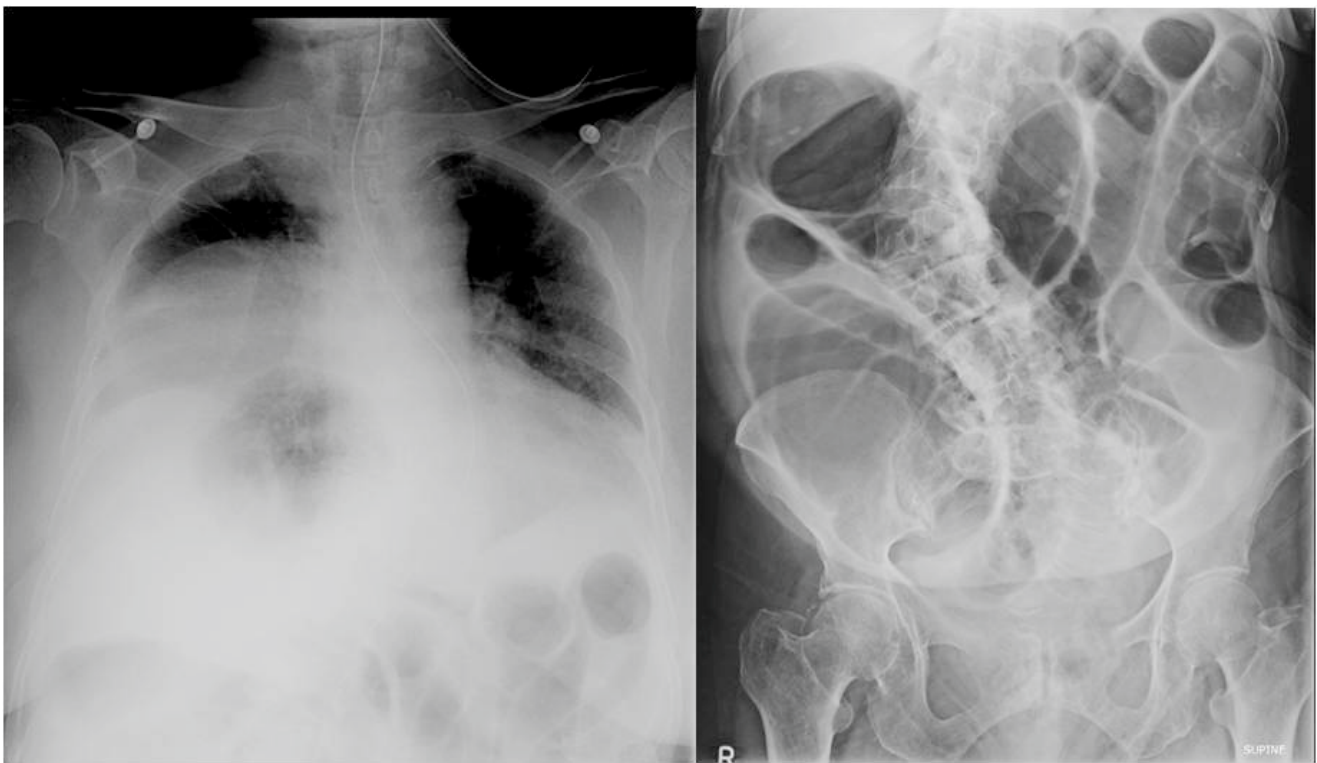


Figure 1: Chest X-Ray showing right paracardiac opacity with air-fluid levels. Abdominal radiograph reveals multiple dilated bowel loops representing obstruction.

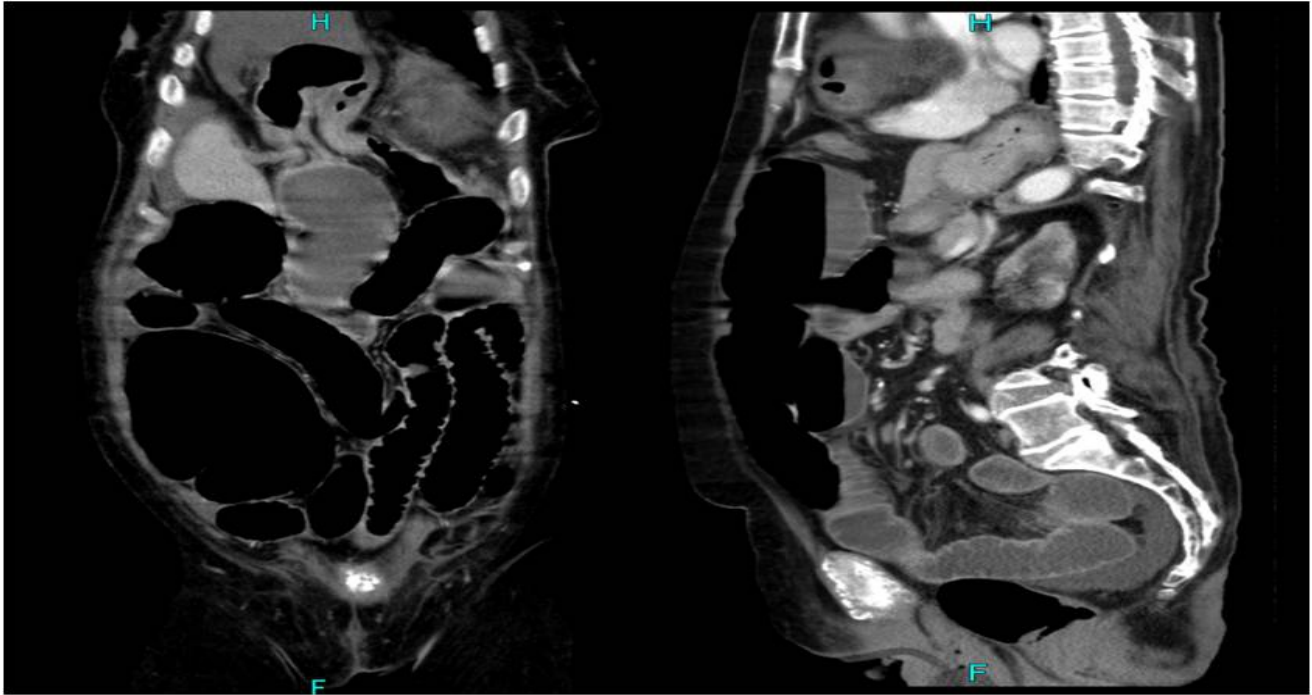


Figure 2: Coronal and sagittal sections of CT scan abdomen showing right sided diaphragmatic hernia with strangulation of transverse colon.

Conclusion

This case represents the first report of adult Morgagni hernia with an unusual presentation and significant bowel obstruction with strangulation. It highlights the difficulties in diagnosis, prompting a need for a high index of suspicion when assessing patients with suggestive of gastrointestinal obstruction. A missed diagnosis can lead to life-threatening complications such as obstruction or strangulation which warrants early surgical intervention. Although laparoscopy is suitable for certain cases, signs of bowel obstruction constitute a surgical emergency and an indication for laparotomy.

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