

Morgagni's Hernia Presenting with Gastric Outlet Obstruction in a Young Girl

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SUMMARY

This is the case report of a young girl, who presented to us with history of epigastric pain and persistent vomiting, initially admitted with suspicion of peptic ulcer disease /gastric outlet obstruction, however, later on imaging, it turned out to be gastric and duodenal herniation through diaphragm, which was later affirmed on laparotomy. Hernia of Morgagni, a rare form of congenital diaphragmatic hernia, may present early in life with respiratory symptomatology but usually is an incidental finding in adulthood. However though rare, it could present with obstructing, even strangulating symptoms of herniated viscera. Treatment primarily focuses on reduction of herniated contents and sealing the vent in diaphragm. Reason for reporting this case is that a misdiagnosis on part of surgeon can lead to considerable morbidity and occasional mortality.

Keywords: Morgagni hernia, gastric outlet, obstruction

INTRODUCTION

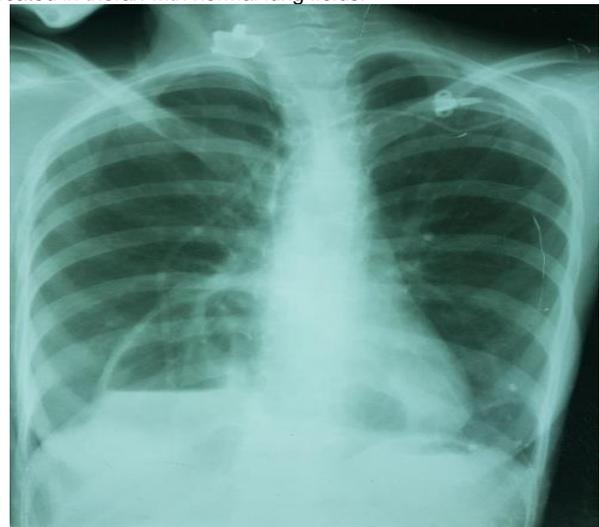
Congenital diaphragmatic hernias are uncommon occurring in 2000-5000 live births. Among these Morgagni hernias are even rare constituting only 2-3% of CDH, with hernia of Bochdalek being commonest constituting over 95%. Foramen of Morgagni is a triangular space located posterolateral to sternum. Morgagni's hernia is mostly right sided, with left sided anterior hernias being labeled as Morgagni-Larrey's hernia. It usually presents in childhood causing lung hypoplasia in many cases. On the other hand, approximately 30% adult cases are asymptomatic. However, cases may present with obstructing and strangulating variety. Even then, timing intervention can give you excellent results. Prognosis usually depends on pulmonary hypertension, pulmonary hypoplasia, presence of associated anomalies and in emergency cases, depends on timely management. These cases are often misdiagnosed until complication develops. We present this rare case to raise awareness among clinicians about this variety of presentation.

CASE REPORT

A 16 year old girl presented to our surgical unit with complaint of chest pain for last 2 months and persistent vomiting for last 1 month. The chest pain was retrosternal, burning in nature and associated with meals. Vomiting was non-bilious, projectile, non-bloody, usually occurred 1-2 hours after meals. She had poor oral intake but no constipation. There was history of weight loss but no history of corrosive intake. She had multiple previous admissions but to no avail. She was on proton pump inhibitors as endoscopy revealed esophageal ulceration with Barrett's oesophagus. A year back she also presented with signs and symptoms of intestinal obstruction and underwent laparotomy. Volvulus of small intestine was present for which resection and loop ileostomy was performed. However, due to lack of proper record no comment on diaphragmatic hernia was made. On clinical

examination, she was emaciated, dehydrated, with upper abdominal distension. Succession splash was present. However no abdominal tenderness or guarding was present. Bowel sounds were normal, with no visceromegaly and normal digital rectal examination. Among baseline investigations, pre-renal azotemia and deranged electrolytes were present depicting gastric losses. ABGs reflected metabolic alkalosis and ECG was normal. Plain chest x-ray showed gastric bubble in thorax with raised hemi-diaphragm but otherwise lung fields were normal. (Fig. 1). Patient was managed on lines of gastric outlet obstruction with fluid resuscitation, NG tube drainage and monitoring while CT imaging of thorax and abdomen was arranged. Ct showed intrathoracic pylorus and antrum of stomach. (Fig. 2)

Fig.1: Chest X-Ray: stomach shadow showing air fluid level located in thorax with normal lung fields.



An upper midline laparotomy was performed. Findings noted at surgery were of a large hernia defect in diaphragm located anteriorly. Hernia sac contained distal stomach and first part of duodenum. No strangulated viscera/omentum was found and other diaphragm was normal. Contents

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reduced, hernia sac excised and diaphragm defect repaired with prolene interrupted sutures. Ventilator care was not needed. She recovered well and was discharged on 15th day. She was reviewed in outpatient clinic after 2 months with good recovery, improved appetite and weight gain.

Fig 2: CT- Chest: intrathoracic pylorus and antrum of stomach



DISCUSSION

Morgagni's hernia, along with Bochdalek's hernia, diaphragm eventration and central diaphragm defects, are grouped under congenital diaphragmatic hernias. Among CDH, it is least common as it constitutes only 2-3% of all CDH¹. It is characterized by herniation through foramen of Morgagni, a triangular space, bound by muscular fibers of xiphisternum, costal margin fibers that insert into central tendon of diaphragm. It is anterior, more often right sided² small and at low risk of prolapse. Herniation through left sternocostal hiatus is usually termed as Morgagni-larrey's hernia.

Presentation varies with age, with children presenting with respiratory symptoms due to lung hypoplasia and pulmonary hypertension. Contrary to this, adults are usually asymptomatic with majority diagnosis made incidentally on imaging^{3,4}. However, review suggests that it can present with obstructing, even strangulating symptoms like literature gastric outlet obstruction and small and large bowel volvulus⁵. Recurrent chest infections and GI symptoms chest pain, GERD and constipation have been attributed to these.

Pathophysiology of Morgagni hernia is still vague. Many patients who presented with diaphragmatic defects reported to have normal radiographs previously. Probably, these hernial defects are acquired through these congenital defects, which enlarge with prolonged or even sudden rises of abdominal pressure. Since these defects enlarge with age, so that may be the reason they are not discovered in children⁶. Respiratory disease such as COPD, GI problems like constipation and even, obesity have been implicated. Omentum is a common hernial content with small intestine and stomach presenting less frequently⁷. However, stomach is a more frequent content in left sided larrey's hernia.

Among differential diagnosis, cardio-phrenic fat pad is most important. Non fatty lesions like Lobe collapse, consolidation, lung sequestration, lymphoma and even thymic tumor included in differentials can be differentiated from Morgagni's hernia as it is more radiolucent. On CT, linear soft tissue opacities representing omental vessels usually help to differentiate omental mass from other fatty

lesions like cardio-phrenic fat pad, lipoma, liposarcoma and thymolipoma. It may rarely mimic diaphragm rupture, however, in our case, there was no history of chest and abdominal trauma. In our case, gastric bubble in x-ray was spot on, with CT affirming it.

Surgical treatment is preferable whether patient is symptomatic or not. The rationale for treating asymptomatic patients is that they may develop features of incarceration in future⁸. There are different techniques employed, however, there exist controversy as to which technique is preferable. Surgery includes open (laparotomy/thoracotomy) or minimal access techniques (thoracoscopy / laparoscopy). Both have their advantages, with abdominal approach allowing easier reduction of contents⁹ inspection of other diaphragm and easier to deal with hernia complications like incarceration and strangulation. However, literature review suggests thoracotomy/thoracoscopy as most often used technique with advantage of easier dissection of hernial sac from mediastinal and pleural cavity¹⁰. Compared to abdominal approach longer post- operative recovery. Minimal access techniques have their better visual range, decreased hospital stay, less post-operative pain and overall better recovery, however, are less preferable in emergency situations, where resection of necrosed bowel has to be done. We took abdominal approach as it was more preferable in gastric outlet obstruction. Among repairs, suture repair usually done for small defects with mesh being preserved for defects greater than 3cm^{11,12}. However, in emergency situations, peritonitis or extensive contamination may restrict the use of mesh. Lower morbidity and mortality is associated with presentation of CDH in adults compared to neonates as in neonates lung hypoplasia occurs while in adults, lungs are fully developed with normal functional reserves and are only compressed by herniated contents. Hence, timely repair is associated with timely repair.

CONCLUSION

The reason for presenting this interesting case is to awareness among surgical trainees and other specialty doctors. Our patient had multiple admissions, however was misdiagnosed. This led to great morbidity of having incarcerated stomach. Hence, a high index of suspicion is required while accessing patients with respiratory distress and symptoms of GI obstruction. So, if this condition is diagnosed early and treated appropriately it has a good prognosis.

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