



A RARE CASE REPORT OF SMALL BOWEL OBSTRUCTION WITH A GIANT HIATUS HERNIA

Dr. Esha Bansal

MBBS, MS

ABSTRACT **Introduction:** Hiatus hernia refers to transposition of stomach through esophageal hiatus of diaphragm. There are 4 types of hiatus hernia. Generally patients with hiatus hernia are asymptomatic but may present with gastrointestinal or respiratory symptoms. Here we report a case of a patient with intestinal obstruction who was diagnosed with giant hiatus hernia incidentally. **Case Report:** A 70 yrs old female patient presented to the emergency department with complaints of abdominal pain, vomiting and inability to pass stool and flatus. Patient had no co-morbidities. examination patient's abdomen was distended and non tender, previous operative scar was present. On auscultation peristalsis was heard in the lower left thorax and reduced breath sounds on left side. **Methods And Tools:** Hematological and biochemical work up were done along with radiography, ultrasonography and CECT(abdomen + pelvis) which established the diagnosis of giant hiatus hernia. Patient was taken up for surgery after explaining the relatives about the condition and the need to do the surgery. **Discussion:** Giant hiatal hernia is responsible for 0.3–15% of all hiatal hernias. There are various approaches to operate a patient with a giant hiatus hernia. **Results:** Radiological investigations were confirmatory to establish the diagnosis of hiatus hernia and hence, patient was taken for surgery after this. **Conclusion:** All the asymptomatic cases of giant hiatus hernias should be operated to avoid further complications.

KEYWORDS :

INTRODUCTION

Hiatus hernia refers to transposition of stomach through esophageal hiatus of diaphragm. There are 4 types of hiatus hernia.

Type I hernia is also referred to as a sliding hernia, as it may become spontaneously reduced to its normal position. These result from the widening of the crural diaphragm forming the esophageal hiatus and laxity of the phrenoesophageal membrane, causing the transient movement of the gastroesophageal (GE) junction out of the abdomen.

Type II hernias are unique and rare – these represent a true paraesophageal herniation of the fundus of the stomach into the chest, with the gastroesophageal junction being appropriately located.

In types III and IV, the gastroesophageal junction is abnormally positioned in the thorax. They are caused by laxity of the gastrosplenic and gastrocolic ligaments, leading to widening of the esophageal hiatus over time.

Type III, or a fixed intrathoracic stomach, is an incarcerated stomach.

Type IV hernias are characterized by the presence of other viscerae, such as colon, small bowel or spleen within the hernia sac.

Most patients are asymptomatic or may present with reflux. The most common presenting complaint in a patient with a large hiatus hernia is that of anemia.

More serious complications, warranting urgent/ emergent surgical management, include gastric volvulus, outlet obstruction, hemorrhage or respiratory distress [2]. With gastric volvulus, patients will experience intermittent obstruction, causing symptoms of dysphagia and regurgitation. Generally patients with hiatus hernia often present with gastrointestinal symptoms such as dysphagia and heartburn, whereas respiratory symptoms caused by hiatal hernias are extremely uncommon (1). Here we report a case of a patient with intestinal obstruction who was diagnosed with giant hiatus hernia incidentally.

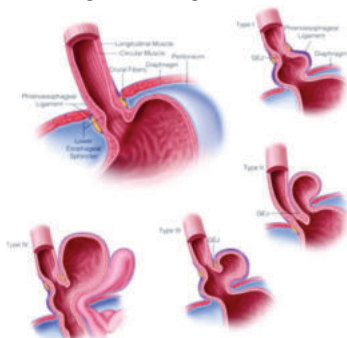
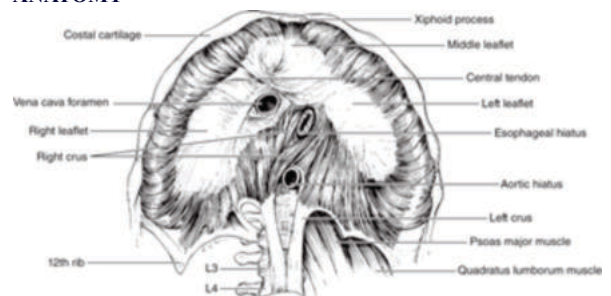


Figure1. Normal anatomy of the esophageal hiatus shown with examples of different types of hiatal hernias

ANATOMY



Source: Gerard M. Doherty; Current Diagnosis & Treatment: Surgery, 14th Edition
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Figure 2. Anatomy of various diaphragmatic defects.

The septum transversum is composed of mesoderm which forms the central tendon of diaphragm. It forms the ventral body wall.

The pleuroperitoneal membranes are partitions separating the pleural from peritoneal cavities and they fuse with the dorsal mesentery of esophagus.

The dorsal mesentery of esophagus constitutes the median portion of diaphragm. The crura of the diaphragm develop from muscle fibres which grow into the dorsal mesentery of esophagus.

The lungs and pleural cavities enlarge and burrow into the lateral body wall which is split into 2 layers - an outer layer which will form part of the definitive body wall and an inner layer that contributes to the peripheral portions of the diaphragm.

Nerve Supply

Phrenic nerve is the motor nerve to the diaphragm and is also sensory to the central region. This explains referred pain from the diaphragm to the shoulder.

The peripheral region of the diaphragm receives sensory nerves from the lower 6 or 7 intercostal nerves.

ACTION

It is the chief involuntary muscle of respiration but can also be used voluntarily to increase the pressure in abdomen (2).

CASE REPORT

A 70 yrs old female patient presented to the emergency department with complaints of abdominal pain for 1 week, vomiting for 2 days and inability to pass stool and flatus since 1 day. Patient had no co-morbidities. She had a history of abdominal hysterectomy 20 years back and incisional hernioplasty 12 years back. Upon physical examination patient's abdomen was found to be distended and non tender, previous operative scar was present, no dilated veins, visible

peristalsis or sinuses seen. Patient didn't have any guarding or rigidity and there was no palpable organomegaly. On percussion tympanic note heard and on auscultation peristalsis was heard in the lower left thorax and reduced breath sounds on left side. Patient was maintaining SPO2 at 95%.

METHODS AND TOOLS

Investigations

Hematological and biochemical work up were within normal range. Radiography revealed elevated right dome of diaphragm and air fluid levels in left lower thorax and abdomen.

Ultrasonography showed trace amount of pleural effusion on right side with evidence of peristaltic bowel loop in left lower thorax with diaphragmatic border not appearing clearly. CECT (abdomen + pelvis) revealed large hiatus hernia with herniating stomach and bowel loops in the thoracic cavity and small bowel obstruction with abrupt transition point in mid ileal loops in the right iliac fossa due to adhesions. Rest of the systemic examination and investigations were within normal range.



Figure 3. Chest Xray showing bowel loops in thorax

SURGERY

After establishing the diagnosis, patient was taken for surgery and exploratory laparotomy was planned. A midline incision was made and on entering the peritoneal cavity; transverse colon, stomach and abdominal part of esophagus were found in posterior mediastinum herniating through the esophageal hiatus within its sac. Central part of diaphragm and right sided tendon were weak and thin. Bowel loop, stomach and esophagus were dissected free from sac and reduced within the abdomen. Triangular ligament of liver dissected to allow better visualisation. Approx 15cm sized defect was seen in central tendon of diaphragm. Composite mesh was placed with cellulose layer facing the defect. Mesh was fixed with prolene 2-0 on right crus of diaphragm encircling the esophagus and fixed over left crus of diaphragm. On further examination, twisted bowel loops were found surrounding the meckel's diverticulum 2 feet proximal to terminal ileum and a band adhering the diverticula to the peritoneum. Band was released and bowel loops surrounding the meckel's diverticulum were untwisted with proximal loops dilated and distal loops collapsed. Ileal resection was done and ileo-ileal anastomosis was done in 4 layers. Abdominal drain no. 28 placed in right morrison's pouch and no. 32 in left pelvis and fixed with silk 5062. Closure done in layers, dressing done and patient was shifted in ICU on ventilator.



Figure 4. Mesh placement over the defect.

POST-OPERATIVE PERIOD

In the immediate post-operative period patient's counts increased to 19,000/cumm and AG also increased to 108cm then gradually patient's hemoglobin also reduced to 8.2 mg/dl after which PCV was transfused, counts and abdominal girth also started to reduce gradually. Patient was extubated on 3rd post operative day and kept on high flow oxygen support. On 4th post operative day her saturation dropped down to 87% and she was reintubated. Patient developed hyperthermia. Patient developed right sided mild pleural effusion with underlying collapse of lower lobe of lung on post operative day 4. On post operative day 5, patient expired with cause of death being respiratory distress due to right lung collapse and pleural effusion.

DISCUSSION

Giant hiatal hernia is responsible for 0.3–15% of all hiatal hernias (3). Generally, the common presentations of giant hiatal hernia include pain, heartburn, vomiting, dysphagia, and anemia. Respiratory symptoms are considered a very uncommon clinical presentation.

There are 3 approaches of operating a case of giant diaphragmatic hernia : thoroscopic approach, abdominal approach and laparoscopic approach (4)

Small defects maybe repaired primarily but large defects require placement of mesh to avoid tension on the repair (4).

Therefore, even if a patient with a giant hiatus hernia is asymptomatic they need to be operated to avoid strangulation leading to ischemia or necrosis of herniating abdominal organs (4).

RESULTS

Radiological investigations were confirmatory to establish the diagnosis of hiatus hernia and hence, patient was taken for surgery after this.

CONCLUSION

All the asymptomatic cases of giant hiatal hernias should be operated to avoid further complications.

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