INTRODUCTION

The diaphragmatic hernias (parasternal or retrosternal) are uncommon form of congenital hernia of 1-6% incidence rate usually occurring in posterolateral aspect on the left side of the diaphragm (Bochdalek’s hernia), seen in 90% of cases.1 Morgagni hernias are rare, usually occurring on the right in the anterior parasternal region due to maldevelopment of embryonic septum transversum with failure of fusion of sternal and costal fibrotendinous elements of diaphragm.2 Acquired diaphragmatic hernias results either from blunt or penetrating trauma.3 The small fraction represents unusual cases such as congenital hernias (Morgagni/Bochdalek) presenting in adulthood.4 Gastric volvulus are associated with diaphragmatic hernia,5 majority of which presents in early childhood. Morgagni hernia is mostly diagnosed in older patients with more predilection towards female.6 Diagnosis usually is radiological; a plain chest radiograph can demonstrate the presence of viscerae contained with air. Contrast studies of the gastrointestinal system, computed tomography (CT) and magnetic resonance imaging (MRI) are helpful for confirmation.7

CASE REPORT

An 80 years old female presented to our hospital with complaints of upper abdominal dull ache over the past 2 months, particularly in epigastric region, and bloating sensation with fullness after meals. Patient also had episodic projectile vomiting (colour of vomitus not specified by patient) besides relative constipation. Patient lost significant weight over the period of illness; however, there was no history of anorexia and patient used to ask for the feed. She took treatment for her indigestion and constipation but with no relief. In her past history, she had the complaint of joint pain. No significant abdominal trauma was encountered by her ever in life. Patient was pallor on examination. Abdomen was soft, non-tender abdomen with no palpable viscerae or mass. Bowel sounds were sluggish. She had decreased air entry over the right middle and basal regions of hemithorax.

Preliminary working diagnosis was gastric outlet obstruction. Patient underwent imaging through upper GI endoscopy, plain chest and abdominal radiographs, barium meal studies and CT scan as part of work up besides haematological and biochemical analysis (revealing 5.5 gm/L Hb levels with all the other parameters within the normal limits). Upper GI endoscopy remained unremarkable besides esophageal candidiasis as the endoscopist was unable to introduce endoscope distal to the body of the stomach.

Plain abdominal radiograph revealed presence of bowel loops in right lower hemithorax which was confirmed on Barium meal series giving an upside-down appearance to stomach. Multiplaner cross sections of CT confirmed the defect in antero-medial part of the right hemidiaphragm in parasternal region through which gastric antrum and pylorus with hepatic flexure of colon and omentum were protruding in the right hemithorax, all enclosed in a peritoneal sac. Partial gastric volvulus of mesentero-axial variety was demonstrated with upside-down appearance of the stomach.

ABSTRACT

A Morgagni diaphragmatic hernia is a rare congenital anteromedial defect in adults (5%). Symptoms of visceral herniation are attributable to the organs involved. Imaging is the mainstay of diagnosis either in an asymptomatic person or in a person with respiratory and/or gastrointestinal symptoms, ultimately requiring surgical intervention because of the risk of incarceration. We present a rare case of an 80 years old female with vague upper abdominal pain and recurrent vomiting. An anteromedial parasternal defect was established on conventional as well as on cross-sectional imaging in right hemidiaphragm through which the upper abdominal contents were protruding in the right hemithorax, all enclosed in a peritoneal sac. The herniation resulted in mesentro-axial gastric volvulus. Due to age and anaesthesia risk, patient was conservatively managed.

Key words: Morgagni hernia.  Diaphragmatic hernia.  Mesentro-axial gastric volvulus.

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Plain abdominal radiograph shows air filled bowel in the right basal hemithorax (black arrow) above diaphragm and liver (red arrows). (b) Barium outlining the gastric fundus, body and antrum with pylorus (black arrow) giving it an upside-down appearance. Nasogastric tube can also be appreciated in the pylorus (red arrows).

Axial CT slice through the lower chest shows gastric antrum and pylorus with nasogastric tube intraluminally in the right hemithorax (yellow arrow). Contrast filled gut loops (red arrow) and peritoneal sac (white arrow) is also demonstrated. (b) Coronal reformat demonstrates upside-down appearance of stomach (yellow arrows) protruding into the right hemithorax through anteromedial defect (red arrow).

Saggital (a) and coronal (b) reformatting of CT through lower chest and upper abdomen demonstrating anteromedial paraternal diaphragmatic defect (yellow arrow) with protruded abdominal contents in peritoneal sac (red arrow).

After establishing the diagnosis radiologically, the definitive treatment for the patient was supposed to be surgical diaphragmatic repair by plication with laparoscopic abdominal approach and gastropexy for gastric volvulus. The patient did not meet the general fitness criteria as a candidate for general anaesthesia. She was kept on conserva-tive treatment on her subsequent follow-up visits.

DISCUSSION

Morgagni-Larrey hernia usually has a peritoneal sac, which distinguishes this hernia from the Bochdalek one. The hernia often contains transverse colon, liver but sometimes there may also be small bowel, stomach, pancreas, and gallbladder.8

Patients show no specific symptom other than mild respiratory discomfort and vague gastrointestinal manifestations, such as shortness of breath, postprandial vomiting or gastric-esophageal regurgitation, intermittent nausea/vomiting, abdominal distention, dysphagia, and others. In severe cases, the intestinal incarceration of the herniated contents may develop into a dangerous situation; however, that would be very rare. Pre-disposing factors for gastric volvulus include lax ligaments, bands, adhesions, peptic ulcer disease, gastric neo-plasms, and eventration of the diaphragm.

Gastric volvulus can be an organo-axial type (more common), where the stomach may rotate about a line between the pylorus and the cardia, or a mesentero-axial type (less common), where the stomach may rotate about a line drawn from the mid-lesser to mid-greater curvature giving an upside-down stomach appearance (as in this case).9 Generally this type of volvulus is partial as a result of excess mobility of the antrum and duodenum and so the stomach often kinks and obstructs between the body and the antrum.10 This case is rather unusual because of the delayed presentation of a Morgagni hernia associated with partial gastric volvulus of mesentro-axial variety.

The treatment is surgical. Diaphragmatic repair can be done by plication either with open / laparoscopic abdominal approach. Gastropexy is usually done for gastric volvulus.

A diaphragmatic hernia with gastric volvulus in adults is a rare entity and difficult to diagnose clinically. Careful interpretation of radiological imaging is required depending on index of suspicion, which should be treated at first place because of the risk of incarceration.

REFERENCES

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