

Hiatal Hernia as a Mysterious Diagnosis; a Case Report

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Abstract

Introduction

Proximal displacement of stomach and gastro-esophageal junction into the thoracic cavity results in a condition known as Hiatal Hernia (HH). Sometimes this entity is overlooked in practice and patients are managed as non-surgical diagnoses such as gastroesophageal reflux disease or asthma.

Case Report

A 6 month-old female infant has presented with bloody emesis for four months. She was evaluated and diagnosed with gastritis and treated with proton pump inhibitors accordingly. She later developed respiratory symptoms and a chest x-ray was ordered. It showed a retro cardiac shadow by which the correct diagnosis was reached

Discussion

In the primary work up of patients with gastrointestinal or respiratory symptoms anatomical abnormalities should be considered. HH is an example of these abnormalities that is frequently missed by primary care physicians especially in the pediatric population.

Key Words: Barium study, Hiatal hernia, Diagnosis, Emesis.

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Introduction

Hiatal hernia (HH) refers to herniation of the elements of the abdominal cavity into the mediastinum through a widening of the crus of the right hemi-diaphragm. The most common herniated organ is the stomach. Hiatal hernia has been reported in 10 to 50 percent of the adult population (1) but the real prevalence in pediatrics has not been reported in the literature. The prevalence of HH in children with gastroesophageal reflux disease varies between 6.3% and 41% (2). Patients may be asymptomatic or present with a spectrum of symptoms. They may be suffering from gastroesophageal reflux, halitosis or dysphagia. In rare cases they may present with intractable vomiting due to stagnation of the herniated segment or gastric volvulus. According to the literature there are 4 types of HH (3).

Type one or sliding hernia is the most common. It is defined as the protrusion of the stomach and the gastroesophageal junction through the diaphragm into the chest causing an incompetent lower esophageal sphincter leading to the symptoms of gastroesophageal reflux. In type two or para esophageal hernia there is a localized defect in the phrenoesophageal membrane from which the stomach fundus herniates into the chest. The gastroesophageal junction remains affixed to the preaortic fascia and the median arcuate ligament of the diaphragm. The defect progressively enlarges and eventually the entire stomach herniates into the chest positioning the pylorus juxtaposed to the gastric cardia hence forming an upside down intra-thoracic stomach. The herniated stomach is attached at the gastroesophageal junction thus it tends to rotate around its longitudinal axis and leads to organoaxial volvulus. Gastric volvulus can result in acute gastric obstruction, incarceration and perforation (3, 4). Due to the normal position of the gastroesophageal junction

reflux symptoms are not present in this type of hernia. Type three is a combination of the type one and two. Type four which is the least common type of HH applies to bulging of another organ into the hernia sac coupled with stomach such as the colon, spleen, pancreas or small intestine. The patient to introduce is a case of hiatal hernia with coffee ground emesis since two months of age and a new onset productive cough.

Case Presentation

A 6-month-old infant girl presented to our tertiary care center with coffee ground vomiting for one day. She had been suffering from runny nose for two weeks when she was admitted. Similar episodes of coffee ground emesis had occurred before. First one was at the age of 2 months when oral ranitidine was prescribed for the patient and maternal cow's milk restriction was recommended. She had developed another episode of bloody emesis at 5 months of age. Upper endoscopy had been performed in a local hospital and esophagitis and gastritis were reported and she was prescribed with a proton pump inhibitor at the time of discharge from the hospital.

Two weeks prior to the current ward admission she had developed a productive cough. She was taken to a private clinic and the physician in charge had requested a chest x-ray. In the patient's chest x-ray a soft tissue density containing internal lucent areas was seen in the middle and inferior zones of the right hemi thorax extending to the retro cardiac region (Figure. 1a). Considering the clinical symptoms and the findings on chest X ray the patient was referred for further evaluation and was admitted to our ward. A spiral CT scan of the chest was done and revealed a posterior mediastinal mass measuring 68*40*46 mm with mixed internal air density in the right inferior paravertebral region extended behind the

heart (Figure 1b). The esophagus was mildly dilated superiorly and appeared along the lesion. The stomach was not seen in the abdomen and was found in the right hemi thorax. Subsequently, barium study was conducted and the result was highly in favor of gastric herniation into the thoracic cavity (Figure 2). Patient was operated on

with the impression of an organoaxial volvulus based upon the barium study and clinical symptoms. The patient's symptoms responded dramatically to the surgical correction of the herniation and the volvulus and she became symptom-free.

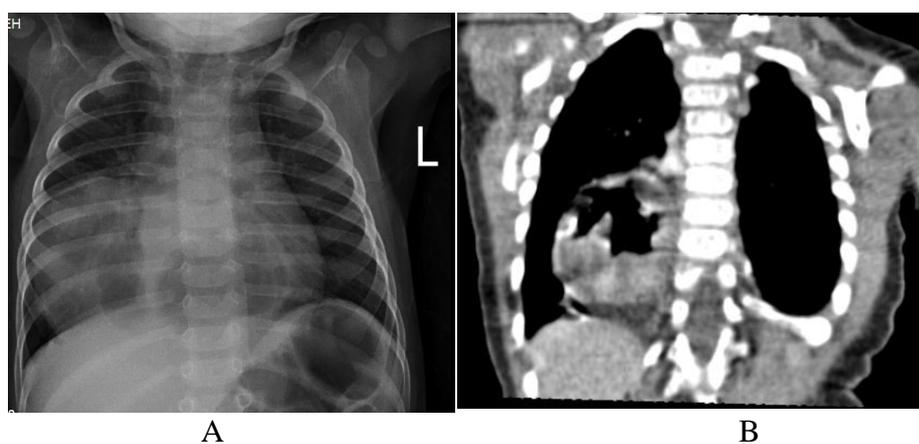


Fig.1: (A) A soft tissue density with internal lucent areas was seen in middle and inferior zones of right hemi thorax extending to retro cardiac region; (B) A posterior mediastinal mass measuring 68* 40*46 mm with mixed internal air density in inferior right paravertebral region extending behind the heart.

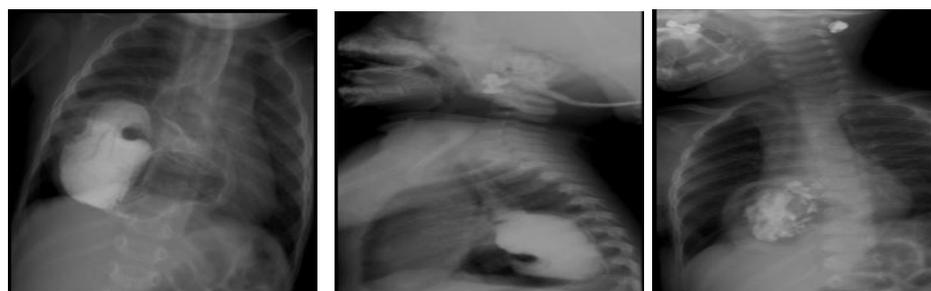


Fig. 2: Mild dilatation is middle third of esophagus. The fundus and proximal body of stomach is filled with contrast but the rest of stomach was not filled even after 15 minutes with beak-like configuration of the proximal gastric body. Findings were suggestive of an organoaxial volvulus.

Discussion

Hiatal hernia is defined as proximal displacement of the stomach and the gastroesophageal junction into the thoracic cage above the diaphragm (5). According to the available literature there is a

relationship between hiatal hernia and gastroesophageal reflux disease (GERD). The presence of hiatal hernia in patients with GERD is occasionally overlooked (5). One rare complication of hiatal hernia is gastric outlet obstruction due to accidental volvulus of the herniated part of stomach

in the mediastinum (6). In the initial presentation she had experienced recurrent episodes of coffee ground emesis along with runny nose and mouth secretions which contributed to severe regurgitation. Endoscopy was performed as the initial diagnostic modality. During endoscopic evaluation of the upper gastrointestinal tract hernia can be detected by evaluating the Z-line displacement when the scope is advanced through the lower esophageal sphincter. Retroversion maneuver increases the accuracy of the procedure in order to detect hiatal hernia. It should be emphasized that endoscopy is operator dependent and hernia can be missed during this procedure (7).

The gold standard modality for the diagnosis of hiatal hernia is contrast study in which the anatomical abnormalities of the gastrointestinal tract are best seen. Barium study increases the sensitivity in the evaluation of this condition (7-8). In this case, abnormal findings in chest X-ray and spiral CT scan were highly suggestive of anatomical abnormality in the thoracic cavity. Barium study was eventually performed and gastric herniation was clearly detected and appropriate surgical correction was carried out. The complex presentation of patients with HH can be misleading for the physicians hence result in misdiagnosis and mismanagement (9). In this patient the primary impression was gastritis and she received treatment for this diagnosis. The patient's symptoms persisted and new symptoms developed which warranted further evaluation and led to the correct diagnosis.

Conclusion

Hiatal hernia can be overlooked in the preliminary work up of patients with gastrointestinal or respiratory complaints. This case highlights the need to consider anatomical abnormalities and specifically HH in patients with refractory emesis or pulmonary symptoms.

Conflict of interest: None.

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