

Incidental Finding of a Type IV Hiatal Hernia Following Trauma

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Citation

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Abstract

Hiatal hernias are the result of defects in the diaphragmatic hiatus wherein gradual enlargement of the hiatal orifice allows abdominal contents to herniate into the mediastinum. This is usually a naturally acquired condition but similar clinical presentations may occur after trauma or after previous surgery on the gastroesophageal junction (i.e., fundoplication). The stomach by itself is most typically involved; however, other associated organs may be included within the hernia sac including the spleen, colon, pancreas, or liver. We present a trauma activation patient of our level one institution who was to have an asymptomatic hiatal hernia.

INTRODUCTION

Hiatal hernias are the result of defects in the diaphragmatic hiatus wherein gradual enlargement of the hiatal orifice allows abdominal contents to herniate into the mediastinum. This is usually a naturally acquired condition but similar clinical presentations may occur after trauma or after previous surgery on the gastroesophageal junction (i.e., fundoplication). The stomach by itself is most typically involved; however, other associated organs may be included within the hernia sac including the spleen, colon, pancreas, or liver. We present a trauma activation patient of our level one institution who was to have an asymptomatic hiatal hernia.

CASE REPORT

A 75-year-old white female was involved in a high-speed motor-car accident. She was rear-ended when driving at approximately 70 miles an hour. She was a restraint driver, her air bags deployed, and she hit her head on the windshield losing consciousness. On arrival to the emergency department, ATLS primary and secondary surveys were performed. She was found to be have a Glasgow coma scale score of 14 (confused) and was hemodynamically stable (with a heart rate of 100 beats per minute, a respiratory rate of 22 breaths per minute and a blood pressure of 110/75mmHg, saturating at 92% on room air). She was complaining of a headache and anterior chest wall pain. On physical examination, no obvious injuries were identified.

Two large-bore IV infusions were started and she was sent to the CT scanner for a whole body scan (CT scan of the head, neck, chest, abdomen and pelvis). The CT scans were read negative by the trauma team and the radiologist except for an unusual image in the chest (Figure 1 and 2).

Figure 1

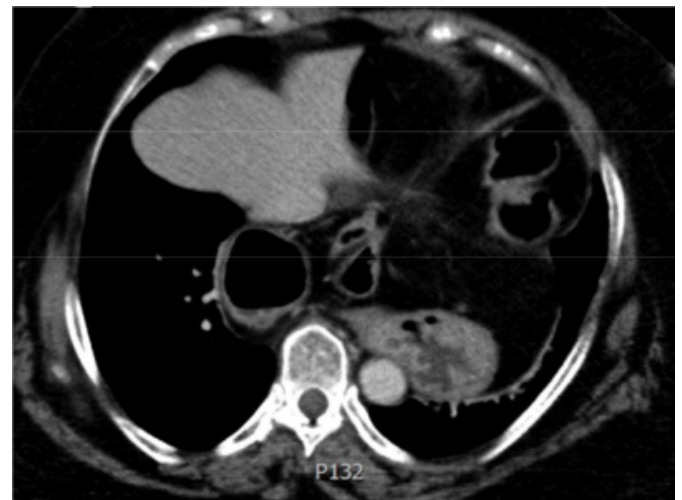


Figure 2



Her past medical history was significant for coronary artery disease, chronic obstructive pulmonary disease, atherosclerosis, hyperlipidemia, and hypertension. She was admitted to the hospital with the diagnosis of a mild traumatic brain injury, concussion, and chest wall contusion.

The CT scan showed an incidental finding of a herniation of the stomach, small bowel, and colon into the thoracic cavity (type IV hiatal hernia). Upon further interrogation, none of the manifestations of hiatal hernia were identified such as symptoms of GERD (heart burn, regurgitation). She also denied symptoms related to the volume of stomach in the hernia such as postprandial chest pain or pressure (often relieved by belching), dysphagia, shortness of breath resulting from gastric displacement of lung volume, and more severe GERD symptoms. All therapeutic options and the risks and benefits of this options were discussed with her. Due to her clearly asymptomatic state and all her comorbidities, no surgical intervention was advised and she agreed to close observation only.

DISCUSSION

The classification of hiatal hernias has changed over time. Ake Akerlund, in 1926, named and classified hiatal hernias into three types (hiatal hernia with a shortened esophagus, paraesophageal hernia, and hernias not included in these first two categories) (1); after this, Allison classified hiatal hernias into two types (the sliding hernia and the paraesophageal or rolling hernia) (2). The most accepted classification system used today categorizes hiatal hernias into four types. In type I (95% of all hernias), the GE junction “slides” into the mediastinum, pulling the stomach

behind. They may be asymptomatic or may be associated with symptoms of GERD. The indication for surgical repair of type I hernias depends on the severity of the symptoms and the ability to manage symptoms and/or esophageal damage with medical therapy. In type II hernias (less than 1% of all hernias), the GE junction resides in the abdomen, and a portion of the gastric fundus slides into the mediastinum adjacent to the esophagus. The type III hernia (the most common giant hiatal hernia), is characterized by the presence of the stomach and the gastroesophageal junction in the mediastinum. The type IV hiatal hernia is a more extensive type III hernia with other abdominal organs, such as colon, spleen, or liver, located within the chest. A rare type hiatal hernia is the parahiatal hernia, in which the stomach herniates through a small defect in the diaphragm, adjacent to the left crus of the diaphragm, anteriorly (3). Most patients with giant hiatal hernias that are intermittently symptomatic should undergo elective repair of the hiatal hernia by a laparoscopic approach if there is no contraindication. When one encounters a patient with a giant hiatal hernia who is truly asymptomatic, while still controversial, the recommendation is that completely asymptomatic patients without iron-deficiency anemia should be treated with watchful waiting (4). This goes against the classic teaching, that these patients should undergo repair to avoid the risk of strangulation, a rare occurrence. This teaching was based on the early observations by Skinner and Belsey, in which six of 21 patients with a paraesophageal hernia, treated medically because of minimal symptoms, died from the complications of strangulation, perforation, exsanguinating hemorrhage, or acute dilatation of the herniated intrathoracic stomach (5). Recent evidence shows that watchful waiting of this type of hernias in asymptomatic patients carries a much lower lifetime risk of death (approximately 1%) than previously thought (4).

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