Unusual Complication after Paraesophageal Hernia Repair

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Abstract

We describe a 66-year old woman with a paraesophageal herniation who was readmitted to our department after previous scheduled repair and an uneventful postoperative course. She had soluble contrast examination and no leak was found from the oesophagus nor was recurrent herniation diagnosed. On computed tomography the abscess was confirmed and reoccurrence of hiatal herniation was excluded. She recovered after the left thoracotomy and evacuation of the purulent hematoma. Mediastinal hematoma is a rare complication that may occur after tearing the arteries in the gastroesophageal junction area, especially if the herniation is approached from the abdominal cavity.

Keywords: Paraesophageal hernia; Complication; Hematoma

Introduction

Hiatal hernia is characterized as protrusion of the stomach into the thoracic cavity through a widening of the right crus of the diaphragm. Large hernias are accidentally diagnosed on plain chest radiographs. There are four types of oesophageal hiatal hernias: sliding (type I), paraesophageal (type II), combined (type III) which is characterised by elements of type I and type II hernias including combination of typical symptoms for both, and giant paraesophageal hiatal hernia (type IV) [1]. Each type may present with different symptoms and specific complications. Sliding hernia accounts for more than 85% of all hernias and is associated with sliding the cardia upward into the thoracic cavity. It results in opening the acute angle between the oesophagus and stomach and promotes reflux, the most essential feature for type I hernias. Type II hernias (paraesophageal) occur in 3.5-5% of all operated hiatal hernias. The gastroesophageal junction remains in the normal position as an important distinction from other hernias [1-3]. This type of herniation is also characterised by existence of a peritoneal sac, which in some people fails to regress during development and remains bulging into the posterior mediastinum directly, anterior to the oesophagus. This sac may remain empty for the entire life of the patient or the anterior wall of the stomach may protrude into it and compress even the part or the oesophagus, or both [1,4]. These mechanisms explain symptoms. If the lower oesophageal sphincter functions normally, reflux symptoms are rare. A definition of giant paraesophageal hernia is under discussion, but any hernia through the oesophageal hiatus that includes more than one third of the stomach might be considered type IV [1].

Case Presentation

A 66 year old woman was admitted to our department for elective surgery due to symptomatic giant paraesophageal herniation. The herniation was diagnosed on the plain radiograph of the chest and confirmed on gastroscopy and contrast barium examination of the upper gastrointestinal tract. There was no evidence of esophagitis. In the barium swallow study the herniation diameters were 6 x 10 cm in the Trendelenburg’s position. Her complaints were typical for paraesophageal herniation: fullness and vomiting after meals, occasional dysphagia, palpitations, shortness of breath, pain, intolerance of physical activity. Blood tests revealed mild anaemia with Hgb level 11.4g/dL (normal values between12 and 16g/dL). No ischemia was noted on electrocardiogram. She underwent open reposition of the half of the stomach into the abdominal cavity with excision of the sac from the existence of a peritoneal sac, which in some people fails to regress during development and remains bulging into the posterior mediastinum directly, anterior to the oesophagus. This sac may remain empty for the entire life of the patient or the anterior wall of the stomach may protrude into it and compress even the part or the oesophagus, or both [1,4]. These mechanisms explain symptoms. If the lower oesophageal sphincter functions normally, reflux symptoms are rare. A definition of giant paraesophageal hernia is under discussion, but any hernia through the oesophageal hiatus that includes more than one third of the stomach might be considered type IV [1].
called asymptomatic patients, particularly older ones tend to neglect observation in selected cases [5]. However, some authors claim that this has been modified from immediate surgical repair after the diagnosis to the asymptomatic paraesophageal hernias, especially in elderly patients [2]. Recently, attitude towards the treatment of paraesophageal hernia may present asymptomatically, suggesting that possibly was the cause of hematoma which ended in abscess [6]. The repair of paraesophageal hernia is more complex than repair of sliding hernia and not free from complications. Postoperative complication rate reaches 25% in open approaches [1].

Readmission to hospital after paraesophageal hernia repair according to Poupore et al. [7] accounts for more than 6% with a median of 11 days to readmission.

The Mediastinal hematoma is a rare complication after hiatal hernia repair. In our search of the literature, we did not find such a case. Blood supply of the lower portion of the thoracic esophagus originates from branches branching off of the left gastric artery, bronchial artery, or directly from the aorta, they might be as small as 1 mm or less in diameter, thus bleeding from them usually stops spontaneously [8]. The risk of hematoma emerges during abdominal approach when the esophagus or stomach is pulled to reduce the hernia’s sac or during constructing fundoplication. In 1967, Skinner et al. [9] describe a variable connecting artery between the left gastric and left phrenic arteries. The operation in the hiatal area on the lower esophagus and the gastroesophageal junction may result in tearing this small artery and cause bleeding that is easily oversewn from the operative field. Formation of a hematoma around the esophagus remains a possibility, especially there is no complete visual control of the operative field. Formation of a hematoma around the esophagus can be control with a tube placed into the mediastinum through the hiatal opening for the esophagus if it is noticed during the surgery. If the hematoma occurs and is diagnosed early in postoperative period, its evacuation is possible by thoracostomy. Even thoracotomy is safe, allowed for preservation of the reconstructed hiatus and fundoplication, and removing advanced fibrotic-purulent inflammatory lesions under visual inspection.

However, the diagnosis of such a complication might be difficult. In differential diagnosis, abcess caused by a leak through the damaged wall of the esophagus should be considered. Recurrent herniation and migration of an intact fundoplication must also be excluded. The diagnosis of recurrence is made by contrast swallow, in some cases soluble to avoid contamination of the mediastinum if leak is strongly suspected. Computed tomography is helpful by demonstrating the position of the stomach, hiatal size and content [10].

### Discussion

Paraesophageal hernia may present symptomatically suggesting intermittent spontaneous reduction [2]. Recently, attitude towards asymptomatic paraesophageal hernias, especially in elderly lies has been modified from immediate surgical repair after the diagnosis to observation in selected cases [5]. However, some authors claim that so-called asymptomatic patients, particularly older ones tend to neglect symptoms that accompany them over a long period of time [6].
worry about the mild dysphagia the patient presented because from our experience we know it is usually transient for cruroplasty loosens with time.

References