Contained Hypopharyngeal and Cervical Esophageal Perforation Masquerading as Retropharyngeal Abscess

Theodore Klug[1] and Courtney Shires[1]

[1]West Cancer Center

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Abstract

Esophageal perforation is most commonly caused by endoscopic instrumentation of the upper GI tract and most commonly presents with chest pain in more than 70% of patients, vomiting, and subcutaneous emphysema.

Background

Esophageal perforation is most commonly caused by endoscopic instrumentation of the upper GI tract and most commonly presents with chest pain in more than 70% of patients, vomiting, and subcutaneous emphysema.

Case Presentation

Our 49 year old female presented as a retropharyngeal abscess with sore throat and dysphagia for 5 days. She underwent endoscopic transoral incision and drainage of the posterior pharyngeal wall. She continued to have symptoms and was found to have a contained esophageal perforation (CEP) between the layers of the esophagus. She underwent open repair and stenting and returned to oral feeds in 3 weeks.

Discussion

Esophageal perforations are usually full thickness and in the lower esophagus from high pressure (vomiting or coughing). In contrast, our patient had a cervical CEP from yelling that was contained by the outer layer of the esophagus. She had very mild symptoms in contrast to the severe chest pain seen in lower esophageal perforations. Our patient underwent a combination of open drainage and repair, placement of a drain, endoscopic stenting, and non-oral feeds which resulted in a full recovery.

Conclusion

CEP can be caused by yelling, and can be found in the hypopharynx and cervical esophagus. In this location, CEP can be mistaken for retropharyngeal abscess. Patients with CEP can have mild symptoms. CEP can have good outcomes with aggressive intervention.

Background

Esophageal perforation is a rare but life-threatening condition[1]. Early detection and diagnosis are important to ensure good patient outcomes. At least half of esophageal perforations are iatrogenic, oftentimes caused by endoscopic instrumentation use in the upper gastrointestinal tract[1]. Still, about a third of esophageal perforations are spontaneous[1]. The scientific evidence that steers management of esophageal perforation is based primarily upon retrospective studies at single institutions, as well as on a few nationwide studies[1-8]. Randomized studies are virtually non-existent[1]. The case that we present is of a patient

that was eventually found to have a contained esophageal perforation instead of the initially suspected retropharyngeal abscess.

Case Presentation

A 49-year-old female with a past medical history significant for depression, schizophrenia, and nicotine abuse presented with progressive sore throat and dysphagia for 5 days. Imaging showed a retropharyngeal fluid collection (Figure 1). She underwent direct laryngoscopy and cervical esophagoscopy. A sickle knife was used to make an incision in the posterior pharyngeal wall, but no significant amount of purulence was released. She was maintained on intravenous antibiotics. She was discharged 2 days later. Three days after her procedure, she was presented again to the emergency department with increased neck and throat pain. A computed tomography (CT) scan showed that the fluid collection had worsened, with it now extending into the posterior mediastinum from the postcricoid area of the hypopharynx to the aortic arch on the sagittal, axial, and coronal angles, respectively (Figures 2-6). The patient was taken to the operating room the following day in a joint effort by Otolaryngology and Thoracic Surgery. She underwent primary repair of cervical and thoracic esophageal perforation, sternocleidomastoid muscle flap reinforcement of the esophageal repair, and cervical and thoracic esophageal myotomy. Gastroenterology (GI) was also called into the operating room to assist with an esophagogastroduodenoscopy (EGD), which showed an esophageal tear 17 cm in length. The patient then had two esophageal stents placed in an overlapping fashion (Figures 7 and 8), as well as a nasogastric tube and G-tube. The patient had an esophagram 2 days later, with no contrast extravasation. However, the patient did aspirate She used her G tube for 3 weeks. Cultures of the abscess were taken, showing positivity for Prevotella bacteremia, and the patient was started on antibiotics. She then had another esophagram which showed no extravasation. She was allowed to eat orally and was able to do so well. She is doing well with no issues 5 months after surgery.

Discussion

Our patient experienced a perforation from the hypopharynx to the aortic arch. Based off of the patient history, we postulate that the esophageal perforation that occurred was a result of an increase in pressure due to patient activity. According to the patient, she had been yelling at her significant other for quite some time, with no other voice-related activity. She had not swallowed any sharp objects. She had no previous esophageal disease.

With no episodes of vomiting or ingestion of a foreign body recorded prior to the esophageal rupture, combined with a chest x-ray showing no pneumoperitoneum and no subcutaneous emphysema, Boerrhave's syndrome was ruled out Thus her diagnosis of esophageal perforation was delayed for a few days.

Spontaneous rupture of the esophagus as seen in Boerhaave's syndrome perforation commonly occurs in the lower one-third of esophagus. Our patient had spontaneous rupture in the hypopharynx and cervical esophagus.

While Boerhaave's syndrome involves a full thickness perforation, our patient experienced violation of the innermost mucosa, submucosa, and muscularis propria of the esophagus. The adventitia remained intact. This resulted in the perforation appearing as a walled off abscess on CT.

*I*atrogenic perforations of the esophagus most frequently occur in the cervical esophagus just above the upper sphincter, whereas spontaneous rupture as seen in Boerhaave's syndrome perforation commonly occurs in the lower one-third of esophagus. Our patient had mild symptoms of esophageal perforation prior to her laryngoscopy. Therefore, we feel that she likely had a contained cervical esophageal perforation initially prior to her laryngoscopy and did not experience the perforation from laryngoscopy.

Conclusion

Our patient with no history of esophageal disease, presented with partial thickness esophageal perforation from the hypopharynx to the aortic arch. Due to the unusual location of a spontaneous esophageal perforation, her mild symptoms, and her imaging, she was felt to have a retropharyngeal abscess. Our case is the

first study showing a hypopharyngeal and cervical esophageal perforation following yelling. She underwent combined open and endoscopic repair and is back to baseline 5 months after intervention.

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Legend

Figure 1. Initial CT scan showing retropharyngeal fluid collection.

Figure 2. Repeat CT scan showing increasing fluid collection behind the esophagus extending into the mediastinum.

Figure 3. Sagittal CT showing fluid collection posterior the hypopharynx.

Figure 4. Axial CT showing fluid collection posterior to the hypopharynx.

Figure 5. Axial CT showing fluid collection posterior to the esophagus.

Figure 6. Coronal CT showing fluid collection posterior to the hypopharynx.

Figures 7 and 8. X-rays showing two esophageal stents placed in an overlapping fashion.