

## **UC Irvine**

### **Journal of Education and Teaching in Emergency Medicine**

#### **Title**

Esophageal Perforation

#### **Permalink**

<https://escholarship.org/uc/item/73n4d88n>

#### **Journal**

Journal of Education and Teaching in Emergency Medicine, 2(3)

#### **Authors**

Park, Valentina  
Mefford, Jason

#### **Publication Date**

2017

#### **DOI**

10.5070/M523035680

#### **Copyright Information**

Copyright 2017 by the author(s). This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

## Esophageal Perforation

Valentina Park, BS\* and Jason Mefford, MD^

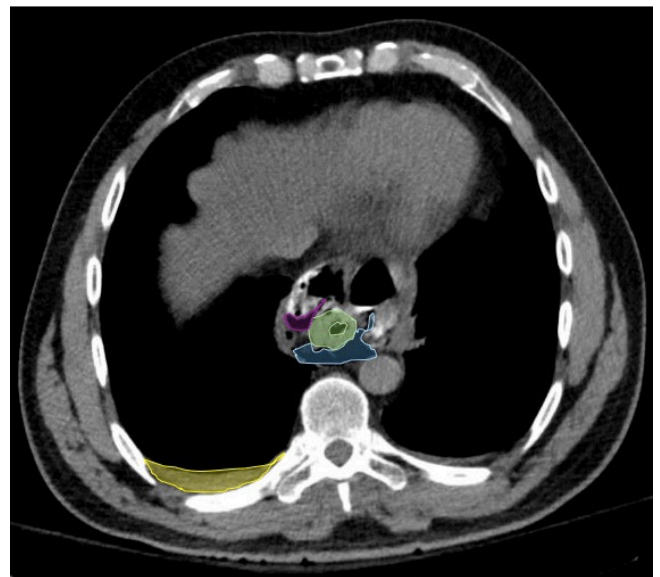
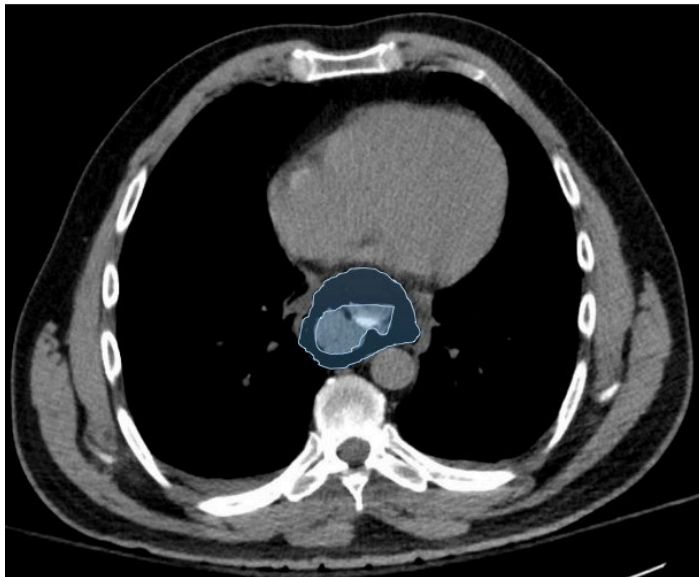
\*University of California, Irvine, Department of Emergency Medicine, Orange, CA

^University of California, Davis, Department of Emergency Medicine, Sacramento, CA

Correspondence should be addressed to Valentina Park, BS at [valentp@uci.edu](mailto:valentp@uci.edu)

Submitted: March 3, 2017; Accepted: May 25, 2017; Electronically Published: July 14, 2017; <https://doi.org/10.21980/J8K91B>

Copyright: © 2017 Park et al. This is an open access article distributed in accordance with the terms of the Creative Commons Attribution (CC BY 4.0) License. See: <http://creativecommons.org/licenses/by/4.0/>



**History of present illness:** A 51-year-old male with history of gastroesophageal reflux disease status post multiple endoscopies presented to the emergency department with severe abdominal pain. Paramedics reported the patient appeared diaphoretic on arrival and maintained stable vital signs during transit. The patient reported taking Prilosec that morning before eating breakfast, after which he felt like something was stuck in his throat with abrupt onset of abdominal pain radiating to his back and associated dyspnea, described as “the worst pain of my life.” The patient denied nausea or vomiting. On exam he was diaphoretic, in moderate distress and clutching his chest. He had clear breath sounds bilaterally and normal heart sounds. His abdomen was soft and tender to palpation in the epigastrium without rebound or guarding.

**Significant findings:** CT chest angiogram demonstrated extensive pneumomediastinum (blue outline) with mural thickening (green outline) and mural air within the distal esophagus (purple outline), in addition to adjacent air-fluid levels (yellow outline), suggestive of esophageal perforation, likely consistent with Boerhaave syndrome.

**Discussion:** Esophageal perforation is a life-threatening event often requiring urgent or emergent surgery, which can be delayed due to nonspecific presentations that make it difficult to diagnose.<sup>1,2,3</sup> The mortality rate can be as high as 20% and delaying treatment for more than 24 hours doubles this risk.<sup>4,5</sup>

Iatrogenic causes account for the majority of esophageal perforations (55%-70%), followed by spontaneous rupture (15%), foreign body ingestion (10%-14%), and traumatic perforation (10%-23%).<sup>1,2,4</sup> Pain referring directly to the site of perforation is the most common presenting symptom, and can mislead clinicians to focus on other intrathoracic organs of more immediate interest such as the heart and lungs. Intrathoracic and intraabdominal perforations are more severe than cervical perforations and may present with characteristic signs of systemic sepsis such as tachycardia, tachypnea, and fever.<sup>6,3</sup> CT esophagography showing pleural effusions, pneumomediastinum, subcutaneous emphysema, hydrothorax, hydropneumothorax, and subdiaphragmatic air are all suggestive of a perforation with a sensitivity and specificity of 78% and 94%.<sup>3,7</sup> Primary repair by a trained surgeon<sup>3,7</sup> remains the most successful treatment option, reducing mortality by up to 70% compared to nonoperative management.<sup>1,2,3</sup> More conservative treatment may be considered in select cases of well-contained perforations with minimal contamination.<sup>4</sup>

The patient in this case underwent emergent primary surgical repair of a distal esophageal perforation and removal of an impacted bezoar with endoscopy. The patient did well post-operatively and was discharged in stable condition.

**Topics:** Esophageal perforation, Boerhaave syndrome, abdominal, GI, gastroenterology, bezoar.

#### References:

1. Jones WG 2nd, Ginsberg RJ. Esophageal perforation: a continuing challenge. *Ann Thorac Surg.* 1992;53(3):534-543.
2. Laddertrons MR, Lowe JE, Postlethwait RW. Diagnosis and recommended management of esophageal perforation and rupture. *Ann Thorac Surg.* 1986;42(3):235-239.

3. Brinster CJ, Singhal S, Lee L, Marshall MB, Kaiser LR, Kucharczuk JC. Evolving options in the management of esophageal perforation. *Ann Thorac Surg.* 2004;77(4):1475-1483. doi: 10/1016/j.athoracsur.2003.08.037
4. White RK, Morris DM. Diagnosis and management of esophageal perforations. *Am Surg.* 1992;58:112–119.
5. Suarez-Poveda T, Morales-Uribe CH, Sanabria A, Llano-Sanchez A, Valencia-Delgado AM, Rivera-Velazquez LF, et al. Diagnostic performance of CT esophagography in patients with suspected esophageal rupture. *Emerg Radiol.* 2014;21:505. doi: 10.1007/s10140-014-1222-4
6. Biancari F, D'Andrea V, Paone R, Di Marco C, Savino G, Koivukangas V, et al. Current treatment and outcome of esophageal perforations in adults: systematic review and meta-analysis of 75 studies. *World J Surg.* 2013;37(5):1051-1059. doi: 10.1007/s00268-013-1951-7
7. Wright CD, Mathisen DJ, Wain JC, Moncure AC, Hilgenberg AD, Grillo HC. Reinforced primary repair of thoracic esophageal perforation. *Ann Thorac Surg.* 1995;60:245-249.