

Introduction

- Esophageal malignancy is the most common cause of tracheoesophageal fistula (TEF) in adults developing in 5-15% of patients that have an esophageal malignancy
- Fistula formation is frequently found late in the disease course of esophageal malignancy, often as a result of cellular damage from radiation therapy.
- Patients can present in a septic state, with symptom onset including coughing, pneumonia, hemoptysis, hypoxic respiratory distress, and aspiration.
- The symptoms of cough, aspiration, and pneumonia remain consistent with expected symptoms of radiation therapy for esophageal malignancy and can lead to delay in diagnosis of TEF.

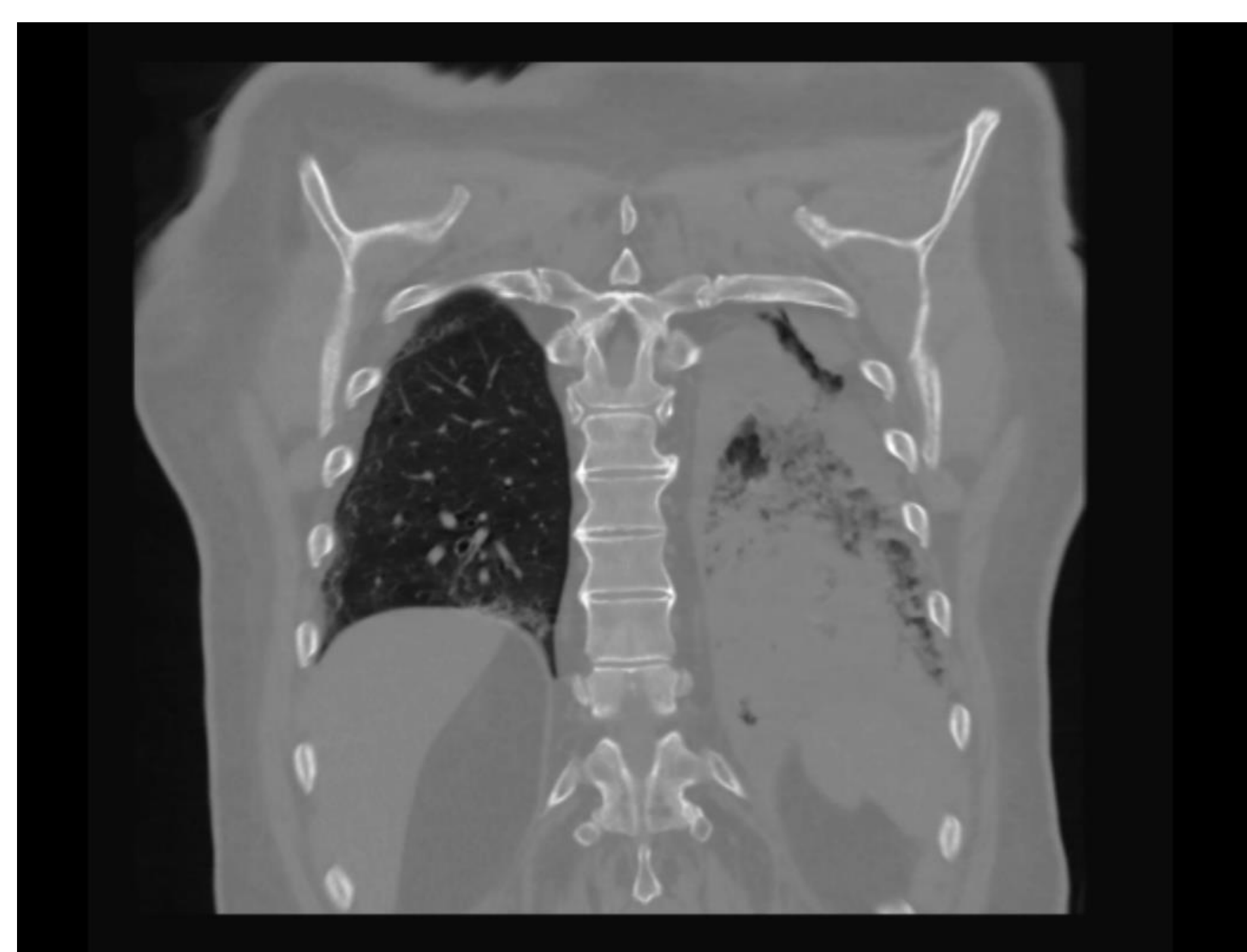


Figure 1. CT Chest without contrast showing multifocal aspiration pneumonia.

Case Description

The patient was a 75-year-old male with a history of non-Hodgkin's lymphoma, atrial fibrillation on warfarin, and chronic dysphagia.

Presentation:

- Admitted to the medical intensive care unit for acute hypoxic respiratory failure requiring non-invasive mechanical ventilation.
- Labs were remarkable for white blood cell count of 17.9, hemoglobin 10.5, platelets 400. BUN of 29, Cr of 2.2, and the remainder of electrolytes were within normal limits.
- Total bilirubin, transaminases, alkaline phosphatase, and lipase were unremarkable.
- Electrocardiogram was significant for atrial fibrillation with rapid ventricular rate.
- CT chest w/o contrast noted multifocal aspiration pneumonia, most severe at the left lung base (figure 1). CT abdomen w/o contrast showed irregular thickening of the mid to distal esophagus suspicious for a neoplastic etiology, for which GI was consulted for an esophagogastroduodenoscopy (EGD).

Hospital Course:

- He was found to be in acute hypoxic respiratory failure with sepsis due to aspiration pneumonia in the left lower lobe, making the patient too unstable for EGD initially.
- He was given azithromycin 500mg and 2g cefepime.
- Subsequently, he developed pulseless electrical activity-arrest requiring intubation.
- Following intubation, it was conducive for the patient to undergo EGD, which found invasive squamous cell carcinoma of the esophagus with tracheal fistulation.
- Due to poor prognosis, the palliative care team was consulted at which point the patient elected for hospice with comfort measures only.

References

- 1)Watanabe, Masayuki et al. "Recent progress in multidisciplinary treatment for patients with esophageal cancer." *Surgery today* vol. 50,1 (2020): 12-20. doi:10.1007/s00595-019-01878-7
- 2) Hürtgen M, Herber SCA. Treatment of malignant tracheoesophageal fistula. *Thorac Surg Clin*. 2014 Feb;24(1):117-127. doi: 10.1016/j.thorsurg.2013.09.006. Epub 2013 Nov 9. PMID: 24295667.
- 3) Lolley DM, Ray JF, Ransdell HT, Razzuk MA, Urschel HC. Management of malignant esophagorespiratory fistula. *Ann Thorac Surg*. 1978 Jun;25(6):516-20. doi: 10.1016/s0003-4975(10)63600-4. PMID: 77661.
- 4) Balazs A, Kupcsulik PK, Galambos Z. Esophagorespiratory fistulas of tumorous origin. Non-operative management of 264 cases in a 20-year period. *Eur J Cardiothorac Surg*. 2008 Nov;34(5):1103-7. doi: 10.1016/j.ejcts.2008.06.025. Epub 2008 Aug 3. PMID: 18678504.
- 5) Ajani JA, D'Amico TA, Bentrem DJ, et al. Esophageal and Esophagogastric Junction Cancers, Version 2.2019, NCCN Clinical Practice Guidelines in Oncology. *J Natl Compr Canc Netw*. 2019;17(7):855-883. doi:10.6004/jnccn.2019.0033
- 6) Xin Guan, Chao Liu, Tianshuo Zhou, Zhigang Ma, Chunhui Zhang, Bojun Wang, Yang Yao, Xiaona Fan, Zhiwei Li, Yanqiao Zhang; Survival and prognostic factors of patients with esophageal fistula in advanced esophageal squamous cell carcinoma. *Biosci Rep* 31 January 2020; 40 (1): BSR20193379. doi: <https://doi.org/10.1042/BSR20193379>

EGD Images:

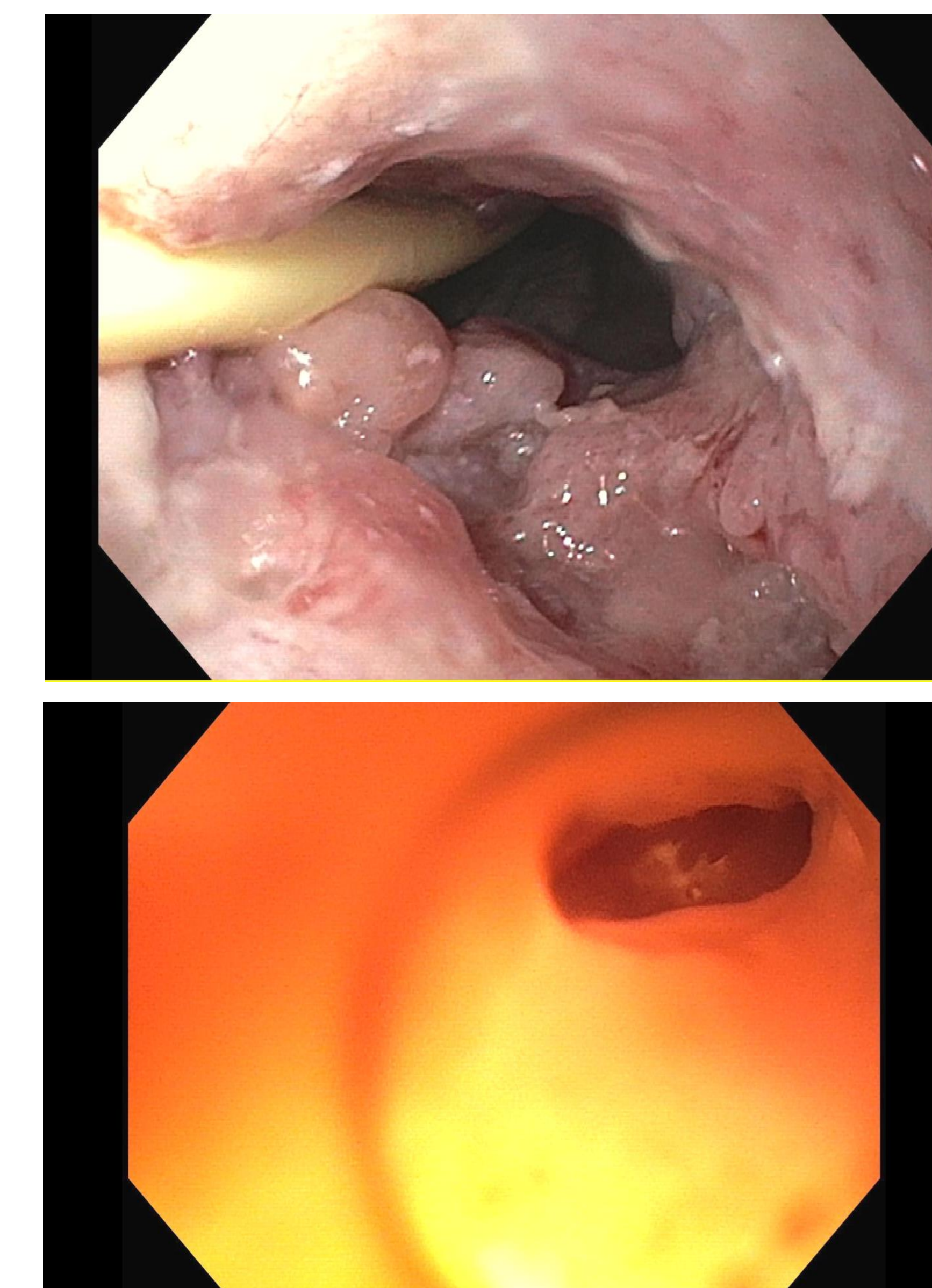


Figure 2. Images taken from the esophagogastroduodenoscopy showing The esophageal squamous cell carcinoma (top) and transesophageal fistula (bottom).

Conclusion

- Esophageal cancer is the 6th leading cause of cancer related death in men with a 5 year survival rate of 15-25%.
- Due to the rapidly progressive nature of the disease and the frequent lack of clinical symptoms during early stages, esophageal carcinoma is especially difficult to detect.
- TEFs are typically found late in the disease course, but it is critical to recognize that complications associated with esophageal fistulas (i.e. aspiration pneumonia) can be the presenting findings of esophageal malignancy.