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Case Report

Hypoxia in a Patient with Esophageal Cancer

Dipti Sagar[1,2], Pravachan Hegde[1], Helen Wong[1,2] and Shreyas Saligram[1,2]*

[1]*University of California, San Francisco, Fresno, California, USA*

[2]*VA Central California Health System, Fresno, California, USA*

***Corresponding Author:** Shreyas Saligram, University of California, San Francisco, Fresno, California, USA.

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Abstract

57 year old male was diagnosed with stage 4 squamous cell carcinoma of esophagus. He received a partially covered esophageal stent for obstructing esophageal mass. He had radiotherapy and was started on palliative chemotherapy, cisplatin and fluorouracil. He presented 6 months later with fever, chills, and generalized weakness, shortness of breath and productive cough of 3 day duration. He was febrile with temperature of 102.6, hypoxic with SO_2 of 88% on room air. Physical examination revealed tachypnea; decreased breath sounds and diffuses crepitation bilaterally. Laboratory tests were significant for neutropenia with absolute neutrophil count of 0.3. Chest X-ray showed bilateral lower lobe interstitial prominence and right middle lobe consolidation (Figure 1).

Keywords: *Hypoxia; Esophageal Cancer*

Introduction

The treatment of tracheoesophageal (TE) fistula has made marked progress with advancement of endoscopic techniques. As surgical intervention is often not feasible due to advanced malignancy and poor performance status of the patients, endoscopic and bronchoscopic intervention provides a good choice to palliate symptoms and reconstruct the airway and esophagus. We present an interesting case of TE fistula where we successfully placed tracheal and esophageal stent (dual stenting) for palliative treatment resulting in great clinical results.

Case Report

57 year old male was diagnosed with stage 4 squamous cell carcinoma of esophagus. He received a partially covered esophageal stent for obstructing esophageal mass. He had radiotherapy and was started on palliative chemotherapy, cisplatin and fluorouracil. He presented 6 months later with fever, chills, and generalized weakness, shortness of breath and productive cough of 3 day duration. He was febrile with temperature of 102.6, hypoxic with SO_2 of 88% on room air. Physical examination revealed tachypnea; decreased breath sounds and diffuses crepitation bilaterally. Laboratory tests were significant for neutropenia with absolute neutrophil count of 0.3. Chest X-ray showed bilateral lower lobe interstitial prominence and right middle lobe consolidation (Figure 1). He was admitted to ICU for acute hypoxic respiratory failure, febrile neutropenia and septic shock secondary to pneumonia. Bronchoscopy was done for hypoxia and acute respiratory failure which showed a tracheoesophageal (TE) fistula secondary to esophageal perforation and migration of stent in to the trachea (Figure 2). Patient underwent double stenting in collaboration with interventional GI and pulmonologist. An initial bronchoscopy and subsequent endoscopy showed a TE fistula at 23 cm. This was hemi circumferential and a lot of necrosis was present from his prior radiotherapy. A prior esophageal stent was noted. The proximal end of the stent was at 24 cm. Using an over the wire technique a 60 X 20 mm fully covered metal tracheal stent was placed (Figure 3). Although, it appeared to seal the fistula, the tracheal stent appeared to protrude into the esophageal lumen. We then placed a fully covered metal stent (23 mm x 125 mm) through the existing stent with proximal end at 21 cm to completely cover the fistula (Figure 4). Esophagogram post procedure showed no evidence of esophageal leak and communicating tracheoesophageal fistula was not seen.

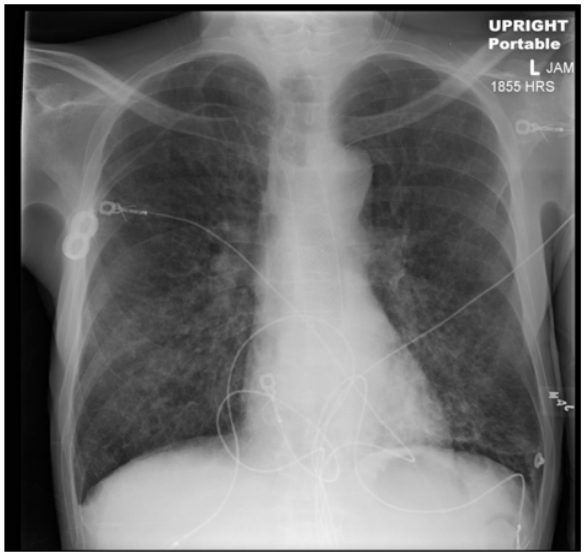

Figure 1

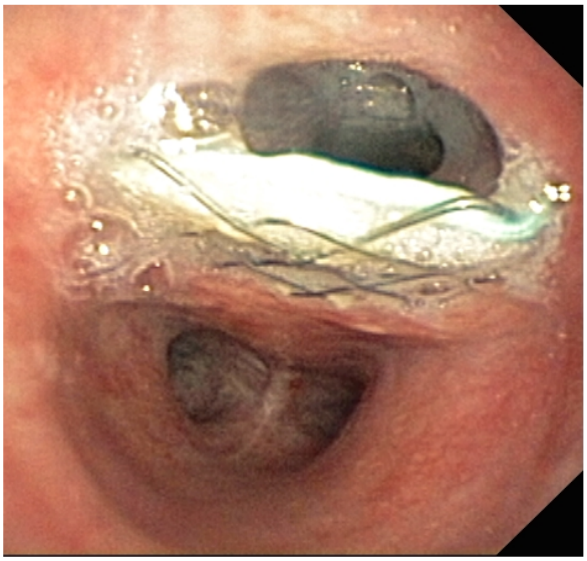

Figure 2

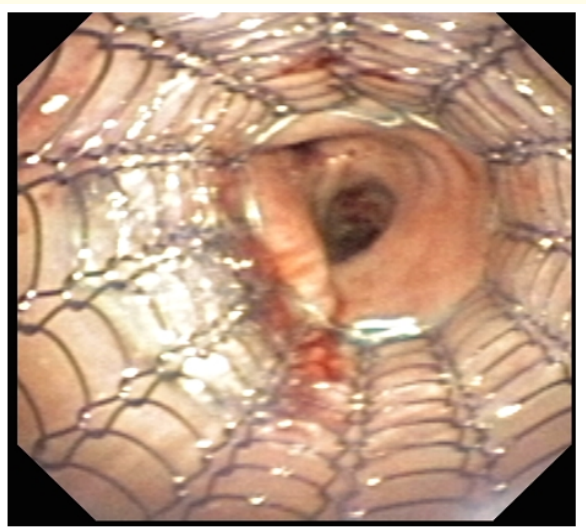

Figure 3

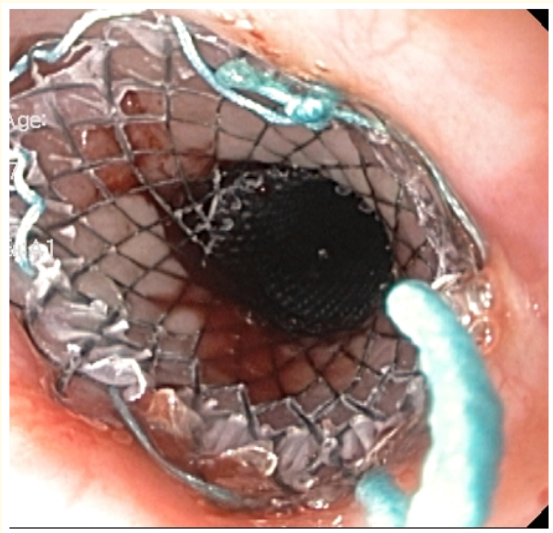

Figure 4

Discussion

An acquired tracheoesophageal fistula is a pathological communication between the esophagus and the airway. It can occur as complications of mechanical ventilation, complications related to previous tracheal or esophageal surgery, trauma, iatrogenic injuries, caustic ingestion, complications related to previous radiation therapy to the mediastinum, esophageal cancer and complications related to tracheal or esophageal stents. The life expectancy of the patients without proper treatment may be measured in weeks. A TE Fistula usually develops during or after completing radiation and chemotherapy with subsequent tumor necrosis. In addition, the persistent pressure to the wall of esophagus and airway after esophageal stenting is also an important cause [1]. Severe cough, pneumonia, frequent aspiration to the airway, malnutrition and life-threatening hemoptysis can lead to rapid deterioration, and most patients die within 3 to

4 months [2]. Operative resection of the fistula and reconstruction of the airway and alimentary tract will provide the best opportunity of full recovery. However, it carries a high risk of complications, especially for patients with cancer and is therefore seldom performed [3]. It is safe and feasible to place tracheal and esophageal covered metallic stents based on fistula location and size for the palliative treatment of TE Fistula.

Simultaneous stenting of both trachea and esophagus or tracheal stenting in case of complete esophageal obstruction, yields the best clinical results and has become a standard procedure [4-6].

No severe complications have been reported so far in large series [7,8]. Should removal of the stent be necessary, rigid bronchoscope and standard interventional techniques are warranted.

Double stenting can improve the quality of life and improve survival time in carefully selected patients with large TE fistulas [4].

Conclusion

A good palliative recovery for TE fistula can be achieved with endoscopic placement of esophagus and tracheal stenting [2]. Two stents seemed to work better than single stent for palliation.

This case highlights the role of endoscopic dual stenting (esophageal and tracheal) in patients with trachea-esophageal fistula who are poor surgical candidates.

Conflict of Interest

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