

Imaging of esophageal stent with convex probe endobronchial ultrasound

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A 79-year-old man presented with dysphagia. A computed tomography (CT) chest scan showed a dilated esophagus and prominence of the subcarinal nodal area. An esophagogastroduodenoscopy (EGD) and endoscopic ultrasound (EUS) revealed an abnormal narrowing of the esophagus between 25 cm and 30 cm, with a tumor extending 3 cm below the gastroesophageal (GE) junction. Biopsies demonstrated invasive esophageal adenocarcinoma. Due to the friable esophagus and possibility of needle contamination, a needle aspiration of the subcarinal node/mass/infiltrative process was not obtained during the EUS staging. An 18 mm × 103 mm fully covered esophageal stent was placed over the guide wire and under fluoroscopy guidance.

The follow-up CT chest scan showed the stent in the esophagus with anterior displacement of the posterior tracheal wall and less prominence of the previously seen subcarinal abnormality [Figure 1]. The bronchoscopy with the convex probe endobronchial ultrasound (CP-EBUS) was performed for airway assessment and sampling of subcarinal lymph node. The bronchoscopy showed 30% narrowing in the distal third of the trachea from a bulge of the posterior wall [Figure 2]. The CP-EBUS showed the esophageal stent behind the posterior wall

of the trachea and left mainstem bronchus, as a serrated hyperechoic area at the edge of the subcarinal infiltrative process [Figure 3]. An EBUS-guided transbronchial needle aspiration (EBUS-TBNA) was carefully performed from this area, as there was only a small window for sampling [Figure 4]. The cytology suggested an inflammatory process without any malignancy.

Esophageal stents are usually placed in patients with dysphagia secondary to malignancy or benign disorders.^[1] Malignant dysphagia is defined as difficulty in swallowing due to mechanical compression of the esophagus caused by cancer, resulting in partially or completely obstructed esophageal lumen.^[2] Due to the distensible nature of the esophagus the patients will not recognize the symptoms until 50% of the luminal diameter is compromised, this can cause a

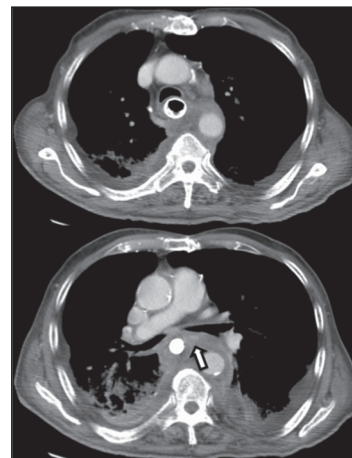


Figure 1. CT chest showing the esophageal stent with enlarged subcarinal lymph node (arrow)

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Figure 2. Bronchoscopy view of the lower third of the trachea showing a bulging effect of the esophageal stent at the posterior wall of the trachea

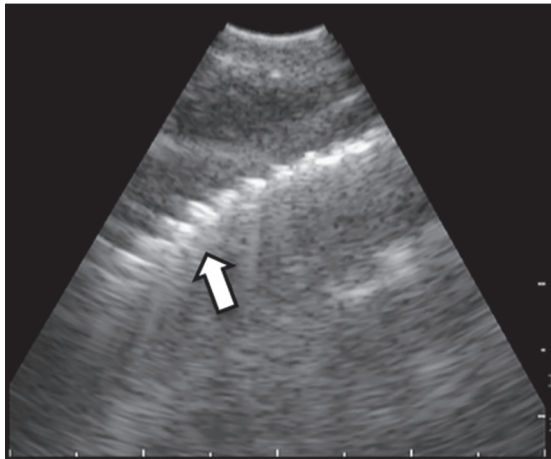


Figure 3. EBUS view of the subcarinal area showing the stent hyperechoic activity (white arrow)

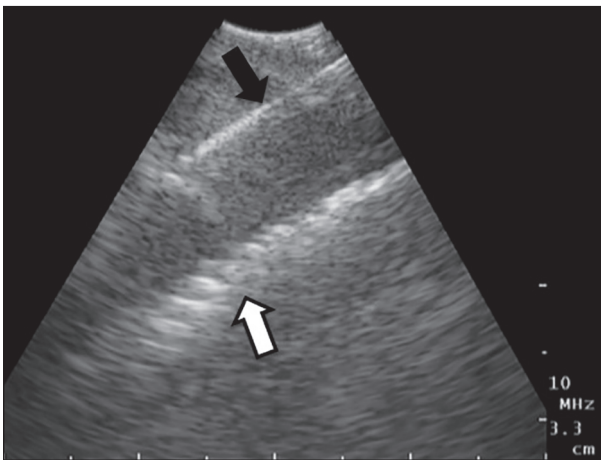


Figure 4. EBUS view of the subcarinal area showing the stent hyperechoic activity (white arrow) and the TBNA next to the stent (black arrow)

significant delay in the recognition of the symptoms and unfortunately diagnosis at advanced stage^[3]

Esophageal stents play an important role in the palliative treatment of those patients since more than 50% of them are present when the tumor is unresectable.^[4]

We are presenting a case of an already-placed esophageal stent and need further sampling of the subcarinal lymph node. The EBUS were used to assess and sample the subcarinal lymph node.

The role of EBUS has expanded from its initial role in the diagnosis and staging of lung cancers to diagnosing other mediastinal benign and malignant conditions such as sarcoidosis, melanoma and lymphoma.^[5,6] Recently, the EBUS scope has been used for the diagnosis of vascular diseases such as pulmonary thromboembolic disease, and pulmonary and venous pulmonary tumors.^[7,8] Beyond its diagnostic role, the therapeutic role of CP-EBUS continues to grow. CP-EBUS has been used to guide implantation of radiotherapy monitoring devices and placement of fiducial markers to guide stereotactic radiosurgery.

The aim of this report is to describe the imaging characteristics of esophageal stent using CP-EBUS. Esophageal stents are usually hyperechoic and can vary in shape, depending on the viewing plane with EBUS. In our case, the stent's image was ranging from a straight hyperechoic line to a serrated curved hyperechoic net, which limits the view beyond the stent and prohibiting the identification of anatomical structures. Therefore, it is important to recognize the appearance of esophageal stent with EBUS so as not to confuse the EBUS needle, which itself looks hyperechoic [Figure 4].

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