

# Esophageal Covered Stent Fracture And Perforation In To The Main Left Bronchi

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## Abstract

A 56-year old male was diagnosed with esophageal carcinoma and treated with chemotherapy and chemoradiation therapy as palliative therapy. Nineteen months after the diagnosis and eight months after radiotherapy, the patient experienced dysphagia and cough when eating. A fistula was discovered between the esophagus and the main left bronchi in the barium esophagram. A coated self-expanding metal stent (SEMS) was placed into the esophagus as palliative therapy. Four months after the SEMS insertion, the patient was re-admitted again due to dyspnea, cough and expectoration. The fibro-bronchoscope showed a fistula between the main left bronchi and the esophagus with coated SEMS perforation into the bronchi.

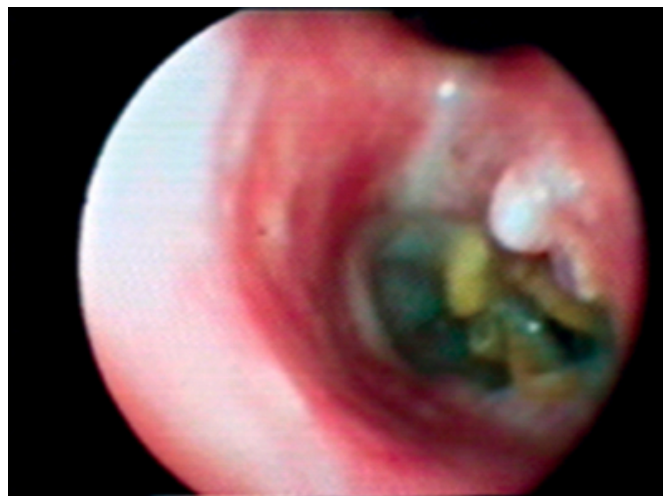
## CASE REPORT

A 56-year old male was referred to our hospital by chest pain when eating, and weight loss at the last two months. The barium esophagram discovered a polypoid lesion in the middle third of the esophagus, with a slight stenosis. The oral endoscopy revealed a neoplastic grown and the biopsy taken during the oral endoscopy showed a squamous carcinoma. Infiltration of the main left bronchi was demonstrated in the chest CT-scan and in the eco-endoscopy, without mediastinal adenopathy or metastases. Chemotherapy with six cycles of 5- fluorouracil and cisplatin was done after the diagnosis and chemoradiation therapy (44 Gy) was administrated as palliative therapy. Nineteen months after the diagnosis and eight months after radiotherapy, the patient experienced dysphagia and cough when eating. A fistula was discovered between the esophagus and the main left bronchi in the barium esophagram. A coated self-expanding metal stent (SEMS) Ultraflex (Microvasive/ Boston Scientific Inc.) was placed into the esophagus as palliative therapy.

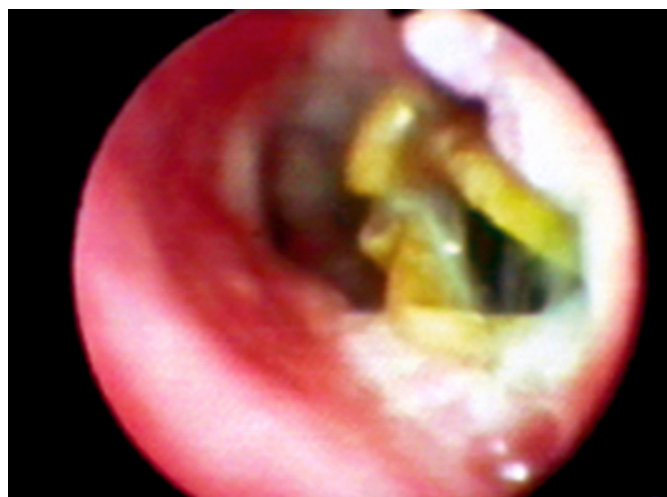
Four months after the SEMS insertion, the patient was re-admitted again due to dyspnea, cough and expectoration. The fibro-bronchoscope showed a fistula between the main left bronchi and the esophagus with coated SEMS perforation into the bronchi (Figure 1). A subsequent SEMS was placed within the pre-existent esophageal stent. The patient died a few days later due to massive hematemesis.

## Figure 1

Figure 1 and 2: Esophageal-bronchial fistula. Yellow cover of esophageal stent penetrates into the main left bronchi next to neoplastic grown



**Figure 2**



### DISCUSSION

Esophageal carcinoma is the seventh most common malignancy worldwide. The incidence is increasing in the western world mainly due to squamous carcinoma. Unfortunately, most patients are no longer curable at the time of presentation. The palliative treatment of esophageal cancer includes the placement of self-expanding metallic stent into the esophagus. The first description of the endoscopic placement of an expanding metallic spiral stent was made by Frimberger in 1983. There are currently at least eight different types of metallic stent on the market, covered and uncovered, some of which have anti-reflux valves. Ultraflex stent is available in uncovered and covered forms. It has the weakest radial force but greater flexibility and is employed for upper third strictures. They are primarily used to palliate symptoms of dysphagia in patients with inoperable esophageal cancer and allow the patient to swallow oral food until the more advanced stages of the disease are reached. Although the internal diameter of these stents is small (10-12mm), that does not guarantee the relief of dysphagia. Other indications include anastomotic recurrence following surgery and secondary tumors within the mediastinum causing esophageal compression.

The most serious local complication of esophageal cancer is the formation of a fistulous communication of the esophagus to the airway, which occurs by direct invasion of the tumor. Fistulization to the bronchial tree is less commonly observed than to the trachea.

Treatment of the bronchoesophageal fistula in patients with advanced disease is restricted by the disease itself. The endoscopic placement of expandable-coated stent may be the treatment of choice for closure tracheoesophageal fistulas.

and later place another stent in the airway, because it remains an important method for maintaining quality of life. Other possibility consists in surgical bypass with esophageal exclusion, that can be attempted in patients with large or multifocal tracheoesophageal fistulas or who have unsuccessful SEMS placement.

Most large series use covered stents to treat tracheoesophageal fistula and esophageal perforation, with success rates of 80%-100%. Plastic stent are difficult to place in patients with angulated strictures, and the patients with proximal esophageal cancers may have pain after the placement. Other symptoms can be derivates from the airway compression by the stent. Other complications of SEMS are distal migration, bleeding and perforation. The perforation is more frequent in patients that previously have been received chemoradiation therapy, chemotherapy or alcohol injection. This observation suggest that the inherent structural weakness of tissues treated previously with these techniques are a risk factor of augmented stent-related complications. The poststent chemoradiation is also associated with an increased complication tases, as tracheoesophageal fistula.

One exceptional complication of the placement of the stent is the stent fracture, observed only in the 2% of the patients treated with this technique, in which part of the silicone coating from the esophagus stent penetrates the bronchi. In these cases some authors consider that an additional stent into previous esophageal stent should not be an effective treatment because suspect that the exposed part of the initial stent penetrates into the bronchus following the expansion of the second stent. However, there are publicated cases suggesting that the second stent can block the fistula and improve the oral alimentation status of the patient and impeding the respiratory symptoms caused by the fistulous communication. The airway stenting instead of an esophageal stent may represent a useful modality of treatment.

In the case that we report, when the patient was diagnosed, there was already an infiltration of the main left bronchi, which, during the course of the illness, destroyed the bronchial wall to become a fistula. Later the placement of the SEMS to treat the apparition of the bronchoesophageal fistula during the course of the illness appeared the fistulization of the coated esophageal stent. This complication was discovered by the bronchofibroscopy. We thin that our case is interesting because the perforation of the covered stent into the bronchial tree is an exceptional

complication of this technique.

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