

Spontaneous esophageal cancer perforation managed with Fully Covered Self Expandable Metallic Stent (FCSEMS)

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Esophageal cancer is one of the 7 most common cancers in the world. It usually presents with dysphagia, persistent vomiting, weight loss, loss of appetite and anorexia. However, 1% of esophageal cancer might perforate causing severe abdominal pain. We present the case of a 30-year-old man with sudden onset of epigastric pain for one day duration. He had a history of progressive dysphagia, vomiting, weight loss and loss of appetite for the past three months. CT thorax and abdomen revealed a circumferential mass at the lower esophagus with the presence of pneumomediastinum and pneumoperitoneum suggestive of esophageal perforation. The patient was successfully treated endoscopically by using a Fully Covered Self-Expandable Metallic Stent (FCSEMS) to maintain lumen patency and cover the area of the perforation.

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INTRODUCTION

Esophageal cancer is one of the 7th most common cancers in the world.¹ In 2007 there were more than 17 000 people diagnosed with esophageal cancer in the United States and more than 1 200 cases in Malaysia.¹ This cancer usually occurs in patients over the age of 40 and is more common in men compared to women with a ratio of 7: 1. Despite treatment, the estimated 5-year survival rate among those with this disease is still low, in the range of 16-18%.¹ These patients usually present with dysphagia, persistent vomiting, weight loss, loss of appetite and anorexia. Various modalities can be used to investigate this cancer including endoscopy, barium swallow and CT scan. There are various modes of esophageal cancer treatment including a conservative approach, endoscopy and surgery. Esophagectomy is the standard procedure for cure. However, 1% of esophageal tumors present with perforation.² This condition is also closely related to high mortality and poor prognosis. The use of Self-Expanding Metallic Stent (SEMS) needs to be considered in managing such a condition before subjecting the patient to oncological treatment.³

CASE PRESENTATION

A 30-year-old gentleman, presented with sudden onset of epigastric pain for 1 day. It was associated with progressive dysphagia, recurrent vomiting, weight loss and loss of appetite for past three months. On clinical assessment, patient looked cachexic, dehydrated, lethargic and was having generalized abdominal pain mostly at the epigastric region. CT thorax and abdomen revealed a circumferential mass at the lower esophagus with the presence of

pneumomediastinum and pneumoperitoneum with liver metastases. The mass was located at the level of T10 vertebral body down to the gastroesophageal junction with a length of 5cm and a thickness of 2.5cm. The patient underwent diagnostic laparoscopy with peritoneal lavage and on table oesophagogastroduodenoscopy (OGD) under general anaesthesia. Diagnostic Laparoscopy showed presence of mass at the lower esophagus, extending to the upper part of the stomach and to the lesser curvature. Pus was noted surrounding the mass with no obvious perforation seen. Multiple liver nodules were also seen. The peritoneum was washed with distilled water and a 19Fr Blake drain was inserted. Meanwhile, the OGD revealed a lower esophageal mass obstructing the lumen with the presence of pus surrounding the lesion. Multiple biopsies were taken. The length of the stricture was 8 cm measured using the water soluble non-ionic contrast via fluoroscopy. The site of perforation was identified 2cm above the esophageal gastric junction during the fluoroscopy study. After that Controlled Radial Expansion (CRE) balloon dilatation was used to expand the narrowed area. A guidewire was then introduced and advanced beyond the stricture into the stomach (Figure 1). The length of the stent measured 4 cm longer than the stricture area to reduce the risk of migration and ensure the area of perforation was fully covered. A Fully Covered Self Expandable Metallic Stent (FCSEMS) of 12 cm length was then deployed (Figure 2 & 3). This technique helped to maintain the opening of the lumen and cover the area of perforation. Histopathology from the biopsies taken showed adenocarcinoma. The patient was allowed home on day 5 postoperatively and was subjected to chemotherapy as palliation. Unfortunately, this patient presented again fourteen days

later with septic shock secondary to community-acquired pneumonia and succumbed after three days.

Figure 1 The guidewire passed the constrictive lesion at the distal esophagus

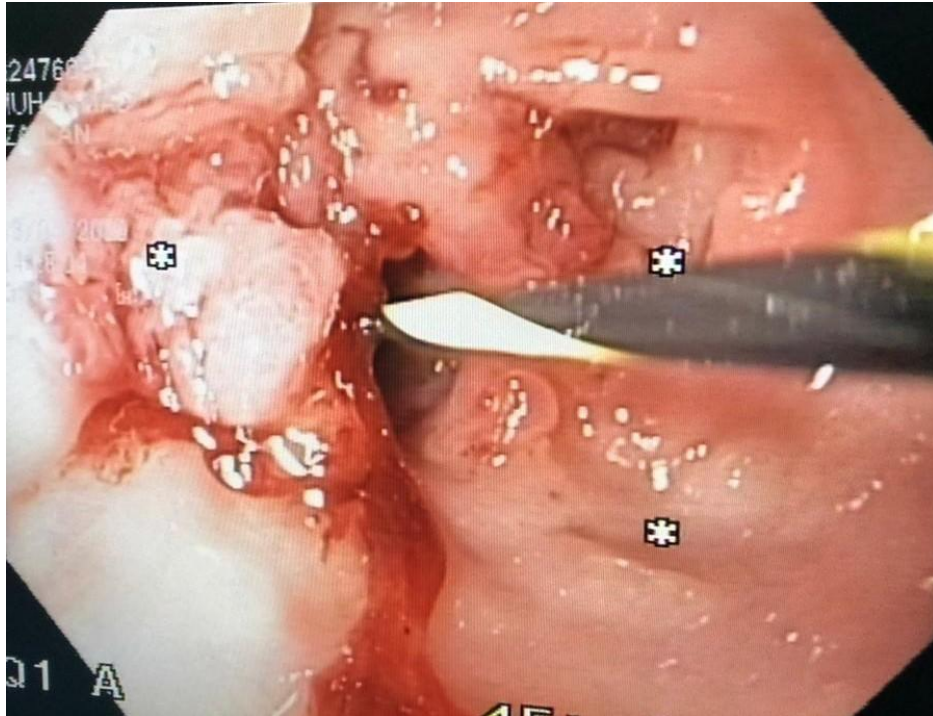


Figure 2 The Fully Covered Self Expandable Metallic Stent was placed at the distal esophagus

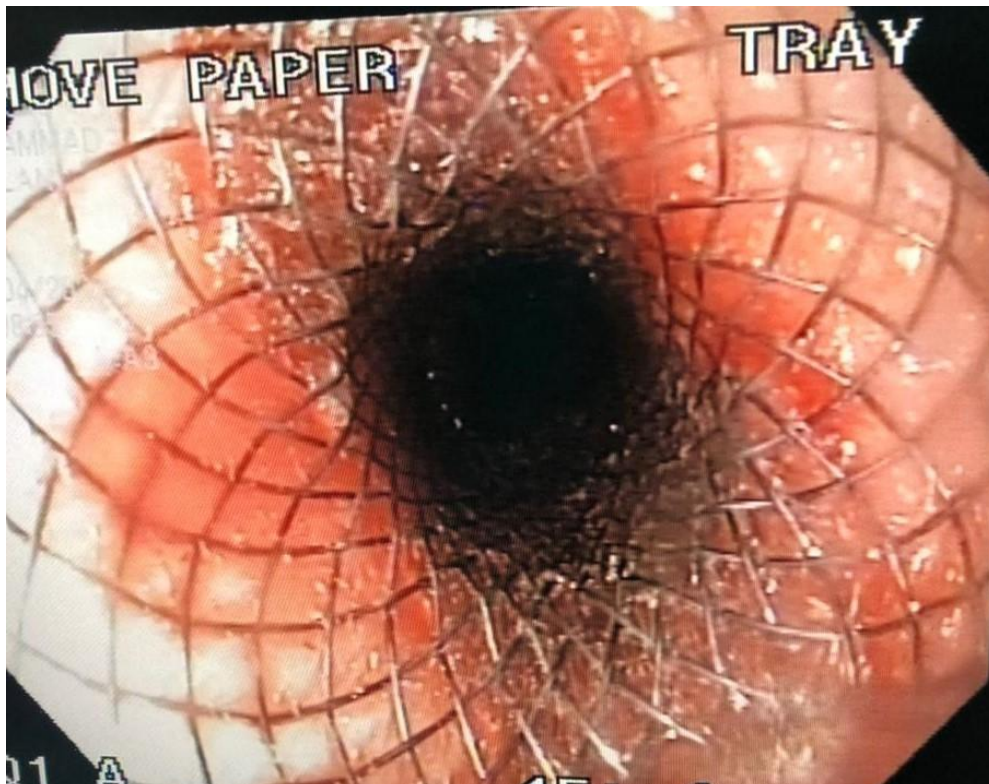
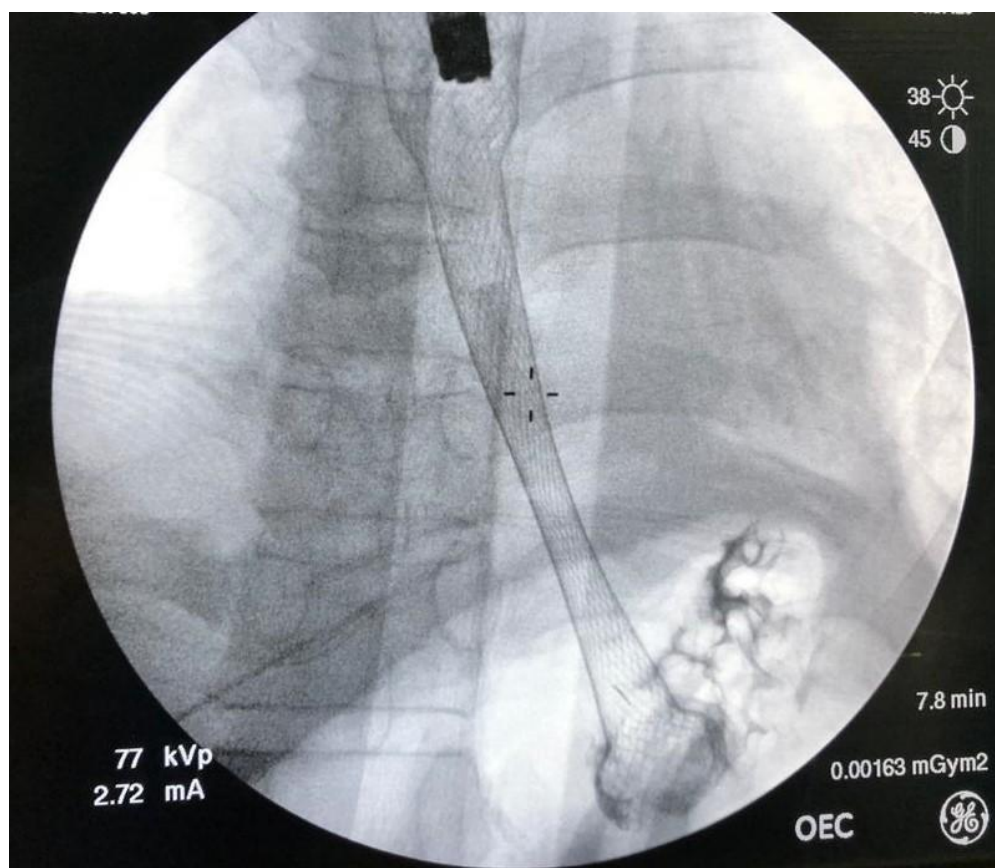


Figure 3 The position of FCSEMS confirmed by plain radiograph



DISCUSSION

The various treatment modalities that exist for the treatment of esophageal perforation illustrate the occurrence of heterogeneity in etiology (benign versus malignant) and diversity in the clinical course of esophageal perforation. The variety of surgical techniques proposed for the management of esophageal perforation include simple drainage (abdominal with left chest tube drainage), repair with or without autologous tissue, esophageal exclusion, resection with diversion and esophagectomy with primary anastomosis. In the case of a small and non-cancerous esophageal perforation, non-operative treatment is the best and most effective way of dealing with the condition.¹⁻²

However, the most effective treatment for perforation caused by locally advanced or advanced esophageal cancer still yet to be determined. Poor healing process, local or systemic tumor load, the general condition of the patient before and after surgery and prognosis of the disease are the things to be considered before deciding on the best treatment option.³

Surgical resection in esophageal cancer perforation is one of the most definitive treatments. Surgical resection can remove mediastinal contamination and the tumor simultaneously. However, the decision to perform resection depends on the general status of the patient and the extent of the tumor. In addition, the uncertainty in the oncological consequences of esophageal perforation leads to the lack of clear guidance

on the outcome of the surgery. This is not the same as perforation in colon cancer where this is a predictor of poor survival of the disease. Palliative esophagectomy are avoided in view of high morbidity and mortality. Therefore, the role of emergency palliative esophagectomy in patients with advanced disease and sepsis is still questionable.¹⁻³

In such cases, less invasive procedures are among the best solution. Self-Expanding Metallic Stent (SEMS) is generally used to treat dysphagia due to malignant obstruction and has been successful in treating this condition.⁴ Recently, several authors have studied the use of Self-Expanding Metallic Stent (SEMS) to address esophageal tumor perforation. *Morgan et al.* 1997 reported on the use of covered SEMS in 19 patients with iatrogenic

esophageal perforation during dilatation of malignant stricture. Immediate successful sealing was successfully achieved in 18 of those patients.⁵ The use of a second SEMS for overlapping purposes may also be used if persistent leakage is still present. We propose that the use of SEMS be considered in spontaneous perforated esophageal cancer, especially in patients with advanced disease and sepsis.

CONCLUSION

FCSEMS may be considered as an option for perforated esophageal cancer especially in cases where sepsis is uncontrolled and when the primary tumor is unresectable.

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