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Endoluminal Palliation

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An estimated 14,520 new cases of esophageal cancer are expected in the United States in 2005. The number of expected deaths from this disease exceeds 13,500 [1]. In the United States, the incidence of adenocarcinoma of the esophagus has been increasing, with a dwindling incidence of squamous cell carcinoma. Other regions, such as Asia, Northern Africa, and Iran, have comparatively higher incidences of squamous cell cancer of the esophagus.

Esophageal cancer is associated with significant mortality, with an estimated 5-year relative survival of 14.9%. With distant spread, this survival decreases to 2.7% [2]. Although surgery can be used in a curative approach to early-stage cancers, locally advanced and metastatic esophageal cancer is unresectable.

With advanced disease, the focus of care shifts to preserving and improving quality of life. Obstruction of the esophageal lumen by tumor leads to substantial dysphagia and poor nutritional status. Such patients are also at risk for aspiration pneumonia.

Endoscopic methods for palliation of malignant dysphagia are aimed at debulking or displacing obstructing tumors to improve swallowing and decrease the risk of aspiration (Box 1). Thermal and nonthermal endoscopic ablative therapies may be applied to tumors within the esophageal lumen but have no role in the palliation of dysphagia from extrinsic causes [3,4]. Endoscopically placed stents apply internal radial forces to the esophagus, mechanically widening the esophageal lumen. Stents are useful for palliating malignant dysphagia resulting from tumors within the esophagus and from malignant processes that cause external compression of the esophagus, such as extra-esophageal cancers and lymphadenopathy.

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Box 1. Methods of endoluminal palliation of esophageal cancer

Ablative

- Laser
- Argon beam plasma coagulation
- Photodynamic therapy
- Brachytherapy catheter placement
- Alcohol injection
- Chemotherapy injection

Stents

- Rigid plastic (traditional non-expanding)
- Self-expandable metal
- Self-expandable plastic

Endoscopically placed stents provide an alternative to surgery for the palliation of inoperable cancers involving the esophagus or gastric cardia. Unlike feeding tubes, the use of stents can result in palliation of dysphagia, allowing peroral nutrition. Covered metal stents are considered to be the nonsurgical treatment of choice in the management of tracheoesophageal fistulas [5].

Self-expandable metal stents (SEMS) have largely replaced conventional plastic stents. The fixed diameters of rigid plastic stents limit their usefulness in treating significant esophageal strictures, and the placement of rigid plastic stents in the esophagus is associated with considerable discomfort and the need for aggressive dilation. This may necessitate general anesthesia for placement and increases the risk of perforation. SEMS have the advantage of a thin wall and collapsed design that allows expansion to a larger, suitable diameter after deployment. The lower cost of plastic stents allows them to be used in regions where resources are limited or where esophageal malignancy is encountered infrequently. One institution reported that deployment of SEMS was six times as costly as deployment of plastic stents [6].

De Palma et al [7] published a randomized controlled trial of plastic versus gelatin-covered SEMS for palliation of esophageal cancer in 39 patients. Patients with esophagorespiratory fistulas were excluded. Both stents were placed using fluoroscopic guidance. Plastic stents were placed after Savary dilation. Both devices were similar in technical success (>90%), and both stents resulted in immediate significant improvement in dysphagia. General anesthesia was required for plastic stent placement in 60% of patients. Twenty-two percent of patients who received a plastic stent suffered early severe complications, including perforation, bleeding, and death. No early complications developed in the metal stent group. Four instances of late stent obstruction were seen in each group. Tumor ingrowth was observed in two patients with SEMS. This study