

Reprinted from December 2012

Supported by

ClinicalOncology  
NewsGastroenterology  
& Endoscopy News

GENERAL SURGERY NEWS

Boston  
Scientific

# Advances in Stent Technology for Esophageal Cancer

## Faculty

### Rafael S. Andrade, MD

*Associate Professor**Section of Thoracic and Foregut Surgery**University of Minnesota Medical Center, Fairview**Minneapolis, Minnesota*

## Introduction

Esophageal stricture and tracheoesophageal fistula in the setting of advanced esophageal cancer can have a devastating effect on quality of life due to severe dysphagia, aspiration pneumonia, and the inability to sustain nutrition or enjoy meals.<sup>1</sup> Management of dysphagia is indicated for palliative purposes in patients with unresectable esophageal cancer<sup>1</sup> and in order to optimize nutrition prior to surgery in the neoadjuvant setting.<sup>2,3</sup>

Historically, management of malignant dysphagia consisted of radiation therapy with or without systemic chemotherapy, endoscopic tumor ablation, stricture dilation or enteral feeding.<sup>4,5</sup> Although radiation therapy provides excellent palliation, its effect is delayed by weeks.<sup>6,7</sup>

## Esophageal Stenting

Endoscopically placed stents are being used for immediate palliation of dysphagia as well as tracheoesophageal fistulae.<sup>1,3</sup> The SIREC (Stent or Intraluminal Radiotherapy for Inoperable Esophageal Cancer) study

found that newer stents produced more immediate relief of dysphagia than radiation therapy,<sup>8</sup> although the latter offers a more durable result for patients with more than 3 months' life expectancy.<sup>8</sup> Thus, the paradigm of esophageal stenting for immediate relief followed by radiation therapy may be the most effective way to palliate dysphagia in patients with malignant dysphagia and a life expectancy of at least 3 months.

The WallFlex<sup>®</sup> (Boston Scientific) fully or partially covered esophageal stent, constructed of multiple braided radiopaque nitinol wires, is indicated for the maintenance of esophageal luminal patency in malignant esophageal strictures or for the occlusion of concurrent esophageal fistulae.<sup>9</sup>

A prospective study<sup>10</sup> assessed the clinical efficacy and safety of the esophageal WallFlex<sup>®</sup> stent for dysphagia palliation in 37 patients with esophageal cancer.<sup>10</sup> Stent placement was successful in 36 of 37 patients, who experienced significant palliation.<sup>10</sup> Major complications occurred in 3 patients (pneumonia in 1, severe pain in 2); 8 patients developed recurrent dysphagia because of stent migration, food impaction, or tissue ingrowth or overgrowth.<sup>10</sup>

## Our Experience

Multidisciplinary tumor board conferences present the perfect time to discuss our patients and select the most appropriate form of dysphagia palliation in esophageal cancer patients. The typical WallFlex<sup>®</sup> stent candidate at our institution presents with a T3 tumor and dysphagia; the stent is placed either for palliative purposes or to maintain nutrition and quality of life before neoadjuvant therapy and surgical management (Figure). Radiation therapists at our institution have no difficulty simulating and delivering treatment in the presence of an esophageal stent.<sup>11</sup>

For those patients who require nutritional support, I favor stenting in lieu of the placement of a jejunostomy feeding tube (J-tube). Placing a J-tube may require a 5-day hospital stay because bolus feeding needs to be gradually instituted. The stent is easier to place and quicker to re-establish enteral nutrition.

Stent placement at our hospital is done under general anesthesia and fluoroscopic guidance, and is frequently performed at the time of endoscopic ultrasound staging. We do not predilate except when the stricture is so tight that we cannot pass the deployment system. We usually select the 18-mm diameter stent to relieve solid-food dysphagia. In instances when the stricture is not as tight, we will place a 23-mm diameter stent. We tend to put in longer stents if we have to stent across



**Figure. Esophageal tumor before and after placement of the WallFlex<sup>®</sup> stent.**

[www.bostonscientific.com/endo-resources](http://www.bostonscientific.com/endo-resources)

the gastroesophageal junction due to tumor involvement since we believe they help address higher migration rates in these instances. We admit the patient for overnight observation and obtain a chest x-ray the following morning to confirm proper stent position.

Patients receiving the esophageal stent are initiated on a clear liquid diet with a stepwise progression to a soft solid diet. The patient's ultimate diet can be determined by trial and error. Patients who are stented across the gastroesophageal junction are instructed to follow aspiration precautions and prescribed twice-daily proton pump inhibitors. Patients are seen in the outpatient clinic 1 week after stent placement for symptom assessment and repeat chest x-ray to evaluate stent position and to assess clinical response. The majority of patients experience immediate dysphagia palliation, but patients often have variable amounts of retrosternal pain, which tends to resolve within 3 to 5 days with the use of oral narcotic pain medication. Reflux symptoms and stent migration remain concerns during follow-up of patients receiving esophageal stents. Stent migration very rarely requires emergent intervention or hospitalization. We usually perform endoscopy within 2 to 4 days.

My advice for learning how to place the WallFlex® stent is to approach someone with significant experience and observe the procedure. Ask them how they select patients for this procedure, under which conditions they use general anesthesia and fluoroscopy, and how they ensure proper positioning, and make note of technical pearls.

## References

1. Sharma P, Kozarek R; Practice Parameters Committee of American College of Gastroenterology. Role of esophageal stents in benign and malignant diseases. *Am J Gastroenterol*. 2010;105(2):258-273.
2. Pellen MG, Sabri S, Razack A, Gilani SQ, Jain PK. Safety and efficacy of self-expanding removable metal esophageal stents during neoadjuvant chemotherapy for resectable esophageal cancer. *Dis Esophagus*. 2012;25(1):48-53.
3. D'Cunha J, Rueth NM, Groth SS, Maddaus MA, Andrade RS. Esophageal stents for anastomotic leaks and perforations. *J Thorac Cardiovasc Surg*. 2011;142(1):39-46.
4. Gasper WJ, Jamshidi R, Theodore PR. Palliation of thoracic malignancies. *Surg Oncol*. 2007;16(4):259-265.
5. Arends J, Bodoky G, Bozzetti F, et al. ESPEN guidelines on enteral nutrition: non-surgical oncology. *Clin Nutr*. 2006;25(2):245-259.
6. Bown SG. Palliation of malignant dysphagia: Surgery, radiotherapy, laser, intubation alone or in combination? *Gut*. 1991;32(8):841-844.
7. Siersema PD, Dees J, Van Blankenstein M. Palliation of malignant dysphagia from oesophageal cancer. Rotterdam Oesophageal Tumour Study Group. *Scand J Gastroenterol Suppl*. 1998;225:75-84.
8. Homs MY, Steyerberg EW, Eijkenboom WM, et al. Single-dose brachytherapy versus metal stent placement for the palliation of dysphagia from oesophageal cancer: multicentre randomised trial. *Lancet*. 2004;364(9444):1497-1504.
9. van Boeckel PG, Siersema PD, Sturgess R, et al. A new partially covered metal stent for palliation of malignant dysphagia: a prospective follow-up study. *Gastrointest Endosc*. 2010;72(6):1269-1273.
10. Boston Scientific, Inc. WallFlex® Fully and Partially Covered Esophageal Stents. [http://www.bostonscientific.com/Device.bsci?page=HCP\\_Overview&navRelId=1000.1003&method=DevDetailHCP&id=10115032&pageDisclaimer=Disclaimer](http://www.bostonscientific.com/Device.bsci?page=HCP_Overview&navRelId=1000.1003&method=DevDetailHCP&id=10115032&pageDisclaimer=Disclaimer). Accessed October 31, 2012.
11. Rueth N, Shaw D, D'Cunha J, Cho C, Maddaus M, Andrade R. Esophageal stenting and radiation therapy: a multimodality approach for the palliation of symptomatic malignant dysphagia. *Ann Surg Oncol*. 2012;10.1245/s10434-012-2459-3.

Disclosure: Dr. Andrade was a paid consultant for Boston Scientific Corporation.

Disclaimer: This article is designed to be a summary of information. While it is detailed, it is not an exhaustive clinical review. McMahon Publishing, Boston Scientific, and the author neither affirm or deny the accuracy of the information contained herein. No liability will be assumed for the use of the article, and the absence of typographical errors is not guaranteed. Readers are strongly urged to consult any relevant primary literature.

Copyright © 2012, McMahon Publishing, 545 West 45th Street, New York, NY 10036. Printed in the USA. All rights reserved, including the right of reproduction, in whole or in part, in any form.

ENDO-114415-AA Nov2012