Stenting for Esophageal Cancer
Technical Issues and Outcomes

Moishe Liberman
Director – C.E.T.O.C.

Division of Thoracic Surgery
Centre Hospitalier de l’Université de Montréal
Disclosures

Research and Educational Grants:
- Ethicon Endosurgery
- Cook
- Boston Scientific
- Olympus
- Baxter (in kind support)
- ODS Medical
- Caprion
Outline

- Stenting for Palliation – Indications
- Stenting Techniques
- Double Stenting
- UES Stenting
- Stenting in Neoadjuvant Setting
- Cases
PALLIATION - OPTIONS

- Esophageal Dilation
- Endoluminal Laser Therapy (YAG, Argon)
- Alcohol Ablation
- Chemotherapy (CIS) Injection
- PDT
- APC
- Cryospray
- Brachytherapy, External Beam
- **Endoscopic Stenting**
Esophageal Stenting Technique

- Endoscopy
- Pediatric scope helpful
- Guidewire
- Sizing
- Measurements
  - Proximal 3-5cm
  - Distal less important
- Fluoroscopy occasionally
- Endoclips
- Minimal to no stent in stomach
- Pre-dilation NOT recommended
- Be careful with mid and upper third tumors
  - Airway obstruction
  - Bronch Before and After Stenting
Stent Options
Palliation

Who?
- T4
- M+
- Too old
- Too sick
- Dysphagia

Why?
- Symptomatic relief of dysphagia
- QOL
- Malnutrition
Complications

### Immediate
- Aspiration
- Airway compromise
- Malposition
- Delivery system entrapment
- Stent dislodgement
- Perforation

### Early (<7 days)
- Bleeding
- Chest pain
- Nausea

### Late (> 7 days)
- Recurrent dysphagia
- Migration
- TE Fistula
- Bleeding
- GERD / Aspiration
Interventions for dysphagia in oesophageal cancer
Dai et al.

- 3682 patients
- 53 Studies
- SEMS insertion is safer and more effective than plastic
- Thermal and chemical ablative therapy provide comparable dysphagia palliation but have an increased requirement for re-interventions and adverse effects
- Anti-reflux stents provided comparable dysphagia palliation to conventional metal stents
- Brachytherapy might be a suitable alternative to SEMS in providing a survival advantage and possibly a better quality of life, and might provide better results when combined with argon plasma coagulation or external beam radiation therapy
Expandable Metal Stents vs. Laser Combined with Radiotherapy for Palliation of Unresectable Esophageal Cancer: A Prospective RCT

- RCT
- 39 patients
- Unresectable esophageal CA
  - ND:YAG Laser + Brachytherapy
  - SEMS
- **SEMS** associated with less:
  - Fistula Formation
  - Bleeding
  - Need for re-treatments
  - Cost

Evidence-Based Choice of Esophageal Stent for the Palliative Management of Malignant Dysphagia

- 12 Study Meta-Analysis
- 911 Patients
- **46% Metal**
- **54% Plastic**
- 8 studies comparing covered to uncovered metal stents

Evidence-Based Choice of Esophageal Stent for the Palliative Management of Malignant Dysphagia

Stent Insertion Related Mortality

Favors SEMS  Favors Plastic
### Stent Insertion Related Morbidity

<table>
<thead>
<tr>
<th>Study or sub-category</th>
<th>SEMS n/N</th>
<th>Plastic n/N</th>
<th>OR (fixed) 95% CI</th>
<th>Weight %</th>
<th>OR (fixed) 95% CI</th>
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<td><strong>01 Perforation rate</strong></td>
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<td>3/20</td>
<td>22.29</td>
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<td>137</td>
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<td>63</td>
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<td>59</td>
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</table>
Esophageal + TB Invasion

Stenosis / TE Fistula

Esophageal Stent

and

TB Stent
Patients and Methods

Trachea

Carina

Bronchi
Patients and Methods

Trachea

Carina

Bronchi
Patients and Methods

Trachea

Carina

Bronchi
Demographics

October 2009 39 patients 99 patients September 2014

22 patients 67 years 17 patients

Effect of primary tumor site
♀ 69 year old female

History of Esophageal CA

Treated chemo-XRT at OSH

Dyspnea and Stridor

Dysphagia
Neoadjuvant Setting

- **Who?**
  - T3, N1+, M1a

- **Why?**
  - Nutritional Status
  - Symptomatic Relief of Dysphagia
  - QOL

- **Risks:**
  - Proximal migration
  - Distal migration
  - Erosion + Fistula
  - Bleeding
Nutritional Support with Endoluminal Stenting During Neoadjuvant Therapy for Esophageal Malignancy

- Retrospective review
- 59 patients
  - 25 SEMS
  - 19 PEGs
  - 14 oral diet only

**SEMS:**
- Lower rate of interruption of chemo-XRT
- Greater improvement in Albumin levels
- Less percentage of body weight loss
- Stent migration = 24%
- 31% did not go on to resection due to progression
- Major operative complications were: 20%, 47%, 43% (p=NS)


- Prospective, dual-institution, single-arm, phase II evaluation of esophageal cancer patients undergoing neoadjuvant therapy before resection
- SEMS before neoadjuvant therapy
- 32 Patients
- 2 patients had stent migration
- No erosive complications
- Improvement in dysphagia, mild weight loss, and maintenance of performance status.
- No surgical complications were attributed to stent placement.

Prospective trial
- 13 patients
- Silicone/Polyester Stent
- Placed immediately following EUS Staging

- No perforations
- No bleeding episodes
- Significant decrease in dysphagia scores at 1, 2, 3, 4 weeks
- Stent migration in 46%

Absorbable Stents
Neo-Adjuvant before MIE
XRT Induced Stricture
UES Stenting
41M. Antral AdenoCA.
Summary

- Esophageal stenting offers excellent palliation for unresectable ES CA
  - Fast
  - Cheap
  - Immediate relief of dysphagia
- Useful in combination with airway stenting for TE Fistula / Es+TB Obstruction
- Is being used in the neoadjuvant setting
Ivor-Lewis Esophagectomy
Montreal General Hospital - 2005