“Use of stents in esophageal cancer”

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Features of esophageal cancer

- Esophageal cancer is an abnormal growth that arises from the inner lining of the esophagus (tube which brings food from the mouth to the stomach).
- It usually develops in people over age 50 but can occur much younger.
- The actual cause is unknown but it has been associated with smoking, heavy alcohol drinking and gastroesophageal reflux disease.
## Cancer Statistics for USA

<table>
<thead>
<tr>
<th>Cancer Site</th>
<th>Incidence</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung &amp; Bronchus</td>
<td>215,020</td>
<td>161,840</td>
</tr>
<tr>
<td>Breast</td>
<td>184,450</td>
<td>40,930</td>
</tr>
<tr>
<td>Prostate</td>
<td>186,320</td>
<td>28,660</td>
</tr>
<tr>
<td>Colorectal</td>
<td>148,810</td>
<td>49,960</td>
</tr>
<tr>
<td>Gastric</td>
<td>21,500</td>
<td>10,880</td>
</tr>
<tr>
<td>Esophageal</td>
<td>16,470</td>
<td>14,280</td>
</tr>
</tbody>
</table>

Natural History of Esophageal Adenocarcinoma

Normal Esophagus -> Reflux Esophagitis -> Barrett’s Epithelium -> Barrett’s Dysplasia -> Invasive Carcinoma

Acid Bile -> Acid Bile -> Genetic alterations -> Genetic alterations
Causes of esophageal cancer symptoms

• The 3 important characteristics of any cancer are growth, invasion and spread beyond its boundaries.

• With time, esophageal cancer grows, encircles the esophagus, invades and spreads to the lungs, liver, bones, etc.

• Symptoms are mostly caused by narrowing of the esophageal passage by the enlarging mass.
Causes of esophageal cancer symptoms

• As the tumor grows it encircles the esophagus.
• In the area of the tumor the esophagus becomes stiff and narrow.
• When swallowed food reaches the tumor, it gets stuck and causes pain, gagging, possibly vomiting.
• Prolonged symptoms lead to weight loss.
# Symptoms of advanced esophageal cancer

<table>
<thead>
<tr>
<th>Symptom</th>
<th>% of pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty swallowing</td>
<td>80-96</td>
</tr>
<tr>
<td>Weight loss</td>
<td>42-46</td>
</tr>
<tr>
<td>Pain</td>
<td>6-20</td>
</tr>
<tr>
<td>Cachexia</td>
<td>6</td>
</tr>
<tr>
<td>Cough/ Hoarseness</td>
<td>3-4</td>
</tr>
</tbody>
</table>

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Treatment of esophageal obstruction from cancer

- Surgery
- Chemotherapy
- Radiation therapy
- Combination chemo/RT
- Endoscopic tumor ablation
- Esophageal stent placement
- Percutaneous endoscopic gastrostomy
Treatment of esophageal obstruction with stents

• Endoscopic treatment focuses on reopening the narrowed part of the esophagus
• Available stents now have a spring-like effect to stretch the esophagus open
• The large diameter of the stents allows solid food to pass easily
Esophageal Wallstent®

- Stainless steel
  Or Nitinol
- Thin introducer
- Large diameter
  16-23 mm
- Length 8-15 cm
- Silicone membrane
Picture of esophageal stent placement
Esophageal Wallstent
Why use metal esophageal stents?

- Metal esophageal stents are self-expanding so they are easily inserted with an endoscopy procedure.
- Metal stents have a thin introducer, require minimal dilation for insertion, resulting in a low complication rate.
- Metal esophageal stents open the esophageal passage widely so food passes easily.
How does it feel after stent is placed?

• The procedure is performed with sedation, so there is no pain.
• Most patients feel an awareness in the chest after the stent is placed.
• This usually disappears after a few days, but sometimes requires pain killers.
• Most patients can drink on the same day and eat solid food on the 2nd day.
Side effects of esophageal stents?

- The most common side effect is pain, usually with the larger stents (10-15%).
- Mild reflux occurs when the stent is low down in the esophagus (20-30%).
- Hard foods can get stuck in the stent if not chewed carefully (3-10%).
- The stent can slide into the stomach if the tumor shrinks (10-12%).
Are there complications from stents?

- Bleeding (3-6%)
- Perforation (1-3%)
- Death (1%)
Can the stent be removed?

• Esophageal stents are designed for permanent placement.
• Sometimes the stent becomes partially embedded in the esophageal wall, making removal difficult.
• If designed for removal, they can usually be removed with endoscopy.
• When they slide into the stomach, they can be removed with endoscopy.
Conclusions

- Esophageal metal stents provide a quick and safe method of relieving obstruction from esophageal cancer.
- They allow people with esophageal obstruction to eat regular food.
- They can cause minor side effects that usually subside after a few days.
- Stent migration & tumor progression sometimes causes recurrence of symptoms.