Does the Surgeon Have a Role in the Management of Early (HGD-T1a) Esophageal Cancer?

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Disclosures

No relevant disclosures
Clinical Scenario

• 75 year old man
• Long standing GERD for 20 years managed with daily PPIs
• Falls on vacation sustains # right hip
• Found to be anemic
Clinical Scenario

- 1 cm lesion, 1 cm proximal to SCJ
- 1 cm Barrett’s
- Biopsies – adenoca, Barrett’s without dysplasia
- EUS – T1b lesion, no nodes
- CT/PET - normal
What is the next step in the patient’s management?

A. EMR
B. Esophagectomy
C. Induction chemo/RT
D. Induction chemo
Clinical Scenario

- Final path
  - T1a
  - No LVI
  - Mod. Differentiated
  - Clear margins
What is the next step in the patient’s management?

A. Esophagectomy
B. Ablation of Barrett’s
C. Surveillance of Barrett’s
D. Ablation, Surveillance, Nissen
Clinical Scenario
Curative Resection for Esophageal Adenocarcinoma
Analysis Of 100 En Bloc Esophagectomies

Jeffrey A. Hagen, MD, Steven R. DeMeester, MD, Jeffrey H. Peters, MD, Para Chandrasoma, MD, and Tom R. DeMeester, MD

From the Department of Surgery, Keck School of Medicine, University of Southern California, Los Angeles, California

Objective
To document what can be accomplished with surgical resection done according to the classical principles of surgical oncology.

Methods
One hundred consecutive patients underwent en bloc esophagectomy for esophageal adenocarcinoma. No patient received pre- or postoperative chemotherapy or radiation therapy. Tumor depth and number and location of involved lymph nodes were recorded. A lymph node ratio was calculated by dividing the number of involved nodes by the total number removed. Follow-up was complete in all patients. The median follow-up of surviving patients was 40 months, with 23 patients surviving 5 years or more.

Results
The overall actuarial survival rate at 5 years was 52%. Survival rates by American Joint Commission on Cancer (AJCC) stage were stage 1 (n = 26), 94%; stage 2a (n = 11), 65%; stage 2b (n = 13), 65%; stage 3 (n = 32), 23%; and stage 4 (n = 18), 27%. Sixteen tumors were confined to the mucosa, 16 to the submucosa, and 13 to the muscularis propria, and 55 were transmural. Tumor depth and the number and ratio of involved nodes were predictors of survival. Metastases to celiac (n 5 16) or other distant node sites (n 5 26) were not associated with decreased survival. Local recurrence was seen in only one patient. Latent nodal recurrence outside the surgical field occurred in 9 patients and systemic metastases in 31. Tumor depth, the number of involved nodes, and the lymph node ratio were important predictors of systemic recurrence. The surgical death rate was 6%.

Conclusion
Long-term survival from adenocarcinoma of the esophagus can be achieved in more than half the patients who undergo en bloc resection. One third of patients with lymph node involvement survived 5 years. Local control is excellent after en bloc resection. The extent of disease associated with tumors confined to the mucosa and submucosa provides justification for more limited and less morbid resections.
Esophagectomy for HGD/IMC at URMC

<table>
<thead>
<tr>
<th>Year</th>
<th>HGD</th>
<th>IMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2005</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>2006</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>2007</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>2008</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>2009</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>2010</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>2011</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>2012</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Slide courtesy of Dr. Tom Watson and Michal Lada – AATS 2014
Curative endoscopic resection of early esophageal adenocarcinomas (Barrett’s cancer)

Christian Ell, MD, Andrea May, MD, Oliver Pech, MD, Liebwin Gossner, MD, Erwin Guenter, MD, Angelika Behrens, MD, Lars Nachbar, MD, Josephus Huijsmans, MD, Michael Vieth, MD, Manfred Stolte, MD

Wiesbaden and Bayreuth, Germany

**Background:** In view of the increasing incidence of adenocarcinoma in Barrett's esophagus and the mortality and high morbidity rates associated with surgical therapy for this condition, safe and effective but less invasive methods of treatment are needed.

**Objective:** To evaluate efficacy and safety of endoscopic resection in these patients.

**Design:** Single-center prospective study.

**Setting:** Teaching hospital, conducted between October 1996 and September 2003.

**Patients:** A total of 100 consecutive patients (mean age, 62.1 10.9 years; range, 31–86 years) with low-risk adenocarcinoma of the esophagus (macroscopic types I, IIa, IIb, and IIc; lesion diameter up to 20 mm; mucosal lesion without invasion into lymph vessels and veins; and histologic grades G1 and G2) arising in Barrett’s metaplasia.

**Interventions:** Endoscopic resection with the suck-and-cut technique.

**Main Outcome Measurements:** Complete local remission.

**Results:** A total of 144 resections (1.47 per patient) were performed without technical problems. No major complications and only 11 minor ones (bleedings without decrease of Hb O2 g/dL; treated with injection therapy) occurred. Complete local remission was achieved in 99 of the 100 patients after 1.9 months (range, 1–18 months) and a maximum of 3
Radiofrequency Ablation in Barrett’s Esophagus with Dysplasia

Should we throw in the towel?

Southern Thoracic 2012 – Update on Esophageal Disease
- 12 months surveillance
  - Q2-3 m EGD
  - No dysplasia
- Esomeprazole 40 mg BID
- Foregut evaluation
  - 48 hr pH
  - HRM
  - UGI
When to consider esophagectomy

**Favor Esophagectomy**
- Severe GERD symptoms
- Non functional esophagus
- Large hiatal hernia with short esophagus
- Long term uncertainty
- Unable to adhere to follow up and surveillance

**Favor Endotherapy**
- Functional esophagus
- Minimal symptoms of GERD
- Committed to multiple procedures and willingness to have further surveillance EGD
- Objective evidence of acid control with pH studies (on PPI or Nissen fundoplication)
Long term surveillance is required

32 patients with BE treated with APC-
(376 pt-yrs of follow-up)

BE without dysplasia -
27 patients - 323 pt-yrs of follow-up

2 cases of esophageal adenocarcinoma
Incidence : 0.61% per pt-yr

BE with LGD - 5 patients - 75 pt-yrs of follow-up

1 case of esophageal adenocarcinoma
Incidence : 1.3% per pt-yr

A rationale for surgeon involvement

<table>
<thead>
<tr>
<th>Study</th>
<th>N</th>
<th>% HGD or IMC</th>
<th>Follow-up (mos)</th>
<th>Recurrence Rate GEJ/ (No GEJ)</th>
<th>Rate of disease progression</th>
<th>Rate of progression to cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaheen 2011 USA</td>
<td>106</td>
<td>50</td>
<td>36.6</td>
<td>13.2%</td>
<td>4.2%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Gupta 2013 USA</td>
<td>448</td>
<td>71</td>
<td>27</td>
<td>33%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Haidry 2013 UK</td>
<td>335</td>
<td>96</td>
<td>19.1</td>
<td>N/a (8.2%)</td>
<td>5.1%</td>
<td>8%</td>
</tr>
<tr>
<td>Phoa 2013 Netherlands</td>
<td>54</td>
<td>100</td>
<td>61</td>
<td>35.2% (6.5%)</td>
<td>5.6%</td>
<td>3.7%</td>
</tr>
</tbody>
</table>
### Risk Factors For Failure

<table>
<thead>
<tr>
<th></th>
<th>Successful endotherapy n=28</th>
<th>Failed endotherapy n=10</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eradication of non-dysplastic Barrett’s</td>
<td>71%</td>
<td>20%</td>
<td>0.008</td>
</tr>
<tr>
<td># of endotherapy sessions mean (range)</td>
<td>1.7 (1-3)</td>
<td>2.8 (1-5)</td>
<td>0.006</td>
</tr>
<tr>
<td># EMR sessions mean (range)</td>
<td>0.8 (0-2)</td>
<td>1.2 (0-3)</td>
<td>0.08</td>
</tr>
<tr>
<td># RFA sessions mean (range)</td>
<td>1.0 (0-2)</td>
<td>1.6 (0-5)</td>
<td>0.10</td>
</tr>
<tr>
<td>Duration of endotherapy (months)</td>
<td>10</td>
<td>16</td>
<td>0.13</td>
</tr>
<tr>
<td>Complications of endotherapy (strictures)</td>
<td>4%</td>
<td>10%</td>
<td>0.46</td>
</tr>
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## Reasons for Failure in 1000 IMCs

<table>
<thead>
<tr>
<th>Reason for failure of endoscopic therapy</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor healing after EMR</td>
<td>12</td>
<td>28.6</td>
</tr>
<tr>
<td>Technical problems of EMR due to previous endotherapy</td>
<td>6</td>
<td>14.3</td>
</tr>
<tr>
<td>Wrong decision at initial assessment</td>
<td>22</td>
<td>52.4</td>
</tr>
<tr>
<td>No further endoscopic therapy due to second cancer</td>
<td>2</td>
<td>4.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>42</td>
<td>100</td>
</tr>
</tbody>
</table>

** LSBE and poorly differentiated IMC significant risk for failure

Multi-disciplinary discussion at tumor board is mandatory

Cancer Stage after Failed Endoscopic Therapy

- **Initial Presentation**: HGD 0%
- **During Endotherapy**: T1a 20%
- **At Esophagectomy**: T1a 20%, N1 40%

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The Durability of Endoscopic Therapy for Treatment of Barrett’s Metaplasia, Dysplasia, and Mucosal Cancer After Nissen Fundoplication

Corey S. Johnson • Brian E. Louie • Aaron Wille • Christy M. Dunst • Stephanie G. Worrell • Steven R. DeMeester • Jessica Reynolds • Joe Dixon • John C. Lipham • Michal Lada • Jeffrey H. Peters • Thomas J. Watson • Alexander S. Farivar • Ralph W. Aye

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Abstract

Introduction Radiofrequency ablation (RFA) ± endoscopic resection (EMR) is an established treatment strategy for neoplastic Barrett’s and intramucosal cancer. Most patients are managed with proton pump inhibitors. The incidence of recurrent Barrett’s metaplasia, dysplasia, or cancer after complete eradication is up to 43% using this strategy. We hypothesize the addition of fundoplication should result in a lower recurrence rates after complete eradication.
Durability after CR-IM

CR-IM
N = 26

Fundoplication

CR-IM
18 (69.2%)

Recurrent IM
8 (30.8%)

CR-IM
4 (15.4%)

IM
4 (15.4%)

Outcomes after CR-D

CR-D
N = 16

Fundoplication

- CR-IM 10 (62.5%)
- IM 5 (31.3%)
- LGD 1 (6.3%)

Resolution of Dysplasia

Persistent Dysplasia
N = 7

Fundoplication

CR-IM 4 (57%)
IM 2 (29%)
LGD 1 (14%)

# Progression of Disease

<table>
<thead>
<tr>
<th>Last Biopsy</th>
<th>CR-IM</th>
<th>IM</th>
<th>LGD</th>
<th>HGD</th>
<th>IMC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM</td>
<td>3 (6.1%)</td>
<td>2 (4.1%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5 (10.2%)</td>
</tr>
<tr>
<td>LGD</td>
<td>6 (10.2%)</td>
<td>2 (2.1%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8 (16.3%)</td>
</tr>
<tr>
<td>HGD</td>
<td>16 (32.7%)</td>
<td>7 (14.3%)</td>
<td>1 (2%)</td>
<td>0</td>
<td>0</td>
<td>24 (49%)</td>
</tr>
<tr>
<td>IMC</td>
<td>11 (22.4%)</td>
<td>0</td>
<td>1 (2%)</td>
<td>0</td>
<td>0</td>
<td>12 (24.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>36 (73.5%)</td>
<td>11 (22.4%)</td>
<td>2 (4.1%)</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Mean follow-up 25 months

YES, the surgeon has a role!

• Learn the endoscopic techniques

• Advocate for esophagectomy in select cases

• Participate in GI tumor board

• Understand the limitations of endoscopic therapy and the risk factors for failure

• Consider Nissen fundoplication after endotherapy for more effective GERD control
Does the Surgeon Have a Role in the Management of Early (HGD-T1a) Esophageal Cancer?

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