Barrett’s Esophagus: To Screen or Not to Screen? In Whom? With What? When? For How Long?.....

V. Raman Muthusamy, MD, FACG, FASGE
Director of Interventional Endoscopy
Clinical Professor of Medicine
David Geffen School of Medicine at UCLA

Key Questions

- Should We Screen?
- Who Should We Screen?
- How Should We Screen?
- When Should We Screen?
- How Often/Long Should We Screen?
Should We Screen?

• BE associated with increased risk for esophageal adenocarcinoma (EAC)
• Potentially this risk is up to 40x that of the general population
• Risk of cancer between 0.5-1.0%/yr (all levels of dysplasia combined)
• EAC has dismal 17% 5-yr survival
• BE, however, may have negligible effect on overall mortality

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Who should be screened?

- Barrett's is present in 1-2% of the US population
- BE occurs in 6-18% of GERD patients
- But many patients with GERD have atypical or no GERD symptoms
- Should all GERD patients be screened or only some? If so, which ones?
Prevalence of Barrett’s in Subjects Undergoing Colonoscopy

![Graph showing prevalence of BE, LSBE, and SSBE]


GERD and Barrett’s

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Prevalence of BE in GERD patients (%)</th>
<th>Prevalence of BE in non GERD patients (%)</th>
<th>Prevalence of BE in the overall study cohort (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerson et al.1</td>
<td>2002</td>
<td>n/a</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Rex et al.2</td>
<td>2003</td>
<td>8</td>
<td>6</td>
<td>7</td>
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<tr>
<td>Rokken et al.3</td>
<td>2005</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Ward et al.2</td>
<td>2006</td>
<td>20</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>Zappi et al.4</td>
<td>2008</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Gerson et al.2</td>
<td>2009</td>
<td>n/a</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

1Asymptomatic veterans only.
2Asymptomatic men only.

The Barrett’s Iceberg

- Most Barrett’s Undetected
  - Endoscopy: 22.6/100,000
  - Autopsy: 376.0/100,000
- GERD symptoms not present in 60% of Barrett’s patients in population based study
- Only 23/589 pts diagnosed with EAC in Kaiser study had known BE >= 6 months

Which GERD Patients to Screen?

- Men > 50 years
- Caucasian race
- GERD symptoms for > 5 years
- Nocturnal Reflux
- Hiatal Hernia
- Elevated BMI
- Tobacco use
- Intra-abdominal distribution of body fat

Screen patients with multiple risk factors: Weak rec., low-moderate quality evidence

ASGE Guideline on BE and Other Premalignant Conditions of the Esophagus. GIE 2012; 76:1, 1087-84
Upper Endoscopy for GERD: Best Practice Advice from CGC of the ACP. Ann Int Med 2012; 157: 908-816
Key Questions

• Should We Screen?
• Who Should We Screen?
• How Should We Screen?
• When Should We Screen?
• How Often/Long Should We Screen?

How Should We Screen?

• Standard Endoscopy
• Unsedated Endoscopy
• Capsule Endoscopy?
• Cytosponge?
• Something else? (Blood/Saliva)
Cytosponge for BE Screening

- Office-based, < 10 min
- Can be done by PCPs
- Tests for trefoil factor 3
- Study of 504 pts
  - 99% swallowed sponge
  - 3% diagnosed with BE
  - 73% Se and 94% Sp for >=1 cm of BE
  - 90% Se and 93.5% Sp for >=2 cm of BE

Kadri et al, BMJ 2010; 341

Key Questions

- Should We Screen?
- Whom Should We Screen?
- How Should We Screen?
- When Should We Screen?
- How Often/Long Should We Screen?
When to Initiate Screening?

- Based on duration of symptoms?
- Based on age?
- Based on presence of certain high risk characteristics?

Key Questions

- Should We Screen?
- Whom Should We Screen?
- How Should We Screen?
- When Should We Screen?
- How Often/Long Should We Screen?
How Often or Long Should We Screen?

- CORI National endoscopic database
- 1/1/2000-12/31/2004
- 24,406 pts had an initial EGD negative for BE and at least 1 subsequent EGD during the study period
- 2.3% (N=561) had BE on f/u EGD (3.1% M:1.2% F)
- 9.9% BE on f/u EGD when esophagitis on initial exam vs. only 1.8% when no initial esophagitis


Summary: Screening for BE

- The utility of screening for BE will depend on the accuracy and price of the screening technique and the efficiency of techniques utilized once diagnosed.
- Screening for BE based on GERD symptoms appears to miss a large fraction of patients with BE
- Population based screening, likely with non-endoscopic techniques, will likely be needed to identify the majority of patients with BE
- Current data suggest a limited role and low-yield for repeat screening for BE
Overview

- Ablation/Resection Are Effective
- Risk of Progression is Real
- Risk of Progression May be Higher Due to False Diagnosis of BE and Underestimation Re: Progression
- Surveillance Hasn’t Been Shown to Work

Barrett’s Esophagus: The Case for Ablation/Eradication

V. Raman Muthusamy, MD, FACG, FASGE
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Evolution of Thought Regarding RFA and BE

- It will never work
- The results will be variable among physicians
- It’s not safe
- It will alter esophageal function
- It will lead to buried glands
- The neosquamous epithelium isn’t really normal
- It will never last
- It doesn’t reduce the risk of developing cancer
- It isn’t cost effective

### RFA Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>n</th>
<th>FU</th>
<th>CR-IM</th>
<th>CR-D</th>
<th>CR-HGD</th>
<th>Buried Glands</th>
<th>Stricture Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIM-II Trial</td>
<td>61</td>
<td>30 mo</td>
<td>96.4%</td>
<td>--</td>
<td>--</td>
<td>None</td>
<td>0%</td>
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<tr>
<td>AIM-LGD</td>
<td>50</td>
<td>60 mo</td>
<td>92%</td>
<td>--</td>
<td>--</td>
<td>None</td>
<td>0%</td>
</tr>
<tr>
<td>HGD Registry</td>
<td>10</td>
<td>24 mo</td>
<td>90%</td>
<td>100%</td>
<td>--</td>
<td>None</td>
<td>0%</td>
</tr>
<tr>
<td>AMC-I</td>
<td>11</td>
<td>14 mo</td>
<td>100%</td>
<td>100%</td>
<td>--</td>
<td>None</td>
<td>0%</td>
</tr>
<tr>
<td>AMC-II</td>
<td>12</td>
<td>14 mo</td>
<td>100%</td>
<td>100%</td>
<td>--</td>
<td>None</td>
<td>0%</td>
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<tr>
<td>AMC Long-term FU</td>
<td>23</td>
<td>52 mo</td>
<td>100%</td>
<td>100%</td>
<td>--</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Comm Registry</td>
<td>429</td>
<td>20 mo</td>
<td>77%</td>
<td>100%</td>
<td>--</td>
<td>None</td>
<td>0%</td>
</tr>
<tr>
<td>EURO-I</td>
<td>24</td>
<td>15 mo</td>
<td>96%</td>
<td>100%</td>
<td>--</td>
<td>None</td>
<td>1.1%</td>
</tr>
<tr>
<td>EURO-II</td>
<td>118</td>
<td>12+ mo</td>
<td>96%</td>
<td>100%</td>
<td></td>
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<td>4.0%</td>
</tr>
<tr>
<td>Emory</td>
<td>27</td>
<td>&lt;12 mo</td>
<td>100%</td>
<td>100%</td>
<td>--</td>
<td>None</td>
<td>0%</td>
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<tr>
<td>Dartmouth</td>
<td>25</td>
<td>20 mo</td>
<td>78%</td>
<td>--</td>
<td></td>
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</tr>
<tr>
<td>Henry Ford</td>
<td>66</td>
<td>varied</td>
<td>93%</td>
<td>--</td>
<td>--</td>
<td>None</td>
<td>6.0%</td>
</tr>
<tr>
<td>Mayo</td>
<td>63</td>
<td>24 mo</td>
<td>78%</td>
<td>89%</td>
<td>--</td>
<td>None</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>LGD</td>
<td>39</td>
<td>24 mo</td>
<td>87%</td>
<td>95%</td>
<td>--</td>
<td>None 0%</td>
</tr>
<tr>
<td></td>
<td>HGD</td>
<td>24</td>
<td>23 mo</td>
<td>67%</td>
<td>79%</td>
<td>--</td>
<td>None 0%</td>
</tr>
<tr>
<td>AIM RCT (primary)</td>
<td>127</td>
<td>12 mo</td>
<td>77% (83%)</td>
<td>86% (92%)</td>
<td>--</td>
<td>5.1%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Long-term FU</td>
<td>106</td>
<td>24 mo</td>
<td>93%</td>
<td>95%</td>
<td>--</td>
<td>3.8%</td>
<td>7.6%</td>
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<tr>
<td>RFA/ER vs. SRER RT</td>
<td>47</td>
<td>24 mo</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>RFA/ER</td>
<td>22</td>
<td>22 mo</td>
<td>96%</td>
<td>96%</td>
<td>--</td>
<td>None</td>
<td>14.0%</td>
</tr>
<tr>
<td>SRER</td>
<td>25</td>
<td>25 mo</td>
<td>92%</td>
<td>100%</td>
<td>--</td>
<td>8.0%</td>
<td>88.0%</td>
</tr>
</tbody>
</table>

ACG Western Regional Postgraduate Course - Las Vegas, NV
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Adverse Events
Reported Events: January 2005 to June 2013

- Total procedures: 143,264
  - Cumulative Event Rate (by procedure): 0.23%
    - Death procedure related: 0.00%
    - Perforation: 0.01%
    - Stricture: 0.17%
    - Mucosal injury +/- intervention: 0.01%
    - Bleeding +/- intervention: 0.02%
- Incidence rate is 1 MDR in 426 procedures
  - 1 stricture in 575 procedures (1.7 strictures in 1,000 procedures)
  - 1 perforation in 11,938 procedures (.08 perforations in 1,000 procedures)
- Colonoscopy perforation rates:
  - Overall: .05 to 1.2 perforations in 1,000 procedures
  - Therapeutic: 1 perforation in 1,000 procedures
    - Panteris V, et al. Endoscopy 2009

Durability of Ablated Tissue

- Dysplastic:
  - 2 year
    - 93% (99/106) overall
      - 93% in HGD group (50/54)
      - 98% in LGD group (51/52)
  - 3 year
    - 91% (51/56) overall
      - 96% in HGD group (23/24)
      - 100% in LGD group (32/32)
- Nondysplastic
  - 2.5 yrs: 98.4% (60/61)
  - 5 years: 92% (46/50)

Data provided by the manufacturer, GI Solutions, Covidien, Inc., and based on calculations using the FDA MAUDE database.
### EET: Recurrence

<table>
<thead>
<tr>
<th>Author</th>
<th># Patients</th>
<th>Median f/u</th>
<th>R-D</th>
<th>R-IM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fleischer et al. (AIM-II)</td>
<td>50</td>
<td>48</td>
<td>NR</td>
<td>8</td>
</tr>
<tr>
<td>Pouw et al. (European MC)</td>
<td>24</td>
<td>22</td>
<td>NR</td>
<td>17</td>
</tr>
<tr>
<td>Shaheen et al. (AIM-D)</td>
<td>106</td>
<td>12</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>Gupta et al. (U.S. MC)</td>
<td>592</td>
<td>24</td>
<td>22</td>
<td>33</td>
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<tr>
<td>Haidry et al. (U.K. Halo)</td>
<td>335</td>
<td>19</td>
<td>6</td>
<td>9</td>
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<tr>
<td>Shaheen et al. (U.S. RFA)</td>
<td>5522</td>
<td>26</td>
<td>21</td>
<td>28</td>
</tr>
<tr>
<td>Komanduri et al.</td>
<td>186</td>
<td>20</td>
<td>1.6</td>
<td>3.7</td>
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</table>

### Ablation Effect on Natural History

<table>
<thead>
<tr>
<th>Polyp</th>
<th>NDBE</th>
<th>LGD</th>
<th>HGD</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.58%</td>
<td>0.6%</td>
<td>1.7%</td>
<td>6.6%</td>
</tr>
</tbody>
</table>
| 0.06% | 0.16%| 0.16%| 1.7%

Progression risk expressed as “Per-patient-per-year” (% risk of developing EAC
NNT calculated on 5-year basis (number needed to treat to avoid one cancer over 5 years)

**Disease Progression: AIM-D Trial**

- **Any Progression of Disease**: NNT = 8
- **Any Progression to Cancer**: NNT = 12
- **HGD Progression to Cancer**: NNT = 6
- **LGD Progression to HGD**: NNT = 11

**Cost Effectiveness of RFA for BE**

- **RFA for HGD, LGD, and NDBE**
- **Assumed 25% recurrence for RFA**
- **Assumed indefinite post-RFA surveillance**
- For LGD and NDBE 3 strategies:
  - Bx, surgery when cancer occurs
  - Bx, treat when HGD occurs with RFA
  - RFA with endoscopic surveillance
- **LGD**
  - $18,231 (QALY for option 3 vs. 2 assuming 0.5%/yr progression)
- **NDBE**
  - $205,500, $124,796, $118,338/QALY for rates of .12%, .33%, 0.5%

*Hur et al, Gastro Sept 2012, 143:67-575*
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Natural History of HGD

- Most studies suggest 6-10% progression to cancer per year
  - Meta-analysis suggested 6.6%/yr
- Shaheen et al, NEJM, 2009
  - RCT of RFA vs. Surveillance
  - HGD progression rate of 19% in 1 year in surveillance arm
  - Rigorous confirmation of HGD pre-enrollment
  - Rigor f/u and biopsy protocol
Natural History of LGD: Earlier Data

<table>
<thead>
<tr>
<th>Study</th>
<th>Interval</th>
<th>LGD to HGD/Cancer</th>
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</thead>
<tbody>
<tr>
<td>Sharma, et al.</td>
<td>1 year</td>
<td>2.7%</td>
</tr>
<tr>
<td></td>
<td>5 year</td>
<td>13.5%</td>
</tr>
<tr>
<td>Weston, et al.</td>
<td>1 year</td>
<td>3.1%</td>
</tr>
<tr>
<td></td>
<td>5 year</td>
<td>15.5%</td>
</tr>
<tr>
<td>Skacel, et al.</td>
<td>1 year</td>
<td>12.7%</td>
</tr>
<tr>
<td></td>
<td>5 year</td>
<td>63.5%</td>
</tr>
<tr>
<td>Lim, et al</td>
<td>1 year</td>
<td>3.3%</td>
</tr>
<tr>
<td></td>
<td>5 year</td>
<td>16.5%</td>
</tr>
<tr>
<td>Wani, et al.</td>
<td>1 year</td>
<td>1.7% (cancer)</td>
</tr>
<tr>
<td></td>
<td>5 year</td>
<td>8.5% (cancer)</td>
</tr>
</tbody>
</table>

More Recent Data Regarding LGD Progression

- Meta-analysis suggests 1.7%/yr risk of progression to cancer
- Subsequent study (N=210) suggests 0.44%/yr to cancer with HGD progression of 1.6%/yr
- Another study of 147 LGD pts (85% of whom were downstaged) suggests progression rate of 13.4%/yr to HGD/CA and 85% risk of progression at 109.1 months.
- Shaheen, NEJM, 2009
  - 13.6% progression to HGD in 1 year in surveillance arm

Wani et al, Gastroenterology 2011;141(4):1523-30
Curvers WL, AM J Gastro 2010;105(7):1523-30
Surveillance versus Radiofrequency Ablation for Barrett’s Esophagus with Confirmed Low-Grade Dysplasia: a European Multicenter Randomized Controlled Trial (SURF)

Patient Selection

511 patients were reviewed by central pathology panel

247 patients had confirmed LGD in BE

107 patients did not meet entry criteria
- 46 declined enrollment
- 33 LGD not reproduced <18mo
- 20 progression or lesion at BGE
- 6 excess comorbidity
- 1 intolerant to PPI
- 1 pre-existent stenosis

140 patients included

4 patients were screening failures and excluded from further analysis

136 patients randomized

Trial Protocol

Confirmed LGD in BE

HRE with NBI

Randomization 1:1

Surveillance

HR endoscopy + biopsies
- t = 6 mo

HR endoscopy + biopsies
- t = 12 mo

HR endoscopy + biopsies
- t = 24 mo

HR endoscopy + biopsies
- t = 36 mo

Radiofrequency Ablation

Halo360 (max 2)

Halo90 (max 3)

Residual BE on endoscopy

Escape ER

HR endoscopy + biopsies
- t = 12 mo

HR endoscopy + biopsies
- t = 24 mo

HR endoscopy + biopsies
- t = 36 mo
Baseline characteristics and FU

<table>
<thead>
<tr>
<th></th>
<th>RFA n=68</th>
<th>Surveillance n=68</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male sex</td>
<td>55 (81%)</td>
<td>61 (90%)</td>
</tr>
<tr>
<td>Age in years (mean)</td>
<td>63</td>
<td>63</td>
</tr>
<tr>
<td>BE length (median)</td>
<td>C2M4</td>
<td>C2M4</td>
</tr>
<tr>
<td>Follow-up (median)</td>
<td>30</td>
<td>24</td>
</tr>
<tr>
<td>Follow-up visits (mean)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Biopsy specimens (median)</td>
<td>37</td>
<td>31</td>
</tr>
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</table>

SURF Trial Results

Table 2. Primary and Secondary Efficacy Outcomes

<table>
<thead>
<tr>
<th>Efficacy Outcomes</th>
<th>No. of Patients (%)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progression to high-grade dysplasia or cancer</td>
<td>Ablation Group (n = 68)</td>
<td>Control Group (n = 68)</td>
</tr>
<tr>
<td></td>
<td>1 (1.5)</td>
<td>18 (26.5)</td>
</tr>
<tr>
<td>Progression to cancer</td>
<td>1 (1.5)</td>
<td>6 (8.8)</td>
</tr>
<tr>
<td>Complete eradication of dysplasia at the end of endoscopic treatment</td>
<td>63/68 (92.6)%</td>
<td>NA</td>
</tr>
<tr>
<td>Complete eradication of IM at the end of endoscopic treatment</td>
<td>60/68 (88.2)%</td>
<td>NA</td>
</tr>
<tr>
<td>Complete eradication of dysplasia during follow-up, No. of events/total patients (%)</td>
<td>62/61 (67.6)%</td>
<td>7/68 (10.3)</td>
</tr>
<tr>
<td>Complete eradication of IM during follow-up, No. of events/total patients (%)</td>
<td>54/69 (90.0)%</td>
<td>0/68 (0.0)</td>
</tr>
</tbody>
</table>

3 year f/u – trial stopped early by DSMB

Phoa et al, JAMA, 3/2014
### Natural History: NDBE

<table>
<thead>
<tr>
<th>Study</th>
<th>1 year risk</th>
<th>5 year risk</th>
<th>5 year risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharma, et al.</td>
<td>4.0%</td>
<td>20.0%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Shaheen, et al.</td>
<td>0.9%</td>
<td>4.5%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Labenz, et al.</td>
<td>na</td>
<td>na</td>
<td>2.5% (0.0-13.5%)</td>
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<tr>
<td>Hvid-Jensen</td>
<td>na</td>
<td>na</td>
<td>1.3%</td>
</tr>
<tr>
<td>Wani et al (Meta-analysis)</td>
<td>0.12%</td>
<td>6.5%</td>
<td></td>
</tr>
<tr>
<td>Bhat et al</td>
<td>0.13%</td>
<td>0.65%</td>
<td></td>
</tr>
<tr>
<td>Wani et al</td>
<td>3.6%</td>
<td>0.48%</td>
<td>0.27%</td>
</tr>
</tbody>
</table>

### Overview

- **Ablation/Resection Are Effective**
- **Risk of Progression is Real**
- **Risk of Progression May be Higher Due to False Diagnosis of BE and Underestimation Re: Progression**
- **Surveillance Hasn’t Been Shown to Work**
Underestimating risk?

- Hvid-Jensen study eliminated 131 cancers found in 1st year of study ("incident disease")
  - Without exclusion, rate goes for 0.12% to 0.36%
  - Also excluded all HGD in 1st year
- Misclassification of BE
  - 32.3% of those w/ BE were not confirmed (95% CI 24.4-41.1) in a community study
  - VA study found 18% of LSBE and 33% of SSBE couldn’t be confirmed

Ganz GIE, 80:5 2014

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### Technique of Biopsy in Endoscopic Surveillance

**Technique:**

**NDBE:**
- 4 quadrant q 2 cm
- Q 1 yr x 2; then q 3-5 yr

**LGD:**
- 4 quadrant q 1 cm
- Repeat: Q 6-12 months

**HGD:**
- 4 quadrant q 1 cm
- Repeat q 3 months

**Compliance:**

- US Study of 2245 cases
  - Adherence rate was 51.2%
- Lower compliance with longer BE
  - (N=150; Netherlands)
    - 0-5 cm: 79%
    - 5-10 cm: 50%
    - 10-15 cm: 30%

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### Problems with Surveillance

- Expensive ($596,000/QALY saved)
- Detects, not prevents, cancer
- Leads to patient anxiety
- Samples only 3-5% of mucosa
- Poor compliance associated with reduced dysplasia detection
- Surveillance frequency not tied to length of BE
- No quality data showing mortality reduction from EAC
  - Population study showed only 23/589 pts diagnosed with EAC had known BE >= 6 mo

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Increased Yield with Specialized Brush

- 39.8% increase in Barrett’s esophagus detection in GERD patients
- 42.1% increase in dysplasia detection c/t biopsy in patients w/ dysplasia undergoing surveillance

Anandasapathy, Dig Dis Sci, 2011
Johanson, Dig Dis Sci, 2011

Probe Based Confocal Laser Endomicroscopy

- A unique endomicroscopy system
- Probe-based system, used during endoscopic procedures
- Compatible with existing endoscopes
- Real-time visualization of tissue at the cellular level
- Access the entire GI tract
- Different probe types for different indications and needs

- Providing real-time visualization of tissues

Resolution: 1, 3.5 μm
FOV: 240 μm, 600 μm
Depth of observation: 55-65 μm, 70-130 μm

CLE images in the esophagus*
V. Raman Muthusamy, MD, FACG

Does Surveillance Work?

- Corley et al Gastro 145(2), Aug 2013
  - 8272 BE patients; 351 with adenocarcinoma
  - 70 pts with prior dx of BE (51 dead; 38 from CA)
  - Surveillance hx contrasted with 101 living BE pts
  - Surveillance within 3 yrs:
    - Not associated with decreased risk from CA (OR 0.99 [0.36-2.75])
    - Fatal cases received surveillance 55.3% of time; controls: 60.4%

Nondysplastic Barrett’s

Should I Ablate It?
Rationale

- 50 y.o. man diagnosed with Long Segment NDBE
  - Currently would get endoscopy at 51, 55, 59, 63, 67, 71, and 75
  - Assuming 3 ablation sessions, 1 yr f/u, 5 yr f/u, and 10 year f/u, would save 1 endoscopy and benefit from reduction in risk of progression.

NDBE: Who is High Risk?

- Family history?
- Long-segment? (>=3 cm)
- Young age? (<=60)
- History of prior dysplasia?
- Patient with poorly controlled GERD?
- Elevated BMI?
- Men?
- Hernia size?
Conclusions

- Barrett’s Esophagus can be effectively eradicated with ablation and resection techniques.
- The risk of BE progressing to dysplasia/cancer is not insignificant and may be underestimated due to over-reporting of Barrett’s and removal of early dysplasia developers in some studies.
- Surveillance has not been shown to be effective.
- Clinical and biomarker risk factors that predict which non-dysplastic patients will progress to dysplasia and would benefit from treatment remain “The Holy Grail” of Barrett’s Esophagus, but are likely many years away.
- In the interim, a strategy of treating all BE patients with dysplasia and select NDBE seems reasonable.