Non-dysplastic Barrett’s Esophagus:
Ablate them all? Not on my watch!

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Overall incidence trend in esophageal adenocarcinoma (1973-2006).

Esophageal Adenocarcinoma Without Prior Diagnosis of Barrett’s Esophagus: 95%

Dulai GS, Gastroenterology 2002
Corley DA, Gastroenterology 2002.
Prevalence of Barrett’s in Subjects Undergoing Colonoscopy

- All BE: n=65
- LSBE: n=12
- SSBE: n=53

- n=961
- Mean age: 59 years
- 60% Men
- 78% Caucasian

Evolution of Barrett’s esophagus

Accumulate Genetic Changes

Injury
Acid & bile reflux

Genetics
Gender, race,

Squamous esophagus

Chronic inflammation

Barrett’s metaplasia

Low-grade dysplasia

High-grade dysplasia

Adenocarcinoma

Evolution of Barrett’s esophagus

Accumulate Genetic Changes

Injury
Acid & bile reflux

Genetics
Gender, race,
Barrett’s Surveillance: Confounding Factors

• Endoscopic Biopsy Sampling Error: “Seattle Protocol”
  – In community practice: only 50% performed.

• Pathology Interpretation Variability
  – LGD: $K = 0.32$ (fair); HGD: $K = 0.65$ (moderate)

Currently Available Endoscopic Ablation Techniques for BE

- Argon Plasma Coagulation (APC)
- Multipolar Electrocoagulation (MPEC)
- Heat Probe
- Lasers (Nd:YAG, KTP, Argon)
- Photodynamic Therapy (PDT)
- Cryotherapy
- Radiofrequency Ablation (RFA)
RFA
Generator

Barrx™ Ultra Long RFA Focal Catheter

Barrx™ Channel RFA Endoscopic Catheter

Barrx™ 360 RFA Balloon Catheter

Barrx™ 360 Soft Sizing Balloon

Barrx™ 60 RFA Focal Catheter

Barrx™ 90 RFA Focal Catheter
A previously 8 cm HGD BE
Courtesy of Charles Lightdale, MD
Meta-analysis: Efficacy and Durability of RFA for BE

- Studies: 18 reporting efficacy; 6 Durability:
  - CE-D = 91%
  - CE-IM = 78%
  - Esophageal stricture = 5%
  - Progression to cancer after CE-IM = 0.7%
  - Recurrent IM = 13%

Randomized Controlled Trial: SURF Surveillance v RFA for Confirmed LGD

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<tr>
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<th>RFA n=68</th>
<th>Surveillance n=68</th>
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<tbody>
<tr>
<td>Male sex</td>
<td>55 (81%)</td>
<td>61 (90%)</td>
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<tr>
<td>Age in years (mean)</td>
<td>63</td>
<td>63</td>
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<td>BE length (median)</td>
<td>C2M4</td>
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Phoa, et al. DDW 2013
Progression to HGD/EAC

![Graph showing progression to HGD/EAC with rates of 25% and 1.5% for Surveillance and RFA, respectively.](image)
NDBE Progression to HGD/Cancer

- Multicenter outcomes project
- 1204 patients followed for mean 5.5 years
- 0.27% per year developed cancer
- 0.48% per year developed HGD
- 2.9% NDBE developed cancer in 10 years
- 7.3% NDBE developed HGD/Ca in 10 years
- NDBE > 6 cm had a 7x increase in cancer risk
- 28% increase in HGD/Ca risk for every 1.0 cm BE

Non-Dysplastic Barrett’s Esophagus: Clinical Factors Risk Factors for Progression to Cancer

- Caucasian
- Male
- Smoker
- Obese
- Young Age BE
- Long Segment
- Large Hiatal Hernia
- Family History of BE & EAC

Chak, Gut, 2002
Gopal, Dig Dis Sci, 2003
Weston, Am J Gastroenterol, 2004
Hage, Scand J Gastroenterol, 2004
Iftikhar, Gut, 1992
Bani-Hani, World J Gastroenterol, 2005
de Jonge, Gut, 2010
Prasad, Am J Gastroenterol, 2010
Reid, Am J Gastroenterol, 2000
Weston, Am J Gastroenterol, 2001
Suspiro, Am J Gastroenterol, 2003
Sikkema, Am J Gastroenterol, 2011
Sappati Biyyani, Dis Esophagus, 2007
Munitiz, J Clin Gastroenterol, 2008
Abnet, Eur J Cancer, 2008
de Jonge, Am J Gastroenterol, 2006
Jung, Am J Gastroenterol, 2011
Current Guidelines

• **Dysplasia**: must be confirmed by expert pathology review, and EMR for all focal lesions.
• **HGD**: endoscopic therapy (EMR/RFA) preferred over surveillance or esophagectomy.
• **LGD**: endoscopic therapy (EMR/RFA) an option instead of surveillance for confirmed LGD.
• **NDBE**: surveillance for most, but RFA an option based on clinical risk factors and co-morbidities.
• **The future**: management based on validated biomarkers.

AGA MPS on BE: Gastroenterology 2011;140:1084-1091
ASGE Guidelines: Gastrointest Endosc 2012;76:1087-1094