A 58 year-old, obese white man has had heartburn for more than 20 years. He read a magazine article saying that heartburn is a risk factor for Barrett\'s esophagus, which can lead to cancer of the esophagus. The article scared him, and he asks you what he should do. The article went on to say that people with heartburn should have an endoscopy to look for Barrett\'s esophagus. Endoscopy reveals Barrett\'s esophagus. Biopsy specimens show high-grade dysplasia.
Barrett’s Esophagus

Affects 5.6% of adult Americans

Metaplasia
One adult cell type replaces another type

Barrett’s Metaplasia
Esophageal Adenocarcinoma

Stratified Squamous Epithelium

Affects 5.6% of adult Americans

GERD
Reflux Esophagitis
GEJ (Gastro-Esophageal Junction)

Z-Line (Squamo-Columnar Junction)

Columnar Lined Esophagus


Specialized Intestinal Metaplasia

Risk Factors for Barrett’s Esophagus and Esophageal Adenocarcinoma

Guidelines for Endoscopy in GERD

• “Upper endoscopy is not required in the presence of typical GERD symptoms.”

• “Endoscopy is recommended in the presence of alarm symptoms and for screening of patients at high risk for complications [Barrett’s esophagus].”


• “Upper endoscopy is indicated in men and women with heartburn and alarm symptoms (dysphagia, bleeding, anemia, weight loss, and recurrent vomiting).”

• “Upper endoscopy is indicated in men and women with typical GERD symptoms that persist despite a therapeutic trial of 4 to 8 weeks of twice-daily proton pump inhibitor therapy.”
AGA Medical Position Statement on Endoscopic Screening for Barrett’s Esophagus

We recommend against screening the general population with GERD for Barrett’s esophagus.

In patients with multiple risk factors associated with esophageal adenocarcinoma, we suggest screening for Barrett’s esophagus. Chronic GERD, hiatal hernia, age ≥50, male gender, white race, elevated BMI, intra-abdominal body fat distribution

U.S. Incidence of Esophageal Adenocarcinoma Has Been Rising

Incidence per 1,000,000

5.6 per million 1973
25.6 per million 2006
7-Fold Increase In 3 Decades

Estimates of Cancer Risk for Individual Patients with Non-Dysplastic Barrett’s Have Been Getting Lower

1% per year

0.5% per year

0.25% per year
Endoscopic Surveillance Might Not Decrease Mortality from Esophageal Adenocarcinoma

Surveillance endoscopy within 3 years was NOT associated with decreased risk of death from esophageal cancer (adjusted odds ratio 0.99; 95% CI 0.36-2.75)

55% surveillance endoscopy performed within 3 years

60% surveillance endoscopy performed within 3 years

Do Proton Pump Inhibitors (PPIs) Prevent Cancer in Barrett’s Esophagus?

• Evidence that PPIs prevent carcinogenesis in Barrett’s esophagus is indirect and not proven in controlled trials.

• PPIs are the most effective medical treatment for reflux esophagitis.

- Decrease gastric acid production
- Decrease acid reflux
- Heal reflux esophagitis

PPIs Reduce the Risk of Neoplastic Progression in Barrett’s Esophagus

540 Barrett’s patients, median follow-up 5.2 years

PPI use associated with 75% reduction in risk of neoplastic progression
AGA Medical Position Statement on the Treatment of GERD in Barrett’s Esophagus

- GERD therapy with medication effective to treat GERD symptoms and to heal reflux esophagitis is clearly indicated.
- Antireflux surgery is not more effective than medical therapy for prevention of cancer in Barrett’s esophagus.
- We recommend against attempts to eliminate esophageal acid exposure (PPIs in doses >once daily or antireflux surgery) for cancer prevention.

Gastroenterology 2011;140:1084.

AGA Medical Position Statement on Endoscopic Surveillance for Barrett’s Esophagus

- We suggest that endoscopic surveillance [with biopsy] be performed in patients with Barrett’s esophagus.
- We suggest the following surveillance intervals:
  - No dysplasia: 3-5 years
  - Low-grade dysplasia: 6-12 months
  - High-grade dysplasia in the absence of eradication therapy: 3 months


The Cancer Risk for High-Grade Dysplasia in Barrett’s is Sufficient to Warrant Intervention

- The Cancer Risk for High-Grade Dysplasia in Barrett’s is Sufficient to Warrant Intervention
- ~6% per year
Management Options for High-Grade Dysplasia in Barrett’s Esophagus

Intensive endoscopic surveillance (every 3 months)
Endoscopic ablation
Endoscopic mucosal resection
Esophagectomy

AGA Medical Position Statement on the Management of Barrett’s Esophagus

We recommend endoscopic eradication therapy rather than surveillance for treatment of patients with confirmed high-grade dysplasia in Barrett’s esophagus.
None considered curable by endoscopic therapy.

Systematic Review: Risk of Lymph Node Metastases for High Grade Dysplasia (HGD) or Intramucosal Carcinoma (IMC) in Barrett’s Esophagus

- Lymph node metastases in 26 of 1,874 patients (1.39%, 95% CI 0.86% - 1.92%)
Accurate T Staging *Crucial* to Determine if Curative Endoscopic Therapy Feasible

- High Grade Dysplasia and Intramucosal Carcinoma
  - Lymph node metastases in 1%-2%
  - Curative endoscopic therapy feasible
- Submucosal invasion
  - Lymph node metastases in >10%
  - Failure rate for endoscopic therapy unacceptable
- Endoscopic mucosal resection (EMR) the best procedure for T staging
  - EMR is as much a staging procedure as it is a therapeutic procedure.
  - If EMR shows submucosal invasion, then endoscopic therapy is not advised.

Radiofrequency Ablation (RFA)
Radiofrequency Ablation of Barrett’s Esophagus

Randomized, Sham-Controlled Trial of Radio-frequency Ablation for Dysplasia in Barrett’s

64 patients with LGD
63 patients with HGD

Randomization

3 yrs
Ablation 42
Ablation 43
Ablation 42
Ablation 43

Sham 32
Sham 31
Sham 32
Sham 31

Radiofrequency Ablation of Dysplasia Prevents

Progression of Neoplasia

Radiofrequency ablation
Sham ablation

Progression

3.6% 16.3%
1.2% 9.3%
Complications of Radiofrequency Ablation in 84 Patients

- Esophageal strictures (6%)
- UGI bleed (1%)
- 2 hospitalizations for chest pain (2%)


Endoscopic Therapy for Mucosal Neoplasia In Barrett’s Esophagus 2014

- EMR of mucosal irregularities for staging and therapy
- Ablate the remaining Barrett’s metaplasia to minimize metachronous neoplasia

PROPOSAL: Routine Polypectomy for Colon Polyps and RFA for Non-Dysplastic Barrett’s Esophagus Are Intellectually the Same

- RFA, like colonoscopy, is safe and effective
- Non-dysplastic Barrett’s esophagus is like a small colon polyp
- Limiting RFA only to Barrett’s with dysplasia is like limiting polypectomy only to polyps that are large or clearly malignant.
U.K. Experience with EMR and RFA for Treatment of Mucosal Neoplasia in Barrett’s Esophagus

RFA for Non-Dysplastic Barrett’s Esophagus?

Chronic GERD symptoms and ≥1 risk factor(s) for adenocarcinoma (Age>50, male, white, hiatal hernia, obesity, intra-abdominal body fat, smoking)

Consider screening endoscopy

No more screening

Barrett’s

No dysplasia

Low-grade dysplasia

High-grade dysplasia

or intramucosal Ca

Have diagnosis confirmed by expert pathologist

Low-grade dysplasia

High-grade dysplasia

or intramucosal Ca

Surveillance endoscopy every 3-5 yrs

Endoscopic eradication

Surveillance endoscopy every 6-12 months or endoscopic eradication on screening

Barrett’s esophagus
AGA Medical Position Statement on the Management of Barrett’s Esophagus

Endoscopic eradication therapy is not suggested for the general population of patients with Barrett’s esophagus in the absence of dysplasia.

RFA should be a therapeutic option for select individuals with non-dysplastic Barrett’s esophagus who are judged to be at increased risk for progression to HGD or cancer.

Thank You