
بسم الله الرحمن الرحيم

Refractory GERD definitions, Clinical manifestations & diagnosis

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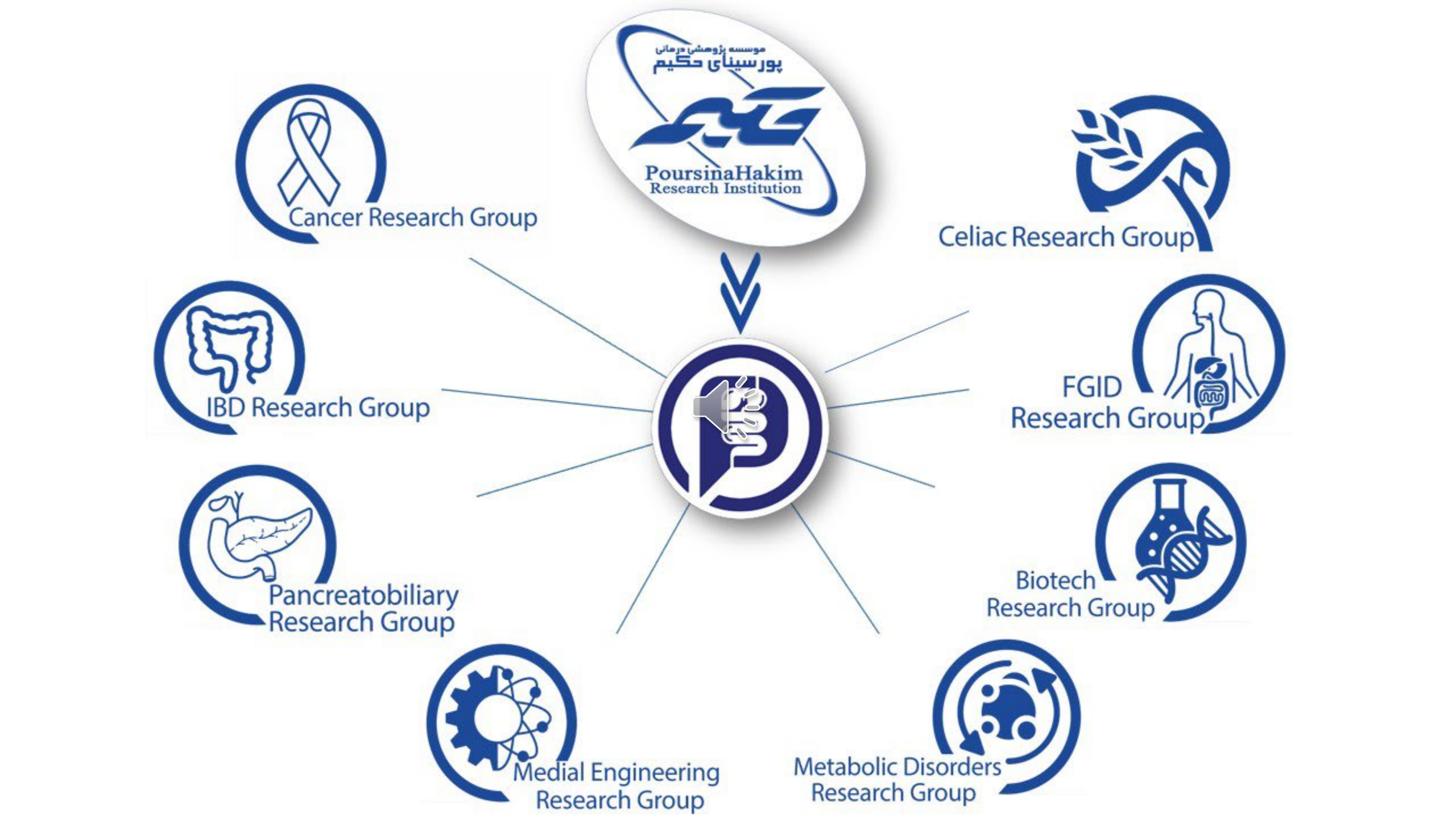
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Prevalence of GERD

- **Ranged from 15 to 30 percent in Western countries**
- **5 to 10 percent in Asia.**
- **About 20% in USA**
- **Around 21% in Iran.**
- **23% in Saudi Arabia**
- **More than 30 percent in UAE**



Clinical manifestation of GE Reflux

Classic symptoms of GERD are:

- Heartburn(pyrosis)
- Regurgitation
- Aternative esophageal symptoms of GERD include:
- Dysphagia,
- Chest pain,
- Water brash,
- Globus sensation,
- Odynophagia,

Extra-esophageal Manifestations:

- **Chronic Cough**
- **Asthma, wheezing, hoarseness**
- **Pharyngitis**
- **Laryngitis and Laryngeal spasm**
- **Aspiration (either by micro vomitus or during swallowing)**
- **Recurrent otitis**
- **Sinusitis**
- **Halitosis**
- **Dental caries**
- **Nausea**

Alarm features

needs early EGD or re-EGD within 2 weeks

- New onset dyspepsia in patient ≥60 years (adjust according to local epidemiology of upper GI cancers)
- Evidence of gastrointestinal bleeding (hematemesis, melena, hematochezia, occult blood in stool)
- Iron deficiency anemia
- Anorexia
- Unexplained weight loss
- Dysphagia
- Odynophagia
- Persistent vomiting
- Gastrointestinal cancer in a first-degree relative

Definition of Refractory GERD

Controversial definitions

- **Most cases:** are either non-erosive reflux (NERD) or functional heartburn
- **Refractory:** Partial or lack of response to proton pump inhibitor (PPI) twice daily for 8 weeks
- **Failure of PPI therapy:** with one PPI daily for 4 weeks (63% of NERD patients & 44% of GERD Patients)

Prevalence of GE Reflux is increasing due to:

- **Older age,**
- **Intake of analgesics,**
- **Consumption of certain types of food and drinks,**
- **Decrease in the prevalence of Helicobacter pylori infection,**
- **Smoking,**
- **Alcohol consumption**
- **High body mass index (BMI),**
- **Limited physical activity**

Other Risk factors of GERD (acid or bile)

- **Family history of GERD**
- **Male sex,**
- **Race,**
- **Hiatal Hernia**
- **Passive smokers**
- **Zollinger-ellison syndrome**
- **Gallbladder dysfunction**
- **Gastric or duodenal dysmotility**
- **Cholecystectomy**
- **Biliary Sphincterotomy**
- **Stagnant food in the stomach** (as in gastroparesis, bowel motility disorders, bezoar, GOO or small or even large bowel sub occlusion)
- **Gastric surgery or Intra gastric balloon**

Terminology

- **Erosive esophagitis:** endoscopically visible breaks in the distal esophageal mucosa with or without symptoms of GERD
- **True non-erosive reflux disease (NERD):** quantifiably excessive esophageal acid exposure based on testing with pH-metry in the absence of erosive esophagitis
- **Reflux hypersensitivity:** patient-reported symptoms that correlate with reflux events during reflux monitoring
- **Functional heartburn:** lack of correlation between patient symptoms and reflux events

Etiology of Refractory GERD

- **Insufficient acid suppression:**

1. **Medication timing and adherence**
2. **Differences in PPI metabolism**
3. **Residual acid reflux**
4. **Weakly acidic or alkaline reflux (non-acid reflux)**
5. **Reflux hypersensitivity**
6. **Functional heartburn**
7. **Zollinger-Ellison syndrome**

Differential Diagnosis of Refractory GERD

- **Esophageal motility disorders (Achalasia, scleroderma, EB, …)**
- **Eosinophilic esophagitis,**
- **Infectious esophagitis,**
- **Pill esophagitis,**
- **Caustic esophagitis**
- **Radiation esophagitis**
- **Gastroparesis,**



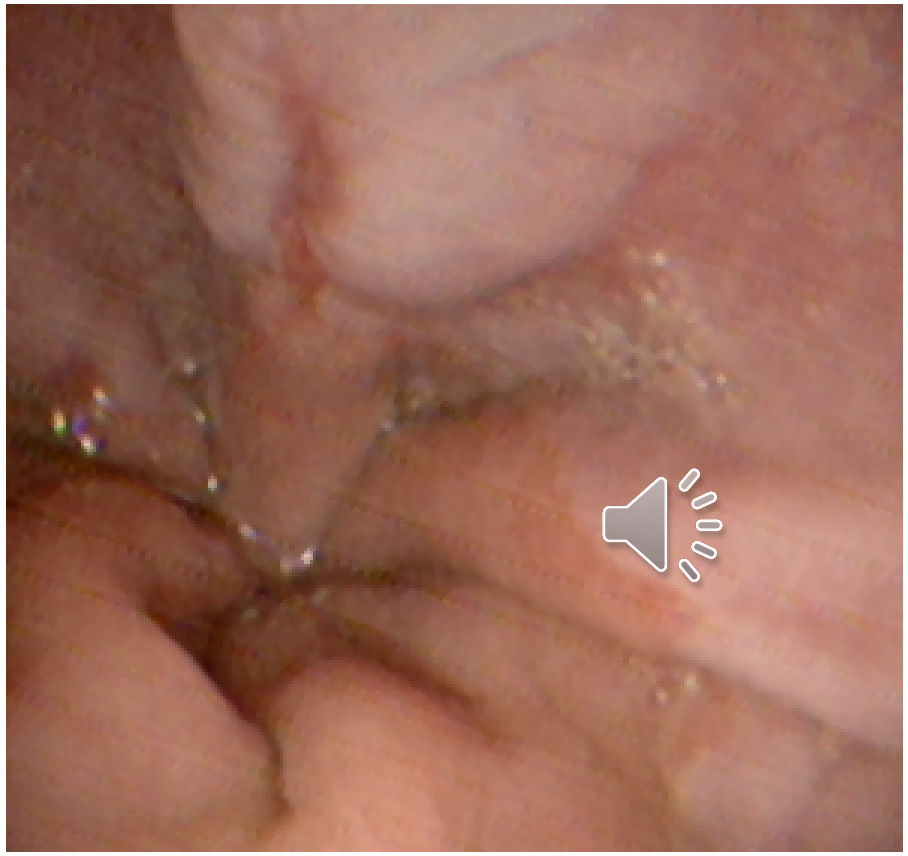
Differential Diagnosis of Refractory GERD (cont.)

- **Esophageal stricture or cancer (rare)**
- **Rumination syndrome**
- **Functional**
- **Bile reflux**
- **Duodenogastroesophageal bile reflux**
- **Celiac disease**
- **Small bowel obstructive lesions (Crohn’s disease, lymphoma, cancer, web and rings, stricture, bezoar, etc.)**

Diagnosis

- **Hx. & Ph. examination**
- **Empiric therapy**
- **EGD + distal and mid esophageal + body & antral biopsies**
- **24 hrs. ambulatory ph-metry**
- **Impedance Manometry**
- **Gastric and small bowel motility evaluation**
- **Laboratory tests: FBS, Hb. A1c, Ca/P, fasting gastrin, TTG IgA, Serum IgA level, FIT, Calprotectin, H.Pylori stool Ag, S/E**

Los Angeles grade A esophagitis



Los Angeles grade A esophagitis: One or more mucosal breaks no longer than 5 mm, not bridging the tops of mucosal folds. Mucosal breaks are defined as an area of slough or erythema with a discrete line of demarcation from the adjacent, more normal looking mucosa.

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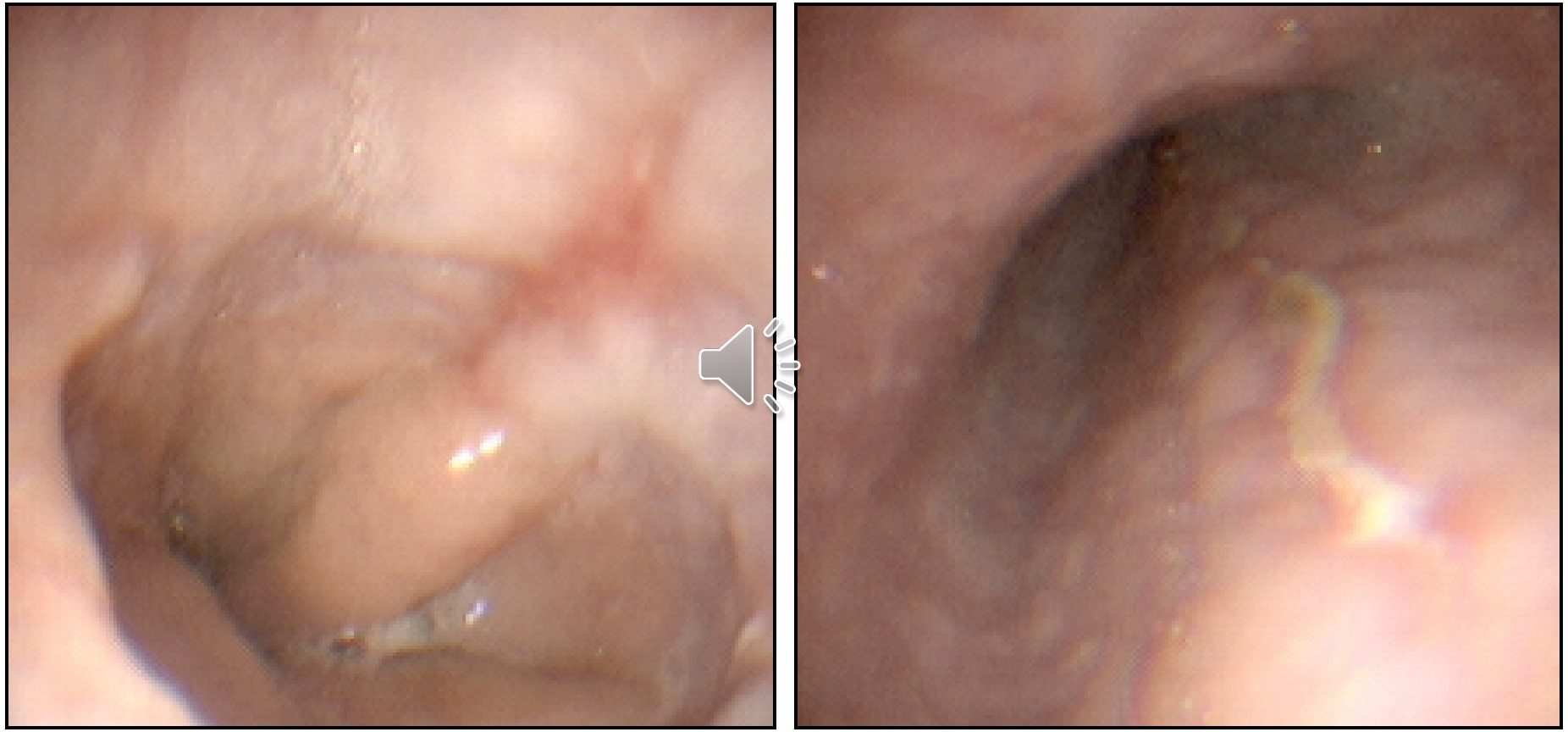
Los Angeles grade B esophagitis



Los Angeles grade B esophagitis: One or more mucosal breaks longer than 5 mm, but not bridging the tops of mucosal folds.

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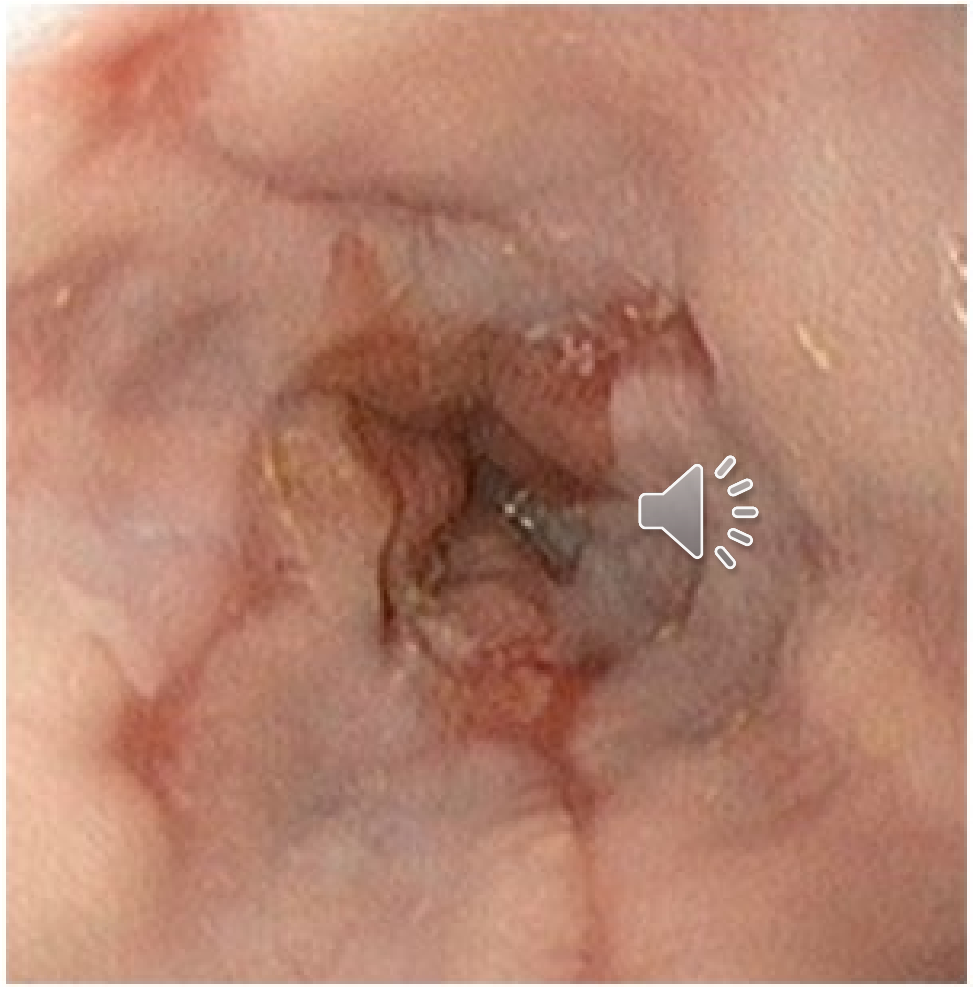
Los Angeles grade C esophagitis



Los Angeles grade C esophagitis: One or more mucosal breaks bridging the tops of mucosal folds involving less than 75 percent of the circumference of the lumen.

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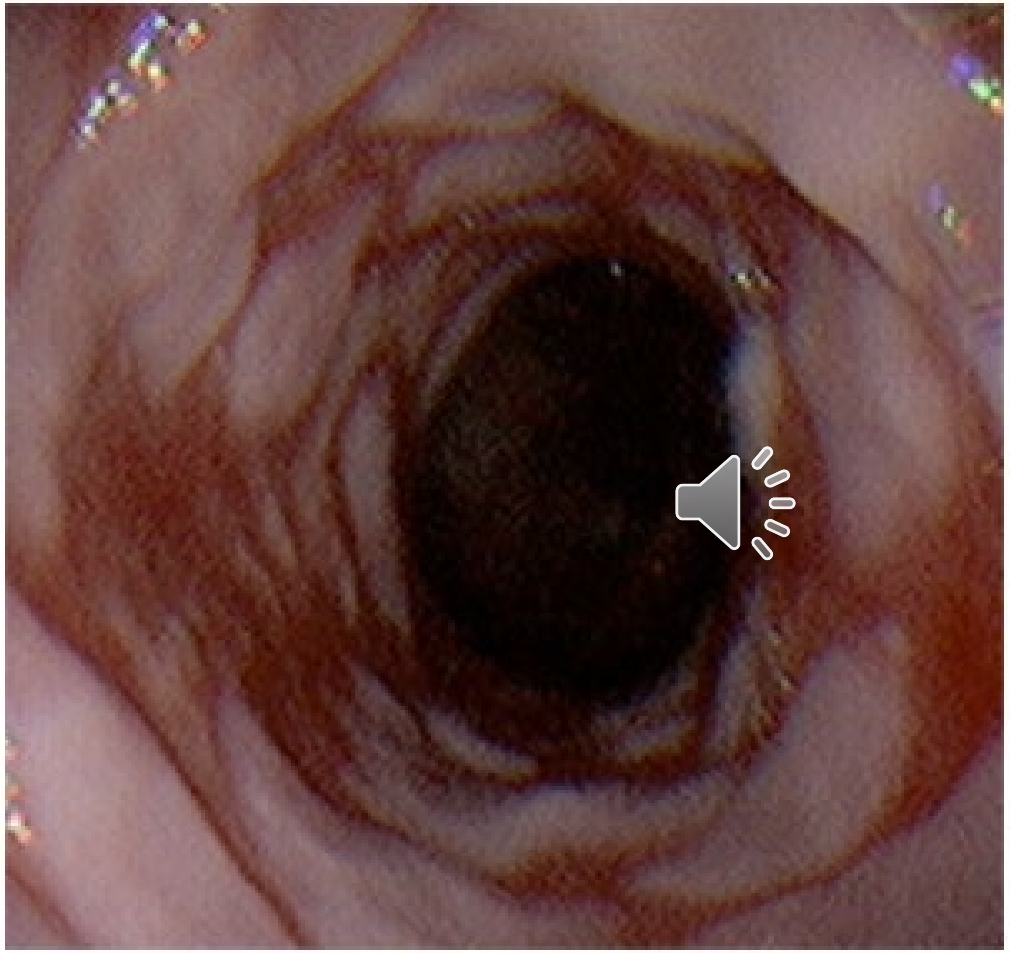
Los Angeles grade D esophagitis



Los Angeles grade D esophagitis: 1 or more mucosal breaks bridging the tops of mucosal folds involving more than 75% of the circumference of the lumen.

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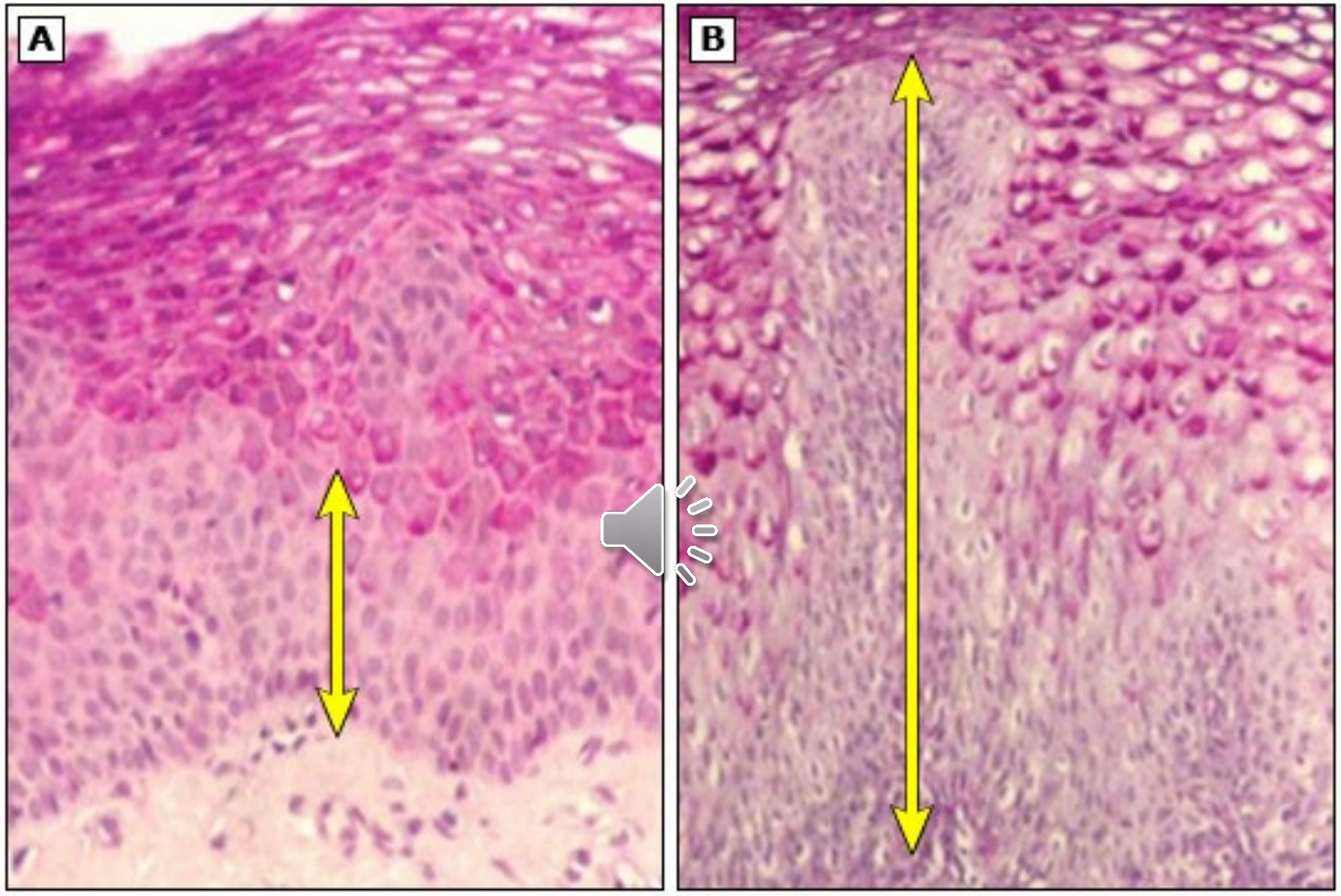
Histologic findings in GERD



(A) Increased basal layer thickness (noncornified stratified squamous).

(B) Papillary elongation (noncornified stratified squamous).

GERD: gastroesophageal reflux disease.

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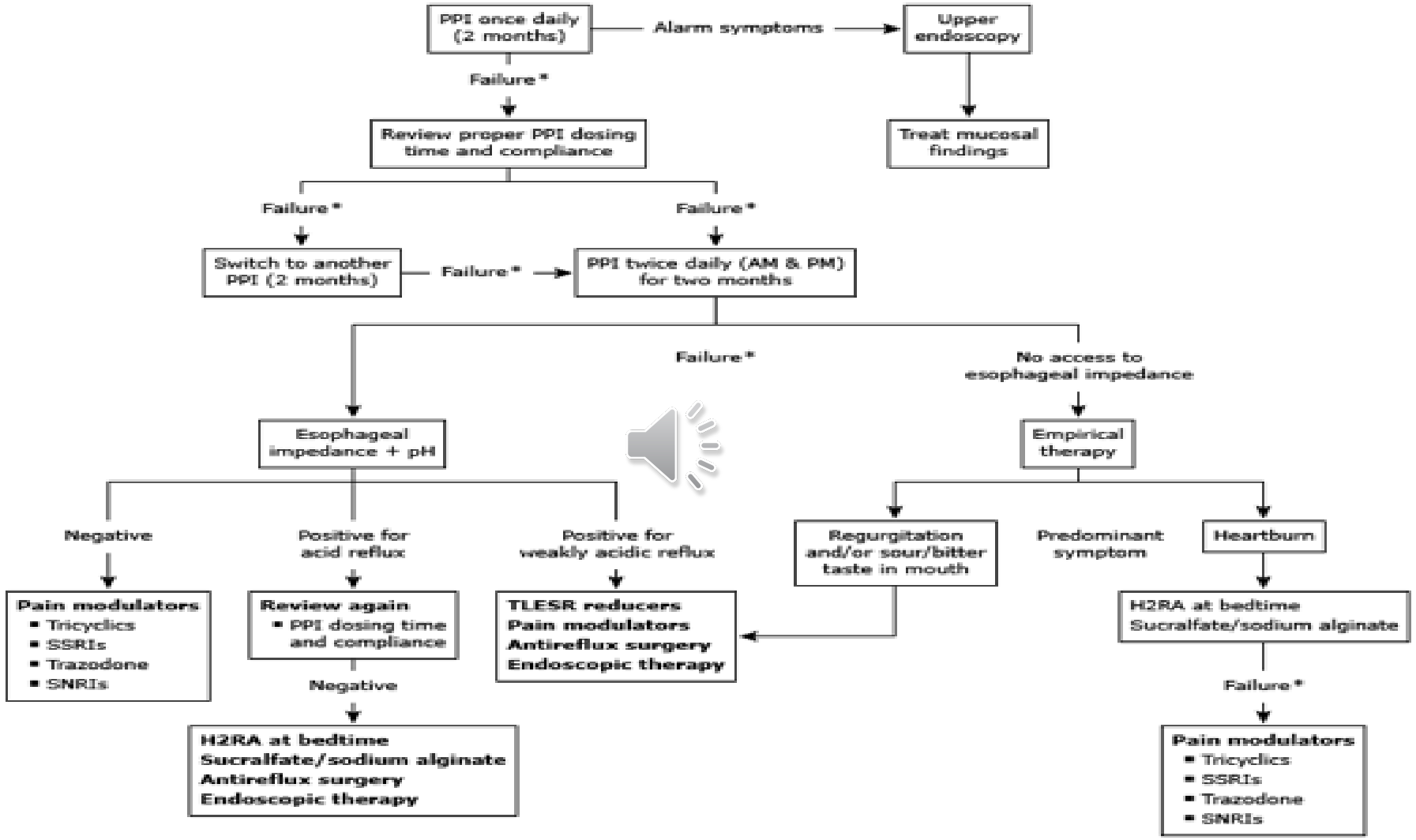
Management algorithm of GERD patient who failed PPI once daily



Management algorithm of gastroesophageal reflux disease (GERD) patient who failed PPI once daily (complete or partial*).

PPI: proton pump inhibitor; SSRIs: selective serotonin reuptake inhibitors; SNRIs: serotonin-

