

# Eosinophilic Esophagitis

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# Objectives

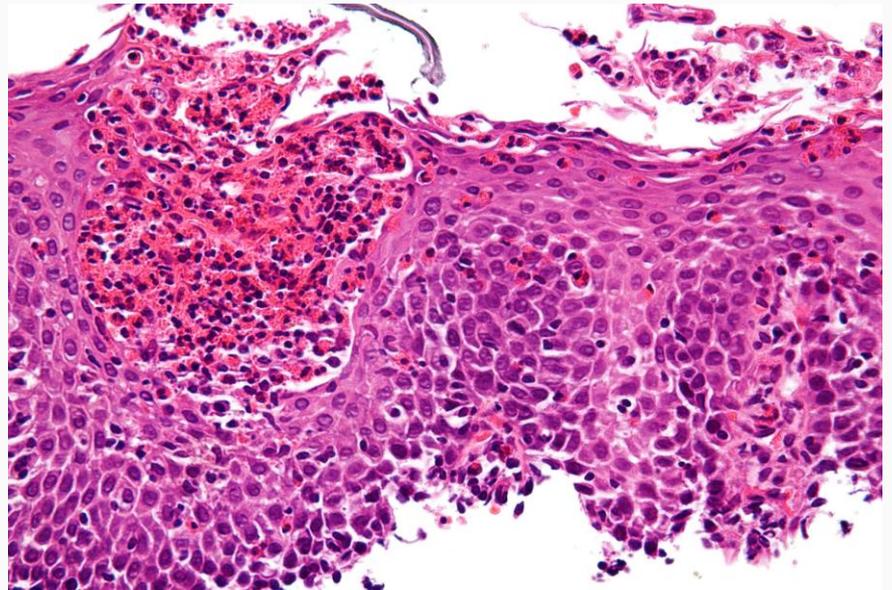
- Understand the presentation of EoE in various pediatric groups
- Learn the visual diagnostic criteria for EoE
- Expand on the current treatment guidelines

# Eosinophilic Esophagitis

Chronic immune-mediated disorder resulting in eosinophilic infiltration of the esophagus

Criteria for diagnosis:

- Clinical symptoms of esophageal dysfunction
- Histologic presence of >15 eosinophils/hpf
- Absence of other eosinophilic syndromes beyond esophagus



# Eosinophilic Esophagitis: Pathophysiology

- Genetic?
  - Genetic susceptibility locus at 5q22
- Environmental?
  - Non-Ig E (TH2) allergic response to allergens

It is believed that when a food allergen enters the body through a disrupted epithelial barrier, esophageal Ag-presenting cells interact with the allergen, releasing a cascade of proinflammatory cytokines and chemokines, leading to recruitment of eosinophils to the esophagus

## Eosinophilic Esophagitis: Prevalence

- Prevalence: 1.6 - 40 per 100,000
- Prevalence highest in children with dysphagia or food impaction (63-88%)
- 3:1 M > F
- More common in Caucasians
- Fam Hx EoE or significant GERD

# Eosinophilic Esophagitis: Signs and Symptoms

## *Young Child*

- Regurgitation
- Vomiting
- Feeding diff/ refusal
- Failure to thrive

## *School-age*

- Vomiting and abd pain
- Food refusal
- Dysphagia

## *Adolescents and adults*

- Reflux
- Dysphagia
- Heartburn
- Food impaction
- Epigastric abd pain



## *Other symptoms*

- Anorexia
- Early satiety
- Malnutrition / FTT
- Esophageal dysmotility
- Hematemesis (rare)

## *Personal hx atopy in 60-80%*

- Asthma
- Eczema
- Allergic rhinitis
- Food allergies

# Eosinophilic Esophagitis

- Symptoms can be indistinguishable from GERD in children
- Emesis of undigested food within a few minutes of eating
- Chronic inflammation can lead to esophageal stricture formation
- Empirically start PPI for 6-8 weeks before EGD to r/o GERD or dx PPI-responsive EoE

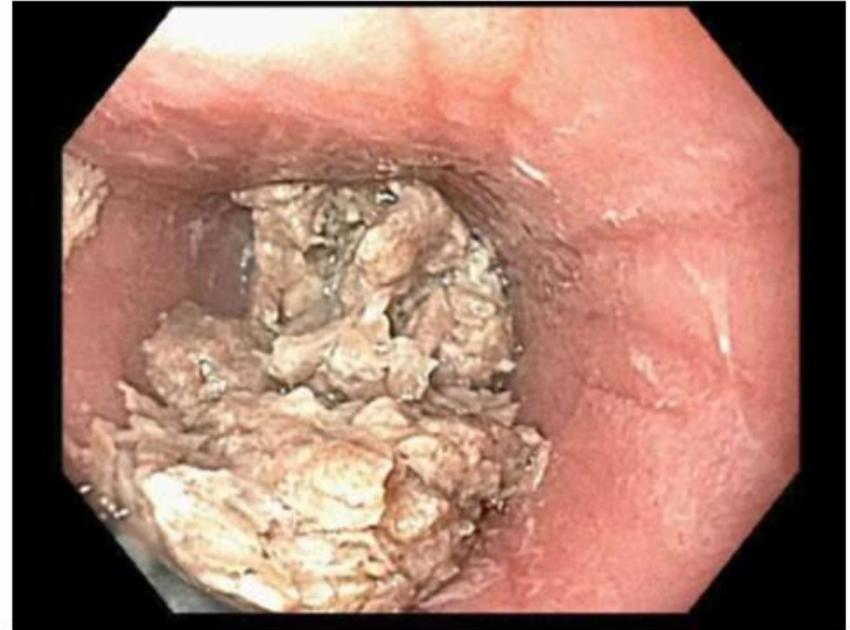


Figure 3. Food impaction in a patient with eosinophilic esophagitis.

# Eosinophilic Esophagitis: Diagnosis

## Endoscopy with Biopsy

- Direct visualization:
  - Linear furrows
  - Concentric rings
  - Loss of typical vascular pattern
  - White exudates
  - Late findings of narrowing or stricture
  - 30% may appear normal
- Histology
  - Patchy disease, so obtain both distal and proximal esophagus samples
  - $\geq 15$  eosinophils/hpf
  - Excessive eosinophils in the stomach and/or duodenum would suggest alternate diagnosis



**Figure 2.** Mucosal edema, loss of vascular pattern, and linear furrows in a patient with eosinophilic esophagitis.

## Swallowed Topical Corticosteroids

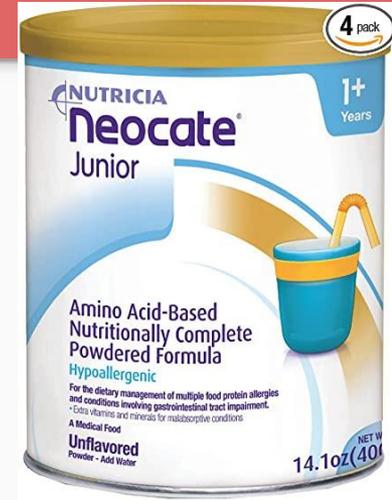
### *Aerosolized Fluticasone or Viscous Budesonide*

- When swallowed, they are deposited along the surface of the esophageal mucosa
- 50-85% show improvement in symptoms
- AE: dry mouth, nosebleed, oropharyngeal or esophageal candidiasis, some evidence of adrenal suppression

## Dietary Modification

### *Amino acid-based elemental formula diet (Neocate, Elecare)*

- 95% have clinical and histologic improvement
- Consuming the volume of formula needed to maintain nutrition may be a real challenge, and NG or GT may be required



## Dietary Modification

### *Selective Elimination*

- Based on results of allergy testing and clinical symptoms
- 57-77% success

### *Step Up Diet*

- No food allergy testing needed
- 2-food elimination (animal milk, gluten-containing cereals)
- 4 food elimination (milk, wheat, eggs, legumes)



## Dietary Modification

### *6 Food Elimination Diet*

- Empiric elimination of common food allergens (milk, soy, eggs, wheat, nuts/peanuts, fish/shellfish)
- For non-responders
- 75% demonstrate improvement
- Significant dietary restriction and need repeat EGDs to ensure reintroduced foods don't cause relapse



# Eosinophilic Esophagitis: Treatment

- Repeat EGD 6 weeks after dietary or medication change
- Clinical symptoms do not always correlate with histologic findings
- Once EGD resolution noted, foods can be systematically reintroduced while monitoring for redevelopment of clinical symptoms
- EoE almost always returns after discontinuing corticosteroids or reintroduction of eliminated food

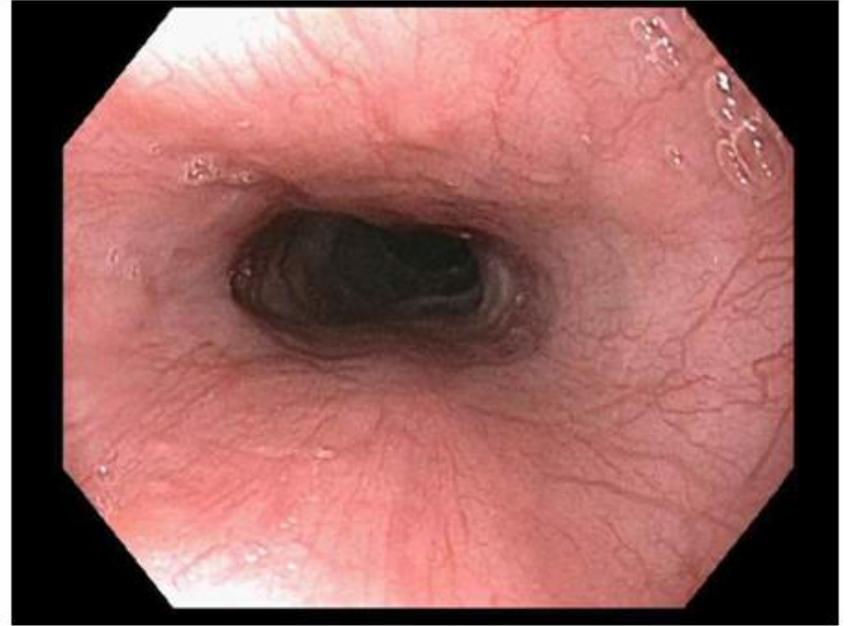
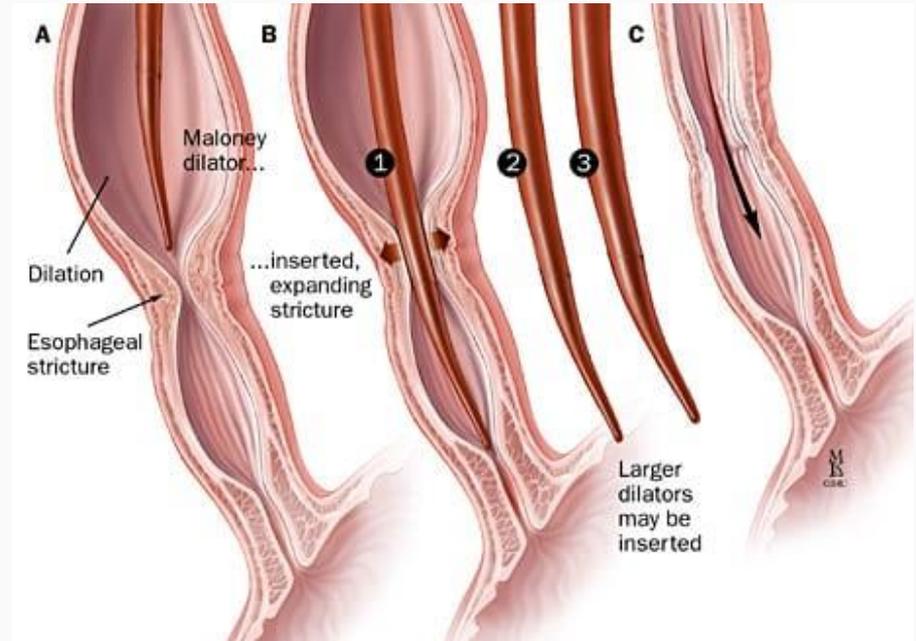


Figure 1. Endoscopic appearance of normal esophagus.

## Dilation Therapy

- Reserved for esophageal stricture
- Esophageal perforation possible complication
- Meds and diet typically first treatment choice



## Questions

A 14-month-old girl is brought to the office for follow-up. She has had reflux all her life and continues to be below the 5th percentile for weight. Proton pump inhibitors (PPIs) were tried which worked for a while but on tapering the medication, the symptoms return. The diagnosis of eosinophilic esophagitis is confirmed. Which of the following is the most appropriate next management step for this patient?

- A. Four-food elimination diet consisting of milk, wheat, nuts, and shellfish.
- B. Premedication with diphenhydramine prior to meals with no diet restriction.
- C. Six-food elimination diet and swallowed topical corticosteroid combination regimen.
- D. Six-food elimination diet consisting of milk, soy, eggs, wheat, nuts, and fish.
- E. Two-food elimination diet consisting of animal milk and gluten-containing cereals followed by a step up to 4- or 6-food elimination diet in nonresponders.

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## References

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