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Eosinophilic Esophagitis in Children

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Introduction

Eosinophilic esophagitis (EoE) is a chronic immune-mediated disease resulting in inflammation of the esophagus. It is when white blood cells collect in the esophagus and ultimately lead to dysfunction. “EoE has evolved over the last 15 years from a rare entity to one whose incidence rates are approaching that of inflammatory bowel disease,” (Syed, Andrews, Shaffer, Urbanski, Beck & Storr, 2012). EoE approximately affects 52 per 100,000 individuals. It is seen more commonly in male. If treatment is not sought out, it can lead to morbidity, including esophageal fibrosis and stenosis, and can tremendously affect quality of life.

Signs & Symptoms

•EoE is acknowledged as one of the most common causes of dysphagia and recurrent food impaction leading to medical intervention.

•It can present by vomiting, difficulty swallowing solid food with other unknown eating problems.

•According to Trivedy and Teitelbaum (2015), Clinical manifestations of EoE in children are nonspecific and vary by age; hence, diagnosis based on symptoms alone is not feasible.

•Infants and toddlers often present with feeding difficulties, which can result in failure to thrive school-aged children are more likely to present with vomiting or abdominal pain

Pathological Process

While a physician may be able to predict the diagnosis of eosinophilic esophagitis, a biopsy is the defining tool. The biopsy should confirm the predominancy of eosinophil inflammation. Onset of the disease will present differently based on the age of the child. “Toddlers often present with feeding difficulties with or without failure to thrive; vomiting is more common in older children, and dysphagia is common in adolescents,” (Teoh, Chan, Avinashi, Ko & Goldman, 2015). It is also found that there is a strong connection between EoE and IgE allergies such food triggered as well as asthma. As evidenced in children and adults, it was considered to be a resultant form of GERD, but there is also a link to allergies in some patients. As depicted by Grin & Streutker:

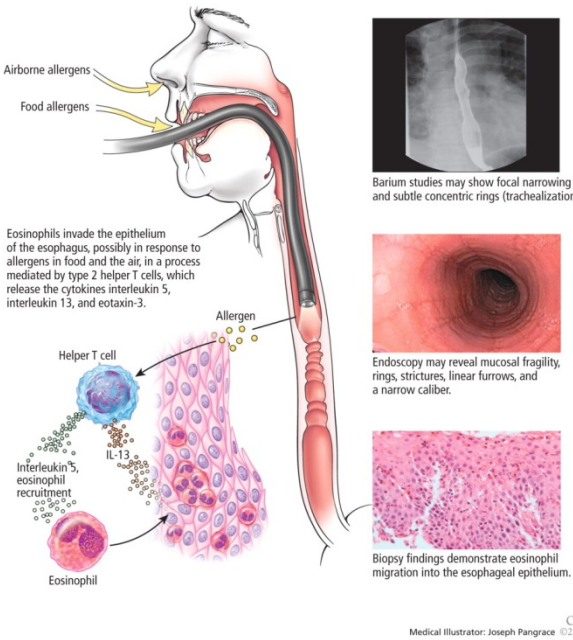
- The squamous mucosa in EoE resembles basal hyperplasia
- Epithelium appears quite hyperchromatic
- Lamina propria fibrosis is common and may contribute to esophageal dysmotility.
- Other inflammatory cells such as lymphocytes and mast cells are often present
- The number of mast cells can be significantly increased.

In a cohort study performed by Teoh, Chan, Avinashi, Ko & Goldman, biomarkers could be selected from the pathogenesis of EoE, which is currently thought to involve a Th 2-mediated response to allergens (9–12). A number of cytokines, including interleukin (IL)-4, IL-5, and IL-13 (13–18), chemokines, such as eotaxin-3, which is the most highly upregulated gene in EoE (15,19–21), and markers of eosinophil activation, such as granule proteins (18,22–24), have all been shown to be elevated in EoE as compared with controls.

An endoscopy should be performed to visualize the severity of the disease. “Macroscopic features seen when performing endoscopy often include linear furrows, esophageal rings (or trachealization), pallor or decreased vasculature, or white plaques or exudates,” (Teoh, Chan, Avinashi, Ko & Goldman, 2015). Understanding the biomarkers are key at defining the cause of eosinophilic esophagitis and the pathophysiology of the disease. Proper treatment can stem from this understanding and lead to a solution for a patient affected by the disease.

Is eosinophilic esophagitis ‘asthma of the esophagus’?

Eosinophilic esophagitis is an increasingly recognized cause of a variety of esophageal symptoms, including dysphagia, food impaction, atypical chest pain, and heartburn that does not respond to therapy. Its cause is unknown, but allergic and immune-mediated mechanisms similar to those of asthma and other atopic diseases are implicated.



Nursing Implications

Once EoE has been identified, the medical management should be multidisciplinary. A referral should be made to a gastroenterology and allergy specialist to control symptoms. It is also crucial that dietary modifications take place. The nurse has the responsibility to inform and educate the patient and the parents of a child. Symptoms can be well controlled with medication and dietary modification. The families need to be made aware that:

Proton pump inhibitors, oral and topical corticosteroids, and leukotriene inhibitors are medications of choice

Of these, only steroids lead to both clinical and histologic resolution

These medications almost always need to be given chronically as the disease recurs when the medications are discontinued

Esophageal dilatation may be necessary if food becomes lodged in the esophagus

Conclusion

The exact cause of EoE is unknown but there seems to be a correlation with allergies and asthma. The pathological significance of this process is surrounded by the diagnosis. Because there is a correlation between allergies and EoE, determining the triggers is essential to slowing the course as well as the symptoms. Defining the cause can also point to the right treatment to alleviate symptoms. Esophagitis needs to be diagnosed properly and as quickly as possible because they could be lifelong complications if left untreated. “It has rapidly emerged as an important cause of upper GI morbidity in patients of all ages and is encountered in a substantial proportion of patients undergoing diagnostic upper endoscopy,” (Dellon, 2013). Most children can lead a normal life with proper adherence to the lifestyle modifications.

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