

Hard to swallow?

The tale of eosinophilic oesophagitis

LI-ZSA TAN MB BS, MRCPCH, FRACP

DANIEL AVI LEMBERG MB BS, DipPaed, FRACP

Eosinophilic oesophagitis is increasingly recognised as an important cause of upper gastrointestinal symptoms in both children and adults. Accurate diagnosis and appropriate treatment leads to resolution of symptoms and prevention of long-term sequelae for most patients.

Remember

- Eosinophilic oesophagitis (EoE) is a chronic immune- or antigen-mediated oesophageal disease, whereby eosinophilic infiltration into the oesophageal mucosa results in symptoms of oesophageal dysfunction.^{1,2}
- Although EoE is often similar in presentation to gastro-oesophageal reflux disease (GORD), especially in young children, its symptoms do not resolve when optimally treated with anti-reflux medication.³ Left untreated, EoE can lead to oesophageal fibrosis and stricturing disease.

MedicineToday 2016; 17(10): 55-57

Dr Tan is Gastroenterology Fellow at Lady Cilento Children's Hospital, Brisbane, Qld. Associate Professor Lemberg is Head of Paediatric Gastroenterology at Sydney Children's Hospital, Sydney; and Conjoint Associate Professor at the School of Women's & Children's Health, Faculty of Medicine, UNSW Australia, Sydney, NSW.

SERIES EDITOR: Dr Katherine Ellard MB BS, FRACP, Honorary Secretary of the Gastroenterological Society of Australia (GESA).

The views published in this series are those of the authors and not necessarily indicative of those held by all members of the Digestive Health Foundation or GESA.



- Even accounting for growing recognition of the disease, the incidence and prevalence of EoE are thought to be increasing worldwide. Prevalence has been estimated at between 43 and 52 per 100,000 population.^{1,2,4,5}
- Symptoms of EoE are age-dependent. Infants and young children may present with food aversion, 'fussy eating', regurgitation, vomiting, abdominal pain and poor growth.³ Adolescents and adults often present with dysphagia, odynophagia and food impaction.
- Patients frequently have a history of atopy and food or aeroallergen hypersensitivity. It is theorised that EoE is the result of chronic exposure to food allergens or aeroallergens in genetically susceptible people.⁶
- The diagnosis of EoE is based on symptoms and endoscopy. Specifically, diagnosis is made when more than 15 eosinophils per high-power field (HPF) are present in at least one oesophageal mucosal biopsy specimen and eosinophilia is limited to the oesophagus.¹

Assessment

- Upper endoscopy is required to visualise the oesophagus and to collect oesophageal mucosal biopsy specimens, which should be assessed for other differential diagnoses.
- Characteristic endoscopic features include oedematous mucosa, oesophageal rings, furrowing, narrowing and strictures (Figures 1a and b). Decreased vascularity and fragile mucosa are also often noted.¹ About 10% of patients have a normal endoscopic appearance, with only histopathological examination of biopsy specimens indicating the pathological diagnosis.
- Apart from the presence of more than 15 eosinophils per HPF, other histological features of the diagnosis include eosinophilic microabscesses, extracellular eosinophilic



Figures 1a and b. Endoscopic features of eosinophilic oesophagitis include oedematous mucosa, linear furrowing of the oesophagus (a, left) and florid white exudates (b, right).

granules, basal layer hypertrophy, spongiosis and lamina propria fibrosis characterised by hyalinisation of the submucosal collagen (Figure 2).⁷

Management

- Corticosteroids can be extremely effective in inducing remission, but discontinuation of treatment may result in relapse. Off-label use of topical preparations such as swallowed fluticasone propionate and oral viscous budesonide reduces the side effect profile that occurs with long-term use of systemic corticosteroids.⁸⁻¹⁰
- Of the two topical preparations, oral viscous budesonide has

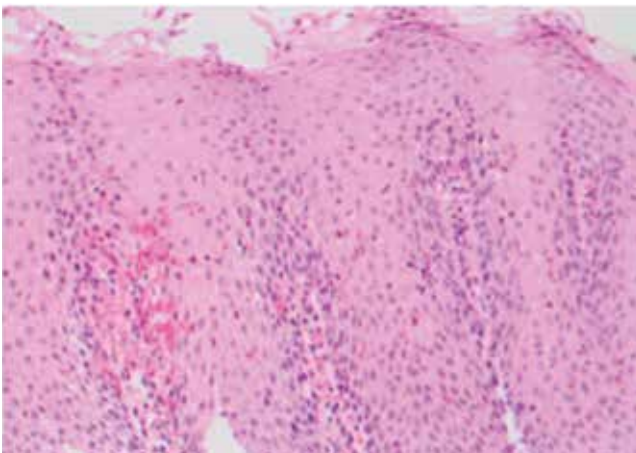


Figure 2. Eosinophilic inflammation in oesophageal squamous epithelium, showing features suggestive of eosinophilic oesophagitis: more than 80 eosinophils/high-power field, spongiosis and hyalinisation of the subepithelial stroma.

previously been reported as the more effective treatment.¹¹ However, a recent study suggested that there may be no significant difference between oral viscous budesonide and swallowed fluticasone propionate.¹²

- Elimination diets can achieve symptomatic and histological resolution, but compliance is key. This course of treatment should be undertaken with strict supervision from a dietitian.
- The six-food elimination diet involves avoiding the six most commonly allergenic foods: cow's milk, egg, wheat, soy, peanuts and fish/shellfish. Paediatric studies have reported achieving clinical and histological remission in 53 to 74% of patients.²
- In targeted elimination diets, skin-prick testing or atopy patch testing is performed to screen for potential allergenic triggers, which are then excluded from the diet. However, data suggest that these diets are less successful because of the difficulty in interpreting results of these tests.¹³
- The amino acid-based formula diet requires complete avoidance for some months of all forms of food apart from amino acid-based formula. It is highly effective, as it eliminates all food allergens from the diet, but often results in low levels of compliance because of its poor palatability. It is therefore more suited to infants.
- Endoscopic oesophageal dilatation provides symptomatic relief of dysphagia but fails to treat the underlying inflammation.
- There is an overlap in symptoms and histological features between EoE and GORD. The relationship between these disorders is unclear. Some symptomatic patients may respond to treatment with proton pump inhibitors (PPIs),¹⁴ although PPIs alone have been found to be inferior to combined treatment with oral viscous budesonide in children.¹⁰

Conclusion

EoE is a chronic immune-mediated disease with varied and subtle presentations, particularly in infants and children. Greater awareness of this disease is necessary for early diagnosis and treatment, and thus prevention of sequelae such as oesophageal fibrosis and stricturing disease.

MT

References

1. Dellon ES. Eosinophilic esophagitis. *Gastroenterol Clin North Am* 2013; 42: 133-153.
2. Papadopoulou A, Koletzko S, Heuschkel R, et al. Management guidelines of eosinophilic esophagitis in childhood. *J Pediatr Gastroenterol Nutr* 2014; 58: 107-118.
3. Liacouras CA, Spergel J, Guber LM. Eosinophilic esophagitis: clinical presentation in children. *Gastroenterol Clin North Am* 2014; 43: 219-229.
4. Noel RJ, Putnam PE, Rothenberg ME. Eosinophilic esophagitis. *N Engl J Med* 2004; 351: 940-941.
5. Cherian S, Smith NM, Forbes DA. Rapidly increasing prevalence of eosinophilic esophagitis in Western Australia. *Arch Dis Child* 2006; 91: 1000-1004.
6. Raheem M, Leach ST, Day AS, Lemberg DA. The pathophysiology of eosinophilic esophagitis. *Front Pediatr* 2014; 2: 41.
7. Li-Kim-Moy JP, Tobias V, Day AS, Leach S, Lemberg DA. Esophageal subepithelial fibrosis and hyalinization are features of eosinophilic esophagitis. *J Pediatr Gastroenterol Nutr* 2011; 52: 147-153.
8. Konikoff MR, Noel RJ, Blanchard C, et al. A randomized, double-blind, placebo-controlled trial of fluticasone propionate for pediatric eosinophilic esophagitis. *Gastroenterology* 2006; 131: 1381-1391.
9. Aceves SS, Bastian JF, Newbury RO, Dohil R. Oral viscous budesonide: a potential new therapy for eosinophilic esophagitis in children. *Am J Gastroenterol* 2007; 102: 2271-2279.
10. Dohil R, Newbury RO, Fox L, Bastian J, Aceves S. Oral viscous budesonide is effective in children with eosinophilic esophagitis in a randomized, placebo-controlled trial. *Gastroenterology* 2010; 139: 418-429.
11. Dellon E, Sheikh A, Speck O, et al. Viscous topical is more effective than nebulized steroid therapy for patients with eosinophilic esophagitis. *Gastroenterology* 2012; 143: 321-324.e1.
12. Albert D, Heifert TA, Min SB, et al. Comparisons of fluticasone to budesonide in the treatment of eosinophilic esophagitis. *Dig Dis Sci* 2016; 61: 1996-2001.
13. Spergel JM, Brown-Whitehorn TF, Cianferoni A, et al. Identification of causative foods in children with eosinophilic esophagitis treated with an elimination diet. *J Allergy Clin Immunol* 2012; 130: 461-467.
14. Molina-Infante J, Ferrando-Lamana L, Ripoll C, et al. Esophageal eosinophilic infiltration responds to proton pump inhibition in most adults. *Clin Gastroenterol Hepatol* 2011; 9: 110-117.

COMPETING INTERESTS: None.