Eosinophilic oesophagitis: an otolaryngologist's perspective

ABSTRACT

Eosinophilic oesophagitis is a diagnosis that is being made more frequently in the assessment of dysphagia in both adults and children. It is unclear whether this is a result of increased prevalence or improved diagnostic methods. Children present commonly to paediatric institutions with foreign body impaction. Research indicates that food impaction may predispose to eosinophilic oesophagitis. This article presents eosinophilic oesophagitis from an otolaryngologist's point of view. It details the clinical features present in the disease as well as how it is diagnosed and managed. It illustrates early signs of eosinophilic oesophagitis so that primary physicians and emergency physicians know when to refer on to otolaryngologists.

Eosinophilic oesophagitis is a diagnosis that is being made increasingly frequently in the assessment of dysphagia in both adults and children (Dellon et al, 2013). However, it is unclear whether this is the result of increased prevalence or better diagnostic methods. Diagnosis is typically made by endoscopy and histopathology. Biopsies demonstrating eosinophil-predominant inflammation with at least 15 or more eosinophils per high power field have a sensitivity of 100% and a specificity of 96% (Dellon et al, 2013). This article raises awareness of this condition, and illustrates early signs of eosinophilic oesophagitis so that physicians can refer appropriately.

Understanding and recognition of eosinophilic oesophagitis in the realm of otolaryngology is limited. Foreign bodies in the oesophagus are common presentations in paediatric institutions that require urgent endoscopy, but a degree of suspicion is required, particularly with food bolus obstructions in both children and adults. Otolaryngology and paediatric surgeons do not routinely take biopsies when removing these foreign bodies.

Dr T Gnanasekaran, MPhil Candidate, Department of Medicine, University of Sydney, Camperdown NSW, Australia

Dr S Gnanasekaran, Resident Medical Officer, Medical Education Unit, Royal Melbourne Hospital, Parkville VIC, Australia

Dr JM Wood, Fellow, Department of Paediatric Otolaryngology, Starship Children's Hospital, Auckland, New Zealand

Professor P Friedland, Consultant, Department of Otolaryngology, Head and Neck Skull Base Surgery, Sir Charles Gardiner Hospital, Perth, Australia

Correspondence to: Dr T Gnanasekaran (drtharsiga@gmail.com)

Epidemiology

Eosinophilic oesophagitis is now increasingly recognized as a cause of dysphagia in young adults and elderly patients, but the incidence of eosinophilic oesophagitis is still debated. In contrast to older studies, more recent studies have suggested an increase in the prevalence of eosinophilic oesophagitis (Raheem et al, 2014; Maradey-Romero et al, 2015). It has been postulated that improvement in disease recognition rather than a true increase in disease itself may lead to the impression of an increasing prevalence, which has varied between 0.02 and 1.3 per 100 000.

Pathophysiology

The First International Gastrointestinal Research Symposium (FINGERS) defined eosinophilic oesophagitis as a chronic clinicohistopathological disorder characterized by a constellation of symptoms 'distinct and similar' to those of gastro-oesophageal reflux disease (Raheem et al, 2014). This highlights the difficulties in both diagnosis and subsequent management.

A number of environmental factors confer a predisposition to developing eosinophilic oesophagitis later in life. These include premature birth, birth by caesarean section, antibiotic exposure during infancy, lack of breast feeding and living in an area of lower population density. These factors indicate that early stimulation of the immune system may predispose to the disease (Furuta and Katzka, 2015). There is also a genetic predisposition to eosinophilic oesophagitis and it is more common in men with a 3:1 prevalence in nearly every study.

Clinical presentation

The presentation of eosinophilic oesophagitis can vary with age, and includes non-specific oesophageal symptoms such as dysphagia, abdominal pain and episodes of food bolus obstructions. Children can present with failure to thrive. Classic endoscopic findings have been recognized, including longitudinal furrows and oesophageal rings or 'trachealisation' noted in the oesophageal mucosa. It is well recognized that distinguishing between eosinophilic oesophagitis and gastro-oesophageal reflux disease can be difficult.

Some clinicians differentiate between gastro-oesophageal reflux disease and eosinophilic oesophagitis by giving a 6-week course of a proton pump inhibitor. If symptoms do not resolve the patient is treated as having eosinophilic oesophagitis. While the prevalence of eosinophilic oesophagitis is 0.05%, it is markedly more prevalent in those who presented with food impaction

© 2017 MA Healthcare Ltd

because eosinophilic oesophagitis narrows the oesophagus, making food impaction more likely. Furthermore, food bolus impaction as a child may be a sign of subclinical disease which may develop into eosinophilic oesophagitis as an adult. Biopsies in children with meal bolus impactions have presence of mucosal pathology (100%) and in those with inanimate (non-organic) foreign bodies (45%) (Williams et al, 2013).

Eosinophilic oesophagitis is prevalent in those with a family history of eosinophilic oesophagitis but also those who have a personal or family history of atopic disorders.

Most people with eosinophilic oesophagitis present with chronic reflux symptoms. However, if they had episodes of food impaction as a child, the likelihood of them having eosinophilic oesophagitis is much higher. It appears that unrecognized childhood subclinical disease precedes adult presentation of eosinophilic oesophagitis. In one study, 85% of people who had untreated symptoms for 20 years presented with oesophageal strictures (Schoepfer et al, 2013).

On endoscopy, the most common findings of eosinophilic oesophagitis are eosinophilic exudates (white specks), mucosal oedema, linear furrows, oesophageal rings and strictures (Furuta and Katzka, 2015). In terms of imaging, barium oesophagography can be used to identify strictures in patients with eosinophilic oesophagitis.

Studies have also analysed the prevalence and predictive factors of eosinophilic oesophagitis in patients presenting with dysphagia (Prasad et al, 2007). There is evidence to support oesophageal biopsies being obtained even in normal-appearing mucosa in patients with unexplained solid food dysphagia as biopsy could diagnose eosinophilic oesophagitis in about one in 10 cases (Prasad et al, 2007). A clinical algorithm that could be followed by physicians is presented in *Figure 1*.

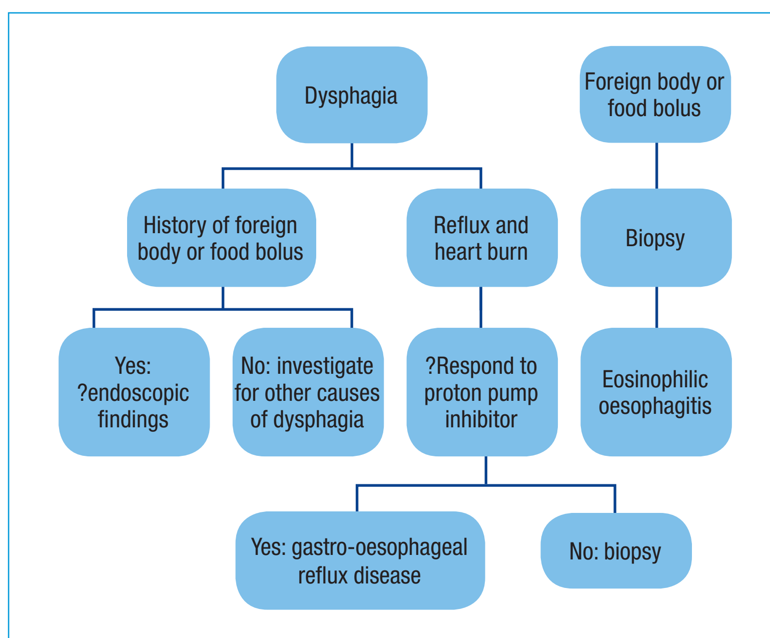


Figure 1. A clinical algorithm for management of patients with suspected eosinophilic oesophagitis.

Treatment

Treatment goals in patients with eosinophilic oesophagitis are to control symptoms and restore function. As a complex disease, management may require multiple specialties including otolaryngologists, gastroenterologists and immunologists.

Traditionally dietary therapy has been used to treat eosinophilic oesophagitis. Given the strong association with atopy, immunologist can do skin prick testing and recommend targeted diets. An alternative diet is the six food elimination diet which eliminates the most allergenic foods (wheat, milk, soy, eggs, peanuts and seafood). Targeted diets had a sustained response in 45% of patients and the six food elimination diet showed improvement in symptoms and histological abnormalities in 74% of patients after only 6 weeks (Kagalwalla et al, 2006).

Topical glucocorticoids in the form of fluticasone administered orally as a spray or a viscous preparation of liquid budesonide are the mainstays of pharmacological therapy. The efficacy of these treatments ranges from 53–95% (Furuta and Katzka, 2015). Systemic glucocorticoids have produced similar results but there is increased risk of side effects such as *Candida* infection, adrenal axis suppression, bone demineralization and suppressed growth (Schaefer et al, 2008).

Oesophageal dilatations by otolaryngologists may be required to treat the complications of eosinophilic oesophagitis in adults. While dilatation successfully manages intra-luminal narrowing it does not address the underlying pathology and as such patients often need regular dilatations. The risk of perforation has been shown to be 1% in several large scale studies (Moawad et al, 2013).

Complications

The complications of untreated eosinophilic oesophagitis can lead to food impaction, dysphagia leading to malnutrition, stricture and even perforation (Furuta and Katzka, 2015).

Conclusions

Foreign bodies in the paediatric oesophagus are common presentations to otolaryngologists. While the overwhelming majority of these foreign bodies are coins (87%), the rest is made up of inanimate (organic material) objects including food boluses (3%). Impaction with such objects, particularly food boluses, may in fact be a sentinel presentation of eosinophilic oesophagitis. **BJHM**

Conflict of interest: none.

Dellon ES, Gonsalves N, Hirano I, Furuta GT, Liacouras CA, Katzka DA; American College of Gastroenterology (2013) ACG clinical guideline: evidenced based approach to the diagnosis and management of esophageal eosinophilia and eosinophilic esophagitis (EoE). *Am J Gastroenterol* **108**(5): 679–692, quiz 693. https://doi.org/10.1038/ajg.2013.71
Furuta GT, Katzka DA (2015) Eosinophilic esophagitis. *N*

© 2017 MA Healthcare Ltd

KEY POINTS

- Eosinophilic oesophagitis is a diagnosis that is increasingly more common in the general population.
- Most people present with chronic reflux symptoms, but if they had episodes of food impaction as a child, the likelihood of them having eosinophilic oesophagitis is much higher.
- Impaction with foor boluses as a child may in fact be a sentinel presentation of eosinophilic oesophagitis.

Engl J Med **373**(17): 1640–1648. https://doi.org/10.1056/NEJMra1502863
Kagalwalla AF, Sentongo TA, Ritz S et al (2006) Effect of six-food elimination diet on clinical and histologic outcomes in eosinophilic esophagitis. *Clin Gastroenterol Hepatol* **4**(9): 1097–1102. https://doi.org/10.1016/j.cgh.2006.05.026
Maradey-Romero C, Prakash R, Lewis S, Perzynski A, Fass R (2015) The 2011–2014 prevalence of eosinophilic oesophagitis in the elderly amongst 10 million patients in the United States. *Aliment Pharmacol Ther* **41**(10): 1016–1022. https://doi.org/10.1111/apt.13171
Moawad FJ, Cheatham JG, DeZee KJ (2013) Meta-analysis: the safety and efficacy of dilation in eosinophilic oesophagitis. *Aliment Pharmacol Ther* **38**(7): 713–720. https://doi.org/10.1111/apt.12438
Prasad GA, Talley NJ, Romero Y, Arora AS, Kryzer LA, Smyrk TC, Alexander JA (2007) Prevalence and predictive factors of eosinophilic esophagitis in patients presenting with dysphagia: a prospective study. *Am J Gastroenterol* **102**(12): 2627–2632. https://doi.org/10.1111/j.1572-0241.2007.01512.x
Raheem M, Leach ST, Day AS, Lemberg DA (2014) The pathophysiology of eosinophilic esophagitis. *Front Pediatr* 2: 41. https://doi.org/10.3389/fped.2014.00041
Schaefer ET, Fitzgerald JF, Molleston JP et al (2008) Comparison of oral prednisone and topical fluticasone in the treatment of eosinophilic esophagitis: a randomized trial in children. *Clin Gastroenterol Hepatol* **6**(2): 165–173. https://doi.org/10.1016/j.cgh.2007.11.008
Schoepfer AM, Safroneeva E, Bussmann C, Kuchen T, Portmann S, Simon HU, Straumann A (2013) Delay in diagnosis of eosinophilic esophagitis increases risk for stricture formation in a time-dependent manner. *Gastroenterology* **145**: 1230–1236. e1–2. https://doi.org/10.1053/j.gastro.2013.08.015
Williams P, Jameson S, Bishop P, Sawaya D, Nowicki M (2013) Esophageal foreign bodies and eosinophilic esophagitis—the need for esophageal mucosal biopsy: a 12-year survey across pediatric subspecialties. *Surg Endosc* **27**(6): 2216–2220. https://doi.org/10.1007/s00464-012-2742-1

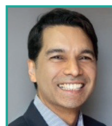
London Rhinoplasty Course
4. 11. 2017
ROYAL SOCIETY OF MEDICINE
www.londonrhinoplastycourse.com
TECHNIQUES IN RHINOPLASTY WITH AN INTEGRATED ENT-PLASTICS APPROACH

BOOK NOW!
REDUCED BOOKING RATE UNTIL 16TH JUNE 2017

This one-day CPD-certified course is designed for all Plastic, ENT and Maxillofacial surgeons.

Further your knowledge and learn new rhinoplasty techniques to achieve the best possible results for your patients.

Conference Co-Chairs



Rajan Uppal
Consultant Plastic Surgeon, London

Nick Eynon-Lewis
Consultant ENT Surgeon, London

Highlights of the course will include:
- Consideration of aesthetics and functional aspects
- Discussion of approaches, graft techniques, complications and controversies
- Case studies and video techniques
- Panel discussion and interaction with the audience

www.londonrhinoplastycourse.com
@LDN_Rhinoplasty #LDNRhinoplasty

© 2017 MA Healthcare Ltd