

Significance of feeding dysfunction in eosinophilic esophagitis

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Abstract

Feeding dysfunction is a frequent presenting symptom of eosinophilic esophagitis (EoE). Here we present 3 children of various ages whose manifestations of EoE associated feeding dysfunction led to significant and life altering impact on their growth and development. Early identification of presenting symptoms of EoE will allow for prompt diagnosis and initiation of appropriate treatments. Recognition of salient features of dysfunction and treatment by feeding therapists and nutritionists led to symptom resolution and growth.

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Key words: Eosinophilic esophagitis; Eosinophilic oesophagitis; Feeding dysfunction; Feeding therapy oral motor skills; Mealtime dynamics; Esophagitis; Oesophagitis

Core tip: Children with eosinophilic esophagitis may present with severe feeding dysfunction that manifests as growth disturbances. Feeding therapy can be an integral part of the treatment plan.

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INTRODUCTION

Eosinophilic esophagitis (EoE) is a chronic esophageal disease characterized by reflux-like symptoms, dyspha-

gia or feeding dysfunction and eosinophil predominant esophageal inflammation^[1-4]. It is estimated to occur in 4 of 10000 adults and children worldwide^[2]. Here we present three children of different ages whose manifestations of EoE-associated feeding dysfunction led to life-altering impact on growth and development. Early recognition and treatment of EoE is necessary to prevent long-term complications of stricture and food impaction.

CASE REPORT

Case 1

A 20-mo-old boy presented for evaluation of nine months of chronic feeding refusal, being a “picky eater” and vomiting. Progressive reduction in solid food intake led to slow weight gain. Physical examination revealed mild wasting (83% ideal weight for height). Clinicopathological evaluation confirmed the diagnosis of EoE and treatment was initiated (Table 1). Feeding evaluation identified refusal to eat meats, vegetables or fruits unless pureed and preference for liquids. Food allergies to egg and peanut were identified. Parental frustration centered on the inability to introduce new foods, low volume of intake and lengthy mealtimes. After medical and feeding therapy, he gained weight (95% ideal weight for height) and vomiting resolved. Family feeding therapy improved the patient’s oral motor skills allowing him to increase food texture variety and caloric intake, develop appropriate mealtime behaviors and add new foods. He participated in mealtimes with positive behaviors thus reducing caregiver frustration.

Case 2

A 4-year-old boy presented with 2 years of intermittent food refusal, vomiting and gagging associated with eating. Treatment with lansoprazole reduced his vomiting but did not resolve other symptoms. He had a history of asthma. Physical examination and growth were normal (110% ideal weight for height). A clinicopathological diagnosis of EoE was made and medical treatment started (Table 1). Feeding evaluation revealed solid food refusal, preference for soft foods and significant mealtime anxiety that resulted in > 1 h-long meal times. Clinical evaluation revealed problems chewing highly textured foods (meats, breads). Eating behaviors and symptoms lead to stressful family dynamics and mealtimes. Individual feeding therapy sessions integrated new foods into his diet, reduced food refusal behaviors, decreased mealtime length, diet expansion and skill acquisition fostering positive mealtimes.

Case 3

A 15-year-old girl presented with a 9-year history of solid food dysphagia. She avoided meat, ate slowly, and limited her diet to foods that did not “get stuck”. Physical examination was notable for wasting (80% ideal weight for height). A clinicopathological diagnosis of EoE was made and treatment initiated. She had a history of cat allergies and allergic rhinitis (Table 1). Feeding evaluation revealed

that she used liquids to “wash” food down, avoided meat and breads, took small bites, preferred foods with soft textures and experienced prolonged mealtimes. To avoid embarrassment, she told friends she was a vegetarian and limited social engagements. Food allergies to sesame, nuts and bananas were identified. Nutritional intervention focused on achieving appropriate weight gain. Treatment with swallowed topical steroid (fluticasone) and food restrictions of sesame, nuts and bananas were started, leading to resolution of symptoms and esophageal eosinophilia after 2 mo later. Despite resolution of dysphagia and esophageal eosinophilia after two months of treatment, feeding behaviors and anxiety persisted. Feeding therapy was initiated to achieve appropriate chewing and swallowing skills and develop strategies for trying new foods in social settings. She incorporated 15 to 20 new foods into her diet. Weight improved (90% ideal weight for height). Her anxiety with social eating resolved and she was able to eat all foods, including meats.

DISCUSSION

Since children develop feeding skills during infancy and throughout childhood, any disruption of this pattern, caused by discomfort or inflammation, can result in life changing, maladaptive eating behaviors. These feeding disturbances can occur at different ages and stages of childhood development (Table 2). In this regard, a limited number of reports have identified the spectrum of feeding dysfunction associated with EoE. Cross-sectional studies determined that feeding dysfunction occurs in 14% to 58.9% of children with EoE^[3,5]. Pentiuk *et al*^[6] describe a number of infants and toddlers presenting to their feeding specialty clinic who were ultimately diagnosed with EoE. However the importance of early recognition and feeding therapy in the overall successful evaluation and treatment of patients with EoE has not been thoroughly emphasized. These cases provide examples of the critical importance of the recognition of feeding dysfunction as a cardinal symptom of EoE as well as the potential need for, and impact of, feeding therapy necessary for some children with EoE.

The first patient demonstrates classic feeding problems observed in infants and toddlers with chronic esophagitis. Food refusal behaviors delay acquisition of age appropriate feeding skills. These children often present as “drinkers and food refusers.” Feeding therapy encouraged development of oral motor skills and reduction in maladaptive learned feeding behaviors. Feeding therapy, concurrent with effective medical therapy, led to improvement in feeding behaviors, accelerated weight gain and reduced family mealtime stress.

The second case demonstrates how chronic pain led to feeding dysfunction and development of maladaptive coping in a pre-school child. In this scenario, development of mature eating skills was stunted and family mealtime dynamics disrupted. Feeding therapy facilitated increased oral intake and normalized mealtime dynamics,

Table 1 Summary of clinical data

Age	Symptom duration at presentation	Presenting symptoms	Diagnostic endoscopy ¹	Treatment	Histologic resolution	Feeding therapy
1 20 mo	9 mo	Vomiting, feeding refusal	Edema and exudate; up to 70 eos/hpf	OVB 0.5 mg BID; ADED	Normal; no eos/hpf	Weekly individual sessions
2 4 yr	2 yr	Vomiting, abdominal pain, feeding refusal	Furrows and exudate; up to 60 eos/hpf	Fluticasone 44 ug 2 puffs BID swallowed	Normal; no eos/hpf	Individual sessions followed by group sessions
3 15 yr	9 yr	Solid food dysphagia	Ringed esophagus; up to 46 eos/hpf	Fluticasone 220 ug 2 puffs BID swallowed, ADED	Furrows; up to 4 eos/hpf	Bimonthly individual sessions

¹Gross and histologic appearance. All diagnostic endoscopies were performed after 8 wk of age appropriate high dose proton pump inhibitor treatment to effectively exclude gastroesophageal acid reflux disease. eos/hpf: Eosinophils per high power field; OVB: Oral viscous budesonide; ADED: Allergen directed elimination diet, as identified by immunocap and skin prick testing.

Table 2 Common feeding dysfunction and clinical gastrointestinal presentation seen in eosinophilic esophagitis by age

	Infant/toddler	School age	Older child/adolescent
Feeding presentation	Liquid and food refusal, delayed oral feeding skills, low volume of intake, grazing behaviors	Food refusal, poor acceptance of new foods, preference for liquid and soft diet, low variety in diet, slow pace of eating, need for prodding to eat	Preference for liquid and soft diet, low variety in diet, fear and anxiety at mealtimes
Gastrointestinal presentation	Vomiting, irritability, pain	Abdominal pain, vomiting	Dysphagia, heartburn

even before histologic normalization.

The third case revealed how EoE contributed to maladaptive feeding behaviors, malnutrition and social disruption in a teenager. Dysphagia led to fear and anxiety about eating and social isolation. Maladaptive behaviors led to reduced intake and malnutrition. Feeding therapy was required to reduce anxiety and improve eating, even after histologic normalization and clinical improvement.

After medical and feeding treatments, each patient either developed previously absent skills or recovered skills that facilitated growth. Major goals of EoE treatment are reduction in esophageal inflammation and optimization of growth and development. Our report emphasizes that, in some children with EoE, early identification and treatment of feeding dysfunction with feeding therapy is key to meeting these goals as evidenced by their improvement in feeding behaviors, intake and growth. Gastroenterologists may miss initial historical features of feeding dysfunction and not recognize the full impact of therapeutic interventions. Individualized or group feeding therapy that includes parents and other caregivers provides necessary immediate tools and long-term feeding strategies.

EoE is a chronic disease that can present with feeding dysfunction. Early recognition of feeding problems as a diagnostic clue for EoE is important to potentially prevent esophageal remodeling and functional sequelae such as dysphagia and food impactions^[7,8]. Institution of age appropriate medical and feeding treatments is critical for children of all ages.

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COMMENTS

Case characteristics

Three children with eosinophilic esophagitis presenting with severe feeding dysfunction.

Differential diagnosis

Exclusion of Gastroesophageal reflux disease with treatment with proton pump inhibition.

Pathological diagnosis

Esophageal eosinophilia with greater than 15 eosinophils/high power field and exclusion of other causes of inflammation.

Treatment

Topical corticosteroids, diet restriction and feeding therapy were used to induce symptomatic and histological remission.

Related reports

Feeding dysfunction as an initial manifestation of eosinophilic esophagitis and feeding therapy as an important part of a treatment plan are under recognized.

Experiences and lessons

This case series is the first to document severe feeding dysfunction in children with eosinophilic esophagitis of various ages who received benefit from feeding therapy.

Peer review

This article will increase awareness of feeding dysfunction as a manifestation of eosinophilic esophagitis and the positive impact of feeding therapy.

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