

CASE REPORT

Case Report: Eosinophilic esophagitis associated with cow's milk protein allergy

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Abstract

Introduction: Eosinophilic esophagitis is a chronic inflammatory disease by infiltrate of eosinophils in esophagus, estimated at 1:10.000. It is distinct from GORD (Gastro-oesophageal reflux disease), although patients share similar symptoms. Is not well established the role of allergy in the process, though the improvement or resolution of the process with the food exclusion diet indicates a role of food allergy in some patients. **Objectives:** report the progress of a patient with eosinophilic esophagitis associated with cow's milk protein. **Method:** medical record review. **Case Report:** At 3 months, the patient started a clinical condition of vomiting and recurrent abdominal pain, diagnosed as gastroesophageal reflux and instituted treatment. Evolves with epigastric pain, heartburn, altering weight and height, choking and impaction with liquids. At seven years old was diagnosed with eosinophilic esophagitis through high digestive endoscopy (HDE) with biopsy and association with cow's milk protein allergy (serum IgE to cow's milk protein increased). After beginning of proper treatment and diet of exclusion presented gastrointestinal symptoms associated with urticaria and angioedema. Restarted treatment, with remission of the clinical condition and normal HDE. **Conclusion:** Eosinophilic esophagitis should be remembered when therapy with Proton-pump inhibitors failure in the control of symptoms. High digestive endoscopy with biopsies it is primordial for the diagnosis and monitoring of these patients.

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INTRODUCTION

Eosinophilic Esophagitis (EE) is a condition caused by mixed hypersensitivity (IgE mediated and non-IgE mediated response). It is a chronic inflammatory disease characterized by an infiltration of eosinophils in the esophagus, and the estimated incidence is one case per 10,000 inhabitants per year¹. It is more prevalent in men (3:1) and Caucasians^{2,3}.

It has been increasingly diagnosed in pediatric and adult patients, although the epidemiology of this disease is not yet well known. It is estimated that 8% to 10% of pediatric patients who fail to respond to treatment with proton pump inhibitors for gastroesophageal reflux disease (GERD) have EE².

Symptoms include abdominal pain, vomiting, anorexia, dysphagia, food impaction, chest pain, and other symptoms similar to those of GERD. Food impaction and chest pain are frequent in teenagers and young adults whereas nonspecific symptoms, including abdominal pain and vomiting, are common in children.

EE is distinct from GERD, although patients share similar symptoms and the same patient may have both conditions. EE has been associated with atopy because 75% to 80% of patients with EE are sensitized to aeroallergens or food allergens, and because of family predisposition and the increased expression of the eotaxin gene 3².

The role of allergy in EE is not well understood; however, an improvement of symptoms with a food elimination diet indicates a possible role of food allergy in some patients.

CASE REPORT

M.A.F.S, male, of mixed ethnicity, started vomiting and had repeated abdominal pain at the age of three months. He was diagnosed with gastroesophageal reflux and treated with regular ranitidine. At age three, he presented with rhinitis and bronchial hyper responsiveness, which evolved to epigastria, heartburn, and height and weight changes.

At age seven, he often choked on solid food and liquids. A normal abdominal ultrasonography (USG) and an upper gastrointestinal endoscopy (UGI) with biopsy were performed, and the results showed the presence of more than 20 eosinophils per field in the esophagus; the results were negative for *Helicobacter pylori*. Tests for normal concentrations of total and specific serum IgE for cow's milk, egg, wheat, soy, cashew nut, and fish showed a positive result only for cow's milk (specific IgE concentration of 3.78 kU/L).

The concentration of specific IgE against domestic mites (*Dermatophagoides pteronyssonus*, *D. farina*, and *Blomia tropicalis*) was smaller than 0.10 kU/L. Complete blood count was normal without eosinophils in the peripheral blood. Family history was positive for respiratory allergy (the mother had rhinitis and asthma) and negative for food allergy and EE. Treatment included an acid blocker (omeprazole, 20 mg/day), oral inhalation of fluticasone (250 mcg, one spray every 12 hours), and a cow's milk-free diet.

After two months, the patient was asymptomatic. Treatment was done for nine months and was discontinued after two years. At age ten, symptoms of vomiting, epigastralgia, dysphagia, rash, and angioedema reappeared after cow's milk was reintroduced to the diet.

EE was diagnosed using high-definition endoscopy (HDE) and the test results indicated the presence of more than 20 eosinophils per field, erosive antral gastritis, erosive bulbitis, bulbar A2 ulcer by Sakita, and negative results for *H. pylori*. The same therapy was initiated and the symptoms improved. At age 12, he was asymptomatic again, HDE results were normal, and the results for *H. pylori* were negative. At age 14, the results of HDE and esophagus, stomach, and duodenum (ESD) examination were unremarkable.

At present, at age 17, he is asymptomatic as long as he takes an acid blocker (omeprazole at 40 mg/day) and follows a cow's milk-free diet. He still has class 3-specific IgE for cow's milk and class 2-specific IgE for casein.

DISCUSSION

In the study case reported, the height and weight of the patient were affected by the disease, and the patient was initially treated for gastroesophageal reflux. The clinical manifestations of EE in infants and younger children are nonspecific and variable but are most commonly associated with feeding difficulties⁴.

The possibility of occurrence of eosinophilic esophagitis and food allergies was considered only when the patient presented food impaction in the esophagus. Food allergy is a prevalent problem. Multiple allergens may be involved, and the most common allergens are cow's milk, wheat, soy, peanuts, and eggs.

Previous studies reported that, in patients with EE⁵, the total serum IgE is either normal or slightly increased and peripheral eosinophilia is uncommon, and these findings are similar to those of this clinical case. Although the pathogenesis of EE remains unclear, therapy that includes an oral and inhalational corticosteroid, an acid blocker, and a proper elimination diet controls the patient's symptoms.

Some patients with severe disease present other symptoms, including significant dysphagia and stenosis, and may require esophageal dilation. Repeated endoscopies should be done at appropriate intervals to assess the effectiveness of therapy in reducing inflammation.

Symptoms may disappear in two to four weeks, regardless of the type of treatment; however, it does not indicate a reduction in inflammation because symptoms often do not correlate with inflammation. In this respect, it is possible to have no symptoms but significant inflammation. The histological response to the use of topical steroids usually occurs in four to twelve weeks⁴. Histological response to the food elimination diet is observed in four to eight weeks but is highly variable, and it has been observed for up to four months in some individuals⁶.

In the case reported, after clinical improvement (the patient was asymptomatic two months after initiation of therapy), failure of family members to comply with treatment caused the reappearance of symptoms. This finding demonstrates that family adherence is essential for the success of therapy because this chronic and relapsing disease needs regular and multidisciplinary follow-up⁷.

HDE and additional biopsies are required to monitor disease progression and confirm the effectiveness of therapy in controlling esophageal inflammation.

CONCLUSION

EE should be considered when therapy using proton pump blockers fails in controlling symptoms. Upper gastrointestinal endoscopy with biopsy is critical for the diagnosis and follow-up of these patients.

In the case reported here, after the diagnosis of EE associated with allergy to cow's milk protein, selection of an elimination diet, and proper treatment, the patient improved and remained asymptomatic. Nevertheless, further studies are needed to assess the natural history and better management of this disease.

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