

Tolerance of Baked Cheese in Cow's Milk-Mediated Eosinophilic Esophagitis

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ABSTRACT

Eosinophilic esophagitis (EoE) is a chronic antigen-driven disease of the esophagus diagnosed by both clinical and pathological features. Current treatments include proton pump inhibitors, elimination diets, and swallowed steroids. This study discusses a young boy with cow's milk-mediated EoE who remained in remission after a 6-week baked cheese challenge following the successful completion of a 6-week baked milk challenge. To our knowledge, there are currently no reported cases of successful remission of milk-triggered EoE after a baked cheese challenge.

INTRODUCTION

Eosinophilic esophagitis (EoE) is a chronic allergic condition in both adults and children characterized by inflammation of the esophagus most often due to food allergies. Cow's milk is the most common food causing EoE.¹⁻³ Elimination of cow's milk from the diet can be an effective treatment for cow's milk-mediated EoE (CMME). Many patients with CMME are also able to tolerate baked milk without recurrence of symptoms or inflammation, and this has been well described.¹ However, successful response to baked cheese in patients with CMME has never been reported. We present a 6-year-old male with CMME who achieved histological and symptomatic remission after the introduction of baked cheese.

CASE REPORT

A 6-year-old male was referred to our care in September 2017 with an 8-month history of reflux, vomiting at night, and constipation. On the first presentation of symptoms in January 2017, he was prescribed ranitidine HCl 15 mg/mL syrup 5 mL once a day; however, no resolution of symptoms was achieved after 5 months.

The patient underwent an esophagogastroduodenoscopy (EGD) and flexible sigmoidoscopy in June 2017 that showed exudates, edema, and esophageal eosinophilia with a peak eosinophil count of 62 eosinophils per high powered field (eos/hpf), confirming the diagnosis of EoE. The flexible sigmoidoscopy was normal. Ranitidine was discontinued, and the patient was placed on an 8-week course of high-dose omeprazole, 20 mg once a day, to rule out if the disease was proton pump inhibitor (PPI)-responsive. The follow-up EGD showed furrowing, exudates, and significant eosinophilic infiltration (a peak eosinophil count of 100 eos/hpf).

We then started the patient on a 6-week milk elimination diet (in conjunction with the PPI therapy). A repeat EGD on this treatment showed a resolution of the furrowing and exudates with a peak eosinophil count of 2 eos/hpf, indicating that milk is the main allergen driving his EoE. In addition, the patient reported no symptoms at the time of EGD. Given that most patients with CMME are able to tolerate baked milk (Leung et al, 2013), the patient was advised to consume baked milk in a muffin every alternate day for 6 weeks. The follow-up EGD showed a normal esophagus with a peak eosinophil count of 4 eos/hpf.

The patient was then counseled to discontinue PPI and continue the baked milk diet. After 6 weeks, the repeat EGD showed continued remission of EoE (with a peak eosinophil count of 5 eos/hpf) and a normal esophagus. The patient continued to report no symptoms.

The patient's EoE was thus determined to be milk mediated with a tolerance for baked milk and not PPI responsive. After presenting the patient with 2 treatment options of continuing baked milk consumption but avoiding other milk products or trying a baked cheese challenge for 6 weeks, the patient chose the latter. The patient consumed Amy's frozen cheese pizza (Amy's Kitchen, Inc, Petaluma, CA) 3 times per week for 6 weeks. The follow-up EGD showed a normal esophagus and continued remission of EoE with a peak eosinophil count of 3 eos/hpf.

DISCUSSION

Approximately 75% of children with immunoglobulin E (IgE)-mediated sensitivity to cow's milk can tolerate heated milk products because high temperature destroys conformational epitopes that milk-specific IgE antibodies are primarily directed against.⁴ Interestingly, a subset of patients with IgE-mediated cow's milk allergy can tolerate baked cheese but not unheated milk, further indicating that heat may play a role in modulating immunogenicity.⁵ Although EoE is not IgE mediated, 73% of patients with CMME tolerated baked milk in a retrospective study.¹ It is still unknown why some patients with CMME can tolerate baked milk.

In this case, the patient either outgrew his EoE or he is tolerant of baked cheese in addition to baked milk. After a retrospective review of 1,812 patients with EoE, 8 cases of patients outgrowing all EoE-related food sensitivities were reported, suggesting that this is a rare occurrence.⁶ The patient's guardian was unwilling to incorporate milk back into his diet at this time to discern whether he in fact outgrew his EoE.

If the patient is indeed able to tolerate baked cheese with CMME, this may indicate that other patients with CMME and tolerance of baked milk may be able to tolerate baked cheese as well. The

opportunity to add baked cheese into the restricted diet of patients with CMME may improve both quality of life and compliance.

DISCLOSURES

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Informed consent was obtained for this case report.

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