Association Between Headache and Sensitivities to Gluten and Dairy

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Abstract

Dietary factors are known triggers for migraine headaches. The most commonly implicated foods are wheat and dairy products. We present a case study of a patient with a 30-year history of debilitating migraine headaches who showed no benefit from various pharmaceutical interventions. Special panels for gluten and cross-reactive foods and a multiple autoimmune reactivity screen revealed significantly high levels of antibodies against wheat proteomes, transglutaminase, and dairy-related antigens. Not only did the implementation of a gluten-free and dairy-free diet result in an amelioration of the migraine headache symptomatology, the clinical improvements correlated with a significant decline in the levels of a majority of the previously elevated antibodies. This finding indicates that diet plays a significant role in a subgroup of patients with migraine headaches.

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Migraine headaches are a common neurological disorder that is induced by environmental triggers, including food. In fact, dietary factors that are known to activate the headache mechanism are called *migraine triggers*.[1] The foods most frequently implicated are wheat and dairy products.[2,3] In a multicenter, prospective study, increased prevalence of headache was noted in patients with celiac disease (CD) and inflammatory bowel disease.[4] Compared to 14% in controls, chronic headache was found in 30% of patients with CD; 56% of patients with nonceliac, gluten sensitivity; and 23% of patients with inflammatory bowel disease (IBD).[4] Similarly, cow's milk is one of the most commonly implicated foods, with sensitivity having been identified in 37% of migraine patients.[5,6] Furthermore, when either gluten or casein (a protein found in milk) was removed from the diet, a reduction in the number and severity of headaches to either a gluten-free or a casein-free diet was observed.[2,7]

This reported relationship between diet-triggered headaches or migraines and reactivity to wheat and gluten is difficult to prove since the reactivity is not consistently confirmed by the skin-prick test or IgE antibody titers. Therefore, an alternative to IgE testing, such as IgG and IgA antibody testing against food antigens, in combination with an elimination diet, would have clinical relevance.

For the present study, the authors will discuss the case of an individual with a 30-year history of debilitating headache that showed no benefit from various pharmaceutical interventions. Consequently, based on laboratory evaluations and the detection of IgG and IgA antibodies against various wheat and milk proteomes, a combination of a gluten- and dairy-free diet was implemented. The reduction in the number of and severity of the individual's headaches in response to this diet was demonstrated by a decline in the salient antibody levels.

Case Report

A 66-year-old Caucasian man with a 30-year history of debilitating headaches came to the Perlmutter Health Center for evaluation. Full neurological evaluations, including magnetic-resonance brain imaging, on multiple, prior occasions had revealed no abnormality. The patient had visited various headache-specialty clinics and had received no benefit from various prophylactic pharmaceutical interventions, including propranolol, amitryptiline, and topiramate. Medicative therapy was modestly effective and included oral sumatriptan—50 to 100 mg approximately twice weekly—as well as a hydrocodone/acetaminophen preparation—5/325 mg, 3 to 4 tablets approxi-