



Letters

Chronic adult food protein–induced enterocolitis syndrome

The chronic form of food protein–induced enterocolitis syndrome (FPIES) was first described by Powell in 1978 and its acute variant in 1986.^{1,2} No cases of chronic FPIES have been reported in adults. Here, we describe a case consistent with chronic FPIES in an adult.

A 20-year-old man was admitted to the hospital after several days of experiencing weakness that prevented him from walking, dizziness, object motion, and blurred vision. His medical history revealed chronic abdominal pain, intermittent diarrhea, and vomiting over the previous months, so he had started a restrictive diet and lost 7 kg as a result. He was lactose intolerant and had avoided milk since diagnosis at the age of 15 years. He had no personal history of eczema, rhinitis, or asthma and denied illicit drug use and alcohol intake.

On admission, his body mass index was 19 kg/m², down from 24 kg/m² before starting the restrictive diet. Extensive neurologic examination revealed mild paresis (4 of 5) in the lower limbs and an unsteady gait with lateral deviation to the right and backward. Findings on cranial computed tomography and nuclear magnetic resonance were normal.

Laboratory tests revealed mild normocytic, normochromic anemia, with serum vitamin B12 levels of 153 pg/mL (200–950 pg/mL) and folate 1.4 ng/mL (2.9–16.9 ng/mL). The levels of albumin, electrolytes, calcium, vitamin D, immunoglobulins, ceruloplasmin, and iron were within the reference range, and tests for liver and renal function and autoimmune thyroid disease also showed values within the reference range.

The tests for serum intrinsic factor, antiparietal cell antibodies, antitissue transglutaminase were negative; fecal calprotectin level was 57 pg/g. A rapid urease test did not detect *Helicobacter pylori*. Abdominal and pelvic ultrasound findings were normal, as were gastroscopy and colonoscopy with biopsy of the stomach and duodenum, performed during dietary avoidance. The patient was discharged home with a prescription for folic acid and cyanocobalamin.

After ruling out gastrointestinal pathology, the patient was referred to our allergy department. He reported that for the past 20 months, he had been experiencing abdominal pain within 1 to 2 hours after meals, diarrhea on most days, and sometimes emesis. Although the patient did not seek medical advice, he suspected eggs to be the offending food, which he was eating 3 to 4 times a week; therefore, he excluded eggs from his diet. His symptoms improved but persisted intermittently, so 3 months later, he decided to also exclude meat and most fish species, which he was eating 2 to 3 days a week. His gastrointestinal manifestations disappeared within a few days, except for some acute episodes of repetitive emesis, abdominal pain, and weakness that prompted his presentation to the emergency department and were related to the

inadvertent intake of the mentioned foods (Table 1). He had tolerated the triggering foods before the onset of the symptoms.

Adult FPIES to multiple foods was suspected. The results of the skin prick tests and serum-specific immunoglobulin E for eggs, fish, and meat were negative. After several months of avoiding the triggering foods, he provided informed consent to undergo a double-blind, placebo-controlled food challenge with a pasteurized whole egg, masked in a vehicle that was also used as placebo.³

The placebo and egg challenges were performed on 2 separate days. The total dose of egg (6 g of protein) was divided into 3 equal parts and administered over 30 minutes. We observed the patient for 6 hours. A complete blood cell count with differential was obtained both at baseline and 6 hours after the food challenge. An hour after eating the whole egg, the patient experienced colicky abdominal pain, repetitive vomiting, pallor, hypothermia, lethargy, and hypotension (77/50 mm Hg), which subsided after approximately 5 hours with saline perfusion. His neutrophil count increased by 1520 per mm³.

An open food challenge with salmon (22 g of protein) was performed after a few days, which led to similar symptoms and a neutrophil increase of 1310 per mm³. The patient refused an open food challenge with beef because he had inadvertently ingested beef a few days before the appointment and again presented repetitive emesis and abdominal pain. Poultry and other fish species were introduced at home with good tolerance.

After comprehensive history taking and investigations, we concluded that the patient had chronic FPIES induced by eggs, beef, and salmon, and we recommended him to continue to strictly avoid these foods. After the diagnosis, the patient has been reevaluated periodically. He remains asymptomatic 2 years after starting the exclusion diet. His levels of vitamin B12, folic acid, methylmalonic acid, and homocysteine are all normal.

Although FPIES has traditionally been considered a pediatric disorder, a few reports have recently been published in adults, with seafood,^{4–6} followed by egg,^{4,5} standing out as the most common foods eliciting an acute reaction. Chronic FPIES is less well characterized than acute FPIES and has only been reported in infants.⁷ However, in 2016, Zubrinich⁸ described a 43-year-old woman with a recurrent intermittent FPIES-like syndrome occurring after egg intake. The patient required emergency treatment after presenting with severe episodes. As in our case, it was the patient who identified the trigger food.

The international consensus guidelines for diagnosing and managing FPIES establish that the most important criterion for the diagnosis is the resolution of the symptoms within days after eliminating the offending food(s) and the acute appearance of symptoms with their reintroduction.⁹ In our patient, the symptoms followed a chronic course, with weight loss and nutritional deficiency associated with vitamin B12 and folic acid deficit. The symptoms appeared with neurologic manifestations, probably caused by a very restrictive diet and possibly by inflammation arising from the almost daily ingestion

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Table 1
FPIES Symptoms Elicited by Each Food, Both Chronic and Acute, after Accidental Ingestion or During the Oral Food Challenges

Food	Chronic symptoms (September 2016–February 2017)	Accidental ingestion (March–May 2018)	Oral food challenge (May 2018)
Egg	++ Vomiting, abdominal pain, diarrhea	+++ Vomiting, abdominal pain, diarrhea, hypotension, lethargy	+++ Vomiting, abdominal pain, diarrhea, hypotension, lethargy, hypothermia BP (77/50 mm Hg) ↑ Neutrophils ^a Not done
Beef	++ Vomiting, abdominal pain	++ Vomiting, abdominal pain	
Salmon	++ Vomiting, abdominal pain, diarrhea	++ Vomiting, abdominal pain	++ Vomiting, diarrhea, abdominal pain ↑ Neutrophils ^b

Abbreviations: BP, blood pressure; FPIES, food protein–induced enterocolitis.

NOTE. The ++ symbol indicates moderate symptoms, only gastrointestinal manifestations (vomiting, abdominal pain, diarrhea); The +++ symbol indicates severe symptoms, gastrointestinal and systemic manifestations (vomiting, abdominal pain, diarrhea, hypotension, lethargy, hypothermia).

^aNeutrophil count increased 1520 above the baseline.^bNeutrophil count increased 1310 above the baseline.

of some of the offending foods. Gastroscopic exploration did not reveal inflammatory changes, as the patient had been avoiding the implicated foods for a few months before the endoscopy.

This case emphasizes the importance of suspecting FPIES in adults. The intermittent or continuous ingestion of the implicated foods may cause chronic, recurrent abdominal symptoms and even nutritional deficits, prompting the need for multiple tests and procedures.

In the adult population, the dearth of published literature on the topic, together with the patient's inclination to directly avoid the trigger food rather than seek medical care, probably results in most cases of the disease being misdiagnosed or undiagnosed.

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