

Psychopathology Masquerading as Food Allergy

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Three patients who presented with vague symptoms previously diagnosed as food allergy are reviewed. No evidence for allergy to foods was found in any of the patients. Two were depressed with psychotic thinking and the third had moderately severe anxiety with depression. All three improved following psychiatric diagnosis and intervention. One was treated with antidepressant and one with antidepressant-antipsychotic medication. All three maintained improvement two years later.

The diagnosis of food allergy must be based on showing a direct relationship between the inciting food and the immunologically mediated reaction. Anxiety and depression may masquerade as food allergy. Evidence of psychopathology should be present to make such a diagnosis.

The true prevalence of food allergy is unknown. In children estimates have ranged from 0.3 to 7.5 percent. There is a decrease in sensitivity concomitantly with age.¹⁻³ Reactions to foods, such as urticaria and angioedema, are the most common, while abdominal cramps, nausea, emesis, and diarrhea occur less frequently. Rarely may respiratory manifestations and anaphylaxis occur.¹⁻³ All well-documented reactions occur within four hours and usually within two hours from the time the inciting food has been ingested. Reactions that occur later than two to four hours following ingestion or consist of vague symptoms are "rare, putative, or unlikely."³ Still, food allergies are occasionally diagnosed in patients with multiple ill-defined symptoms and depression.²⁻⁹ Ascribing these symptoms to immunologically mediated allergy is not only erroneous but may obscure the correct diagnosis and delay appropriate treatment. In this report, three such patients are presented. All three were referred to National Jewish Hospital for evaluation and treatment of "allergies." Two had major depression with psychosis, and one had moderately severe anxiety and depression. All three attributed their symptoms to food allergy, but during extensive diagnostic workup, no objective evidence of food allergy was found, and all improved following psychiatric intervention.

CASE REPORTS

Patient 1

A 20-year-old, divorced, male refinery worker was referred for evaluation of asthma, rhinitis, and food allergies. He had been given various medications, which he took on an irregular basis. Three years prior to his referral, because of complaints of heartburn associated with eating, he underwent skin testing for foods by intradermal injections of serial dilutions of food extracts. His response was evaluated on the basis of the patient's subjective symptoms only. He was judged to be sensitive to corn, eggs, milk, beef, baker's yeast, chocolate, potatoes, grapes, and bacon. He was told to avoid these specific foods. The patient, however, limited his diet to such an extent that he subsisted on bread, pork, and Kool-aid only. Past history was unremarkable except for mild psoriasis.

On review of systems, the patient had multiple vague complaints including burning skin sensation, shortness of breath, feeling "bad or sick," tightness of chest, and heartburn. The patient slept poorly and frequently awakened at 4 AM. His weight was 67 kg, height 173 cm. Physical examination revealed gingivitis, cheilosis, congested nasal mucosa, and wheezing upon forced expiration. Pulmonary function tests showed moderate airway obstruction, which improved considerably after a short course of prednisone and bronchodilators. Blood chemistry was normal. Total eosinophil count was $6 \times 10^8/L$ ($600/mm^3$) of blood. Prick skin tests were strongly positive to grasses while negative to weeds, trees, danders, and 54 varieties of foods. A barium swallow revealed a diaphragmatic hernia with reflux of contrast material into the esophagus.

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The patient was divorced, lived with his parents, and was very dependent on his mother. He missed work often. His wife and 5-year-old son had left the house one month earlier. The patient felt he was in danger of losing his job because of racial discrimination. He felt passed by on promotions and that his supervisors were against him and unsympathetic to his allergies. He was discouraged about his physical illness and had suicidal thoughts in the past. Psychological testing revealed that the patient was severely depressed and regarded all of his symptoms as indicating a hopeless outcome. His somatic preoccupation was felt to protect him from experiencing an overt thought disorder. Psychiatric examination found sufficient evidence for the diagnosis of major depression with psychotic features.¹⁰ The patient was hospitalized and treated with a combination of 8 mg of perphenazine and 100 mg of amitriptyline taken at bedtime, which led to a quick improvement of his depression. He tolerated a regular diet without experiencing any side effects and within three weeks gained 7 kg in weight. His heartburn was easily controlled by occasional antacids and elevation of the head of his bed on blocks during sleep.

On two-year follow-up, the patient was living alone, working sporadically, but had no further hospitalizations. Although he stopped his antidepressant medications after one year, he continued to gain weight and thought his allergies "had improved."

Patient 2

A 54-year-old, married, female clerk and mother of three children was referred "to find out about my food allergies, so that I can eat enough." The patient had suffered from perennial rhinitis for two years and mild asthma for one year. The patient suffered infrequent widespread urticaria, which responded only to steroids. For six months she inconsistently experienced the following symptoms when eating various foods or medications: (1) diffuse abdominal pain, which was localized eight days later to the right lower quadrant; and (2) after another two days, pruriti ani, often accompanied by extreme tiredness and tearfulness. To avoid a flare-up, the patient ate only small meals of a wheat- and milk-free diet. She slept poorly, avoided social contacts, and had stopped going to church. She felt well only during her part-time job in a gift shop. Symptoms recurred immediately as she left work. There were numerous family conflicts. She had repeated short hospitalizations for "mental exhaustion," which were treated with tricyclic antidepressants and major tranquilizers. The patient refused to take those medications regularly because of side effects similar to her food allergies. On review of systems, the patient had multiple complaints.

Physical examination revealed a thin (weight 50 kg, height 160 cm), extremely tense, tearful woman. There was slight diffuse enlargement of the thyroid gland. The rest of the physical examination was unremarkable. Specifically, there were no skin lesions. Routine laboratory

data and immunoglobulin E, triiodothyronine, and thyroxine levels were normal. Pulmonary function tests revealed slight, reversible obstruction to airflow. Immediate hypersensitivity skin tests to house dust, dog dander, and watermelon were positive. She ate watermelon with impunity, however. Prick skin tests to multiple other foods, grasses, weeds, and trees were negative. A barium swallow with small bowel series and a barium enema were normal.

Psychological testing revealed anxiety and depression with a large number of bizarre somatic complaints. On psychiatric examination, she was found to have an isolated psychotic belief fixated on food allergies and was very depressed. Her symptoms were compatible with a diagnosis of schizoaffective disorder.¹⁰

As the patient usually stopped all medications, an agreement was reached with the patient and her trusted family physician to start her on antidepressant and antipsychotic medication with close outpatient follow-up at home. She was encouraged to continue her employment, as working reinforced reality oriented behavior. The patient reluctantly began to try foods to which she thought she was allergic. Within two months, she was eating three meals a day and had gained 3 kg while being treated with 50 mg of imipramine at bedtime. She had been unable to tolerate perphenazine or amitriptyline because of a recurrence of vague abdominal distress.

After two years, the patient was still taking 50 mg of imipramine at bedtime and had maintained her weight with a diet of rice, meat, baby foods, and fruit. Even though her husband had died, the patient had fewer crying spells, had no further hospitalizations, and was still working.

Patient 3

A 35-year-old, single, female interior designer was referred for evaluation of allergy to seafood, iodine, tartrazine, and penicillin.

Past history was remarkable for hypothyroidism, and she had been on 2 g of thyroid extract for six years. Family history was negative for atopy. At the age of 15 years, the patient suffered angioedema while on injectable penicillin. Two years prior to her referral, she had two episodes of nausea within one hour of, and another time four hours after, eating shellfish. Twelve hours later she developed abdominal cramps and a rash on her legs that disappeared within two hours of taking an antihistamine. She felt sore and weak for another two days. Eight months earlier she ate some tuna fish and one-half hour later felt dizzy and developed a "feeling" of a rash on her arms, but no actual rash appeared. She took an antihistamine, but one hour later felt that her throat was closing. She went to an emergency room, where acute hyperventilation was diagnosed, and she was given diazepam intravenously. The feeling of thickening in the throat continued for two days in spite of treatment with diazepam and hydroxyzine.

Later, an allergist treated her with a short course of

prednisone and occasional hydroxyzine. Her condition was diagnosed as an allergy to seafood, iodine, and tartrazine. No skin tests or challenges were performed. Avoidance of foods containing her alleged allergens and a bland elimination diet led to no improvement. She had been told to refrain from milk products because they might contain penicillin. She frequently ate an ice cream made with natural cream, however. She was seen by several specialists because of gastrointestinal complaints, chest discomfort, and pain in the arm. Gastrointestinal series, electrocardiogram and echocardiogram, a ventilation-perfusion scan, and roentgenograms of the chest and spine were normal. The patient became extremely anxious, lost 3 kg of weight, and thus decided to come to National Jewish Hospital for evaluation. Because she was so anxious, she brought her mother with her to the appointment. Physical examination was within normal limits. An otolaryngology consultant found no pathology in the larynx while the patient was feeling "thickening in her throat."

Prick skin tests to multiple foods, pollen, mite, feathers, cat and dog dander, and molds were negative. She had a positive intradermal skin test to sodium benzyloxy-penicillin (the major allergenic determinant of penicillin). Pulmonary function tests were normal. Ingestion of tartrazine caused no symptoms. One hour following the ingestion of 100 mg of potassium metabisulfite, the patient felt a thickening in her throat. There were no objective changes in the physical examination or in pulmonary function tests. Levels of serum complement of 5-hydroxyindoleacetic acid (5-HIAA) in her urine were normal. Serum triiodothyronine, thyroxine, and thyroid-stimulating hormone levels were normal.

Because of the patient's obvious anxiety and because no allergic factors could be identified, psychological evaluation was performed. The patient was found to be a very sensitive woman who tended to conceptualize her psychological distress in terms of physical symptoms. She also used marked repression of psychologically based difficulties. The patient was advised to seek psychotherapy and relaxation training. It turned out that the referring allergist had already made this recommendation. He felt, however, that the patient would accept the diagnosis of psychopathology only at a major medical center.

Two years later the patient felt well and had no further problem with food allergies. She had continued to work but had not had psychotherapy.

DISCUSSION

These three cases stress the importance of diagnosing food allergy only on the basis of objective criteria. The diagnosis should be based on (1) careful history, (2) a food diary, if necessary, (3) a positive prick skin test to the suspected food, (4) ability to reproduce symptoms with a blind food challenge, and (5) amelioration of symptoms with avoid-

ance of the suspected food.¹⁻³ The main value of a food diary is its ability to highlight otherwise occult associations of reactions with certain foods.

The first patient had clear-cut evidence of gastroesophageal reflux, which was easily managed with appropriate therapy, and tolerated all foods with impunity. Food skin-testing performed in his home town produced only totally subjective symptoms and no objective symptoms. Prick skin tests to all foods were negative. An extreme elimination diet did not improve his symptoms. The second patient had multiple, somewhat bizarre, symptoms at varying times after ingesting the suspected foods. She was afraid to undergo any food challenges. The third patient had been told by her referring physician that she was allergic to seafood, iodine, and tartrazine. No symptoms occurred after she ate seafood, she had daily exposure to iodine in her thyroid extract, and a tartrazine challenge was negative. Her past reactions after eating shellfish remain unexplained, but may have been due to a toxic reaction such as shellfish gastroenteritis described in Japan.¹¹ All three patients had a detailed medical history, and patients 1 and 2, a psychiatric interview. These interviews required much more than the average amount of time because of the patients' need to list all their unusual symptoms. Only after they felt the physician was taking both their physical and emotional problems seriously did they agree to psychological testing (Minnesota Multifactorial Personality Inventory, Respiratory Illness Opinion Survey, and Asthma Symptom checklist)¹² and treatment. All three patients were depressed, and two had psychotic ideation centering around their "allergies."

Patient 1 improved on antidepressant plus antipsychotic medication, and patient 2, on an antidepressant alone. Both have maintained their weight and feel improved two years later, patient 1 being off medication by then. Although antidepressants have potent antihistaminic activity,^{5,13} this activity is unlikely to be responsible for the improvement in these patients. Patient 3 seemed to benefit from a thorough workup that showed she did not have food allergy and is doing well two years later with no further treatment.

Reactions to foods may be due not only to allergy, but also to idiosyncrasy and intolerance of or the presence of pharmacologically active substances and toxins.^{2,3,9,11} Ill-defined symptoms such as headache, behavioral changes, and late-onset vague abdominal symptoms have not been proved to be due to food allergy.^{1-3,9} Hence, it is imperative to perform a food challenge, preferably blinded, that will reproduce the adverse reactions.^{1-3,9} The absence of a reaction still requires the presence of a specific psychiatric diagnosis to classify a reaction as purely psychogenic.^{8,9} In a recent series of 24 patients who believed they had food allergy, and in whom none was proven, the diagnosis of a depressive neurosis was made in 19.⁸ Several patients had features of chronic hyperventilation syndrome.^{8,9}

There is no increase in documented food allergy in depressed patients.^{14,15} Conversely, there have been reports^{5,7}

that claim depression itself may be caused by food allergy, though there has been no supporting conclusive evidence. It is much more likely that depression leads to an increase in focusing on somatic symptoms that are attributed as "allergic" by the patients who then limit their diet and make their lives even more isolated and preoccupied.

It is necessary to evaluate thoroughly patients who present with unusual and vague complaints. Food allergy can be diagnosed by appropriate objective testing, and treatable psychiatric illness should not be overlooked by erroneously attributing the symptoms to an allergic mechanism. Unexplained or exaggerated somatic symptoms can occur with depression.¹⁶ It is important to listen patiently to the patients' lengthy and often emotionally charged history to gain their trust. Only then will they agree to appropriate psychological as well as medical testing leading to the correct diagnosis. Appropriate treatment with antidepressant or antipsychotic medication can be very helpful in relieving these distressing and frustrating symptoms.

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