

results suggest sensitization to both substances in this case, or a possible cross-reactivity between carob bean and guar gum. Specific IgE levels, though significant, were too low to perform a RAST-inhibition test. Carrageenans (galactose polymers, extracted from red seaweeds) and pectin (a glucuronic acid polymer, originating from fruits) were also handled by the patient, but nothing has shown that IgE-mediated mechanisms might be involved with these substances. Attempts to know whether they could induce specific IgE were unsuccessful (Pharmacia).

In summary, we describe the first case of occupational allergy to carob bean flour, with evidence of an IgE-mediated mechanism. The patient had immediate rhinitis and delayed asthma, which resolved after he stopped working.

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The true story of the pilot who was itching to fly

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The difficulty of finding a specific cause for chronic urticaria/angioedema has prompted some treating physicians to recommend multiple screening tests in addition to a comprehensive history and physical examination to identify an undetected infection or inflammation.¹ However, some controversy exists as to how many screening tests should be ordered in cases in which the history does not direct the physician toward a specific problem. Recommendations for screening tests range from routine laboratory tests (or none at all),^{2,3} to chest radiography, hemography, sedimentation rate measurement, serology, tests for antinuclear antibody, rheumatoid factor, and ova and

parasites in the stool, serum protein electrophoresis, and skin biopsy.⁴ We present a patient with chronic urticaria/angioedema whose ardent desire to return to work prompted us to pursue an exhaustive workup.

CASE REPORT

H.S. is a 28-year-old Air Force pilot with a 2-year history of progressively worsening chronic urticaria/angioedema whose symptoms and subsequent use of medications had prevented him from flying for more than 6 months. Initially his urticaria was episodic, lasting less than 7 days and responding rapidly to antihistamines. The frequency and duration of his symptoms gradually increased until he was having symptoms daily. Ultimately, his urticaria/angioedema could not be controlled, even with 200 mg hydroxyzine and 100 mg doxepin daily, or with several other combinations of high-dose H₁ and H₂ antihistamines. Prednisone was the only medication that controlled his symptoms. Before being seen at our medical center, he had an extensive workup including normal complement studies and tests for antinuclear antibody, rheumatoid factor, RPR hepatitis serology, thyroid functions, and thyroid antibodies. Skin testing for aeroallergens and foods and a trial of a salicylate-free diet all yielded negative results. On initial examination, he ap-

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peared as a slightly cushingoid white man with urticarial lesions covering 50% of his body. The review of his systems was negative. He was admitted to our hospital and placed on an elemental diet (Tolerex; Norwich-Eaton Pharmaceuticals, Norwich, N.Y.) and observed for 7 days without improvement. The skin biopsy was consistent with chronic urticaria without evidence of vasculitis, and the direct immunofluorescent staining was negative. Dental radiography revealed the presence of a periapical radiolucent lesion, which was surgically removed. Immediately after the procedure his urticaria/angioedema increased dramatically. Cultures and Gram stains from the area were negative, and pathologic study of the tissue showed a periapical granuloma. At this time it was thought that the granuloma could be causing the patient's problem, and he was discharged off medications for observation. However, his symptoms persisted and he was readmitted 2 weeks later. A CT scan of the sinuses showed a retention cyst in the left maxillary sinus (Fig. 1). The cyst was drained via endoscopic surgery, and 6 ml of clear yellow fluid was removed. Repeat endoscopy demonstrated complete decompression of the cyst. Within 30 minutes after the drainage the patient noted a decrease in his hives and by the following morning his skin was clear; cultures from the fluid were negative for fungi and bacteria. He has been free of the urticaria for more than 4 months since drainage of the cyst, and his flight status has been reinstated.

DISCUSSION

An exhaustive workup to find the cause of urticaria is often neither helpful nor cost-effective. Most patients can be treated symptomatically, and with time the urticaria/angioedema will often subside. However, in some patients, such as pilots, regulations will not permit them to be on duty while taking antihistamines or when suffering from urticaria. In such patients an aggressive workup is warranted and may be rewarding.

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FIG. 1. CT scan demonstrates a left maxillary sinus retention cyst and minimal mucosal membrane thickening of the right maxillary sinus.

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