Allergic Fungal Rhinosinusitis

Our Experience

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As can be seen from Ferguson's review of the literature and treatment options, AFRS remains an enigma to us 17 years after it was described. What we have learned raises many more questions than we have answers.

To address some of the issues raised in her review, we believe that IT may prove to be the next advance in our treatment regimen for AFRS; however, some of the problems with IT include the following: (1) the exact fungus causing the patient's problem must be identified; (2) antigens are not available for all fungi, necessitating the use of similar fungal antigens; (3) IT appears to only control, not eliminate, the disease in some patients; and (4) we do not know whether the disease will recur after IT is finished.

Our experience with oral antifungals is mixed. Two patients exemplify the results. The first, a man, was treated with itraconizole with excellent results. He stopped using the medication and the disease recurred. Itraconizole therapy never had any effect on the disease again. The second patient, an older woman with diabetes, experienced a recurrence 6 months after the operation and was treated with itraconizole for 19 months, the result of which was a completely normal computed tomographic scan. Use of the drug was discontinued and she experienced a recurrence 2 months later.

By 1991 it had become evident that surgery alone was not enough to treat AFRS. The use of oral corticosteroids was a necessary postoperative adjunct to surgery. The major question was, "How much for how long?" After 7 years of study, the question is still, "How much prednisone for how long is enough?" It is clear from the article by Kupferberg et al[1] that all patients who are treated with surgery alone will experience a recurrence given enough time. Eight (88%) of 9 patients treated only with surgery experienced a recurrence with the ninth patient's disease recurring after the article was published. The longest times to recurrence were 26 and 34 months, indicating that close follow-up must last at least 3 years, even without the use of corticosteroids. No one knows how long the follow-up needs to last when there is intercurrent medical therapy. It is also clear from the article by Kupferberg et al[1] that monthly endoscopic checkups are the only practical way to follow up the patients, since the disease is completely silent when it recurs.

Our protocol for postoperative corticosteroid AFRS treatment, developed over several years of collecting monthly data and adjusting the dosage, length of treatment, and follow-up of patients, is that all patients should meet the criteria of Bent and Kuhn[2] and that the prednisone dosage should be 40 mg/d for 4 days, followed with 30 mg/d for 4 days, then 20 mg/d for 1 month after the operation, and 0.2 mg/kg per day for 4 months of endoscopic stage 0, and finally 0.1 mg/kg per day for 2 months, including the use of intranasal corticosteroid spray.

The intranasal corticosteroid spray is used at 3× the normal dose used for allergic rhinitis. This treatment is continued for 1 year after prednisone therapy is discontinued. The minimum dosage required to prevent early recurrences established during the time of the study by Kupferberg et al[1] is 0.2 mg/kg per day. Monthly nasal endoscopy continues for 6 months after prednisone therapy is discontinued, and then every 2 months for 2 years, and finally, every 3 months.

Some findings suggest that we learn more from our failures than from our successes. For example, (1) many of the patients experienced recurrence after shorter prednisone courses, (2) recurrence may be suspected, but culture will demonstrate bacterial infection, which when treated reverses the recurrence without prednisone therapy, and (3) a small group whose homes were tested grew the same fungus from their home that was cultured from their sinuses.[3] More questions

are raised by the study of Chrzanowski et al[4] of allergic mucin when an electrophoretic protein band was identified in the eosinophilic mucus that most closely matched human epithelial protein.[3]

Many complex questions remain: (1) Is AFRS an allergic problem, an inflammatory one, or an autoimmune one? (2) How should it be treated? (3) Is AFRS a curable disease? (4) Why do patients become reinfected? (5) Why do intercurrent bacterial infections mimic recurrent fungus? (6) Why does recurrent fungus go away when bacterial infection is treated? (7) What are the chemotactic factors attracting the eosinophils? (8) How many inflammatory mediators are there and what is their role? (9) What does the epithelial protein mean? (10) What happens when IT is stopped? If AFRS recurs, then what? (11) Is there any way to use antifungals?(12) How can we stop the patient's exposure to the fungus? (13) Why is one person in a family susceptible and the rest not? (14) Why do some patients with definite AFRS have normal IgE levels?

While research on immunotherapy is being conducted, we believe that all patients with AFRS should be treated with postoperative oral corticosteroids if we do not have IT available.

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