

Editorial

Fungal sinusitis is endemic in our northwestern India presenting with varied manifestations, including a lot of invasive fungal sinusitis patients, early diagnosis and their treatment, which can help to reduce the morbidity and mortality in these patients.

Fungal sinus disease was first described by Plaignaud in 1791. Today, fungal involvement is implicated in an increasingly larger proportion of sinusitis. Fungal disease can affect both immunocompetent and immunosuppressed patients. In the immunosuppressed patient group, the fungus is typically invasive and can manifest in an acute invasive or a more chronic invasive form.

Invasive fungal disease is usually seen in an immunocompromised patient with mucormycosis or aspergillus causing ophthalmic findings, such as orbital cellulitis, ophthalmoplegia and blindness. In these cases, there is evidence of fungal tissue invasion, and treatment consists of aggressive tissue debridement, which may include orbital exenteration. These patients also require concomitant treatment with systemic antifungal agents as well as vigorous management of the condition causing the underlying immunocompromised state.

Chronic indolent invasive fungal sinusitis is also characterized by tissue invasion, but in an immunocompetent patient. Treatment consists of sinus surgery to remove the fungal mass and reestablish sinus ventilation and drainage and might also include oral antifungal medication for 1 year.

Another type of fungal sinus disease is the chronic noninvasive form, usually described as a 'fungal ball' of the sinus. The fungal hyphae proliferate in sinuses of immunocompetent patients without evidence of tissue invasion or bone erosion. Medical therapy is usually ineffective. These patients are treated by surgical evacuation of the solitary fungal mass and restoration of ventilation of the sinus.

The least recognized and the most common form is allergic fungal rhinosinusitis. In 1983, Katzenstein et al first described this similar clinical picture in seven patients as a new form of sinusitis, 'allergic aspergillus sinusitis.' It was originally thought that the fungus involved was solely aspergillus, but since then other causative fungal species have been identified, and the term allergic fungal sinusitis is now used.

It is invariably associated with nasal polyposis and the presence of allergic fungal mucin. Allergic fungal mucin consists of eosinophils in various stages of degeneration, Charcot-Leyden crystals and fungal hyphae grossly having a brown or greenish black color. It is a nontissue invasive fungal process, representing an allergic/hypersensitivity response to the presence of extramucosal fungi within the sinus cavity. Atopy is characteristic of the disease, two thirds of patients report a history of allergic rhinitis and 90% show elevated specific IgE to one or more fungal antigens. Currently, it is postulated that the pathophysiology of AFRS is similar to that of allergic bronchopulmonary aspergillosis, involving immediate (type I) and delayed (type III) hypersensitivity. Criteria for the diagnosis of allergic fungal sinusitis are still evolving. Bent and Kuhn¹⁸ prospectively evaluated 15 consecutive patients with allergic fungal sinusitis and discovered five characteristic findings: Type I hypersensitivity confirmed by history, skin testing or serology; nasal polyposis; characteristic computed tomographic scan signs; eosinophilic mucus within the sinus without fungal invasion of sinus tissue; and positive fungal stains. Other findings less frequently seen in their study were asthma, bone erosion, positive fungal cultures, Charcot-Leyden crystals and peripheral eosinophilia.

Ophthalmic manifestations of fungal sinusitis include proptosis, diplopia, blepharoptosis, epiphora, visual loss, ophthalmoplegia and orbital abscess formation. Visual loss has been described in the past, but it is a rare clinical entity that requires urgent intervention. Optic neuropathy has been attributed by some authors to direct compression of the optic nerve and by others to a secondary optic neuritis due to contiguous inflammation.

Current treatment of allergic fungal sinusitis consists of a combination of sinus surgery and corticosteroid therapy, with management of orbital findings based on their specific merits. Complete removal of fungi and allergic mucin from the sinus and the reestablishment of sinus ventilation and drainage through an endoscopic approach is the current cornerstone of therapy.



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