Aspergillosis of the Maxillary Sinus

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A rare case of aspergillosis of the maxillary sinus is reported. Surgical excision including the lining of the infected sinus is the preferred method of treatment. Antifungal therapy does not seem to affect the prognosis of this disease.

INTRODUCTION

A rare case of aspergillosis of the maxillary sinus is reported in an 30-year-old female. Zinneman (1984) reviewed the world literature and revealed only 37 cases of the aspergillosis of the maxillary sinus. Though the lungs are commonly involved by aspergillosis but the involvement of the paranasal sinuses by this disease in otherwise healthy individuals is quite rare. J. Oates et al (1987), reported only 3 cases of intracranial extension of paranasal sinus aspergillosis over a ten-year period, indicating the rarity of this condition. Complete surgical excision of the diseased tissue including the surgical removal of the lining of the infected sinus has been found to be the most appropriate treatment in these patients in contrast to systemic antifungal therapy.

The present case is reported because of its rarity and the literature is being reviewed. The clinicopathologic features of the disease and the difficulties in diagnosis and treatment are discussed.

CASE REPORT

An 30-year old Muslim female was admitted in the E.N.T. Ward, with complaints of occasional pain on the right side of the cheek associated with nasal obstruction and pus discharge from the right side of the nose for the last eight months.

Patient also gave history of occasional nose bleed for the last three months. Anterior rhinoscopy

showed congestion of the right nasal mucosa, with a streak of creamy pus in the middle meatus. Posterior rhinoscopy did not reveal any abnormality. There was no regional lymphadenopathy or any evidence suggestive of ocular involvement. X-ray of the paranasal sinuses

Fig.1

Radiograph of the paranasal sinuses showing opacity of the right maxillary sinus

revealed an opaque right maxillary sinus (Fig.1). Blood and urine examinations were within normal limits including blood sugar and blood urea.

The patient was treated as a case of chronic maxillary sinusitis. The sinus was explored via a Caldwell-Luc approach. Pus was aspirated from the sinus and soft, smooth and reddish-black polypoidal mucosa was visualized in the antrum which was removed and sent for histopathological examination.

Microscopic examination showed plenty of dense fungal elements that were surrounded by necrotic tissue with only mild tissue response in form of polymorphonuclears and mononuclears. The fungus was as dichotomously branching hyphae at acute angles and frequently septate transversely (Figs 2 and 3). Picture was typical of aspergillosis. It was reminiscent of the picture described in the lungs when fungus colonizes bronchiectatic or tubercular cavities.

Fig.2

Photo micrograph showing branching fungal hyphae (H and E x 125)

DISCUSSION

Most of these cases of aspergillosis were found in otherwise healthy patients with the history of nasal obstruction associated with nasal and post-nasal blood stained discharge. In the nose a mass of necrotic fungus can be seen. However, in the

present case, no mass was visualized in the nose. Jakse (1984) as well as Morgan (1984) observed that 90% of the cases of aspergillosis of the paranasal sinuses are caused by *aspergillus fumigatus*. *Aspergillus conidiospores* are present

Fig.3

Photo micrograph showing dark staining fungal hyphae penetrating the host tissue without much tissue reaction (Grams stain x 125)

everywhere in the atmosphere. The fungus apparently can not actively penetrate the intact skin or mucous membrane as it has no keratolytic properties. When the organisms come in contact with the damaged or debilitated tissue, they may germinate and cause a mycotic infection. The growth of the hyphae may extend over weeks, months or even years eventually filling up the sinus. Two types have been recognised, colonizing type and invasive type. The colonizing type is recognised as an unusual form of sinusitis occurring in otherwise healthy persons. The diagnosis should be suspected when a unilateral maxillary sinusitis evident as pain, headache, and nasal discharge does not respond to anti-biotic therapy. In these cases the prognosis is excellent if the patient is treated surgically and the lining of the infected sinus is also removed. It has been well accepted that antifungal therapy does not seem to affect the prognosis in these cases. In fact, systemic antifungal therapy without the use of surgery has been found to be unsuccessful. Our case can also be categorised to be that of

colonizing type in that the patient was fully asymptomatic even six months after the Caldwell Luc operation and also without being given any antifungal therapy. J. Oates et al (1987) observed that there may be radiological evidence of bony destruction of involved sinus and a space occupying lesion may be evident. However in our case there was just opaque sinus and neither destruction of the walls of the maxillary sinus nor any space occupying lesions could be visualized (Fig. 1).

Landry et al (1985) have described the invasive type as a more severe form of aspergillosis infection that occurs most often in persons who are in an immunocompromised state. Clinically,

it is seen as a rapidly progressive, gangrenous necrosis of the mucoperiosteum with bone destruction and may be fatal.

Systemic antifungal therapy alone, however, has been unsuccessful and should not be employed since the prognosis is usually excellent with simple surgical intervention. Our patient was also recommended a course of amphotericin B therapy but she refused further treatment. To date, the patient is free of any symptoms related to her paranasal sinuses. Since this patient was keeping fowl and pigeons in her house this might be one of the contributory factors in the causation of aspergillosis as this disease is also rightly called bird fancier's disease.

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