Allergic Fungal Sinusitis with Mycetoma

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Introduction

Fungal infection of the nose and sinuses is an uncommon condition which is now being increasingly recognized. It may occur in patients with chronic bacterial sinusitis, AIDS, prolonged use of corticosteroids/antibiotics, uncontrolled diabetes, or an immunocompromised state. One case of Mycetoma with allergic fungal sinusitis is presented. Diagnostic features of different types of fungal sinusitis are discussed.

Case Report

A 45 year old male shopkeeper from Bihar, presented with left sided nasal obstruction, foul smelling purulent nasal discharge and headache of nine months duration. There was no history of sneezing, epistaxis or steroid administration. He was not a diabetic. He had undergone cholecystectomy herniorrhaphy and excision of a lipoma in the back, during the past one and a half years and was on broad spectrum antibiotics for prolonged periods. Anterior rhinoscopy revealed mucosal edema of the left nasal cavity associated with purulent nasal discharge and hypertrophied inferior turbinate restricting view of the middle meatus area. Posterior rhinoscopy showed only purulent nasal discharge. Right nasal cavity was normal in appearance. X-ray of the paranasal sinuses revealed opacification.

NCCT of the paranasal sinuses showed nonhomogenous soft tissue opacity in the left maxillary antrum extending into the nasal cavity and ethmoid sinus with destruction of lateral nasal wall. There were hyperdense areas within the sinus and marked sclerosis of the antral walls (Fig 1). Provisional diagnosis of chronic maxillary sinusitis of the left side with possibly an antrochoanal polyp was made.

Caldwell Luc's operation was performed in the left side under local anaesthesia. The sinus was filled with laminations of greenish brown offensive cheesy material of the consistency of peanut butter (Allergic mucin). The sinus mucosa was uniformly hypertrophied upto one cm at places, all of which was removed. It was during this process that the patient brought out a 3 cm x 2 cm x 1 cm dirty white oval mass per orally, which on careful examination turned out to be a Mycetoma (Fungal ball). The natural ostium was abnormally widened due to the pressure effect of the Mycetoma. An antrostomy was made for additional dependent drainage.

Post operative recovery was uneventful. Histopathology of the cheesy material revealed layers of mucus mixed with sheets of eosinophils and relatively scarce fungal elements. The Mycetoma revealed dense, pure colonies of *Aspergillus* covered with fibrin and overlying bacterial colonies. The mucosa showed extensive ulceration, intense plasma cells, lymphocytes and eosinophil infiltration. There was no invasion of fungal hyphae into the mucosa.

He was reviewed four weeks later. Repeat CT scan (Fig 2) showed clear maxillary and ethmoid sinuses, an allergic thickening of sinus mucosa and a widened ostium. He was totally symptom free. He has been prescribed steroid nasal sprays and advised regular follow ups. A six monthly review showed no recurrence of nasal or sinus pathology.

Discussion

Aspergillus species is the commonest fungal pathogen of the paranasal sinuses [1]. Hartwick and Batsakis classified sinus *Aspergillo*sis into four types.

Non invasive extramucosal disease which includes

1. Allergic fungal sinusitis
2. Aspergilloma

Invasive mucosal disease which includes

- ### 3. Indolent chronic sinusitis

Fig. 1: Showing nonhomogenous soft tissue opacity in the left maxillary antrum, destruction of lateral nasal wall and double density sign

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Fig. 2 : Showing clear maxillary and ethmoid sinuses and allergic thickening of sinus mucosa

4. Acute fulminant sinusitis

This classification [2] has provided a useful morphological basis for diagnosis and has been found to have good prognostic and therapeutic correlations.

Diagnosis of sinus Mycetoma consists of four features: (a) Radiologically opaque sinus with fluffy calcification (b) Cheesy clay like material in the sinuses (c) Inflammatory mucosa of variable intensity and (d) Absence of fungal hyphae in the mucosa [3]. Removal of the fungal ball with aeration and drainage of the

affected sinus usually resolves this condition without the need for antifungal agents. The diagnostic criteria of Allergic fungal sinusitis consists of five features : (a) Radiologically confirmed sinusitis with double density sign (b) Presence of allergic mucin in the sinus (c) Demonstration of fungal hyphae in the mucin (d) Absence of fungal invasion of the submucosa and (e) Absence of diabetes or immunodeficiency state. The treatment is surgical clearance of the affected sinus with systemic or local steroid sprays [4,5]. Repeated surgical procedures are very commonly required. Review of literature shows that Mycetomas generally occur within the sinus. This case was unusual because there was a Mycetoma in the nasal cavity along with Allergic fungal sinusitis, both confirmed histopathologically, which has not been reported very commonly.

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Two little Boys in the hospital

Two little boys are in a hospital and are lying next to each other. The first boy leans over and asks, "What are you in here for?"

The second replies, "I'm in here to get my tonsils out and I'm a little nervous."

The first boy says, "You've got nothing to worry about. I had that done to me once.

They put you to sleep and when you wake up they give you lots of jello and ice cream. It's a piece of cake!!"

The second boy then asks, "What are you in here for?"

The first boy replies, "Well, I'm here for a circumcision."

The second says, "ooh! I had that done when I was born. I couldn't walk for a year!!!"

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