

Case Report

Laryngeal mucormycosis: a rare entity

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ABSTRACT

"Mucormycosis" term is used in context to a group of fungal diseases caused by the order mucorales. Typically with predilection for the pulmonary and the sino-nasal-orbital tissues, it can very rarely affect the laryngeal as well as the tracheal mucosa either as skip lesions or in continuity. The management of such an involved airway is quite challenging. Literature documents sporadic cases of laryngeal manifestation of mucormycosis. Reported here is such a case of a diabetic male presenting with dyspnoea of sudden onset. Video laryngoscopy revealed extensive glottic edema with a reduced glottic chink. Elective prophylactic tracheostomy followed by direct laryngeal trucut biopsy was undertaken. Histopathology was suggestive of mucormycosis and the patient was administered titrated intravenous Amphoterecin B. The response was favorable and the patient at present is symptom free.

Keywords: Laryngeal mucormycosis, Dyspnoea, Mucorales

INTRODUCTION

Mucoraceae are ubiquitous fungi commonly growing in soil and dead decaying organic matter. Immuno-compromising conditions like uncontrolled diabetes mellitus, especially with ketoacidosis, chronic renal failure, post transplantees, etc predispose individuals to mucormycosis. Mucormycosis is a fulminant invasive fungal infection of the sinonasal tract often extending to the orbit, brain, palate, and skin. This is one of the deadliest fungal infections known, considering its rapid dissemination by the blood vessels.^{1,2}

CASE REPORT

A 52 year old diabetic male presented to the outpatient Rhinology clinic with labored breathing and mild

dysphagia for the last 2 days following an episode of sore throat. Moreover he had hoarseness from 1 month and also his diabetic status was uncontrolled.

On examination he had stridor with visible use of accessory muscles of respiration. A rigid 70 degree video tele-laryngeal evaluation revealed bilateral severely edematous true vocal cords with a compromised glottic chink (Figure 1a).

Patient was investigated and taken up for an urgent prophylactic tracheostomy and a direct trucut laryngeal biopsy. Multiple punch biopsies were taken from the subglottic and post cricoid area. A high tracheostomy was performed lest, it came out to be a malignancy with further need of an extensive laryngeal surgery. Patient was started on intravenous steroids and antibiotics along with strict glycemic control with subcutaneous insulin.

Histopathological examination, consistent with mucormycosis revealed many broad aseptate fungal hyphae with obtuse angle branching along with acute and chronic inflammatory granulations. There was no evidence of malignancy (Figure 2). The patient was thus started on intravenous Amphoterecin B, 1 mg/kg body weight. Serum creatinine and potassium levels were regularly monitored. Subsequent teleryngoscopies revealed edema to be subsiding (Figure 1b) and the patient was gradually weaned off the tracheostomy tube over the next 15 days.

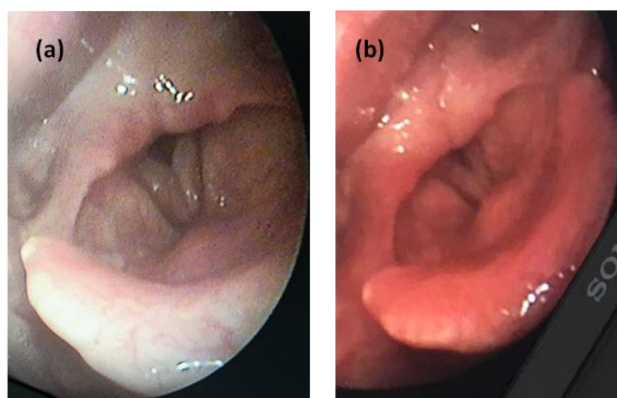


Figure 1: (a) Pretreatment laryngoscopy showing glottic edema and narrow chink (b) Post treatment edema subsiding over the cords.

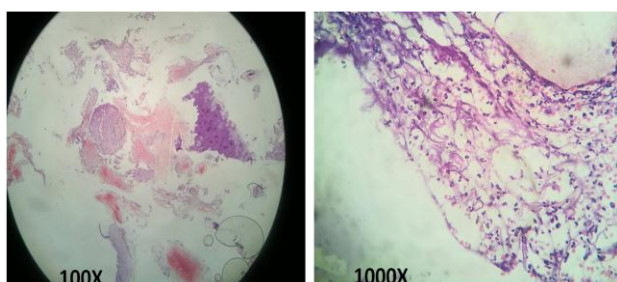


Figure 2: H & E stained photomicrograph showing broad aseptate fungal hyphae along with acute and chronic inflammatory cells.

The patient is under regular follow up and is currently free of any symptoms. He has completed 3grams of intravenous Amphotericin B.

DISCUSSION

Mucormycosis is a deadly opportunistic infection affecting immunocompromised individuals. Risk factors include uncontrolled diabetes mellitus, hematologic malignancies, immunosuppressive therapy, acquired immunodeficiency syndrome, iron overload, etc. Extreme malnutrition is related to gastrointestinal (GI) form of mucormycosis. The use of contaminated medical supplies over wounds are linked with cutaneous mucormycosis.

It exists in many forms, typically as pulmonary or sino-nasal infection, but rhinocerebral mucormycosis is the commonest. The larynx and tracheal involvement is rare, in which case the management becomes quite complex. Fungal airway infections are considered in the differential diagnosis in the setting of an immunosuppressed patient presenting with dyspnea, dysphonia, and vocal fold immobility. Other diagnoses to be considered in such settings include carcinoma, scleroma, mid-line granuloma, histoplasmosis, aspergillosis, lymphoma, syphilis, tuberculosis and other granulomatous diseases of the head and neck.^{2,3,7}

Treatment mostly gets delayed because of difficulty in establishing the diagnosis. The successful treatment requires a prompt diagnosis, reversal of underlying predisposing risk factors, aggressive and radical surgical debridement where applicable, and systemic antifungal therapy.

Amphotericin B is the most widely accepted medical therapy. Recent data supports high-dose liposomal amphotericin as the cornerstone of monotherapy for mucormycosis. Several novel therapeutic strategies include combination therapies in the form of Amphotericin with an echinocandin or an azole. Posaconazole may be tried as salvage therapy. Adjunctive therapy with recombinant cytokines, hyperbaric oxygen, and/or granulocyte transfusions are under evaluation. However, an early diagnosis and rapid onset of treatment is must for controlling this life threatening infection.⁴⁻⁶

CONCLUSION

Mucormycosis is a life-threatening fungal infection that manifests in the immunocompromised. These infections are becoming increasingly common, yet survival remains very poor. A rapid diagnosis and initiation of treatment with aggressive surgical debridement and synergistic antifungal intravenous therapy is vital, for control of this disease. A high degree of suspicion should be maintained for laryngeal mucormycosis in immunosuppressed patients presenting with dyspnoea and hoarseness.

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