

Histoplasmosis of the Larynx

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Summary

Primary histoplasmosis of the larynx is not a common disease. Most cases of laryngeal histoplasmosis results from hematogenous spread of disseminated histoplasmosis usually originating from pulmonary infection by *Histoplasma capsulatum*.

We report a 52-year-old male chronic smoker who had prolonged hoarseness and was initially diagnosed with laryngeal carcinoma. However, biopsy of the laryngeal mucosa confirmed the diagnosis of histoplasmosis. There were no signs of pulmonary or systemic involvement. Treatment with intravenous amphotericin B was given for a week and oral ketoconazole was given for a month with complete resolution of symptoms.

Key Words: Histoplasmosis, Laryngeal Infections

Introduction

Primary histoplasmosis of the larynx is an uncommon disease that may cause prolonged hoarseness. There are less than 100 Publications on laryngeal histoplasmosis since it was first described in 1940 by Brown and colleagues¹. The clinical signs and symptoms may mimic laryngeal malignancy.

Case Report

A 52-year-old Indian man presented to the Department Otolaryngology, Kuala Lumpur Hospital with a 5-month history of hoarseness, cough, weight loss and fatigue. He had sore throat for 2 weeks prior to these symptoms. However, there was no haemoptysis, dyspnoea or dysphagia.

He had been a chronic smoker for the past 40 years, smoking on average 3 packs of cigarettes per day. He was diagnosed with non-insulin dependent diabetes for

almost 22 years and was currently on oral hypoglycemic therapy. There was no past history of tuberculosis and there was no known hypersensitivity to drugs or food. He enjoyed gardening and had been exposed to pigeons' droppings in the process.

Indirect laryngoscopy showed a nodular mass on the left vocal cord. Both vocal cords were mobile. There was no lymphadenopathy of the cervical region and elsewhere. Examination of other systems was unremarkable. His chest radiograph was normal and sputum was negative for acid fast bacilli. However his fasting blood sugar level was elevated. Screening for syphilis, Human immunodeficiency virus and Hepatitis B virus were negative. A provisional diagnosis of laryngeal carcinoma was made.

Direct laryngoscopy under general anesthesia revealed irregular left vocal cord extending to the anterior commissure. The right vocal cord was thickened but there were no abnormal findings of the pyriform fossa, post-cricoid region, epiglottis and the base of tongue.

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Biopsies were taken and the histopathological examination showed fragments of glottic mucosa with dense infiltration of the subepithelial stroma by lymphocytes, plasma cells and some neutrophils as well as eosinophils (Fig 1). In higher resolution the subepithelial stroma showed presence of numerous clusters of tiny intra cellular capsulated organisms, which was consistent with fungal infection of the *Histoplasma spp* (Fig 2). Surface squamous mucosa was unremarkable and there was no malignant changes.

He was initially started on amphotericin B (0.5 mg – 1 mg/ kg/) day for a week and later commenced on ketoconazole 200 mg twice per day for a period of one month. He was followed up for a year with complete resolution of symptoms.

Discussion

Although histoplasmosis is a very common granulomatous disease of worldwide distribution, primary laryngeal histoplasmosis is rather rare. So far, there has not been any published data about laryngeal histoplasmosis in Malaysia.

The aetiological agent of histoplasmosis is *Histoplasma capsulatum*. This fungus is endemic in the Mississippi and Ohio River Valleys in the United States of America. It is a dimorphic fungus, which exists in the mycelial and yeast forms. Transmission is mainly by inhalation

of the spores. The source of infection is soil with high nitrogen content usually as the result of contamination by bat or bird guano.

At room temperature, the fungus exists in the mycelial phase. However, once the spores are inhaled, the increased temperature of the body favours the yeast phase and the reticuloendothelial system is challenged. This phase is responsible for the human infection, which leads to pulmonary infection and complicated by haematogenous spread to other organs such as brain, heart, liver and bone marrow¹.

Primary pulmonary histoplasmosis is usually asymptomatic but chronic pulmonary histoplasmosis is clinically indistinguishable from pulmonary tuberculosis. Laryngeal involvement is usually secondary to chronic disseminated histoplasmosis probably by haematogenous spread². There are occasional reports of sporadic cases of primary laryngeal histoplasmosis. Sizes of the inoculum and prior immune status of the host are the most important factors that determine the degree of infection. Although the size of inoculum may be very small in this patient, it could very likely be the cause of localized infection in larynx. It is often associated with low-grade fever, weight loss and fatigue. Other symptoms of laryngeal infection include sore throat, hoarseness, cough, dysphagia and occasionally stridor.

Direct laryngoscopy may reveal pearly white, edematous, inflamed or ulcerative laryngeal mucosa.

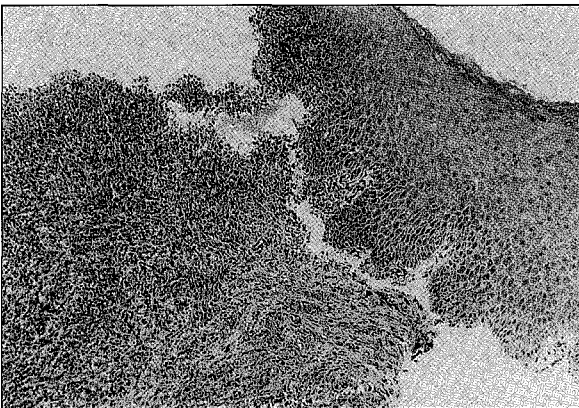


Fig. 1: Low power (x 10) H & E Stain of laryngeal biopsy showing the sub epithelial stroma was densely infiltrated by inflammatory cells

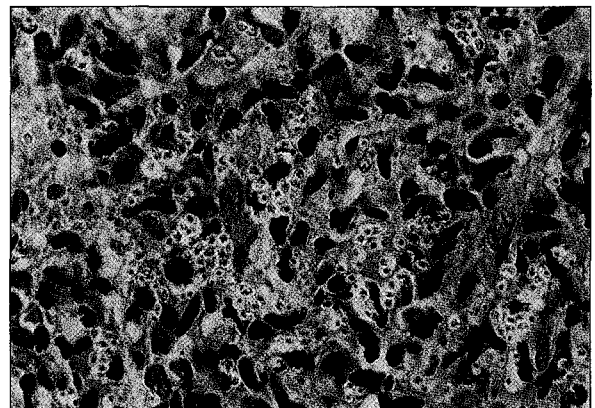


Fig. 2: High power (x 40) H & E Stain of laryngeal biopsy showing the presence of numerous small capsulated rounded organisms

CASE REPORT

Other sites of oropharyngeal involvement include mucosal surfaces of the gingiva, tongue, lips and pharynx³.

When the only evidence of histoplasmosis is a mucosal lesion, investigations such as chest radiography, sputum and urine cultures and bone marrow aspiration biopsy should be performed to look for disseminated disease⁴.

Laryngeal histoplasmosis is seldom diagnosed clinically. The differential diagnoses are carcinoma, tuberculosis, syphilis, lymphoma and other granulomatous disease of the head and neck. Microscopically, histoplasmosis may be confused with blastomycosis, tuberculosis and squamous cell carcinoma.

Factors such as a high index of suspicion in endemic areas, geographic and work history, radiographic examination, immunological test and histology and cultural demonstration of *Histoplasma capsulatum* should be the basis of which the clinical diagnosis is made.

Although laryngeal histoplasmosis is not a common disease in Malaysia, the practicing laryngologist should not be ignorant of its presentation. It should be considered as one of the differential diagnoses when patients present with signs and symptoms that resemble laryngeal carcinoma. Tissue biopsies should be sent for histopathological examination to confirm the diagnosis especially in the absence of disseminated disease. Other investigations should also be performed to rule out disseminated disease. Antifungal medications such as amphotericin and ketoconazole were the mode of therapy. The lesion usually responds rapidly with 4-6 weeks of antifungal therapy.

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