Primary Cryptococcal Infection of the Larynx in a Patient with Severe Chronic Obstructive Pulmonary Disease: A Case Report

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Educational Objectives
At the conclusion of this presentation, participants should recognize both pathologic and laryngeal physical exam findings of cryptococcal laryngitis and become aware of new treatment options for this disease.

Introduction
Cryptococcus neoformans is an opportunistic, encapsulated yeast that can cause both primary pulmonary infections or disseminated infections of the skin, brain, and bone mainly in immunocompromised patients such as those with the acquired immunodeficiency syndrome (AIDS). There have only been seven cases of cryptococcal laryngitis that have been reported previously in the literature¹⁻⁷. The majority of reported cases were in immunocompromised patients; however, there have been reported cases in immunocompetent hosts. Relative to other fungal infections of the larynx, C. Neoformans laryngitis is rare. Common symptoms include a history of prolonged hoarseness and chronic cough. Gross features as seen by indirect laryngoscopy demonstrate laryngeal edema and erythema and multiple white, raised lesions involving the true vocal folds. One report describes a single submucosal cystic lesion involving only the right vocal fold.⁷ All reported cases were limited to the glottic larynx without supra or subglottic extension.

Treatment regimens for cryptococcal laryngitis have varied. While some cases required no treatment, others were placed on antifungals such as fluconazole and amphotericin. None of the previous patients were treated for more than eight weeks, and all had resolution of their symptoms. We present a case of cryptococcal laryngitis in which the host was not only systemically immunocompromised, but also locally because of her chronic use of inhaled steroids. In addition, we report a case with an extended treatment course and introduce a novel treatment strategy for this disease.

Methods
An 82-year-old female with a past medical history significant for coronary artery disease and severe chronic obstructive pulmonary disease (COPD) requiring intermittent home oxygen and both systemic and topically inhaled steroids presented to the Head & Neck Surgery clinic with an eight month history of persistent, worsening hoarseness. She had no other associated factors and she had no complaints of otalgia, dysphagia, odynophagia or unintentional weight loss. Laryngovideostroboscopic exam demonstrated swelling and ulcerative-type masses on bilateral false vocal folds (Figures 1 and 2). Her true vocal folds demonstrated edematous masses more on the right than left in addition to granulomas seen on the posterior aspect of the true vocal folds. In-office biopsy (Figure 5) and fungal culture confirmed the diagnosis of cryptococcal laryngitis and the patient was placed on a six-week course of itraconazole followed by a ten-week course of fluconazole. On her first follow-up visit four months later, her laryngeal findings had almost completely resolved (Figures 3 and 4); however, she had two biopsy-confirmed, residual lesions and her voice had not significantly improved. She then underwent 585-nm pulse dye laser (PDL) treatment in the office and was continued on oral antifungals (fluconazole) for an additional two months.

Results
Pulse dye laser treatment at 585 nm was used to treat residual lesions after a course of antifungals. The final follow-up visit seven months from the original diagnosis showed almost complete resolution of the previous lesions (Figures 6 and 7); however, voice quality was not fully resolved but subjectively improved and acceptable.

Conclusion
Cryptococcus neoformans is an opportunistic yeast fungus of worldwide distribution that lives in soil and avian feces and usually causes primary pulmonary infections as well as disseminated infections of the central nervous system, meninges and bone. Laryngeal involvement is rare but can affect both immunocompromised and immunocompetent hosts. We present a relatively severe case of cryptococcal laryngitis in a patient with both systemic and local immunocompromise who required a prolonged course of antifungals in addition to treatment of residual lesions with the pulse dye laser before resolution.

References