

CASE REPORT

CRYPTOCOCCOSIS: A RARE FUNGAL INFECTION OF THE TONGUE

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Abstract. Fungal infection in the oral cavity is not uncommon. The site involved is usually species related. Cryptococcus rarely infects the oral cavity. We report an elderly patient who presented with a central lesion on the dorsum of the tongue. Biopsy revealed a fungal infection. Special stains confirmed cryptococcus. Being a rare location for cryptococcal infection, clinical suspicion should be correlated with histopathological examination. Once confirmed, the patient should be treated with an antifungal medication.

Key words: fungal infection, tongue, cryptococcus

INTRODUCTION

Oral candidiasis is known to affect immuno-compromised patients, denture wearers and cancer patients, especially those with leukemia (Ranganathan and Hemalatha, 2006; Coco *et al*, 2008; Lerman *et al*, 2008; Subramaniam *et al*, 2008; Vasconcelos *et al*, 2008). Cryptococcus infection rarely occurs in the oral cavity. Cryptococcus is known to infect the central nervous system, specifically causing meningitis. The organism travels via the blood stream from the lungs, from inhaled spores. Identification requires special

stains and the treatment consists of systemic antifungal medications.

CASE REPORT

A 61 year old Chinese male presented with a history of odynophagia of 2 weeks duration. He was unable to take either solids or fluids. He had an associated productive cough, and a blockage nose on the left side.

Oral examination revealed a round lesion in the center on the dorsum of the tongue. It measured 2 x 2 cm. It was well circumscribed and had an indurated margin (Fig 1). The surface was smooth and it was firm to palpation. There was also a mass on the inner aspect of the lower lip. There was post-nasal drip noted on the posterior pharyngeal wall. Nasal endoscopy showed a polypoidal mass occupying the left nasal cavity, with thick mucoid

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Fig 1—Central lesion on the dorsum of the tongue on presentation.

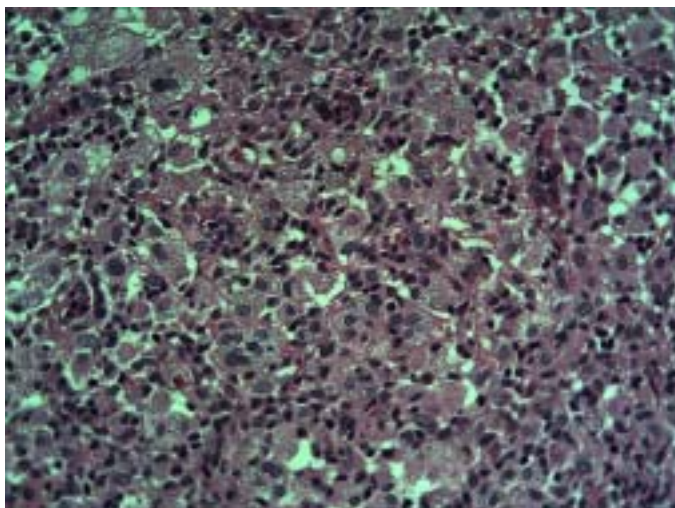


Fig 2—Subcutaneous tissues in both specimens were heavily infiltrated with lymphoplasm cells, and macrophages. Within the macrophages, numerous rounded structures having a capsule were seen (H&E x 40).

secretions in the area. The rest of the examination was normal.

Biopsies were taken from both sites: the tongue and the lower lip. Histological examination showed that the subcutaneous tissues in both specimens were heavily infiltrated by lymphoplasm cells, and

macrophages. Within the macrophages, numerous rounded structures having a capsule were seen (Fig 2). These structures were positive with periodic acid-Schiff (PAS) stain and Grocott's Methenamine Silver (GMS) stain. Features were consistent with fungal infection with cryptococcus.

Biopsy of the nasal mass was performed; it revealed an inflammatory nasal polyp. Screening for retroviral infection was negative. He had no history of high risk behavior and immunocompromised status was ruled out. The patient was started on intravenous fluconazole 200 mg daily for one week and then converted to oral fluconazole 200 mg daily for six months.

By two months, the lesions on the tongue and lip healed (Fig 3). He had no other residual symptoms. He underwent sinus surgery and histopathology of the mass confirmed the diagnosis of an inflammatory polyp with no evidence of fungal involvement.

DISCUSSION

Cryptococcus enters the human body via spores inhaled into the lungs. Cryptococcus is spread hematogenously to the central nervous system, leading to meningoencephalitis. Involvement of other



Fig 3–The lesion healed leaving no residual symptoms.

parts of the body, particularly oral cavity, is rarely seen (Kantarcioglu *et al*, 2006).

The diagnosis of cryptococcus is based on identification of the organism from samples taken from the involved area, such as bronchoalveolar lavage fluid, sputum, cerebrospinal fluid or biopsy of cutaneous or subcutaneous lesions (Iaata *et al*, 2009). In this case, the mass on the tongue was an ulcerative with indurated margin. Malignancy need to be ruled out. Thus a punch biopsy was taken and it revealed the organism.

Cryptococcus should be differentiated from candida on histological examination. The absence of pseudohyphae is the main criteria used to differentiate it from candida (Williamson *et al*, 1996). In a review of cryptococcal infections among AIDS patients, cryptococcus could be distinguished from candida by the presence of a capsule, the spherical form of the yeast, narrow-based budding and a lack of pseudohyphae (Gal *et al*, 1986). In our case,

there were no pseudohyphae seen and the organism stained with GMS. GMS and Mayer's Mucicarmine (MM) are specific for cryptococcosis and should be used to distinguish cryptococcus species from other organisms of similar size and shape (Gazzoni *et al*, 2009).

Saag and his Mycoses Study Group Cryptococcal subproject team (2002) proposed a practice guideline for the management of cryptococcal disease. Spontaneous resolution without specific therapy can occur in most immunocompetent hosts with isolated pulmonary disease. However, in symptomatic infection, fluconazole, 200-400 mg/day for

3-6 months is indicated. For primary cutaneous cryptococcus infection, treat with oral fluconazole at 200 mg/day for 10 days and then 100 mg/day for 8 weeks.

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