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CASE REPORT

Oral Histoplasmosis

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ABSTRACT

Histoplasmosis is a worldwide distributed granulomatous deep mycotic infection caused by dimorphic fungi *Histoplasma capsulatum* which has been endemic in many countries. It is a systemic fungal disease that takes various clinical forms, among which oral lesions are rare. Here, we report a case of solitary nonhealing ulcer affecting the posterior region of palate, diagnosed as histoplasmosis and was treated with antifungal drugs and the healing was found to be satisfactory.

Keywords: Oral ulcer, Fungal infection, Histoplasmosis.

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INTRODUCTION

Histoplasmosis is a granulomatous systemic mycosis caused by the dimorphic fungus *Histoplasma capsulatum*, the clinical disease which was first described by Samuel Darling in 1905. Oral histoplasmosis usually occurs in association with the chronic disseminated form of the disease. Sometimes, they may present as the initial or the only mucocutaneous manifestation of the disease.

CASE REPORT

A 24-year-old female patient visited the Outpatient Department (OPD) of GITAM Dental College and Hospital, Visakhapatnam, with a chief complaint of painful ulcer in the posterior region in palate since 3 months.

Intraoral examination revealed a solitary ulcer of 3 × 2 cm on the posterior part of the soft palate, extending up to the pterygomandibular raphe (retromolar area) with raised and erythematous borders. The lesion was seen extending mesiodistally from the maxillary alveolar ridge 1 cm posterior to the 3rd molar, to 2 cm toward the midline and superioinferiorly from the posterior part of the palate to 3 cm inferiorly toward the pterygo-mandibular raphe (retromolar area) (Fig. 1).

A provisional diagnosis of chronic nonhealing ulcer was established. Excisional biopsy was performed preceded by incisional biopsy (Fig. 2).

Microscopic examination revealed typical sporangia, with collection of multinucleate giant cells along with eosinophilic necrosis. Macrophages with histoplasma bodies are also seen in the connective tissue (Figs 3 to 5). Special stains, like periodic acid schiff (PAS) stain and Grocott-Gomori methenamine silver (GMS) staining, were done to confirm the diagnosis (Figs 6 and 7).

Final diagnosis of histoplasmosis was confirmed after histopathological examination along with the ancillary special stains. Antifungal drugs were prescribed

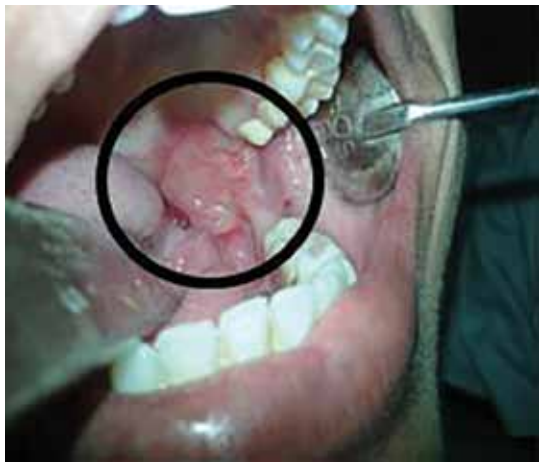

Fig. 1: Solitary nonhealing ulcer at the left pterygomandibular raphe region

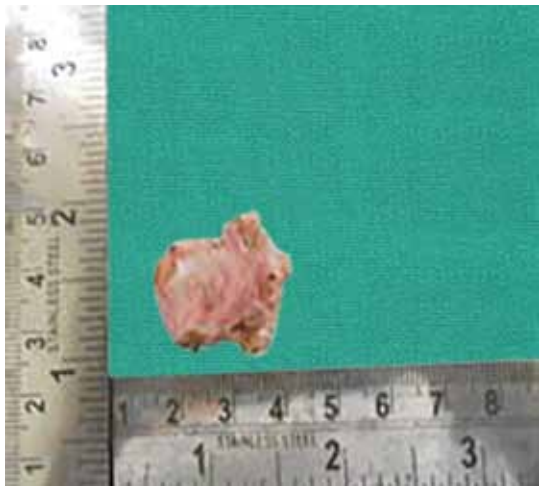

Fig. 2: Excisional biopsy specimen

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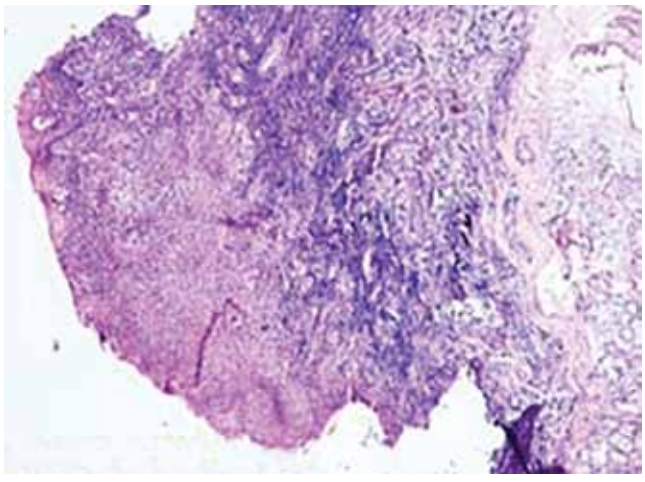

Fig. 3: Hematoxylin and eosin stain: Ulcerated epithelium with underlying fibro-cellular connective tissue

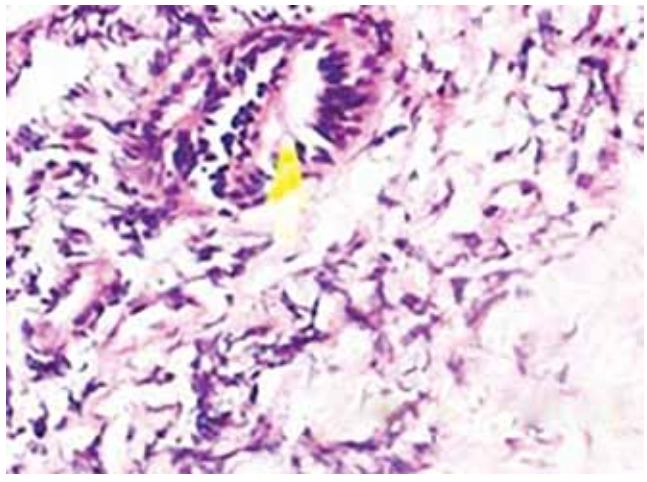

Fig. 4: Hematoxylin and eosin stain: Sporangia in connective tissue

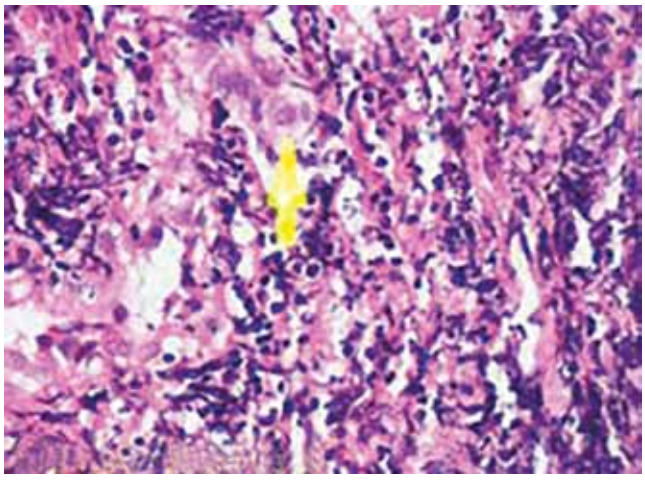

Fig. 5: Hematoxylin and eosin stain: Macrophages with histoplasma bodies in connective tissue

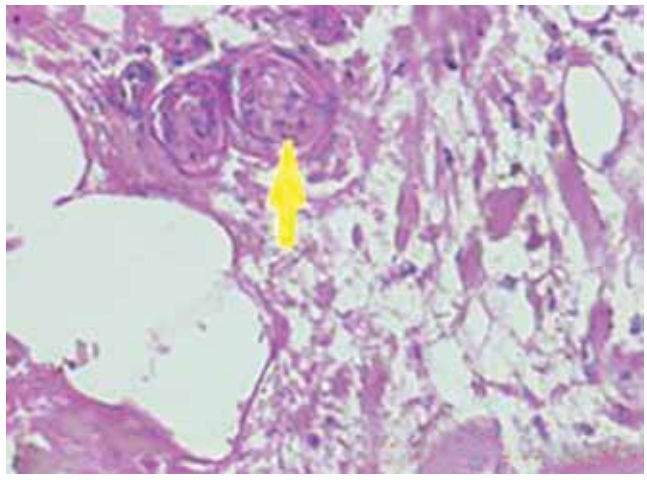

Fig. 6: Periodic acid schiff stain: Sporangia in connective tissue

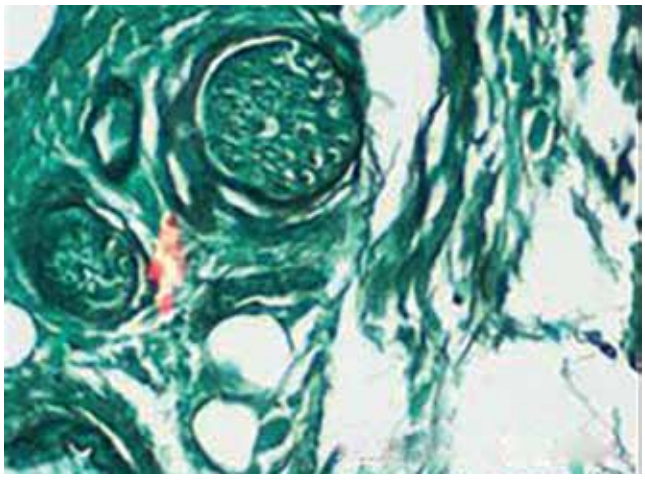

Fig. 7: Grocott-Gomori methenamine silver stain: Sporangia in connective tissue

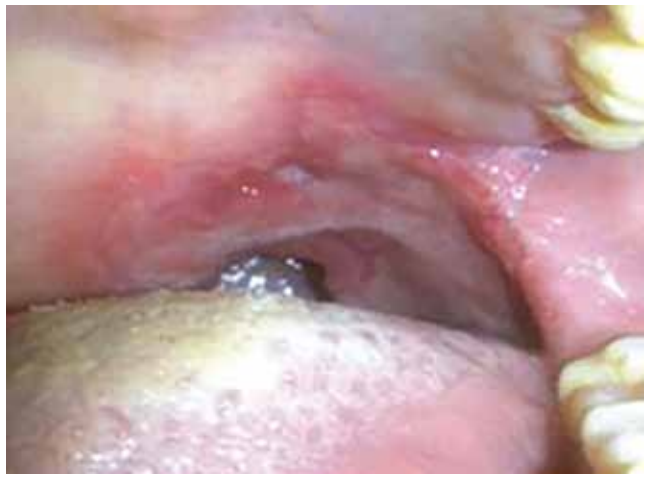

Fig. 8: Lesion after 1 week of antifungal therapy

and patient is under follow-up for every 3 months (Fig. 8).

DISCUSSION

Oral ulcers are one of the most common complaints of the oral mucosa. Oral ulcers are determined by the underlying systemic condition, such as the nature, site, duration and frequency. Histopathological examination usually produces a definitive diagnosis for the majority of conditions.[1]

Differential diagnosis for chronic nonhealing ulcers in the oral cavity, following lesions can be considered.[6,8,9]

Lesion	Clinical presentation in oral cavity	Histologic features
Wegener's granulomatosis	Solitary or multiple ulcers surrounded by erythematous zone mainly on tongue, palate and buccal mucosa. Strawberry gingiva	Collection of histiocytes, pseudoepitheliomatous hyperplasia Negative for any special stains
Bacterial infections	Single painful, indurated, irregular ulcer covered with inflammatory exudates. Commonly involving tongue and palate regional lymphadenopathy	Caseating necrosis Acid fast stain positive
Major aphthous stomatitis	Large, long duration superficial ulcer with surrounding erythema and covered by a yellow slough. Labial mucosa and soft palate are mostly affected	Breach in continuity of epithelium with mixed inflammatory infiltrate in connective tissue Negative for special stains
Sarcoidosis	Present as papule or ulcer. Mainly affecting buccal mucosa, gingiva, lips, floor of mouth, tongue and palate	Granuloma formation with Schaumann bodies and asteroid bodies Negative for any special stains
Deep mycotic or fungal infections	Nodular or painful ulcer with raised and rolled borders Mostly, tongue or palate can be affected	Granulomatous infection with hyphae or sporangia Periodic acid schiff and GMS stains can be used

Fungal or mycotic infections are becoming more frequent because of expansion of at-risk population and use of treatment modalities that permit longer survival of these patients.[2]

Candida species may be recovered from up to one-third of the mouths of normal individuals and are considered inhabitants of the normal flora of oral and gastrointestinal tract. Besides *Candida spp.*, other fungi can also cause disease in humans. The mycotic infections can be superficial or deep fungal infections. Histoplasmosis is one of the deep fungal infection.[7]

Histoplasmosis is caused by *Histoplasma var capsulatum* which is found worldwide in old buildings, soil rich in bird and bat droppings, endemic in Mississippi river valleys in the United States, Central and South America, Southern Europe, parts of Africa and Southeastern Asia.[2,3]

However, in western and central regions of sub-Saharan Africa, the African clade of *Histoplasma capsulatum*, formerly named *H. capsulatum var duboisii*, can be found.[4,5]

Histoplasma capsulatum is a dimorphic fungi, which exists as yeast at body temperature in the human host and as a mold in its natural environment.[4,11]

Airborne spores of the organism are the main mode of transmission, which when inhaled pass into the terminal passages of the lungs and germinate.

The expression of disease depends on the quantity of spores inhaled and the immune status of the patient. Mild flu like illness is seen for 1 to 2 weeks. Then due to development of body immune function, they are ingested by macrophages.[4,11]

There are different types of histoplasmosis like acute, chronic and disseminated histoplasmosis.[4,10]

Disseminated histoplasmosis is characterized by the progressive spread of the infection to extrapulmonary sites, like spleen, adrenal glands, liver, lymph nodes, GIT, central nervous system, kidneys and oral mucosa.[4]

Most commonly affected sites in oral cavity include tongue, palate and buccal mucosa. They present as a solitary, nonhealing painful ulcer with erythematous or irregular surface, with firm rolled margins indistinguishable from malignancy.[4]

Microscopic examination of lesional tissue stained with hematoxylin and eosin (H&E) shows either a diffuse infiltrate of macrophages or more commonly collections of macrophages organized into granuloma, along with multinucleate giant cells is seen. The causative organism though identified with difficulty in H&E stain but the special stains, such as the PAS and GMS methods give better results.[4]

Grocott-Gomori methenamine silver is preferred for screening, because it gives better contrast, and stains even degenerated and nonviable fungi that are sometimes refractory to the other stains, such as PAS and H&E.

The PAS stain performs almost as well as GMS in screening for fungi, it actually demonstrates fungal morphology.[12]

Apart from clinical presentation and histopathology, they can also be diagnosed by cultures, serologic test, including compliment fixation test, immunodiffusion, direct immunofluorescence and histoplasmin skin test.[13]

Treatment varies with each type of histoplasmosis like acute histoplasmosis, because it is a self-limited process, generally warrants no specific treatment other than supportive care with analgesics and antipyretics.[4]

Chronic histoplasmosis, intravenous amphotericin B and itraconazole, can be used.

Disseminated histoplasmosis, amphotericin B, itraconazole or ketoconazole, can be used.

In addition, itraconazole is known to have rapid action and is effective in preventing a relapse.[4,13]

CONCLUSION

Dental clinicians play an important role in the diagnosis and management of oral fungal diseases. Therefore, an adequate knowledge about the possibility of systemic

mycoses should be considered in cases of chronic oral ulcerations or unusual mouth lesions, particularly in the immunocompromised patients. Awareness of the characteristic signs and symptoms of oral fungal diseases might aid in early diagnosis, proper treatment and prevention of disease dissemination, thereby decreasing morbidity.

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