



Oral Candidiasis: A Short Review and a Case Report

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Abstract:

Candidiasis is a fungal infection caused by dimorphic yeasts which belong to the genus *Candida*. Oral candidiasis (OC) is the commonest fungal infection affecting human beings. It affects the oral mucosa. These lesions are caused by the yeast *Candida albicans*. We report a case of Saudi male patient with oral candidiasis who was treated successfully with antifungal therapy.

Keywords: *Candidiasis, fungal, infection, dimorphic yeasts, antifungal therapy*

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1. Introduction

Candidiasis is a fungal infection caused by dimorphic yeasts like fungi which belong to the genus *Candida*. There are about 150 species of *Candida* and over 20 species of them can cause infection in humans, the most common of which is *Candida albicans*. In addition, *C. albicans*, *C. glabrata*, *C. guilliermondii*, *C. krusei*, *C. parapsilosis* *C. tropicalis* also cause infections in human beings.¹⁻³ *Candida* species inhabit the intestinal tract as well as vagina as commensals. They cause infections in immunosuppressed individuals and in healthy individuals with altered microbial flora.¹

Oral candidiasis (OC) is the commonest fungal infection affecting human beings.⁴ It affects the oral mucosa. These lesions are caused by the yeast *Candida albicans*.^{5,4} OC can be broadly placed under

three groups; the acute candidiasis, chronic candidiasis, and angular cheilitis.⁴

1. Acute Candidiasis

- a) Acute pseudomembranous candidiasis.
- b) Acute atrophic (erythematous) candidiasis.

2. Chronic candidiasis.

- a) Chronic hyperplastic candidiasis (candidal leukoplakia)
- b) Denture induced candidiasis (chronic atrophic (erythematous) candidiasis)

3. Angular cheilitis (Stomatitis)

The most widely used classification was developed by Holmstrup and Axel and is as follows⁶:

1. Pseudomembranous candidiasis (Acute / chronic)
2. Erythematous candidiasis (Acute / Chronic)
3. *Candida* associated lesions:
 - a) Denture stomatitis.
 - b) Angular cheilitis.



c) Median Rhomboid glossitis.

The risk factors for OC include poor oral hygiene, impaired salivary gland function, use of drugs especially prolonged use of antibiotics, corticosteroid therapy, oral prosthesis including dentures, high carbohydrate diet, stress and depression, use of tobacco smoking, diabetes mellitus, Cushing's syndrome, oral malignancies, altered nutritional states including iron deficiency, folate deficiency, irradiation and immunosuppressive conditions.^{4,7,8,9,10} OC is diagnosed clinically. However biopsy in cases of hyperplastic OC, and other immunological methods such as PCR and ELISA are sometimes employed to complement definitive diagnosis.¹¹ OC lesions are white or erythematous, usually asymptomatic. It predominantly affects adults and shows no racial and sexual predilection.¹² A variety of remedies have been employed in patients with OS which include the use of mouthrinses such as Sodium hypochlorite, use of topical antifungal drugs such as miconazole, clotrimazole, ketoconazole, nystatin ointments and suspensions, use of systemic antifungal drugs Amphotericin B, Clotrimazole, Fluconazole, Itraconazole, Ketoconazole, Nystatin.^{1,5,7} Recently probiotic use of lactobacilli species especially *Lactobacillus rhamnosus* and *Lactobacillus casei* have emerged as a new frontier against the OC.^{13,14-17,18} Alternative therapies such as the employment of photodynamic therapy, probiotics, prebiotics, use of medicinal plant extracts, honey have also been reported to be of some benefit.^{19,20,21} We report a case of OC occurring in a Saudi male patient who reported being under stress.

2. Case Report

A 34-year old male patient of Saudi origin reported to the outpatient dental

department in the AFHJ, Jazan, KSA with a chief complaint of oral discomfort, discharge, inability to open his mouth and bad breath from the past two weeks. The patient presented a non-contributory past medical except that he was diagnosed for Post-traumatic stress disorder (PTSD) earlier. (See **Figure: 1**). His past drug history and dental history were nonsignificant. He had no history of smoking. His vital signs were normal.

Intra-oral examination showed signs of discharge, a white moss like appearance, ulcerative lesions of the lips, base of the tongue, buccal mucosa along with bad breath and fissures at the angles of the mouth. The patient had a few missing teeth and had poor oral hygiene. An immediate diagnosis of OC was done. He was treated with a single dose of a combination of systemic (200 mg Ketoconazole once daily for 3 days) as well as local antifungal therapy (Nystatin mouth-rinse for 7 days). He responded to Antifungal therapy and recovered completely without necessity of further therapy. (See **Figure: 2**).

3. Discussion & Conclusion

Various members of *Candida* species inhabit the oral cavity and are opportunistic fungi. They are associated with a number of oral diseases in human beings.²² OC is a well-known entity and the lesions are commonly seen. OC results from physiological changes and homeostatic disturbances in the host immune system. In the presence of a healthy and well balanced host immune system *Candida albicans* behaves as a commensal in the oral ecosystem. It proliferates rapidly in cases of defects in cellular immune response in subjects and lead to biofilm infections in immunocompromised individuals.¹²³ In this reported case the patient suffered from OC with severe psychological stress.



OC can result in aspiration pneumonia and fungemia¹. Moreover antifungal resistance due to the lesser susceptibility of certain species, such as *Candida glabrata* and *C. krusei*, to antifungal drugs can be seen.^{23,24} Hence immediately attention with proper clinical diagnosis and judicious administration of antifungal drugs along with adequate attention to decrease in host immune response if any is vital in handling OC when it presents.

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Figures & Legends:



Figure 1: Clinical picture showing OC



Figure 2: One Week post Antifungal therapy