Case Report

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A CASE REPORT OF: PSEUDOMEMBRANOUS CANDIDIASIS INDUCED BY LONG TERM SYSTEMIC CORTICOSTEROIDS THERAPY

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ABSTRACT:

Oral candidiasis is a common opportunistic infection of the oral cavity caused by an overgrowth of Candida species, the commonest being the *Candida albicans*. It is one of the common side effect associated with long term use of systemic corticosteroids. The purpose of this case report is to discuss the Acute Pseudomembranous Candidiasis in 24 Negroid Female Libyan patient on long term use of systemic corticosteroids therapy who came to the department of Oral Medicine, Surgery, and Diagnosis at the Faculty of Dentistry, Libyan International Medical University with the clinical appearance of Acute Pseudomembranous Candidiasis.

Proper patient management with successful treatment protocol, and follow up were performed to overcome the patient presenting symptoms, and to eliminate the corticosteroids therapy related problems.

Key words: Acute Pseudomembranous Candidiasis, *Candida albicans*, Systemic Corticosteroids, Ketoconazole, Chlorhexidine gluconate.

INTRODUCTION:

Oropharyngeal candidiasis is a common opportunistic infection of the oral cavity caused by commensal Candida species. the Candida genus is comprised of over 150 species of asporogenous 'yeast-like' fungi [1]. Since the majority of healthy individuals have an intraoral candida species, it is shown that some individuals exposed to oral candidial lesions. The most commonly implicated species is *Candida albicans* which is isolated in over 80% of lesions [2].

A change from the harmless commensal existence of Candida to a pathogenic state can occur following alteration of the oral cavity environment to one that favors the growth of Candida. The causes of such changes most often related to a weakening of host immune defenses [1]. The implicated predisposing factors are classified into local factors which includes: Impaired salivary gland function, inhaled steroids, dentures, oral cancer/leukoplakia, and high carbohydrate diet. The systemic factors includes: Drugs such as long term use of broad spectrum antibiotics,

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Immunosuppressives , corticosteroids, diabetes, Cushing's syndrome, HIV infection, malignancies as leukemia, nutritional deficiencies as vitamin B12, smoking, and stress [3].

Candidiasis is categorized into primary oral candidiasis in which the condition is only confined to the mouth where as in secondary oral candidiasis the condition is confined to other body parts in addition to the mouth [4]. Primary oral candidiasis has generally four forms are described based on clinical presentation : Acute Pseudomembranous Candidiasis, Acute Erythematous Candidiasis, Chronic Erythematous Candidiasis, and Chronic Hyperplastic Candidiasis [1].

Pseudomembranous candidiasis (oral thrush) presents as creamy white lesions on the oral mucosa and a diagnostic feature of this infection is that these plaques can be removed by gentle scraping leaving behind an underlying erythematous mucosal surface. Histological examination of recovered pseudomembranous reveals desquamated epithelial cells together with yeast and filamentous forms of Candida [1]. The infection has been demonstrated as an acute condition often affecting newborns where the immune system is immature, in older individuals, Acute Pseudomembranous Candidiasis often occurs when there is a nutritional limitation, immune suppression, or by an underlying disease most notably HIV infection [5].

CASE DETAIL:

A 24 years old negroid female Libyan patient, came to the department of Oral Medicine, Surgery, and Diagnosis, at the Libyan International Medical University, with a complaint of roughness, peeling of oral tissue, burning sensation on the tongue and sore mouth since one and half month ago. The patient medical, and drug history revealed that she had surgical removal of intracranial cystic lesion since three months ago, and since then she was on systemic corticosteroids therapy (dexamethasone 10mg/day) till a week before her visit to the department.

On intraoral examination, almost all over her oral mucosa (buccal, labial, palatal mucosa) covered by elevated white patches, diffuse erythema over the soft palate, uvula, and oropharynx (Fig.1 A,B,C), with scrapable white patches. On gently rubbing these white patches , a visible erythematous areas were seen.

The complete blood examination report showed normal figures, a smear was made from scrapings of these lesions For cytological evaluation, and the results indicated candidiasis, Culture *Candida* using a Sabouraud's dextrose agar was also done to aid the definitive identification of the fungal organism. Based on both clinical examination , and investigations; the diagnosis indicate Acute Pseudomembranous Candidiasis due to prolonged use of systemic corticosteroids. Following to that the patient was treated with ketoconazole

tablet 200 mg once daily, chlorhexidine gluconate 0.12% mouthwash 2 times/day for 2 weeks. On the follow up visit, a one week after an improvement of the presenting complaints was noticed , and the oral lesions was completely disappeared (Fig.2 A,B,C).

DISCUSSION:

Although, *Candida albicans* is the most frequently involved species in oral candidiasis, other species are increasingly being encountered. The unique virulence factors of *Candida albicans* includes the ability to adhere to host tissue surfaces, produce filamentous fungal growth, and release hydrolytic enzymes that cause damage to the host tissue.

Pseudomembranous candidiasis can be develop as a result of long term use of systemic corticosteroids, or the case where the individual being immunocompromised for long term. Concurrent with their therapeutic properties subsist a plethora of adverse effects, including the susceptibility to infection [2]. They produce a multiple effects on different immunocytes, as suppressing the dendritic cell activation, reducing the release of macrophage cytokines, B lymphocytes and immunoglobulin/antibody production, increasing in the number of circulating neutrophils, but delaying their apoptosis, and alter T-lymphocyte cytokine production [6] .

Systemic antifungals are usually indicated in cases of disseminated disease and/or in immunocompromised patients [3]. In addition the use of Chlohexidine gluconate mouthwash shows a significant improvement in the reduction, and prevention of the candidal infections [1]. "Chlorhexidine binds to negatively charged microbial cell surfaces leading to a disruption of the cell membrane of the microorganisms (*W Nittayananta et al, 2008)*" [7]. Thus, antifungal activity of chlorhexidine due to both its fungicidal activity and its mechanical effect inhibits the fungal adhesion to mucosal epithelial cells [7].

CONCLUSION:

Candida species are normal oral commensals found in 17-75% of healthy individuals and most debilitated people. The transition of this innocuous commensal to the disease-causing associated with the virulence attributes of the microorganism.

Long term use of systemic corticosteroids results in development of Acute Pseudomembranous Candidiasis due to the fungal overgrowth in immunosuppression status. Effective management of oral candidiasis demands the elimination of any identified predisposing factors together with the administration of appropriate antifungal agents.

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FIGURES:

Fig. 1 *A,B,C*

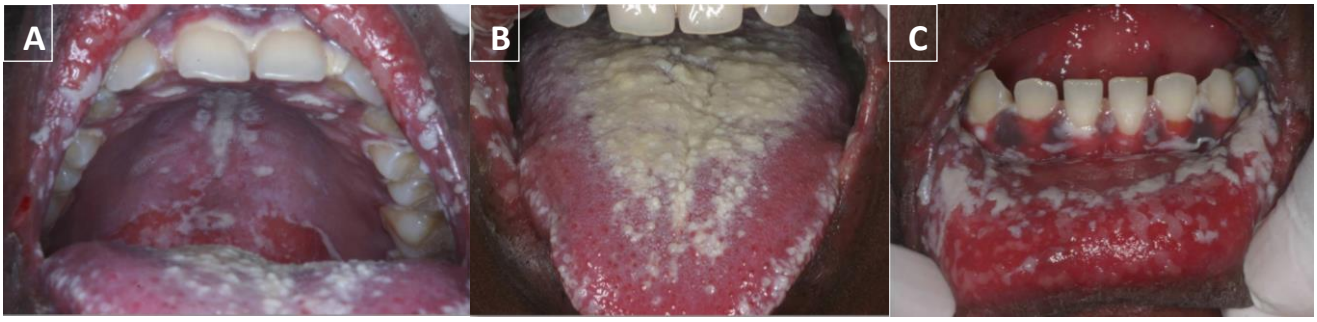

Fig. 2 *A,B,C*