ORAL CANDIDASIS IN DIABETIC PATIENTS - CASE REPORTS WITH TREATMENT

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ABSTRACT
Diabetes mellitus is a common and growing global health problem which causes several complications. Periodontal diseases are considered as the sixth complication of diabetes. Diabetics have an increased predisposition to the manifestations of oral diseases like candidiasis, due to poor glycemic control. Candidiasis refers to a multiplicity of diseases caused by a yeast like fungus, Candida. Candidiasis is predominantly an opportunistic infection affecting skin, nails, oral and vaginal mucosa. Candida albicans, Candida tropicalis, Candida pseudo tropicalis, Candida glabrata, Candida krusei are the few species of candida responsible for this infection. The present article reports a cases of denture stomatitis and kissing lesions of oral mucosa in diabetic patients.

KEYWORDS: Oral candidiasis, kissing lesions, antifungal drugs.

INTRODUCTION
Diabetes mellitus (DM) is a common universal endocrine disorder with decreased host immunity towards infections. In DM type 2 DM accounts for 90-95% of all patients. The most common opportunistic infection in DM patients is oral candidiasis caused by yeast like fungus Candida albicans. In healthy individuals these microorganisms are believed to be
commensals but in diabetic patients, it forms severe colonization, even in the absence of any clinically evident oral candidiasis. This type of subclinical colonization can make them more prone to develop deeper mucosal colonization with further dissemination via blood.

Oral candidasis is classified in to acute and chronic forms. In chronic forms, denture stomatitis (Denture sore mouth) is the most common infection affecting the denture bearing areas of mucosa. Median rhomboid glossitis, angular cheilitis and kissing lesions are the other forms. Denture stomatitis (DS) affects about 65% of denture wearers often asymptotically.\(^1\) It is usually found on the palatal mucosa beneath the upper denture. Kissing lesions of oral cavity are other types of candidal infection, where median rhomboid glossitis (MRG) associated with erythema of palate are seen. In 1914 Brocq first described MRG, which occurs in less than 1 % of the general population.\(^2\) In Indian population prevalence varies between 0.04 and 0.01%. It affects males more commonly than females.\(^3\) The present article reports a cases of denture stomatitis and kissing lesions of oral mucosa in two diabetic patients.

**CASE REPORTS**

In case one, a 54 year old female patient reported to the Department of Oral Medicine with a chief complaint of burning sensation of oral cavity since one and half months. Patient history revealed that she was denture wearer since 15 years and diabetic since 23 years for which she was under medication. The patient was wearing dentures at night without removing since 15 years. General physical examination revealed that patient was moderately built and nourished with normal vital signs.

Intraoral examination of tongue showed whitish lesions on dorsal aspect with multiple fissures [Figure 1]. Diffuse erythematous areas seen over the entire hard palate extending till the junction of hard and soft palate[Figure 2 and3]. On palpation, the white lesions of tongue were scarpable. Based on history and examination, a provisional diagnosis of denture stomatitis of maxilla and acute pseudomembraneous candidasis of tongue were considered. Routine blood investigation were done to rule other hematological deficiencies and random blood sugar estimation was done to detect the possibility of diabetes. Tongue and palate cytosmear was advised. The laboratory investigations revealed showed a random blood sugar level of 360dmg/dL and confirmed the presence of candid hyphae on smear. The patient was referred to physician for diabetic management. The patient was instructed to remove her dentures at night and keep in 0.2%Chlorhexidine mouth wash for overnight. The topical
application of lotion Candid -B twice daily for 15 days was prescribed along with maintenance of oral hygiene. The patient was reviewed after two weeks, which showed 85% reduction in symptoms and lesions. The patient was advised to continue with same medication for another one week and reviewed after one week which revealed complete resolution of symptoms and lesions of tongue and palate [Figure 4 and 5].

In case two, a 33-year-old male patient reported with chief complaint of redness over the tongue since 4 to 5 years. Patient gave history of erythematous lesions on the tongue since 4 years, associated with intermittent burning sensation. Medical history of patient revealed that he was diabetic since 4 years and not under medication. Personal history of patient revealed smoking of 5-6 cigarettes a day and chewing pan masala since 8-9 years, 2-4 pouches per day. General physical examination revealed moderately built and nourished status with no other extraoral abnormalities.

Intraoral examination revealed sharply demarcated, erythematous areas with depapillation measuring about 2x1cms in size on the dorsal aspect of tongue. The lesions were resembling rhomboid shape and present on midline of tongue just one cm anterior to the circumvallate papillae [Figure 6]. Well defined erythematous areas were present over the centre of the hard palate just opposite to lesion present on the dorsal surface of the tongue [Figure 7]. On palpation the lesion was non tender, smooth and no bleeding was present. Based on history and examination, a provisional diagnosis of MRG and kissing lesions of palatae were considered. Smear was taken from the tongue and the palatal lesion, which showed predominantly candidal hyphae. Patient was advised investigations to rule out HIV infection which showed non reactive status of patient. The fasting blood sugar level of patient was 180mg/dl. Patient was advised to stop smoking and chewing habits and referred to physician for management of diabetes. Treatment of fluconazole 100mg twice daily and topical candid gum paint twice daily for 15 days was advised. Patient follow up after two weeks revealed relieve in symptoms along with lesions.

**DISCUSSION**
Candida is a normal commensal of oral mucosa and it can colonize the buccal mucosa, dorsum of the tongue and in denture prosthesis. It can as well adhere to the oral bacteria and pellicle of dental plaque. Although it is a commensal, it tends to form mild colonization in 20-40% of healthy individuals. In immunocompromised disorders, Candida becomes pathogenic forms moderate to severe colonization and causes oral candidiasis.\[^{[4]}\]
Studies have shown increased candidal colonization in diabetic patients when compared with normal patients. [5,6,7] Candidal carriage was even higher among diabetic patients wearing dentures.[7-8]

DS is characterized by generalized inflammation of the palatal mucosa covered by a denture.[9] It is associated with a quantitative increase of yeasts, particularly *Candida albicans*, on the mucosa and the fitting denture surface.[10] DS is usually asymptomatic, sometimes patient may complain of halitosis, xerostomia and burning sensation of oral cavity in about 20-70% of patients. It affects more commonly maxillary area than mandible due to closer adaptation of maxillary denture with palate, which makes large number of yeast to adhere to mucosa. The flushing action of saliva from Wharton’s duct helps in protective mechanism of mandibular area. Different classifications have been reported but the most accepted one is Newton’s classification of 1962 which is based on clinical criteria.[11]

Newton type I-Pinpoint erythematous areas of mucosa
Newton type II- Diffuse generalized erythema involving most of denturecovered mucosa.
Newton type III- Granular erythemaous or nodular lesions commonly involving the central area of hard palate and alveolar ridges.

In our first case patient was having type II denture stomatitis of palate. The etiology of candidasis is multifactorial, with a predisposing factors like changes in oral microbial flora, chronic local irritants, smoking, administration of corticosteroids, pregnancy and immunological deficiencies like HIV, diabetes, leukemia, lymphomas. In our cases, patients were diabetic. The saliva of diabetics favours the growth of *C. albicans* in vitro and it has been shown that on the denture surfaces of diabetic there are more elevated counts of colonies of the yeast by comparison with the non diabeticsubjects.[12] Several studies have shown association between denture stomatitis and diabetic patients.[13]

MRG is classically described as a focus of symmetrical filiform papillary atrophy which may be smooth or a lobulated. It appears as erythematous area on the dorsalsurface of the tongue, anterior to circumvallate papilla. It is normally well circumscribed, with arhomboid shape.[14] Strong association between localized atrophy of tongue and tobacco smoking has been suggested by studies, which was observed in our second case, where the patient was cigarette smoker and tobacco chewer. Kissing lesion develops on the palate, directly opposite
from the tongue lesion. This is more common in people whose immune system is suppressed and is believed to result from the fungal organisms on the top of tongue being transferred to the palate during swallowing. It is important to rule out HIV status in these patients which was negative in our case.

Topical antifungal therapy for oral candidal infections is available in many forms like pastilles, troches, creams, ointments and oral suspensions. Systemic antifungal agents have been recommended for patients with poor compliance such as for immunocompromised patients. Among systemic antifungal drugs, fluconazole and itraconazole have been the most extensively proven as efficient antifungal drugs. In our cases both topical (Candida gum paint) and systemic (fluconazole 100mg) drugs were used for 2-3 weeks, where patients showed good response to these drugs. Effective management of oral candidiasis includes removal of predisposing factors with the administration of appropriate topical or systemic antifungal agents. Concerning the maintenance of denture hygiene in order to improve oral mucosal health, the patients were informed to control their blood glucose level, and to regularly clean dentures and keep them dry overnight.

REFERENCES


**Figure legends**

Figure 1: Intraoral photograph showing acute pseudomembranous candidasis of dorsal surface of tongue

Figure 2: Diffuse erythematous areas of hard palate and maxillary ridge.

Figure 3: Diffuse erythematous areas of hard palate extending till the junction of hard and soft palate.

Figure 4: Photograph showing complete remission of lesions on tongue.

Figure 5: Photograph showing complete remission of lesions on palate and maxilla.

Figure 6: Photograph showing atrophic areas on dorsal aspect of tongue.

Figure 7: Well defined erythematous areas of hard palate (Kissing lesion)