DENTURE STOMATITIS - A CASE REPORT AND AN UPDATE

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ABSTRACT
Opportunistic infections are increasing in modern era despite the advancement of medicine. This holds true especially for a species i.e Candida albicans. This is most common yeast that entraps in between the dentures of the geriatric patients. In geriatric patients, it causes denture stomatitis. The current article describes the case of 60 year old female who was diagnosed with denture stomatitis along with the treatment she was given. It further highlights various treatments and prevention programs that are needed to prevent the growth of this opportunistic organism.

KEYWORDS: candida, stomatitis, denture.

INTRODUCTION
The term stomatitis is derived from the Greek stoma meaning “mouth” and the suffix-itis meaning “inflammation”. Denture stomatitis refers to the condition in which the stomatitis is caused by the denture mostly on denture bearing areas. The mucosa is red and inflamed. Patient may experience pain and burning sensation. It is also called as ‘denture sore mouth’, ‘denture related stomatitis’, ‘chronic atrophic candidiasis’, ‘candida associated denture induced stomatitis’, ‘denture associated erythematous stomatitis’. The main causative organism is “Candida Albicans”. In most patients or in all the patients candida species have been identified.[1,2] The most common site for the condition is maxillary area because the fungal infection is aggravated by adhesion of C. Albicans to the tissue fitting surface of maxillary denture.[3] Trauma has been shown to have a role in production of basement membrane alterations involving expression of type IV collagen and laminin (alpha 1), thus indicating a possible relationship between these elements and denture stomatitis.[4] Maxillary denture acts as a reservoir of microorganisms. The factors that lead to adhesion of candida to acrylic base include.[5]

1. Substrate surface properties, as surface charge, surface free energy, hydrophobicity and roughness.
2. Surface structure and composition of the biomaterials.
3. Physiochemical properties of microbial cell surface, again its surface charge and hydrophobicity.

Other predisposing factors are.
1. Systemic factors
   - Physiological (advanced age)
   - Endocrine dysfunction
   - Nutritional deficiencies
   - Neoplasias
   - Immunosuppression
   - Broad spectrum antibiotics
2. Local factors
   - Antimicrobials and topical or inhaled corticosteroids
   - Carbohydrate rich diet
   - Tobacco and alcohol consumption
   - Hyposalivation
   - Poor oral hygiene
   - Wearing dentures (especially through the night)

It is rare condition in mandibular denture. This is attributed due to the washing action of saliva.[6]

CASE REPORT
A 60 year old female patient reported to the department of Oral medicine and radiology with the chief complaint of broken denture since 1 month. On taking history, patient revealed that it is nowadays accompanied by mild burning sensation from past 10 days. Patient lost her teeth due to loosening of the same 20 years back. Patient is denture wearer from past 20 years. Personal history revealed that patient wear the denture overnight and cleans it rarely. Patient cleans the mouth by rinsing with water while she is wearing the denture.
On intraoral examination, impression of the suction disc of maxillary denture was seen on the palate. There was also presence of diffuse erythema over the hard palate. It was associated with inflammatory papillary hyperplasia surrounding and involving the area where there was presence of impression of suction disc. It was non-tender on palpation. (fig 1)

Based on the history and the clinical examination, a provisional diagnosis of Denture stomatitis was given. Routine blood examination was done along with random blood sugar test. It revealed 151 mg/dl random blood sugar. Cytosmear examination was carried out. It revealed numerous candidal hyphae. On this basis, final diagnosis of Denture stomatitis was given.

Patient was advised to discontinue the old denture. Topical application of candid gum paint was given to use three times a day. Chlorohexidine mouthwash rinsing 3 times a day was also advised. Patient was recalled after 1 week follow-up. Patient responded well to the treatment. (fig 2) After this, patient was advised to get new denture fabricated.

**DISCUSSION**

Denture stomatitis is an asymptomatic condition. Patient may complain of halitosis, slight bleeding, and swelling in involved area, or burning sensation, xerostomia or any taste alterations. These symptoms occur with variable intensity. The main etiological factor for denture stomatitis is wearing the denture overnight. It is accompanied by the quality of the denture such as ill-fitting dentures, traumatic dentures and dentures which are not cleaned on regular basis. This is in support with the present case which has been presented as patient use to wear the denture overnight and don’t clean it regularly which led the yeast to harbor under the denture.

In 1962, Newton has classified the denture stomatitis into three types.

**Type I:** Pin point hyperemia or localized simple inflammation.

**Type II:** Diffuse erythema confined to mucosa in contact with denture base.

**Type III:** Granular surface or inflammatory papillary hyperplasia of palate.

According to this classification, the present case comes under type III denture stomatitis.

The treatment of denture stomatitis includes the following steps.

1. Patient should be advised to take off their denture at night.
2. Good oral hygiene should be maintained and mouth should be free of any periodontal disease. Mouth wash advised like chlorhexidine. It helps to reduce plaque in oral cavity
3. Denture stomatitis can be due faulty design of the denture so identify the denture faults (occlusion disharmonies, improper vertical dimensions and centric position) and correct them.
4. Topical applicants like Nystatin or Amphotericin B can be used to treat acute mucosal symptoms.
5. Microorganism colonies can be reduced with overnight soaking of denture in chlorohexidine gluconate. Sodium hypochlorite should not be used to avoid the bleaching.

Newer treatment modalities includes use of gaseous ozone\(^{(8)}\). This has been proven clinically useful for disinfection of the dentures. The prognosis of the disorder is good, as no malignant transformation has been reported yet. The continuous aspiration and swallowing of candida species may rarely have potentially fatal consequences in immunocompromised patients.\(^{(9)}\)

**CONCLUSION**

The current article highlights the etiology, clinical features, investigations and treatment of denture
stomatitis along with a treated case. It illustrates the need of oral health care programs that must be conducted by the dental professionals for the geriatric patient to enhance their knowledge about the denture wearing habits and maintaining their oral hygiene. Thus, to prevent denture stomatitis, patient education can be a primary tool along with periodic plaque control measures by the professionals.

REFERENCES