ISSN: 2581-5989
PubMed - National Library of Medicine - ID: 101738774

International Journal of Dental Science and Innovative Research (IJDSIR)

IJDSIR : Dental Publication Service

Available Online at:www.ijdsir.com

Volume – 8, Issue – 5, September – 2025, Page No. : 167 - 171

Denture Stomatitis: Case Report

[1]Dr. Rutuja Dandekar, Department of Prosthodontics, Nair Hospital Dental College, Mumbai, Maharashtra, India

[2]Dr. Vishwas Kharsan, Department of Prosthodontics, Nair Hospital Dental College, Mumbai, Maharashtra, India

[3]Dr. Gauri Phansalkar, Department of Prosthodontics, Nair Hospital Dental College, Mumbai, Maharashtra, India

[4]Dr. Saurabh Sarode, Department of Prosthodontics, Nair Hospital Dental College, Mumbai, Maharashtra, India

[5]Dr. Rosy Shamkule, Department of Prosthodontics, Nair Hospital Dental College, Mumbai, Maharashtra, India

Corresponding Author: Dr. Rutuja Dandekar, Department of Prosthodontics, Nair Hospital Dental College, Mumbai, Maharashtra, India

Citation of this Article: Dr. Rutuja Dandekar, Dr. Vishwas Kharsan, Dr. Gauri Phansalkar, Dr. Saurabh Sarode, Dr. Rosy Shamkule, "Denture Stomatitis: Case Report", IJDSIR- September – 2025, Volume – 8, Issue – 5, P. No. 167 – 171.

Type of Publication: Case Report

Conflicts of Interest: Nil

Introduction

Edentulism, particularly in the aging population, is a significant oral health concern that often necessitates the use of complete dentures for rehabilitation. While complete dentures help restore masticatory function, speech, and aesthetics, their prolonged use can lead to various oral and systemic sequelae. These include residual ridge resorption, altered taste perception, decreased masticatory force, mucosal irritation, and increased risk of infections. Among these complications, denture stomatitis is one of the most common, presenting as chronic inflammation of the denture ebearing mucosa.

Denture stomatitis is a common inflammatory condition affecting the oral mucosa beneath a denture. It is often associated with Candida albicans infection and poor denture hygiene. The denture bearing tissues may undergo histopathologic changes, such as inflammation and degeneration or morphologic changes such as traumatic ulceration and hyperplasia leading to denture stomatitis. The etiology of denture stomatitis is multifactorial, and factors such as bacterial plaque accumulation, resin porosity, trauma caused by the use of inadequate prostheses and poor oral hygiene contribute to the mucosa underlying the prosthesis being susceptible to infection.[1]The diagnosis of denture stomatitis depends on clinical findings, such as, the presence of erythema and edema on the palatal mucosa and gingiva covered by the denture base.[1] It affects up to 65% of denture wearers. While often asymptomatic, some patients may experience burning, dryness, discomfort, or bad breath. The lesion has been graded clinically into three types by Newton in 1962 as:

Type I: pin-point hyperemic lesions (localized simple inflammation).

Type II: diffuse erythema confined to the mucosa contacting the denture (generalized simple inflammation).

Type III: is an inflammatory papillary hyperplasia with inflammation of varying degree.

Keywords: Candida Albicans, Inflammation, Erythema, Denture Stomatitis

Case Report

A 67-year-old male patient, reported to the Department of Prosthodontics at Nair Hospital Dental College with complaints of a burning sensation and pain in the upper palatal region. He had been wearing a maxillary suction cup denture for the past 10 years. Upon examination, the denture was found to be in a damaged state with sharp borders, and the palatal tissues appeared inflamed and erythematic, likely as a result of prolonged use of the suction cup design. The patient was unaware of the extent of tissue damage but expressed discomfort and irritation in the affected area.

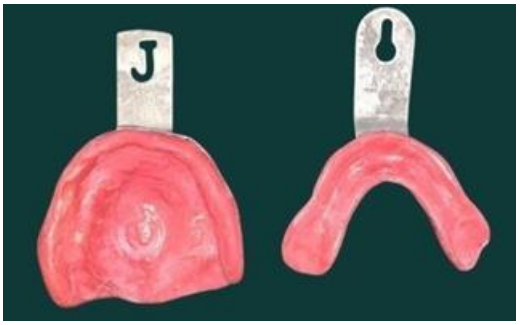
Clinical findings revealed an erythematous and inflamed palatal mucosa with signs of chronic irritation. The suction cup component of the denture had likely created continuous negative pressure on the underlying tissue, leading to mucosal trauma. Based on the history and clinical presentation, a provisional diagnosis of denture stomatitis with palatal tissue abuse was made, attributed to long-term use of an ill-fitting suction cup denture.

The patient was referred to the Department of Oral Pathology for further evaluation and management of the abused palatal tissue. He was advised to discontinue the use of the denture immediately to facilitate healing. Topical antifungal medication and gum paint were prescribed to manage the inflammation. Instructions were given to maintain proper oral hygiene and avoid any mechanical irritation to the healing mucosa.

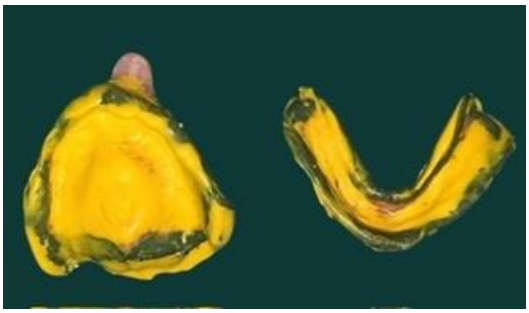
Following the resolution of inflammation and complete healing of the palatal tissue, treatment plan was made for the fabrication of a new set of maxillary and mandibular dentures, excluding the use of a suction cup to prevent recurrence of tissue damage.

Patient reported back after 2 weeks and abused tissues were evaluated. There was resolution of palatal erythema and satisfactory healing was noted.

The denture fabrication process began with recording the primary impression using impression compound to capture the general anatomy of the edentulous arches.



This was followed by peripheral tracing to define the functional limits of the denture-bearing area, ensuring optimal retention and stability. A final wash impression was made using addition silicone for accurate detailing of the tissues.



Once the master cast was prepared, the jaw relation was recorded to establish proper vertical and centric relationships. Subsequently, teeth were arranged and a try-in appointment was conducted to verify esthetics, phonetics, and occlusion.

After patient approval, the final denture was processed and delivered, notably without the suction cup in the maxillary denture to prevent recurrence of tissue trauma and ensure long-term comfort.

Conclusion

This case underscores the clinical consequences of using obsolete denture designs, such as suction cups, which can result in chronic mucosal trauma, denture stomatitis, and compromised oral health. The successful management of this patient involved a multidisciplinary approach, including prompt identification of tissue abuse, cessation of harmful prosthesis use, pharmacologic intervention to promote healing, and the fabrication of a new, well-adapted maxillary denture. This reinforces the need for dental practitioners to discourage the use of outdated prosthetic components and to adopt evidence-based protocols in complete denture fabrication. Regular follow-up, patient education on denture hygiene, and periodic assessment of prosthesis fit are essential for preventing complications and ensuring long-term oral health and prosthetic function in edentulous patients.

Discussion

Primary treatment of denture stomatitis should be targeted towards biofilm cleaning and disinfection at the prosthesis level. A systematic review of the literature suggests that for the majority of patients, basic mechanical oral and denture hygiene procedures, in addition to removing dentures during sleep, are some of the most effective measures for managing denture

stomatitis.[2]The American College of Prosthodontists has published a comprehensive evidence based guideline for the care and maintenance of complete dentures. In terms of cleaning and disinfection, this guideline primarily proposes that dentures should be cleaned by brushing with a nonabrasive denture cleanser or soap outside of the mouth at least once daily. Dentures should never be exposed to water with temperatures of 60°C or above, or to sodium hypochlorite solutions for periods that exceed 10 min, to avoid damage to PMMA surfaces.[2] Dentures should be removed from the oral cavity during sleep, never worn continuously (24 h/day), and should be immersed in clean water to avoid warpage when not in the oral cavity. Patients are advised to attend a dental professional once yearly for laboratory denture cleaning services such as ultrasonic debridement of dentures to minimize the accumulation of rough, calcified microbial deposits, and to repolish the polished surfaces of the denture.[2]

Irradiation with microwave has been proposed as a quick effective and cheap method for the denture disinfection. In vitro the exposure to the microwaves was able to cause the cell death of Candida albicans.[3] Clinical assessment has proved the real effectiveness of this methodology to disinfect the denture and to treat Candida-associated denture stomatitis by the exposure of the denture to the microwaves (350 Watt, 2450 MHz) for 6 minutes, removing the presence of Candida and bacteria.[3] However this treatment is responsible to produce conformational changes on the denture, according to the duration of the treatment and therefore on the possibility of adopting this method together with maneuvers of oral and denture hygiene. In fact, according to the quantum theory, the waves formation induces a production of energy that could interfere with the dimensional stability of the denture.[3]

Maintaining good oral hygiene alone can be effective in managing denture stomatitis, and its effectiveness increases when combined with systemic and topical antifungal treatments. Proper denture hygiene is crucial not only for successful treatment but also for preventing recurrence after antifungal therapy. Therefore, it plays a key role in the prevention of oral candidiasis. Both the denture and the underlying mucosa should be thoroughly cleaned—ideally after each meal—using water or appropriate chemical agents. Patients should also be advised to remove their dentures at night and keep them dry. Additionally, during active treatment for denture stomatitis, it is recommended that the prosthesis be left out of the mouth for at least two weeks to promote healing.

References

1. Martins KV, de Lacerda Gontijo SM. Treatment of denture stomatitis: literature review. Rev Bras Odontol. 2017;74(3):215-20.
2. McReynolds DE, Moorthy A, Moneley JO, Jabra-Rizk MA, Sultan AS. Denture stomatitis—An interdisciplinary clinical review. Journal of Prosthodontics. 2023 Aug;32(7):560-70.
3. Salerno C, Pascale M, Contaldo M, Esposito V, Busciolano M, Milillo L, Guida A, Petruzzi M, Serpico R. Candida-associated denture stomatitis. Med Oral Patol Oral Cir Bucal. 2011 Mar 1;16 (2):e139-43.
4. Cubera K. Denture stomatitis - de nition, etiology, classification and treat-ment. Przegl Lek. 2013; 70 (11):9479
5. Sesma m N, Takad a KS, Laganá DC , Jacger RG, Azambuja-Jun ior N. Evaluation of the ecacy of cleaning methods for removable partial dentures. Rev Assoc Paul Cir Dent. 1999;53(6):463-8

6. Lemos MMC, Miranda JL , Souza MSGS. Clinic, microbiologic and histophato-logic study of the denture stomatitis. Rev Bras Patol Oral. 2003;2(1):3-10.
7. Aoun G, Berberi A. Prevalence of Chronic erythematous candidiasis in Lebanese denture wearers: a clinicomicrobiological study. Mater Sociomed. 2017;29(1):26-9.
8. Moosazadeh M, Akbari M, Tabrizi R, Ghorbani A, Golkari A, Banakar M. Denture stomatitis a nd Candida albicans in Iranian population: a systematic re-view and meta-ana lysis. J Dent (Shiraz). 2016; 17(3 Suppl):28392
9. Byrd WC, Schwartz-Baxter S, Carlson J, Barros S, Oenbacher S, Bencharit S. Role of salivary and candida l proteins in denture stomatitis: an exploratory proteomic analysis. Mol Biosyst. 2014;10(9):2299-304.
10. Gontijo SML, Gomes ADM, Gala-Garcia A, Sinisterra RD, Cortes ME. Evalu-ation of antimicrobial activity and cell viability of Aloe vera sponges. Electronic Journal of Biotechnology. 2013;16(1):10.
11. Marcos-Arias C, Eraso E , Madariaga L , Quindós G. In vitro activities of natu-ral products against oral Candida isolates from denture wearers. BMC Complement A ltern Med. 2011;11:119
12. Acosta-Torres LS, Mendieta I, Nuñez-Anita RE, Cajero-Juárez M, Castaño VM. Cytocompatible antifungal acrylic resin containing silver nanoparticles for dentures. Int J Nanomedicine. 2012;7:4777-86
13. Wilson J. eaetiology, diagnosis a nd management of denture stomatitis. Br Dent J. 1998;185(8):380-4.
14. Gauch LMR, Silveira-Gomes F, Pedrosa SS, Esteves RA, Marques-Da-Sil-va SH. Relationship among local a nd functional factors in the development of denture stomatitis in denture wearers in northern Brazi l. Rev odontol UNESP. 2014 ;43(5): 314-8 .
15. Castro AL , Furuse TA, Gaetti-Jardim Júnior E , Castro EVFL , Jardim PTC, Paro MLC . Denture stomatitis induced by t he bad use of complete denture: a case report. Rev Odonto Araçatuba. 2006; 27(2):87-90.
16. Batista JM, Birman EG, Cury AE. Susceptibility to antifungal drugs of Can-dida albicans strains isolated from patients with denture stomatitis. Rev Odontol.