# Suction Cup on Denture: A Case Report

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## Abstract

Complete Dentures with perfect retention are complicated to attain and several method have been applied for obtaining the same the same. Ill-fitting dentures are due to residual ridge resorption causing difficulty while eating and even dislodgment during talking causing embarrassment for the patient. Suction cup was widely used for retention & stability of dentures but is said to be associated with complications like palatal perforations and oro-antral communications. Here we present a case report of denture stomatitis & palatal perforation due to the suction cup.

***Keywords:*** *Denture stomatitis, Suction cup, Palatal Perforation.*

## Introduction

Denture Stomatitis indicates an inflammatory process in the denture bearing mucosa. It is also seen in individuals who do not follow proper denture hygiene while using a complete or partial removable prosthesis. The most common site is the palatal mucosa and not mandible due to the cleansing properties of saliva. In fabricating a complete denture, retention is very important that depends on several factors - Anatomy like size & quality of denture bearing area, parallel ridge walls, Physical factors like adhesion, cohesion, interfacial surface tension, capillarity, atmospheric pressure & gravitational forces all play important role in stability and retention of the denture.[1,2]

The primary difficulties experienced during denture usage are discomfort, pain, usual noises like clicks and snaps chewing difficulties, change in phonetics and dislodgment of the prosthesis while talking or chewing.[3] To withstand these issues suction cups were used. But continuous use of these suction cups destroys the tissues even leading to perforation of the palate. They create a negative pressure on the mucosa leading to a destructive effect on the palatal tissues. This occurs as it reduces the blood circulation of underlying tissues leading to hypoxia and necrosis of the underlying bone leading to tissue perforation.[4] The pathological changes are severe with the habit of continuous denture usage for 24 hours a day. But suction cups are used when the diameter is < 1mm and has no risk of irritating the tissues/building up bacteria.[5]

**Case Report:** A 65 years old male patient-reported to the department of Oral Medicine & Radiology with a complaint of missing teeth in the lower jaw for 2 months. He was all right when mobility of teeth started eventually leading to its loss. Some of it were lost on its own & few were extracted. Past dental history suggested the usage of a maxillary denture since 2 and half years with non-contributary medical & family history.

The oral hygiene of the patient was moderate. He cleanses his mouth using his finger and warm saline water. Denture hygiene was bad as he wore the denture overnight and Cleaned it at morning in water. The patient was moderately built with normal gait. Blood pressure and respiratory rates were under normal limits.

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**On Examination:** Well defined, circular; punched epithelial indentation measuring 2x3 cms approximately resembling a suction cup. Extending from palatal rugae to 2 cms anterior to the soft palate anterior posteriorly, 2cm medial to the edentulous ridge concerning 15 & 25 mediolaterally i.e. center of the palate. [Figure 1,2]

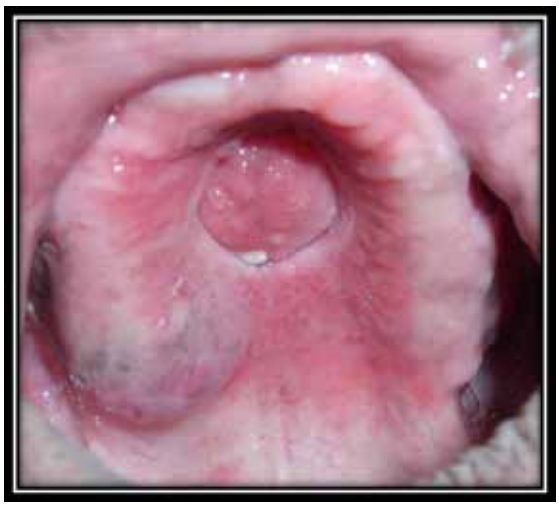

**Figure 1: Palate with suction cup indentation**

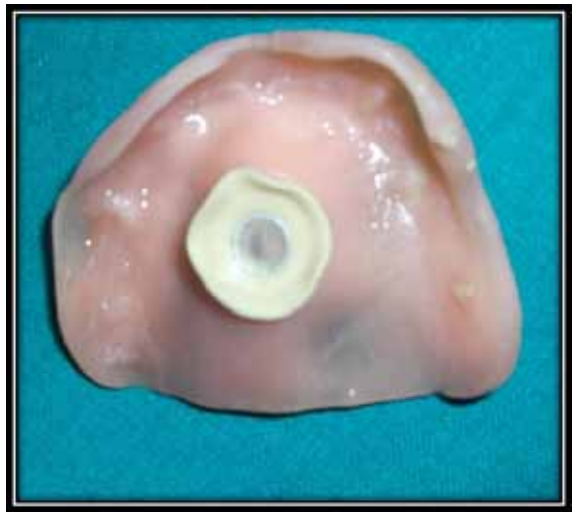

**Figure 2: Maxillary denture with the suction cup**

Mucosa overlying appears erythematous interspersed granular erythema in the center and posterior half of the hard palate [Figure 1,2]. Mucosal Hyperplasia in 13 & 24 is present measuring approximately 1x1cm at the extension of the denture flanges. [Figure 3,4].

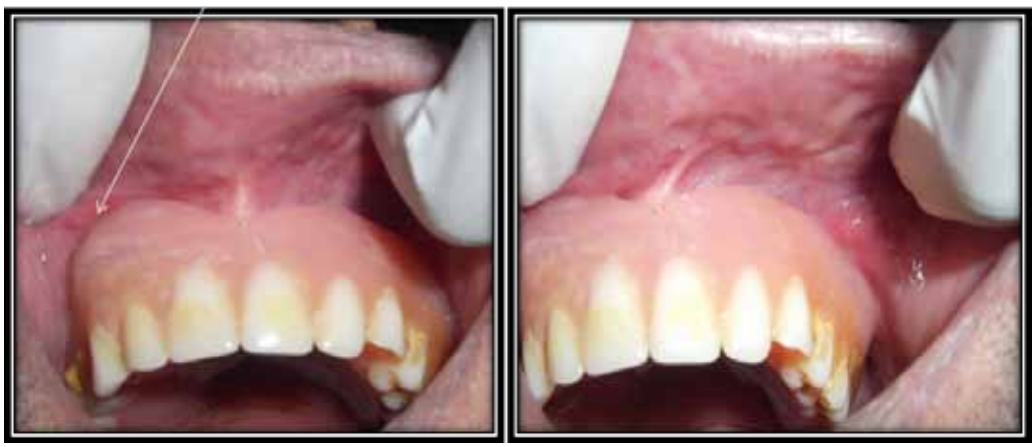

**Figure 3. Traumatic Denture Flange**

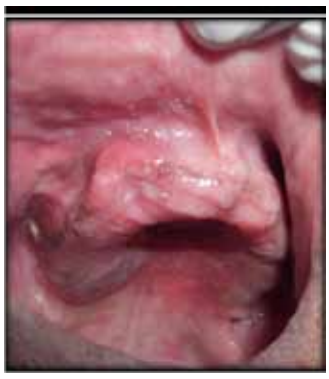

**Figure 4. Mucosa Hyperplasia**

Provisional diagnosis of Completely Edentulous maxillary and mandibular arches, Denture stomatitis & Epulis fissaratum 13 & 24 was given another line. Orthopantomogram revealed impacted 38 and smear report revealed multiple candida hyphae (Figure 5).

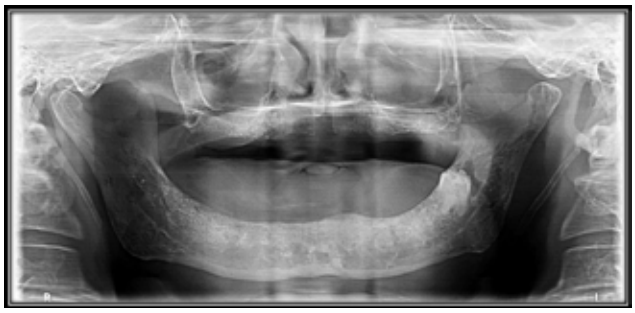

**Figure 5. Orthopantomogram reveals impacted 38**

The patient was advised to discontinue the use of denture & fabrication of new dentures was done. Application topical anti-fungal agent (Candid 4 times daily for 14 days) & gum paint to be massaged on the palatal mucosa.

## Discussion

Denture stomatitis is an inflammatory process of mucosa in patients with complete or partial removable dentures. Its classified into Type I: simple inflammation or pinpoint hyperemia. Type II: diffuse erythema involving a part/entire denture bearing area, Type III: Granular with inflammatory papillary hyperplasia.[6,7] All the patients with dentures are to follow the oral & denture hygiene instructions meticulously & other local factors that promote the growth of yeasts. [8]

The denture hygiene is maintained by brushing it with soapy water, warm saline and soaked at night in an antiseptic or chlorhexidine without any metal components or sodium hypochlorite solution of 0.02% concentration can also be used.[9] Fabrication of new prostheses should be made in cases of ill-fitting or overhanging flanges. An adequately polished and glazed denture reduces the poresin the denture reducing the contamination by oral microorganisms.[4] Inflammatory papillary hyperplasia or the epulis fissaratum is to be excised by scalpel, cryosurgery, electrosurgery or laser beam along with antifungal medications.[10]

## Conclusion

The prosthetic construction of patients is essential in restoring the oral health of completely edentulous patients. Fabrication of the suction cup to enhance the retention of maxillary denture is contraindicated because of its potential to cause palatal perforation. Adequate retention should be obtained by the proper record of the posterior palatal seal and close contact of the denture base to the underlying tissues.

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**Ethical Approval:** Approved

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