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Short Communication

Hard Palate Resorption: A Rare Sequelae of Wearing Complete Dentures

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Abstract

Placement of a removable prosthesis in the oral cavity produces profound changes of the oral environment that may have an adverse effect on the integrity of the oral tissues [1]. Residual alveolar ridge undergoes resorption following extraction of teeth but horizontal flat part of hard palate lateral to midline which provides primary support to maxillary complete denture is resistant to resorption. The intermittent and continuous wearing of dentures increase the resorption of residual ridge but have little or no effect on the hard palate. The use of suction disk by unqualified dentist (quacks) to increase the retention of maxillary denture usually cause inflamma-tory papillary hyperplasia but in some rare cases it even results in resorption of hard palate. This article describes a rare case report of hard palate resorption by wearing of maxillary complete denture with suction disk.

Keywords: Bisphosphonate; BRONJ; Dentoalveolar; procedures; necrotic bone

Introduction

Complete denture wearers may be one of the largest underserved dental patients. A significant number of these patients have den-tures with diminished or poor function due to bone resorption, thinning of the overlying mucosa, decreased or altered salivary flow and quality, soft and hard tissue lesions, neuromuscular challenges, temporomandibular dysfunction and medically compromised patient. The complete dentures should be fabricated by trained dental professionals for these patients to minimize the ill effects of the prosthesis in the oral tissues.

Due to lack of dental facilities and well qualified dental practioner in the rural areas, most of the dental patients were treated by un-qualified/untrained dental personnel known as quacks who have little knowledge about the future effects of procedures used to restore the partially or completely edentulous patients on the tissues of the oral cavity. Due to lack of knowledge about the impression techniques and denture fabrication procedures, most of the prosthesis fabricated by these unqualified dentists are underextended with little reten-tion and stability as shown in Figure 1a. Suction disk is most commonly used by these quacks to increase the retention of maxillary denture and denture adhesive to retain mandibular denture.

Suction disc consists of a rubber disc which is buttoned on to a stud sunk into the fitting surface of a denture. It creates an area of nega-tive pressure within the perimeter of the disc which holds the maxillary denture suspended from the hard palate. it increase the retention of denture but at the same time it causes the ischemia by decreasing the blood supply which results to decrease in supply of nutrients and collection of oxides and catabolites in that particular area resulting in inflammatory changes which ranges from mild inflammation to se-vere inflammatory papillary hyperplasia (Figure 2 and 3). In some cases, the constant irritation caused by this negative pressure results in resorption of hard palate which otherwise is resistant to resorption (Figure 1b and 4). A case of perforation of hard palate and malignant tumor (epithelioma) due to use of rubber suction disc was reported by H.R.B. Fenn [2].

Figure 1a: Under-extended maxillary dentures with suction disks.

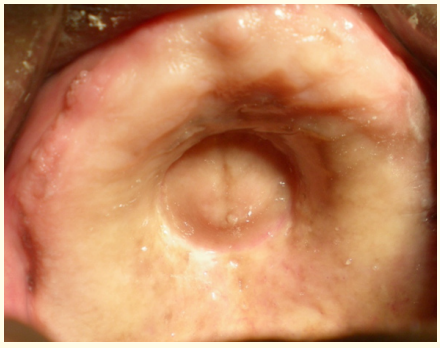

Figure 1b: Excessive palatal resorption.

Figure 2: Severe inflammatory papillary hyperplasia.

Case Reports

Four patients with age between 50 to 60 years old reported to our dental centre for prosthetic evaluation. One Patient had received acrylic resin removable complete dentures (Figure 1a). He had major complaint of difficulty in wearing the prosthesis due to palatal defect (Figure 1b) caused by wearing of maxillary complete denture with suction disc.

Figure 3: Mild inflammatory hyperplasia.

Figure 4: Unusual hard palate resorption.

The most common effects of suction disc on the tissues of hard palate are the severe inflammatory papillary hyperplasia (Figure 2) and papillary hyperplasia with mild inflammation (Figure 3) as seen in other two patients. These changes can be managed by surgical removal of hyperplastic tissues and keeping denture out of the oral cavity for 3-6 weeks. But the excessive resorption of the hard palate Figure 1a (which is most resistant to resorption) caused by the excessive pressure applied by the suction disc along with improperly fabricated prosthesis (Figure 4) in a medically compromised patient suffering with diabetes mellitus is very difficult to treat. All these four patients were not ready for any surgical corrections. so after 4 to 6 weeks of rest of tissues by keeping denture out, new prostheses were fabricated by applying biomechanical principles of convention complete denture fabrication with heat cure acrylic resin and per-manent silicone soft liner (Molloplast B) in the affected tissue area. All the patients

were scheduled for follow-up visits every 3 months and reported no complaints during 1 year of follow-up.

Discussion

Rubber suction discs were frequently used to improve the retention of the maxillary complete dentures for many years during the first half of the 20th century. In the absence of the peripheral seal in the denture, these discs were very popular and quite effective. However, the invariable injury to the palatal tissues, perforation of the palate and cause of malignancy in some case [3], these are rarely used by the qualified professionals in modern era.

But the unqualified/untrained dental practioners (quacks) practice in both rural areas as well as in several urban areas where they treat many dental patients. Due to lack of knowledge and to full fill the needs of patients with the prosthesis, Suction disk is most commonly used by these quacks to increase the retention of maxillary denture even in this modern times.

Soft rubber disc is porous and it soon perishes swells and become very foul by promoting plaque accumulation by enhancing the surface area exposed to microbial colonization. They are unhygienic. Wearing of complete dentures with suction disc commonly because mild to severe inflammatory papillary hyperplasia but prolong wearing, even results in hard palate resorption. Due to potency of suc-tion disc to create palatal hyperplasia and even palatal resorption, these are not used by professional qualified dentists for the same purpose. Patients should be educated about the ill effects of procedures used by unqualified dental professionals on their health and importance of being treated by qualified dentists through advertisements and by organizing dental camps on regular basis.

If any patient is discovered wearing a complete denture with a suction disc, he must be advised of the dangers involved and warned to stop wearing the denture. Not wearing the denture will allow the tissues to recover substantially, although the indentation in the mucosa is unlikely to disappear entirely. When the mucosa has healed, a new denture should be constructed. The palatal region of the denture should free of any sharp projections which could irritate the mucosa again.

Conclusion

Suction disk should not be used for retention of complete dentures; instead dentures should be fabricated by proper techniques by qualified professional dentists. Patients should be educated about the ill effects of suction disks on denture bearing tissues.

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