

## Oral Lesions Associated with Removable Prosthesis among Elderly Patient's

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### Abstract

Dental prosthesis has the main goal of oral rehabilitation of edentulous areas present in the oral cavity. Removable dentures purpose is mainly the oral rehabilitation of edentulous areas. Some secondary purposes for the dental prosthesis include elimination of disease, restoration of the remaining teeth and preservation of the surrounding oral tissues. Due to life expectancy rose, removable dentures wear is frequent nowadays. However, their functional and qualitative limitations can lead to oral lesions. The aim of this study is to present several oral lesions caused by dentures wear and their clinical characteristics among elderly patients. It is based on a literature review, intending to emphasize the importance of proper control and denture adaptation to oral environment. A good manufacturing and hygiene of a denture is of great relevance in order not to compromise the oral mucosa. Removable dentures won't replace a patient's normal dentition. Their repeated use can cause denture lesions, leading to mastication inefficiency and patient's decreasing nutritional capacity. These lesions are more common when there is a poor oral hygiene. Thus, the health professional's instructions are of great importance as well as removable dentures and patient's oral health monitoring and periodic assessments.

**Keywords:** Prosthetic lesions; Oral rehabilitation; Oral lesions; Removable dentures; Elderly

### Introduction

Lesions affecting the oral cavity are mainly caused by prosthetic wear, poor hygiene and iatrogenic damage caused by clinical interventions. Therefore, it is necessary to carry out a study and a detailed analysis of the patient and on his/her prosthetic rehabilitation [1].

When planning and constructing a dental prosthesis, the dentist should consider several aspects such as temporomandibular joint's function and physiological state, muscle tone, oral health and prosthetic hygiene, alveolar ridge's size and shape, distribution of masticatory forces, intermaxillary space, occlusal conditions, prosthetic adaptation and extension, systemic conditions of the patient, cervical margins defects, sharpened areas and patient's previous usage of removable dentures [1,2].

The traumatic ulcer is one of the most common lesions in the oral mucosa, which has multiple etiologies. Apart from traumatic injuries there are others resulting from incorrect planning of dentures such as angular cheilitis, temporomandibular joint trauma and stomatognathic system trauma, caused by errors in establishing occlusal vertical dimension or by insufficient occlusal adjustments [2].

Older individuals have peculiar oral and systemic characteristics such as reduced alveolar ridge, less resilient mucosa, muscle tissue degeneration requiring greater accuracy in adjusting their dentures to tissues. Furthermore, studies allowed concluding that with the ageing process there is a decrease of saliva secretion (xerostomia) [3].

It can cause pain or burning sensation in the mouth defaulting swallowing, speech and mastication as well as decreased taste, intraoral negative pressure, poor prosthetic retention and oral cavity lesions [4].

This study aims to conduct a literature review about oral lesions associated with removable prosthesis among elderly patients.

### Materials and Methods

To carry out this review article the search strategies included electronic databases, such as PubMed, Cochrane Library and Science Direct, reference lists of articles, and selected textbooks. Articles and textbooks used in this study were mainly reached by using the following keywords: "prosthetic lesions", "oral rehabilitation", "oral lesions", "removable dentures" and "elderly". Selection criteria included articles published from 2000 to the present year of 2016 that described the main oral lesions associated with removable prosthesis among elderly patients. At the end of the search, 8 scientific articles were selected.

### Results

#### Denture-related oral dysfunctions in elderly patient's

The main reasons for using dentures in oral rehabilitation are aesthetics, phonetics and patient's comfort and quality of life increase, emphasizing that the lack of teeth may imply consequences for the patient's emotional life. Maladjustment dentures combined to the patient's lack of instructions may affect negatively the treatment, fostering oral lesions for example. According to literature there are numerous lesions that can arise such as hyperplasia, stomatitis, traumatic ulcers, periodontal lesions and candidiasis. Leading factors for denture-related lesions in oral cavity are, among others, wrong defined treatment planning, oral hygiene, xerostomia and maladjusted dentures [5].

#### Incorrect treatment plan

Prosthesis construction fundamental for suitable adaptation in the oral cavity and to prevent oral lesions and some factors should be considered, such as temporomandibular joint, muscle tone, alveolar ridge condition, intermaxillary space, denture's extension and adaptation, cervical margins

defects, sharpened areas, systemic diseases and, especially, instructions regarding denture and the patient's oral hygiene [1].

### Oral hygiene

It is essential to advise patient's about the importance of a correct and proper oral hygiene, even before making the denture. Oral hygiene and prosthesis hygiene are very important for the maintenance of healthy oral cavity tissues. From the several hygiene procedures, brushing is the most commonly used. Many patient's do not hygiene correctly their removable dentures due to lack of motivation and unawareness of its consequences [5].

### Xerostomia

With the ageing process there is a decreased salivary flow which can, occasionally, cause pain, intraoral negative pressure, lack of restraint and may foster oral lesions in patient's wearing oral prosthesis [6].

### Denture's poor adaptation

Maladjusted dentures should be improved or replaced. When it already has some flaws its replacement is essential, in order to prevent oral lesions. Removable denture use causes quantitative and qualitative changes of dental plaque and increasing inflammatory processes in the oral cavity. When associated with a maladjusted denture trauma, it may cause lesions in the oral cavity [7].

### Most common soft tissue's injuries

**Inflammatory papillary hyperplasia:** This condition usually occurs in the hard palate. Its pathogenesis is uncertain but seems to be related to the use of maladjusted dentures, poor oral hygiene and denture overuse. Clinically it is a pathognomonic lesion, with a raspberry appearance, small erythematous nodule, which could lead to palate burning sensation. It occurs as a mucosal inflammatory response [8].

**Denture stomatitis:** Denture stomatitis can also be referred as atrophic candidiasis. It is more frequent patients with maladjusted dentures or in patients who use it for extended periods. It is a diffuse inflammation of the oral mucosa areas in contact with the denture, having varied etiology. Clinically it may appear as a mucosal erythema that may lead to the development of inflammatory nodules where the *Candida albicans* can lodge in. In these cases, treatment with topical medication is more difficult [8].

**Traumatic ulcers:** It is one of the most frequent oral cavity injuries, which may have various etiologies. Traumatic ulcers can occur due to pressure from a maladjusted denture base, frequently caused by overextension. Clinically, it has an oval and slightly depressed appearance, on the edge is an erythematous area that tends to lighten and the middle is usually yellowed and grayish [3-7].

**Periodontal disease:** Wearing prosthesis can contribute to increase periodontal problems, due to increased plaque formation and food retention. It is one of the main factors that can lead to tooth loss. For a successful prosthetic rehabilitation, periodontitis has to be controlled. Periodontal assessment should include radiographic and clinical examinations made on a regular basis [3].

**Candidiasis:** *Candida albicans* is the most common microorganism in candidiasis' etiology in the mucosa, presenting different clinical aspects. Dentures' lack of hygiene in association with trauma work as predisposing factors for candidiasis. Its development will depend on the host's (or patient's) health condition [5].

### Discussion

Some studies point out fibrous hyperplasia as the main lesion associated with removable dentures. However, other studies say that the main lesion is stomatitis, followed by inflammatory fibrous hyperplasia, papillary hyperplasia and angular cheilitis. Inflammatory fibrous hyperplasia is most prevalent among female patients, however in male patient's there is parity in the type of lesions. The increased number of female suffering from this injury may have a direct connection with pathophysiological or hormonal disorders. Concerning age, there is a higher incidence of removable denture lesions in the 31-60 years old group.

In order to avoid oral diseases caused by removable prosthesis, a correct and daily hygiene should be accomplished by the elderly, with support of the caregivers. After every meal the removable prosthesis should be carefully cleaned with water and soap or other hygiene products and, if necessary, the use of a specific brush can improve the hygiene method applied.

### Conclusion

Removable dentures are very important for the patient's oral rehabilitation. A good manufacturing and hygiene of a denture is of great relevance in order not to compromise the oral mucosa. Removable dentures won't replace the patient's normal dentition. Their repeated use can cause denture lesions, leading to mastication inefficiency and patient's decreasing nutritional capacity. These lesions are more common when there is a poor oral hygiene. Thus, health professional instructions are of great importance as well as removable dentures and patient's oral health monitoring and periodic assessments.

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