

Denture Stomatitis in an Edentulous Iraqi Patients

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Abstract

Denture related stomatitis is an inflammatory process that mainly involves the palatal mucosa when it is covered by complete or partial dentures; it appears frequent among denture wearer and varies widely. Fifty patients were examined in this study, 66% of them had denture stomatitis. This study aimed to evaluate the presence of denture stomatitis in denture wearers' patients, and to know the relation between denture age, denture hygiene, and denture cleansing with denture stomatitis.

Results of the present study showed that poor denture hygiene was associated with high percentage of denture stomatitis.

Also low percent of denture stomatitis appeared in the denture wearers of 3-4 times/ day denture cleansing.

The percentage of reduction in the prevalence of denture stomatitis was clear in newly or less years wearing dentures.

Keywords: Denture Hygiene, denture stomatitis, denture cleansing

Introduction

Every surface in the oral cavity, natural or synthetic become covered within about 30 minutes with a (0.5-1.5m) thick precipitate of pellicle^(1,2,3)

The pellicle in turn provides a substrate to which oral debris and microorganisms (bacteria and fungi) readily adhere.

Adherence of microorganism and debris is also favored by rough or otherwise irregular surfaces of dentures.⁽⁴⁾

The maintenance of denture prosthesis is important for the health of patients and to maintain an esthetic, odor-free appliance.⁽⁴⁾

Failure to maintain adequate prosthesis hygiene had been shown to be associated with a high level of oral candidal colonization.⁽⁴⁾ ,there was strong relation ship between denture stomatitis and presence of *Candida albicans* in saliva⁽⁵⁾.

The appliance can absorb microorganisms on its surface, this depend on the material used; acrylic appliances retain a denser flora than metal probably because they are slightly porous and easily scratched, producing areas where microbes can be retained, it has been proposed that poor denture cleanliness might predispose to infection of the palatal mucosa.⁽⁵⁾ Denture stomatitis was seen more frequently under ill fitting dentures with a traumatizing occlusion ; while allergy to denture base material considered the cause of denture stomatitis . Other factors as roughness, bacterial infections and others act as incidence of denture stomatitis⁽⁶⁾.

Materials and Methods

A total of 50 denture wearer patients from (40-65) years old, (20 males and 30 females) came to the clinic of institute of Medical

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Technology. Suffering from denture stomatitis.

Methods of examinations:-

- 1- **Questionnaires:** information about denture age, denture hygiene general health, medical history, taking any medications, frequency of denture cleansing per day (Brushing method).
- 2- **Oral examination:** Intra oral examination of all subjects was conducted to diagnose denture stomatitis which was classified according to Newton⁽⁷⁾ as:
 - A- Type I: Localized palatal pin point hyperemia
 - B- Type II: Generalized hyperemia of the entire denture base area.
 - C- Type III: Showing papillary hyperplasia of the palate.
- 3- **Denture hygiene:** Denture examination must be done by using probe (Paulo et al)⁽⁸⁾ as:
 - A- Good: Absence of plaque
 - B- Fair: Presence of removable plaque on both denture surfaces
 - C- Poor: Presence of non-removable plaque on the denture surfaces (inner and outer).

Results

There was a relationship between denture age and denture stomatitis (table 1)

Also there was a correlation between denture hygiene and presence or absence of denture stomatitis (table 2).

Table 3 showed number and percentage of denture stomatitis types.

Table 4 revealed the opposite relation between denture stomatitis and frequency of denture cleansing.

Discussion

From the results of the present study, it was found that there was clear relationship between denture stomatitis and denture age, because older dentures tended to be related to a higher incidence of denture stomatitis, due to the deterioration of the dentures in time, such as polished surfaces, fit to the underlying tissues and the occlusion, dentures could become more irritant to the mucosa and more open to candidal and bacterial colonization, in addition to that most elderly people do not know how to keep their dentures clean for a period of time⁽¹⁾.

This study demonstrated high association between denture stomatitis and poor oral hygiene, in that all patients with poor denture hygiene have denture stomatitis^(9,10). poor denture hygiene could increase the frequency of positive cultures for *Candida* from the dentures, this elucidate the plaque accumulation on the denture surface may create an appropriate environment for yeast growth^(11,12).

In this study, it was found that 66% of the patients were presented with denture stomatitis. Newton type (III) was the most frequent one, this finding come in agreement to Jean et al (2003)⁽³⁾.

It was found that there was obvious association between stomatitis of oral mucosa and frequency of denture cleansing/ day (1-2) times daily cleansing denture gave high positive percentage, this may be explained by toxic effects of plaque masses in contact with oral mucosa of extended periods with out cleaning are subject to microbial and yeast growth But (3-4) times daily reveal improvement in denture hygiene with few or negative percentage of the denture stomatitis^(12,13).

The tissue fitting surface of dentures usually shows micro porosities which encourage the growth of microorganisms, that are difficult to remove by mechanical or chemical cleansing^(14,15).

A wide range of variations in the prevalence of denture stomatitis had been reported, possibly because of variation in the denture wearing habits and the presence of underlying systemic predisposing factors in the selected populations⁽¹⁵⁾.

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Table 1- The relationship between denture stomatitis and denture age

Denture age	Denture stomatitis			
	Yes	%	No	%
1-2years	5	10	10	20
2-3years	13	26	4	8
>3years	15	30	3	6

Table 2- The relationship between denture stomatitis and denture hygiene

Denture stomatitis	Denture Hygiene							
	Good		Fair		Poor		Total	
	No	%	No	%	No	%	No	%
Positive	3	6	10	20	20	40	33	66
Negative	5	10	12	24	0	0	17	34
Total	8	16	22	44	20	40	50	100

Table 3- Number and percentage of types of denture stomatitis between patients

Denture stomatitis	Type I		Type II		Type III	
	No	%	No	%	No	%
	10	20	6	12	17	34

Table 4- The relationship between denture stomatitis and frequency of denture cleansing (Brushing method)

Denture stomatitis	Frequency of Denture Cleansing			
	1-2 times/day		3-4 times/day	
	No	%	No	%
Positive	25	50	8	16
Negative	5	10	12	24