### **Predisposing Local Factors Contributing to Denture Stomatitis**

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العوامل الموضعية التي تساهم في التهاب الفم أثناء استعمال طقم الأسنان

الملخص:

أجريت الدراسة في قسم التركيبات السنية. وشملت 93 مريضاً (42 امرأة و 51 رجلاً)، تم اختيار العينة من المرضى الذين يرتدون أطقم أسنان كاملة. تم الحصول على البيانات المتعلقة بالجنس والعمر ومدة استخدام أطقم الأسنان والرعاية الصحية وارتداء أطقم الأسنان ليلاً والأعراض ووجود التهاب الفم. تم تقسيم المرضى إلى مجموعتين. المجموعة (أ): تضمنت 60 مريضًا فحصوا التغيرات الالتهابية في الغشاء المخاطي أسفل قاعدة طقم الأسنان ؛ المجموعة (أ) المصابة بالتهاب الفم السيئة لنظافة الأسنان (73%). لم يلاحظ أي فرق معتد به إحصائياً الأسنان؛ المجموعة (أ) المصابة بالتهاب الفم السيئة لنظافة الأسنان (73%). لم يلاحظ أي فرق معتد به إحصائياً الأسنان؛ المجموعة (أ) المصابة بالتهاب الفم السيئة لنظافة الأسنان (73%). لم يلاحظ أي فرق معتد به إحصائياً بين المجموعتين (2.0 = 2 ) لم يكن هناك أي تمييز كبير إحصائيًا في العناصر الموضعية مثل عمر طقم الأسنان، والنظافة بين مجموعة الاختبار ومجموعة المراقب. اعتاد تقرير صحة الفم والأسنان الأسنان، والموضعي أولي يزيد الإسنان السيئة كالعامل

الكلمات المفتاحية: طقم أسنان، مرتدى أطقم الأسنان، التهاب الفم، الأحياء الدقيقة في الفم.

#### Abstract:

The study was conducted in the Prosthodontics Department. It included 93 patients (42 women and 51 men), the sample was selected from patients with a completely edentulous wearing complete dentures. Data related to gender, age, length of denture use, hygiene care, nocturnal denture wear, symptoms, and presence of DS was obtained. Patients were divided into 2 groups. Group (a): included 60 patients who examined with inflammatory changes of the mucosa below the denture base; Group (b): 33 patients without inflammatory changes of the mucosa below the denture base. Sixty patients (65%) had been observed positive with inflammatory signs of the mucosa beneath the denture base. Group (a) with denture stomatitis bad denture hygiene (73%). No statistically significant difference was seen between both groups ( $X^2 = 0.5$ ). There was once no statistically tremendous distinction in the local elements such as denture age, and hygiene between the test and control groups. Poor oral and denture hygiene used to be decided as preliminary local thing predisposing to denture stomatitis.

Keywords: Denture; denture wearers, stomatitis, oral micro flora.

#### Introduction:

The clinical diagnosis of denture stomatitis (DS) is a disease that affects persons who wear removable dentures. Objective indications of the condition include edema and inflammation of the mucosa covered by the denture base (Arendorf, & Walker,1987; Newton,1962). Pain, itching, and a burning sensation are characterized as subjective signs and symptoms, yet the majority of DS sufferers are asymptomatic (Wilson, 1998).

Denture stomatitis, also known as prosthetic stomatitis, is an infection of the oral mucosa,



particularly the palatal and gingival mucosa that comes into direct contact with the denture base. It affects 25–67% of the population (Jerolimov, 1983; Moskona, 1992), predominantly women, and the risk of developing it increases as one gets older (Arendorf, 1987). Newton's type is the most widely used clinical phase and categorization system (Newton, 1962).

Denture Stomatitis (DS) reasons sure pathological changes with inside the oral mucosa of the denture bearing tissues (Jeganatha, 2008). These changes are characterized via flat or granular erythematic region and are observed below complete or partial denture each jaws, however extra regularly in the maxilla (Jeganatha, 2008; Greenberg, 2008).

Numerous research have been accomplished in the previous to learn about the motives of the sickness (Jerolimov, 1983; Jurcic, 1999), however the major motive has no longer been agreed upon. Studies have said extraordinary elements inflicting denture stomatitis like annoying occlusion (Newton, 1962), terrible oral and denture hygiene (Arendorf, 1987), microbial elements (Sweeney, 1994), age of the denture (Jerolimov, 1983 & Lucas, 1989), hypersensitivity to the denture base substances (Fernstr 1997 & Oquist, 1997), residual monomer (Waltimo, 2001), smoking, a number sorts of irradiation, dryness of mouth (Jerolimov, 1983; Jeganatha, 2008; Kreher, 2001), systemic conditions, diabetes mellitus and the internal surface of the denture inflicting irritation of the mucosa (Sweeney, 1994; Budtz, 198).

The objective of this study about used to be designed to inspect of denture stomatitis sings and its relationship to quite a number nearby elements like oral and denture hygiene habits, age of the denture in a pattern of patients admitted to removable Prosthodontics Department, Faculty of Dentistry, University of Asmarya.

### Methodology:

The research was carried out at the Prosthetics Department, Faculty of Dentistry, and University of Al-asmariya. It included 93 patients (42 women and 51 men), aged 39 to 76 years with a mean of 63 years the sample was selected from patients with a completely edentulous wearing complete dentures. Patients with systemic conditions (such as diabetes, hypertension, etc), with medications and patients with relined or rebased dentures were not included in the study. They also had to have used the prostheses for at least two years.

The patents were 42 women and 51 men of various ages, with denture wear ranging from two to more than ten years. Hygiene habits, signs of nighttime denture wear, and the presence of a soft tissue lesion were all gathered. Two groups of patients had been created. Group (a): 60 patients with mucosa beneath the denture base inflammatory signs; Group (b): 33 patients with mucosa beneath the denture base inflammatory signals but no mucosa beneath the denture base inflammatory indications.

Case records sheets have been organized alongside with particular for the dental findings of irritation of oral mucosa. Oral hygiene was once estimated with the aid of degrees: degree 0: bad oral hygiene, degree 1: pleasant oral hygiene, and degree 2: good oral hygiene. Degrees of hygiene have been additionally estimated for denture: degree 0: bad

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Hygiene of the denture (over 1/3rd denture covered with plaque and calculus), degree 1: fine (less than 1/3rd included with plaque and calculus), and degree 2: properly denture hygiene (No plaque and calculus). The age of the denture was previously recorded as well, as seen in Table1.

After comparing the variables in the investigate group to those in the control group which is contained of 33 patients (18 male & 15 female), the data was evaluated. The significance of the differences was determined using the Chi-square test.

Code No	Denture age	Group (a)	Group (b)	
0	$\leq 2$ years	0	0	
1	3-5 years	9	4	
2	6 – 10 years	28	8	
3	> 10 years	23	21	

Table 1: Distribution of Patients according to denture age

### **Results:**

Sixty patients (65 %) had been observed positive with inflammatory signs of the mucosa beneath the denture base (Figure 1). Out of ninety three, thirty-three s patients barring inflammatory signs of the mucosa under the denture base.



Fig-1: Distribution of Patients in Examined Cases

More than 62% of both groups had s pleasant oral hygiene ( $X^2 = 0.6$ ). Group (a) with denture stomatitis bad denture hygiene (73%). No statistically significant difference was seen between both groups ( $X^2 = 0.5$ ).



Bad oral hygiene used to be viewed to be immediately proportional to depth of inflammation. 84% of the patients had class II irritation (Newton), whereas solely 7% had extreme infection (class III) ( $X^2 = 0.3$ ).

Group (a) confirmed most dentures to be in the vary of 5 to 10 years old, whereas group (b) had dentures greater than 10 years old. The distinction in denture put on time used to be no longer statistically widespread ( $X^2 = 0.4$ )

Denture age was once now not extensively accountable for the depth of infection ( $X^2 = 0.3$ ) as nicely as denture contamination ( $X^2 = 0.9$ ), though older dentures had been extra infected with stomatitis group (a) as showed in table 2.

variables	Group (a)	Group (b)	<b>P-Value</b>
Oral hygiene	46	28	0.08
Denture hygiene	32	24	0.5
Age of the denture	10	8	0.3

Table 2: Significance of variables according to groups

\*Age of the denture (Average of years)



Fig-2: Distribution of variables in both groups

#### **Discussion:**

The elements contributing to denture stomatitis have been proven to be assorted and have interplay with nearby and systemic factors. Oral microorganisms exchange after carrying the denture, and this circumstance favors the boom of organisms inflicting denture stomatitis. Newton's class I has been proven to be the end result of trauma, whereas Newton's class III has multivariable interplay phenomenon (Wilson, 1998; Cook, 1991).



My research looked at many factors including denture age, denture kind, and dental cleanliness, revealing that there was seldom any statistically significant variation between the control and test teams, demonstrating that the disease can't be totally caused by way of a single neighborhood component.

Palatal infection has been proven to be greater outstanding in patients having bad denture hygiene however manage team did now not exhibit inflammatory changes, which factors out the significance of resistance of oral mucosa to be greater essential predisposing issue, (Waltimo, 2001; Apasalo, 2001). Denture age is proven with the aid of preceding research to be an necessary element as a end result of poor fit, roughness, insufficient hygiene, and accumulation of plaque due to growing older of denture (Sadamori, 1990; Nikawa, 1990; Hamada, 1990). In our study, it was once viewed that best of denture was once more important than the age of the denture (Harrison, 1995; Jagger, 1995; Harrison, 1995).

Highly finished and polished dentures had much less probabilities to get contaminated as in contrast to old dentures which have been maintained in a right condition. However, it may want to now not be denied that getting old of the denture and launch of residual monomer with time effects in poorer in shape which impacts the infection of the denture,

Hence, it is proven that denture stomatitis consequences in the mouths of older patients beings as an interaction of a variety of neighborhood and systemic elements and completely denture put on can't be taken as a reason of stomatitis when applicable oral and denture hygiene strategies are adopted.

# **Conclusion:**

There was once no statistically tremendous distinction in the local elements such as denture age, and hygiene between the test and control groups. However, the severity of infection of the denture with the aid of fungus had a said relation with the depth of inflammation. Poor oral and denture hygiene used to be decided as preliminary local thing predisposing to denture stomatitis.

Denture hygiene instructions, follow-up, and reinforcement are very integral for the common fitness of the oral cavity after denture rehabilitation.

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