

Case Report

Inflammatory Papillary Hyperplasia: A Case Report

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Abstract

This clinical case report presents a case of inflammatory papillary hyperplasia (IPH) in a 66-year-old female patient with controlled Type II diabetes and a year-long oral candidiasis. Presenting with discomfort and multiple nodular lesions under her relevantly new (3 years old) ill-fitting full maxillary denture, which she wore throughout the day and night, where she continuously used denture adhesives to stabilize the denture and relieve the discomfort caused by the ill-fitting construction, her condition was indicative of inflammatory papillary hyperplasia and fungal infection. Management involved local antifungal treatment, diode laser surgical removal of nodular lesions to alleviate the discomfort, fabrication of a new denture, and extensive oral hygiene education. Over two months, the *Candida* levels were eliminated. This case highlights the complexities of treating denture stomatitis in patients with systemic health issues, emphasizing the need for a multidisciplinary treatment approach and continuous care.

Keywords: inflammatory papillary hyperplasia, type II diabetes, oral candidiasis, prosthetic hygiene, multidisciplinary treatment

Резюме

В този клиничен случай се представя Възпалителна папиларна хиперплазия (БПХ) при една 66-годишна пациентка с контролиран Тип II диабет и на наличие на целогодишна орална кандидоза. Пациентката се оплаква от дискомфорт и множество нодуларни лезии под , относително новата си (от 3 години), тотална протеза на горна челюст, която носи през челия ден и нощ, използвайки лепило за подвижни протези, за да стабилизира протезата и да облекчи дискомфорта, причинен от неправилно прилегалата конструкция. Състоянието на пациентката беше индикация за възпалителна папиларна хиперплазия (БПХ) и гъбична инфекция. Лечението включваше локално противогъбично лечение, хирургично отстраняване на нодуларните лезии с помощта на диоден лазер за облекчаване на дискомфорта, изработка на нова протезна конструкция и обширно обучение за поддържане на орална хигиена. През двумесечния период на лечението нивата на *Candida* бяха елиминирани. Този случай подчертава сложностите при лечение на протезен стоматит при пациенти със системни заболявания, като се акцентира и необходимостта от мултидисциплинарен подход към лечението и непрекъснатата орална грижа.

Introduction

Denture stomatitis, affecting 20-67% of denture users, predominantly females (Gendreau and Loewy, 2011), is a multifactorial oral condition characterized by inflammation beneath the denture, especially in deeper palatal areas (Gendreau and Loewy, 2011). Its complex etiology involves local factors, such as reduced oxygen and saliva flow under dentures, facilitating yeast growth,

particularly *Candida albicans* (Sampaio-Maia *et al.*, 2011). Newton's 1962 classification categorizes denture stomatitis into three types (Arendorf and Walker, 1987), with Type III being advanced, characterized by granular, nodular lesions (Pattanaiik *et al.*, 2011). Diabetes mellitus significantly elevates the risk of denture stomatitis and *Candida* infections (Martorano-Fernandes *et al.*, 2011; Ro-

hani, 2011), with associated complications like xerostomia. Continuous denture wearing contributes to inflammatory papillary hyperplasia (IPH) development (Muhvic-Urek *et al.*, 2020; Bhaskar *et al.*, 1971), and lifestyle factors along with systemic diseases amplify the condition's severity (Schmitz, 1964; Ettinger, 1975; Canger *et al.*, 2009; Emami *et al.*, 2012; Gual-Vaqués P *et al.*, 2017).

Case Presentation

A 66-year-old female, full denture wearer for the last 3 years, presented with tender, nodular lesions on the oral mucosa of the maxilla and premaxilla, causing discomfort for the last year. She has controlled Type II diabetes and an oral candidal infection for almost one year. Continuous denture wear was revealed by the patient, throughout the day and night with the simultaneous use of denture adhesives in order to both stabilize at the beginning and relieve the pain from the ill-fitting construction. The patient also shared that the denture caused her discomfort from the first days that she had it made by her dentist. It felt very tight and caused her pain. She asked her dentist if it was possible to do something to relieve her from this feeling of tightness and the doctor re-adjusted the palatal surface of the denture. This took place 3-4 times in one month, where in a moment the denture came to be loose. The patient was feeling ashamed to go to her dentist again and asked her friends who wore dentures how to stabilize the denture and they proposed the use of denture adhesives. Finally, she was not acquainted with oral hygiene and denture care regime. The intraoral examination showed nodular lesions on the center of the hard palate and near the border of the soft palate, characteristic of IPH (Fig. 1). On the premaxilla were also found 3 nodular lesions characteristic of IPH (Fig. 2). Last but not least, the candidal infection was confirmed clinically on the patient's tongue (Fig. 3).

Diagnosis, Management, and Treatment Approaches: After assessing the patient's general health and diabetes management, diagnostic microbial tests confirmed *Candida albicans* involvement.

The treatment plan included:

1. Local Antimycotic Treatment: Dactarin oral gel and nystatin solution 2 times a day after meals for 14 days.

2. Surgical Intervention: Diode laser surgery for nodular lesion removal.

3. New maxillary Denture Fabrication: A correct-fitting denture was fabricated 2 months post-laser surgery.

4. Prosthetic Hygiene Guidance: Emphasis on den-



Fig. 1. Nodular lesions on the center of the hard palate and near the border of the soft palate, characteristic of IPH

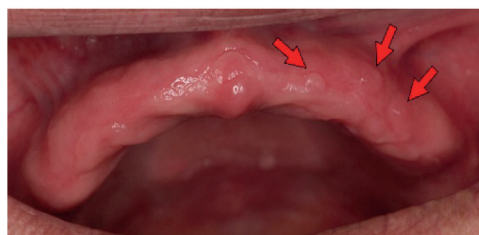


Fig. 2. Nodular lesions on the premaxilla, characteristic of IPH



Fig. 3. Presence of candidal infection (*C. albicans*) on patient's tongue

ture maintenance with special use of effervescent disinfection tablets during the nighttime. Since the denture was with correct fit and cohesion/adhesion there was no need for denture adhesive use.

5. Enhanced Oral Hygiene: Regular oral rinsing and brushing after meal intake and night-time denture removal are advised.

6. Dietary Modifications: Avoid spicy foods and hot food and drinks to reduce the risk of additional discomfort.

Discussion

This clinical case of a 66-year-old female denture wearer with Type II diabetes presents a compelling example of the multifaceted challenges in managing oral health. The patient's experience

with tender, nodular lesions on the oral mucosa and a concurrent oral candidal infection highlights the intricate interplay of prosthetic complications, systemic health, and oral hygiene practices.

Prosthetic complications and systemic health

The development of Inflammatory Papillary Hyperplasia (IPH), as evidenced by the nodular lesions on the hard and soft palate, is a direct consequence of continuous and inappropriate denture wear. This is further complicated by the patient's diabetic status. Diabetes, particularly when controlled, can still predispose patients to a higher risk of oral infections due to altered immune response. The coexistence of oral candidiasis aligns with this understanding, suggesting a compounded effect of systemic health on oral mucosal integrity.

Impact of ill-fitting dentures

The case underscores the critical impact of denture fit on oral health. The patient's initial discomfort due to tight-fitting dentures, followed by their loosening after multiple adjustments, indicates a failure in achieving an optimal prosthetic fit. This ill fit likely contributed to the continuous use of denture adhesives and the subsequent development of IPH.

Psychological and educational aspects

Notably, the patient's reluctance to revisit the dentist due to embarrassment points to the psychological barriers to seeking dental care. Additionally, the lack of acquaintance with proper oral hygiene and denture care practices played a pivotal role in the progression of her oral conditions.

Implications for clinical practice

This case emphasizes the necessity for dental professionals to provide comprehensive care, encompassing not only the technical aspects of denture fabrication but also patient education and psychological support. Regular follow-ups and reinforcement of oral hygiene practices, especially in patients with systemic conditions like diabetes, are paramount. This approach would not only address immediate prosthetic issues but also mitigate the risk of secondary complications such as IPH and candidiasis.

Conclusion

In conclusion, this case illustrates the complex interrelation between prosthetic dentistry, systemic health, patient psychology, and oral hygiene education. It advocates for a holistic, patient-centered approach in dental practice, emphasizing the importance of addressing both the physical and

psychological needs of patients, particularly those with underlying systemic conditions.

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