BIOMEDICINSKA ISTRAŽIVANJA
2023;14(2):209–216

UDK: 616.311:616.314-089.28
DOI: 10.59137/BII202302338C

Case report

Denture-induced fibromatous hyperplasia - case report

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Primljen – Received: 06/11/2023
Prihvaćen – Accepted: 18/12/2023

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Summary

Introduction. Denture-induced fibrous hyperplasia (DFH) is a reactive lesion that occurs as a result of chronic trauma caused by the denture on the oral mucosa.

Case report. A female patient, 56 years old, reported to the Specialist Center for Dentistry at the Faculty of Medicine in Foča for the fabrication of complete dentures. She wore previous complete dentures for about 25 years and complained about their age and discoloration. Clinically, both dentures were poorly retained and stabilized by short wings, with pronounced signs of wear. Denture hygiene was poor. Multiple folds of hyperplasic connective tissue were observed in oral cavity upper vestibule mucosa. The lesion folds were pink and firm, corresponding to denture edges. Based on the anamnesis and clinical examination, a temporary diagnosis of denture-induced hyperplasia was made. The patient was informed about clinical condition assessment as well as possible therapeutic procedures and gave written consent to accept the offered therapeutic procedures. She was advised not to wear dentures for four weeks and to maintain proper oral hygiene. After that, the hyperplasia was surgically removed under local anesthesia. A tissue sample was sent for pathohistological analysis. A new pair of total dentures was made. Removed tissue pathohistological examination confirmed the diagnosis: "Epulis fissuratum".

Conclusion. Education and regular check-ups are essential for the prevention of DFH. Patients should be given detailed oral and written instructions on oral and denture hygiene maintenance, with special reference to possible changes in oral tissues and the importance of regular follow-ups.

Keywords: oral mucosae lesions, denture-induced hyperplasia, dentures, risk factors

Introduction

The prevalence of edentulism is increasing with age and dental practitioners may face more commonly challenges associated with providing care for these patients. One such challenge is denture-induced fibrous hyperplasia (DFH). Denture-induced fibrous hyperplasia is a reactive lesion that occurs as a result of chronic trauma caused by the denture on the oral mucosa. Continuous

resorption of residual alveolar ridge may lead to denture overextension causing excessive mechanical pressure on the mucosa [1]. Other contributing factors include continuous wearing of dentures, parafunctional habits, inadequate oral hygiene, age-related changes, smoking, trauma, and systemic diseases [2, 3]. DFH comes in the form of vestibular hyperplasia (epulis fissuratum (EF)), inflammatory papillary hyperplasia (IPH), and alveolar hyperplasia [2, 4].

Epulis fissuratum (EF) has been reported as the most prominent DFH and it has been shown that the use of a complete denture increases the risk of this lesion three times [5]. Lesions appear as single or multiple folds of hyperplastic connective tissue, covered with stratified squamous epithelium in the alveolar vestibule or on the lingual aspect of the alveolar ridge area along the denture flanges. The size of EF varies between small (less than 1cm) to massive lesions that involve most of the length of the vestibule [4, 6]. Since the discomfort is not a prominent feature following this change, a patient may continue to wear the ill-fit denture until hyperplastic lesions grow considerably in size and the patient becomes aware of the lesion and the need for treatment [7]. The condition is considered to be benign and more prevalent in female patients, at a ratio of 5:1 [8]. The paper aims to present the DFH case and emphasizes its preventive measures and their significance.

Case report

A female patient 56 years old reported to the Specialist Center for Dentistry of the Medical Faculty Foča for the fabrication of new complete dentures. Anamnestic data revealed that the patient wore previous dentures for about 25 years, without significant problems. She objected to the age and permanent discoloration of old dentures. The patient revealed that she used to wear the dentures overnight as well. Anamnesis did not confirm the presence of other acute and chronic diseases.

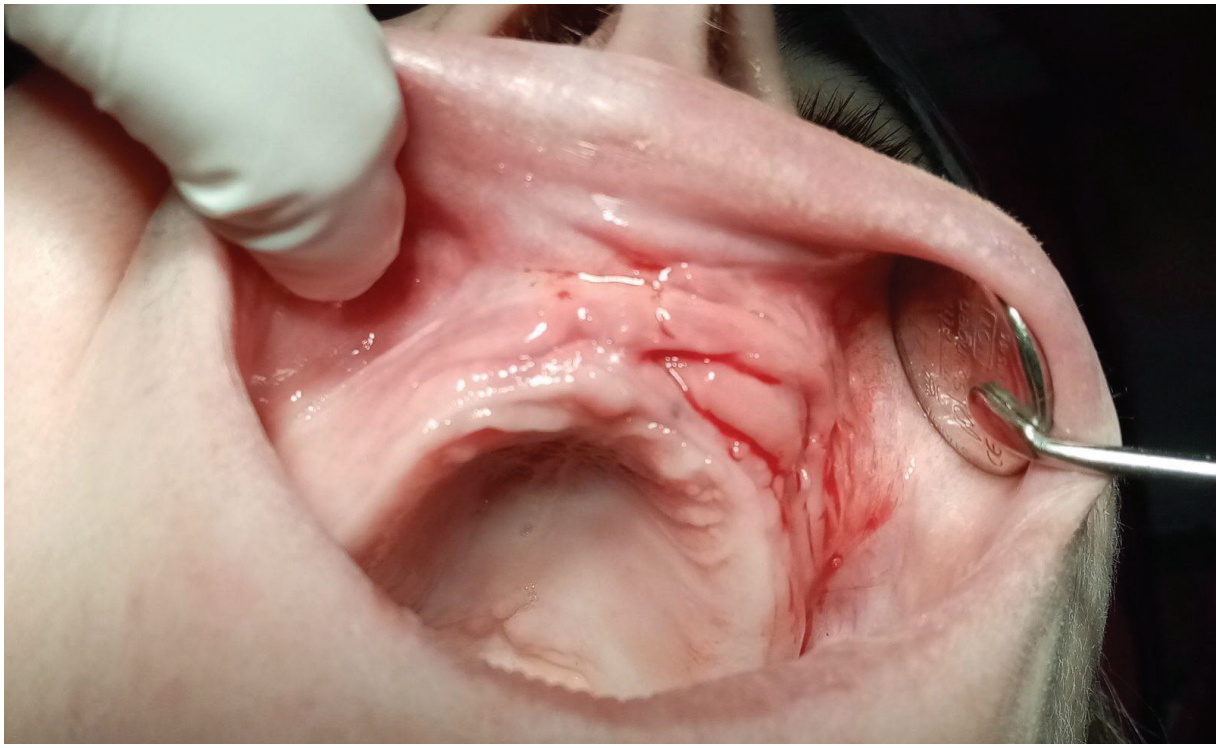

Figure 1. Denture-induces fibromatous hyperplasia after administration of local anesthetic

Clinically, both dentures were poorly retained and stabilized with short prosthetic wings, with pronounced signs of acrylic teeth and other surface wear. The denture hygiene was poor. Numerous pigmentations were present all over the dentures surface. Multiple folds of hyperplasic connective tissue were observed in the region of the upper vestibule mucosa in the approximate teeth region from 16 to 24. The folds of the lesion were pink and firm (Figure 1), and corresponded to the borders of the denture.

The remaining mucosa and other supporting tissues were unchanged. According to the patient's history and clinical examination, a provisional diagnosis of denture-induced hyperplasia was made.

The patient was informed of the clinical condition assessment and possible therapeutic procedures and gave her written consent to accept the offered therapeutic procedures.

In consultation with a specialist in periodontology and oral medicine, the patient was advised not to wear dentures for four weeks and to maintain proper oral hygiene in order to reduce inflammation and achieve regression of the lesion if possible. After that, the hyperplastic lesion was surgically removed under local anesthesia. Primary wound closure was achieved using 3–0 silk suture material (Figure 2). A sample of the tissue was sent for pathohistological analysis. At the follow-up examination, surgical sutures were removed seven days after the interventions. A month after the intervention, new pair of total dentures was made.

Pathohistological examination of the removed tissue revealed nonspecific chronic inflammation of oral mucous (Inflammatio chronica nonspecifica mucosae oris) and confirmed the diagnosis "Epulis fissuratum".

Regular 6-month follow-ups were scheduled for the patient.

Figure 2. Maxillary vestibule after surgical removal of denture-induced fibromatous hyperplasia

Figure 3 (1–5). A maxillary complete denture, 25 years old with poor denture hygiene and pronounced signs of acrylic teeth and other surface wear

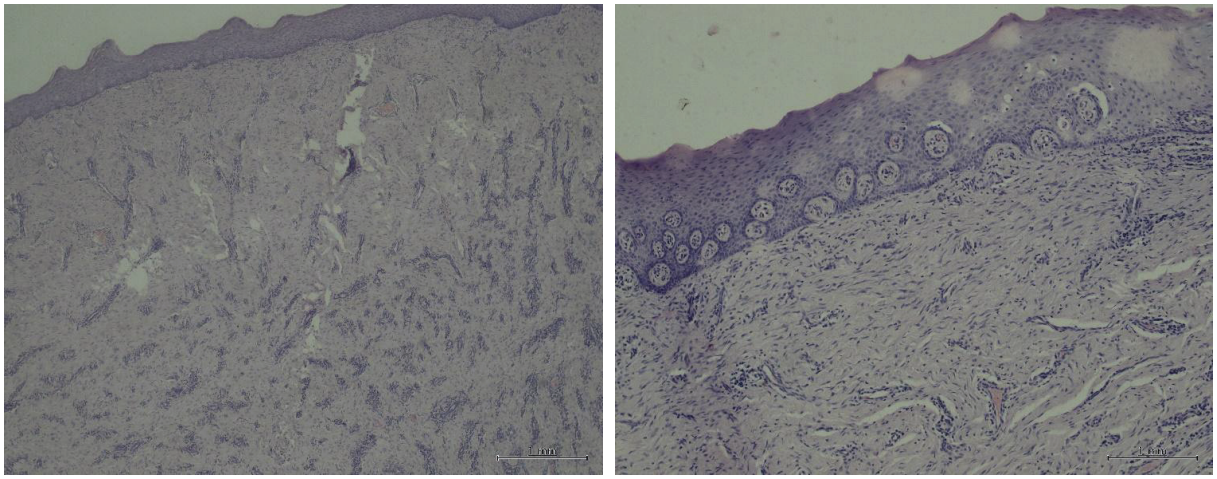

Figure 4. Nonspecific chronic inflammation of oral mucous (Inflammatio chronica nonspecifica mucosae oris)

Discussion

Epulis fissuratum usually occurs in middle-aged and older adults who wear removable dentures for a longer time. The patient from our study wore dentures for 25 years corresponding to literature data where 68.5% of the patients with EF had been wearing their dentures for more than 10 years [4], and the incidence of oral mucosal lesions was higher in patients who had used their dentures for more than 20 years [3]. Some authors have suggested that the useful life of a complete denture is about five years because an extended period of denture wearing without relines or modifications may result in an overextended denture periphery because of ridge resorption [8].

Canger et al. reported that EF patients asked for medical advice due to experiencing pain (14.8%), complaining about their disused dentures (25%), and in 25.8% of EF cases the major cause was the need for renewal of dentures like in our patient [4].

Gaur et al. reported that denture-induced lesions were more frequent in the age group of >40 years (60.78%) and that EF was the second most observed type of lesions [9]. Literature data indicates that the majority of EF patients are female as was our patient [4, 5, 10]. It has been suggested that the higher life expectancy of women and the fact that women tend to have more dental visits and are more prone to wear dentures due to esthetic reasons, together with a higher number of women wearing dentures compared to men with the same age have been considered as the main reasons of the higher prevalence of this lesion among women compared to men. Also, mucosal atrophy after menopause makes the thin mucosa even more sensitive to chronic irritation [5, 8]. Most of the patients with EF in the study from Mohammadi et al. were in their 50s, the mean age of the patients was 54.93 [5] corresponding to the age of our patient. EF in our case was observed in the maxilla and available data suggest that EF occurs at a higher rate in the maxilla (3, 8) than in the mandible [4, 8].

Diagnosis of the lesion is most often possible clinically when observed near the denture flange and the lesion is considered to be benign. However, available literature data indicate that sites of chronic irritation such as defective or malfunctioning complete dentures may be significant predisposing factors to the development of squamous cell carcinoma and precancerous and/or neoplastic changes have been reported as well [8, 11]. Therefore, possible outcomes of ill-fit dentures should not be overlooked especially at certain high-risk sites, such as the mouth floor, where DFH could be present.

Treatment of DFH can be conservative and/or surgical. Different modalities of treatment depend on site, size, consistency, and formed tissues. The conservative approach should be the first option as it is non-invasive. It simply includes removing denture-caused irritation and when the source of trauma is removed, the lesion commonly decreases in size or regresses [12, 13]. However, in many cases, excision of remaining hyperplasic tissue with pathohistological verification is the treatment of choice. Excision can be performed by conventional blade surgery, thermocautery, cryotherapy, or laser techniques [14] depending on the operational modalities available in dental clinics and patients' compliance.

Unfortunately, oral health is often neglected, although it is essential to our everyday lives. The patient in her fifties who spent almost half of her life edentulous is an alarming reality. However, supported by the fact that the patient in this study wore previous complete dentures for about 25 years without regular follow-ups and being aware of oral mucosa lesions is disturbing proof that oral conditions remain a significant public health challenge. The Global Burden of Disease study has stressed its significance as population growth and aging have led to a dramatic increase in untreated oral conditions throughout the world [15] leading to a substantial health and economic burden on patients, healthcare payers, and society.

Oral health promotion focused on tackling unhealthy behaviors has the potential to reduce dental diseases and mortality rates through the provision of non-complex procedures provided by dentists such as routine dental follow-ups and associated interventions [16]. Recommendations regarding optimal recall intervals vary between countries and dental healthcare systems. Dentists have traditionally suggested six-month dental follow-ups in many countries [17]. Follow-ups allow dentists to deal with any problems early, because leaving problems untreated may make them harder to treat in the future, or even better, to prevent problems from developing [16]. It has been suggested that a recall system could be useful and encourage patients to attend follow-ups. However, the findings of Haukka et al. showed that only 18.2% of the study population used the possibility for follow-ups while the rest of the study population did not attend them or attended them late [18]. Therefore, all mentioned above emphasize the need to develop strategies that can reach those adults who do not make appointments for oral health examinations [17, 18].

Conclusion

Education and regular follow-up examinations are essential for the prevention of DFH. Detailed verbal and written instructions on denture maintenance with special emphasis on possible tissue changes should be given to the patient upon denture handover. The patients should be informed in detail about how to maintain oral and denture hygiene as well as be instructed not to wear dentures overnight. Six-month regular follow-up plan should be scheduled to observe any possible denture malfunction or oral lesion occurrence as chronic and sustained pressure cannot only traumatize the oral tissue but can also lead to malignancy. Having in mind the importance of oral health, DFH, and prevention, dentists as well as society decision-makers should address these matters with more attention and serious efforts toward the development and implementation of preventive oral health strategies.

Funding source. The authors received no specific funding for this work.

Ethical approval. The Ethics Committee of the Faculty of Medicine Foča, University of East Sarajevo, approved the study (Number: 01-2-17, dated 27th of January 2023), approved the study (No. 01-2-15), and all respondents gave their consent to participate in the study. The research was conducted in accordance with the Helsinki Declaration.

Conflicts of interest. The authors declare no conflict of interest.

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Fibromatozna hiperplazija izazvana protezom - prikaz slučaja

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Uvod. Protezna hiperplazija (PH) je reaktivna lezija koja nastaje kao posljedica hronične traume izazvane protetskom nadoknadom na oralnoj sluzokoži.

Prikaz bolesnika. Pacijentkinja, 56 godina starosti, prijavila se Specijalističkom centru za stomatologiju Medicinskog fakulteta u Foči radi izrade novih totalnih proteza. Nosila je prethodne totalne proteze oko 25 godina. Žalila se na starost i trajnu prebijenost starih proteza. Klinički, obje proteze su bile loše retinirane i stabilizovane kratkim protetskim krilima sa izraženim znacima istrošenosti. Higijena proteza je bila loša. Višestruki nabori hiperplasičnog vezivnog tkiva uočeni su u predjelu sluzokože gornjeg predvorja usne duplje. Nabori lezije su bili ružičasti, čvrsti i pratili su ivice proteze. Na osnovu anamneze i kliničkog pregleda, postavljena je privremena dijagnoza protezne hiperplazije. Pacijentkinja je obaviještena o procjeni kliničkog stanja, kao i mogućim terapijskim postupcima i dala pismenu saglasnost da prihvata ponuđene terapijske procedure. Savjetovano joj je da ne nosi proteze 4 nedjelje i da održava odgovarajuću oralnu higijenu, Nakon toga, hiperplazija je hirurški uklonjena pod lokalnom anestezijom. Uzorak tkiva je poslat na patohistološku analizu. Mjesec dana nakon intervencije izrađen je novi par totalnih proteza. Patohistološkim pregledom odstranjenog tkiva potvrđena je dijagnoza „Epulis fissuratum ".

Zaključak. Edukacija i redovni kontrolni pregledi su od suštinskog značaja za prevenciju PH. Pacijentu treba dati detaljno usmeno i pismeno uputstvo o održavanju higijene usne šupljine i protetskih nadoknada sa posebnim osvrtom na moguće promjene oralnih tkiva i značaj redovnih kontrolnih pregleda.

Ključne riječi: lezije oralne sluzokože, hiperplazija izazvana protezom, proteze, faktori rizika