

EPULIS FISSURATUM - CLASS III: CASE REPORT

EPULIS FISSURATUM - КЛАСА III: ПРИКАЗ НА СЛУЧАЈ

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Abstract

Epulis fissuratum, or denture fibrosis, is a benign hyperplasia of the fibrous connective tissue of the oral mucosa. It is a reactive lesion to chronic mechanical irritation produced by the flange of a loose and poorly fitting dentures. The therapy is surgical excision. Removal can be performed conventionally – with scalpel, electrocautery, or contemporary with laser. In this article, authors present an interesting case of epulis fissuratum class III rarely seen in every day oral surgery practice. A 61 year-old female was referred to the University Clinic of Oral Surgery for assessment of a soft tissue change in the maxillary front. The clinical examination revealed slight swelling in the central portion of the upper lip, from the vermillion, along the philtrum to the base of the nose, causing a noticeable cosmetic deformity. Intraorally, many overlapping hyperplastic gingival folds and gaps obliterated the fornix of the anterior maxilla. The prosthesis was old and unusable. Based on subjective and objective findings, diagnosis of epulis fissuratum class III was established. Owing to the size of the folds, their deep insertion, and primarily the need for cheiloplasty as cosmetic and functional surgery, the patient was referred to the University Clinic for Maxillofacial Surgery. Surgery was performed under local infiltrative anaesthesia, using an electrocautery for precise excisions. After full recovery, new prosthesis was made. There is no postoperative recurrence 2 years after surgery. **Key words:** epulis fissuratum, class III, surgical treatment, denture.

Апстракт

Epulis fissuratum, или протетска фиброза, претставува бенигна хиперплазија на фиброзното сврзно ткиво на оралната мукоза. Станува збор за реактивна промена која настанува како резултат на хронична механичка иритација предизвикана од крилото на лабава и несоодветна протеза. Терапијата е хируршка ексцизија. Отстранувањето може да се изврши конвенционално со скалпел, електрокаутер, или современа метода со ласер. Во овој труд, авторите презентираат интересен случај на epulis fissuratum, III класа кој ретко се гледа во секојдневната орално-хируршка пракса. Пациентка на возраст од 61 година се обрати на Универзитетската Клиниката за орална хирургија поради присутна мекоткивна промена во предел на максиларниот фронт. На клиничкиот преглед беше детектиран слабо назначен оток на средишниот предел на горната усна, од вермилионот по должина на филтрумот се до базата на носот, предизвикувајќи видлив естетски деформитет. Интраорално, поголем број на хиперпластични гингивални набори, а помеѓу нив усеци, го имаа обтурирано форниксот во фронталниот предел на максилата. Протезата беше во неупотреблива состојба. Врз основа на субјективниот и објективниот наод беше поставена дијагноза Epulis fissuratum класа III. Поради големината на пликите, нивната длабока распространетост и примарно поради потребата од хелиопластика од естетски и функционален аспект, на пациентката и беше посочено да се обрати на Универзитетската Клиника за максилофацијална хирургија. Хируршкиот третман беше извршен под локална анестезија со примена на електрокаутер поради потребата од прецизна ексцизија. По потполно заздравување се изработи нова протеза. Две години по операцијата не се јави рецидив. **Клучни зборови:** Epulis fissuratum, III класа, хируршки третман, протеза.

Introduction

Epulis fissuratum, or denture fibrosis, is a reactive fibrous connective tissue inflammatory hyperplasia of the alveolar ridge oral mucosa and vestibular area. It is most frequently caused by mild and repeated chronic trauma of an ill-fitting prosthesis¹. It can occur in any area of the upper or lower jaw², but the most affected is the anterior maxilla. Fibrous hyperplasia is a consequence of a long-standing loose and illfitting denture. It

can be also seen in patients with edentate frontal maxilla and dentate mandibular front.

The results of a 5-year clinical study showed that patients treated with complete maxillary dentures and mandibular overdentures demonstrated less vertical alveolar bone reduction compared with the patients who had bimaxillary complete dentures³. Prosthetic base needs to undergo occasional revision and readaptation in order to optimally adhere to the changing alveolar ridge. Otherwise, the pressure and the chronic trauma caused by

ill-fitted prosthesis is a direct cause of vestibular mucosal hyperplastic overgrowths. In patients with total and partial dentures, the oral mucosa may exhibit acute or chronic reaction to microbial denture plaque. Also, an allergic reaction to denture base constituents may be elicited.

According to *Budtz-Jørgensen E.*⁴ denture stomatitis is the most common condition of the palatal mucosa in about 50% of complete or partial removable dentures wearers. Angular cheilitis is present in 15% of the cases. Denture induced traumatic ulcers are seen in about 5% of denture wearers. The prevalence of denture induced hyperplasia caused by chronic injury of denture border is seen in about 12% of the denture wearers. Flabby ridge, as a replacement of the alveolar ridge by fibrous connective tissue, is present in 10 to 20%. The most important of all is the evidence of the development of an oral squamous cell carcinoma after chronic injuries of the oral mucosa in such patients⁴. Epidemiologically, since this phenomenon occurs as a consequence of the use of prosthesis, it is predominantly present in middle or more advanced adulthood. It is reported in 5-10% of dentures wearers and it occurs more frequently in the anterior part of the jaw compared with the posterior⁵, with 66-75% higher presence in females. Denture hyperplasia occurs predominantly in females and it is suggested that its formation may be affected by hormonal imbalance in the menopause^{6,7}.

Surgery is a treatment of choice. The surgical excision can be done conventionally, by electrocautery, and with a laser surgery as an up to date treatment modality. In order to maintain the results of the surgery, it is very important to make a new, well-stabilized prosthesis.

The fibrous hyperplasia is classified into three classes according to the localization and extension of fibrous hyperplasia⁸ (Table 1).

Table 1. Classification according to the localization and extension of epulis fissuratum

Epulis fissuratum Classes	Localisation
Class I	Hyperplasia completely attached to mucoperiosteum
Class II	Hyperplasia attached to the mucous membrane of the lips or cheek (soft wall of the vestibular fornix)
Class III	Hyperplasia involving the mucoperiosteum and mucosa, obliterating the entire fornix

In this article we present an interesting case of Epulis fissuratum - Class III, rarely seen in oral surgery practice.

Case report

Hyperplastic mucogingival folds excessive proliferative changes of the upper vestibular mucosa associated with an old and loose, ill-fitting upper prosthesis. A 61 year old female was referred to the University department of oral surgery due to excessive proliferative changes of the upper vestibular mucosa associated with an old and loose, ill-fitting upper prosthesis. The clinical examination revealed slight swelling in the central portion of the upper lip, from the vermilion, along the philtrum to the base of the nose, causing a noticeable cosmetic deformity. There was a distinctive tightening of the free edge of the lip towards the right side making a fold that visibly deformed the width of the vermilion. Intraorally, many overlapping hyperplastic gingival folds and gaps obliterated the fornix and protruded beyond the upper lip on the right side. (Figure 1).



Figure 1. Hypertrophic folds that protrude beyond the upper lip on the right side.

The uniqueness of this case was the presence of extremely marked hyperplasia, many mucogingival folds and serpentine gaps widely spread, with intraoral and extraoral-cosmetic deformity (Figure 2, Table 1- III Class).

The overlying mucosa had normal colour and smooth surface, showing mild hyperaemia in some parts as a result of moderate inflammation. On palpation, the folds were painless and with firm consistency. The prosthesis was old and unusable. She reported that despite the occasional discomfort, pain and swelling that forced her not to use the denture for a limited time period, she restrained from visiting her dentist for 5 years. Based on subjective and objective findings. the diagnosis of epulis fissuratum class III



Figure 2. Hyperplastic mucogingival folds completely obliterating the upper right vestibule.



Figure 4. Intraoperative application of an iodoform packing in the alveolar ridge and the fornix to assist with the healing and to maintain the depth of the vestibular fornix.



Figure 3. Surgical treatment of epulis fissuratum with electrocautery.



Figure 5. The sutures were removed one week after surgery. Minimal labial swelling was a main postoperative symptom.

was established. Owing to the size of the folds, their deep insertion, and primarily the need for cheiloplasty as cosmetic and functional surgery, the patient was referred to the University Clinic for Maxillofacial surgery. According to the American Society of Anaesthesiologists classification, our patient was classified as ASA I (without systemic diseases) as a patient with uneventful medical history. The surgery was planned and performed under local infiltrative anaesthesia, using an electrocautery for precise excisions, layered ablation of the hyperplastic mucosal growths, and unimpaired visibility due to controlled haemostasis. (Figure 3).

After the surgery, the depth of the vestibular fornix was maintained with iodoform packing (Figure 4).

Postoperative period was without complications. The labial swelling was minimal and the pain was mild, as expected. Recovery was accelerated by topical application of NBF gel. Fibrin patches appeared on the first postoperative day. The secondary healing was regular, and the epithelization was an ongoing process. The sutures and iodoform packing were removed a week later. (Figure 5).

After two weeks, partial epithelialization was observed (Figure 6).

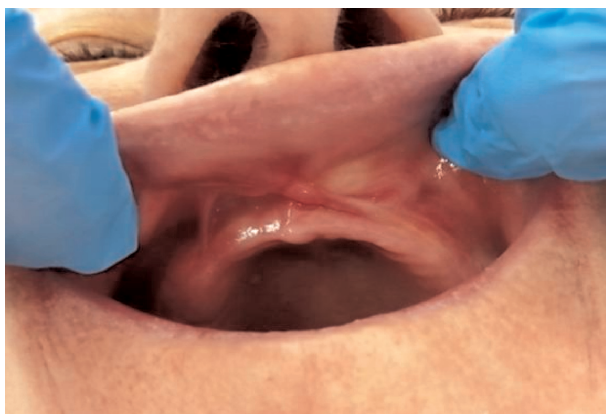


Figure 6. Postoperative clinical examination, (two weeks after surgery) with partial epithelization.



Figure 7. Complete recovery 3 months after surgery.

The treatment was finalized by referring the patient to the Clinic for dental mobile prosthetics for making a new prosthesis that is well-fitted to the new anatomic circumstances (Figure 7).

Complete epithelization of the remodelled vestibular surface was seen three months after surgery.

Discussion

Epulis fissuratum develops slowly over a prolonged period in patients with ill-fitting dentures. It is associated with a denture flange of either a full or partial denture⁹. Typically, patients with epulis fissuratum are asymptomatic¹⁰. It is considered as an overgrowth of intraoral mucosal tissue resulting from chronic and prolonged irritations¹¹. Chronic trauma to the oral mucosa is

a risk factor for the development of oral squamous cell carcinoma. Many studies have shown that the sharp edges of teeth or the ragged edges of ill-fitting dentures have potential to cause oral carcinoma^{12,13} if persistent over a long period. The therapy of denture hyperplasia comprises of two options, conservative and surgical. The conservative approach is non-invasive and should be the treatment of choice suitable for early stages of mucosal hyperplasia, without fibrosis. It includes removal of the acrylic flange first, followed by relining and rebasing after the complete healing of the lesion^{11,12}. The conservative approach was not considered in the presented case since the fibrous inflammatory hyperplasia was excessive and longstanding. The second treatment option is surgical removal of the excessive and hyperplastic tissue. It can be used as an adjunct to the conservative one, when the result is unsatisfactory, or as a stand-alone treatment. This was the treatment of choice that was considered for the case presented here. In the period before surgery, it is important to undertake necessary measures to reduce the irritation and mucosal inflammation. Therefore, our patient was strongly advised against denture use for 2-3 weeks prior to surgery. Additionally, during these period, daily mouthwash with oral antiseptics were part of our patient's daily routine. With these measures alone, there is a possibility for partial regression, and, very rarely, a complete regression of the hyperplastic proliferation. Surgical treatment can be conventional – with scalpel, electrosurgery and laser surgery. Which technique will be applied depends on the clinical situation, advances and disadvantages of each treatment, and on the surgeon's preferences. Scalpel surgery is treatment of choice for removal of epulis fissuratum class I and II, when the lesions are limited to the mucosa. Conventional surgery was not considered in this case because of the amount of the tissue to be removed, accompanied with abundant intraoperative bleeding. In such cases, electrosurgery is a better treatment option. Electrocautery is better than the stainless steel scalpel in relation to time taken for incision, intraoperative blood loss and early postoperative pain, but is inferior to scalpel in relation to wound healing¹⁴. Lasers are another contemporary surgical option to be considered. The following lasers are recommended for soft tissue surgery: CO₂ laser, Er:YAG laser, Nd:YAG laser, diode laser, argon laser and KTP laser. Many studies have shown that carbon dioxide lasers have more promising results than conventional surgery. The advantages of carbon dioxide laser are tissue protection, asepticity, rapid wound healing, minimal postoperative pain and tissue swelling, insignificant scarring, less than 6% recurrence rate, repeatability of the treatment, and minimal func-

tional impairment of the oral cavity^{15,16}. Er:YAG laser is another top laser for soft tissue surgery. In order to effectively cut or ablate human mucosa, the Er:YAG laser targets the chromophore of water selectively instead of the extracellular matrix of collagen. A high absorption peak in the water minimizes the thermal damage to the tissue, which results in improved healing. The weak haemostatic effect of the Er:YAG laser as a disadvantage is neglected due to the large number of advantages it provides, such as: uneventful recovery, accelerated healing and predictable results¹⁷. During the Er:YAG and tissue interaction, the bacteria in the path of the beam are destroyed as the water within the bacterial cells undergoes the same instantaneous phase change, and surgical field is sterilized¹⁸. The liquid nitrogen cryosurgery has also been used successfully in a number of oral surgical procedures. It is widely implemented in the management of aggressive primary jaw lesions and minor soft tissue surgeries. It also provides excellent haemostasis, without direct contact with tissue while maintaining an aseptic environment, good healing with minimal postoperative oedema and pain¹⁹.

Electrosurgery was considered as first treatment option in the presented case. It enabled precise excisions, layered ablation of the hyperplastic mucosal growths, and unimpaired visibility due to controlled haemostasis. Besides, it was important to exclude other lesions in the differential diagnosis. Therefore, the excised tissue was sent for histopathology analysis, and the findings were in accordance with the preoperative diagnosis of epulis fissuratum, thus excluding a malignant proliferation. Postoperative period was uneventful and without complications. What is most important, the vestibule depth was maintained. The secondary healing is a slow healing process. Considering the extent of the wound, partial epithelialization was observed as expected after two weeks, and the epithelization was an ongoing process. The epulis fissuratum III class is a clinical manifestation rarely seen in oral surgery. The chronically enlarged oral mucosa necessitated surgery for functional, aesthetic and diagnostic reasons.

Conclusion

Epulis fissuratum is a common soft tissue enlargement, but the class III presentation is very rare. The recommended therapy is surgical, providing good aesthetics and function. To maintain the postoperative results, a new, well adapted prosthesis is mandatory, as well as frequent

visits to the dentist to manage any trauma and to prevent occurrence of inflammatory hyperplasia.

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