

Combined surgical and prosthetic management of inflammatory fibrous hyperplasia in a fully edentulous patient – case report

Skojarzone leczenie chirurgiczno-protetyczne zapalnego rozrostu włóknistego u pacjenta z całkowitym bezzębiem – opis przypadku

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zapalny rozrost włóknisty, nadziąsłak szczeliny, wstępną re-
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Summary

Inflammatory Fibrous Hyperplasia (IFH) is a benign lesion induced by chronic denture trauma that reduces vestibular depth and complicates prosthetic rehabilitation. This case report describes the comprehensive management of a 64-year-old edentulous man presenting with severe ridge resorption and extensive mandibular fibrous hyperplasia caused by overextended denture flanges. Treatment involved initial tissue conditioning using adjusted existing dentures to reestablish vertical dimension of occlusion and maxillomandibular relationship in centric relation, followed by surgical excision of the lesion combined with vestibuloplasty. The corrected prostheses were immediately reinserted to guide mucosal healing and maintain vestibular depth. Secondary epithelialization provided favourable tissue conditions and supported

Streszczenie

*Zapalny rozrost włóknisty (IFH) jest łagodną zmianą wywołaną przewlekłym urazem spowodowanym przez protezy, która zmniejsza głębokość przedstonka i utrudnia rehabilitację protetyczną. Niniejszy opis przypadku przedstawia kompleksowe leczenie 64-letniego bezzębnego mężczyzny, u którego stwierdzono znaczną resorpcję wyrostka zębodołowego i rozległy rozrost włóknisty żuchwy, wywołany przez nadmiernie poszerzone brzożki protezy. Leczenie obejmowało wstępną re-
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long-term prosthetic success. While conservative tissue conditioning effectively reduces initial inflammation, extensive fibrous lesions require surgical intervention. Because excision alone compromises vestibular depth, adjunctive vestibuloplasty is essential to restore the prosthetic bed. The combined use of tissue conditioning, surgical excision and vestibuloplasty offers a predictable management strategy for extensive IFH, ensuring optimal mucosal healing and stable prosthetic rehabilitation while minimizing recurrence.

ła korzystne warunki tkankowe i przyczyniła się do długotrwałego sukcesu protetycznego. O ile zachowawcze kondycjonowanie tkanek skutecznie zmniejsza początkowy stan zapalny, rozległe zmiany włókniste wymagają interwencji chirurgicznej. Ponieważ zabieg wycięcia zmniejsza głębokość przedsionka, wspomagająca westibuloplastyka jest niezbędna do odtworzenia podłoża protetycznego. Skojarzone zastosowanie kondycjonowania tkanek, wycięcia chirurgicznego i westibuloplastyki stanowi przewidywalną strategię postępowania w rozległych przypadkach IFH, zapewniając optymalne gojenie błony śluzowej i stabilną rehabilitację protetyczną przy jednoczesnym zminimalizowaniu ryzyka nawrotu.

Introduction

Inflammatory fibrous hyperplasia (IFH), commonly referred to as *epulis fissuratum*, is a benign reactive lesion of the oral mucosa characterized by the formation of redundant fibrous tissue, typically presenting as one or more sessile mucosal folds along the vestibular sulcus. It is primarily induced by chronic mechanical irritation and low-grade inflammation caused by ill-fitting or overextended denture flanges, as well as occlusal disharmony.¹ The lesion most frequently affects the anterior regions of the maxillary and mandibular edentulous arches.²

From an etiological perspective, IFH develops as a prolonged adaptive response of the mucosa to continuous trauma. Clinically, its size may vary from small localized folds to extensive lesions occupying the full depth of the vestibule, potentially interfering with prosthetic function.³ Although often asymptomatic, the lesion may exhibit erythema, ulceration, or inflammatory changes in advanced cases, particularly when prosthetic irritation persists.⁴ IFH predominantly affects middle-aged and elderly patients, with a higher prevalence reported among females.⁵

Despite its benign nature, IFH holds significant clinical relevance. If left untreated, it can severely compromise the retention, stability and accurate adaptation of new complete dentures.^{1,7} Furthermore, although malignant transformation is rare, histopathological examination remains mandatory to confirm the diagnosis and exclude dysplastic or neoplastic alterations.⁶ Conventional surgical excision alone may result in vestibular shortening, delayed healing and incomplete re-epithelialization, thereby complicating subsequent prosthetic rehabilitation.⁸

Consequently, a combined surgical and prosthetic approach is often advocated to ensure optimal functional and biological outcomes. Tissue conditioning with corrected existing dentures prior to surgery can reduce inflammation and improve mucosal quality, while postoperative prosthetic guidance may facilitate healing, preserve vestibular depth and minimize recurrence.⁷ The present case report describes the integrated management of IFH through preoperative tissue conditioning, surgical excision with vestibuloplasty, and immediate postoperative prosthetic support. This case is reported in accordance with the SCARE guidelines.⁹

Case report

Mr. A.G., a 64-year-old fully edentulous man, presented with the chief complaint of instability and progressive deterioration of his maxillary and mandibular removable prostheses. The patient sought replacement of his old dentures, which he had been wearing continuously for approximately six years without any professional maintenance or periodic follow-up. He also reported the appearance of a soft tissue lesion in the mandibular vestibule, which had gradually developed over the previous year.

The patient's medical history was notable for non-insulin-dependent diabetes mellitus and arterial hypertension, both of which were well controlled with pharmacological treatment, and the patient remained clinically stable at the time of examination.

Extraoral evaluation revealed marked collapse of the lower third of the face, accompanied by a significant reduction in the vertical dimension of occlusion. These findings contributed to a concave facial profile, suggestive of long-term prosthetic insufficiency.

Intraoral examination of the maxilla showed an edentulous arch of *Class I* morphology according to the Sangiulolo classification. At the mandibular level, clinical inspection revealed severe alveolar ridge resorption and the presence of fibrous hyperplastic tissue extending along the vestibular sulcus from the right canine region to the contralateral lateral incisor. The lesion appeared soft on palpation, non-tender and non-hemorrhagic, with a pale pink hue and multiple redundant mucosal folds. No signs of acute inflammation were noted. Cervical lymph nodes were non-palpable, and no lymphadenopathy was detected (Fig. 1).

Examination of the existing prostheses revealed poor prosthetic hygiene, with maxillary and mandibular removable partial



Fig. 1. Pretreatment intraoral view showing the extensive mandibular inflammatory fibrous hyperplasia induced by the ill-fitting prosthesis.

dentures exhibiting a rough surface texture. The prostheses were defective and highly unstable, retained only by occlusal pressure. The patient continued to wear them after tooth loss without any repair or addition of prosthetic teeth. Several prosthetic teeth were severely worn, with flat occlusal surfaces, and a prosthetic tooth was missing (Fig. 2). The mandibular prosthesis exhibited overextension of the flange in the area corresponding to the lesion. The patient had lost all occlusal reference points; the maxillomandibular relationship in centric relation could not be maintained due to mandibular protrusion tendency, and the vertical dimension of occlusion was significantly reduced.

Radiological Examination: The panoramic radiograph revealed no significant abnormalities apart from moderate resorption of the edentulous maxillary and mandibular ridges.

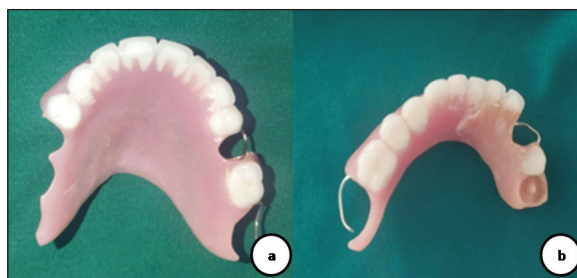


Fig. 2. Defective and unstable prostheses of the patient showing severe occlusal wear and rough surface texture; a – maxillary prosthesis, b – mandibular prosthesis.

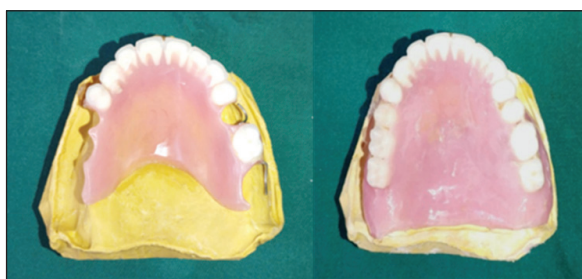


Fig. 3. Conversion and modification of the maxillary removable partial denture into a temporary complete denture.

both tissue conditioning and postoperative healing.

Prosthetic Preparation and Adjustment: Preliminary impressions were taken with the existing prostheses in place, and these were used to convert the removable partial dentures into complete dentures (Fig. 3, Fig. 4). The overextended borders of the mandibular denture were identified and subsequently reduced. Particular attention was paid to the area of the

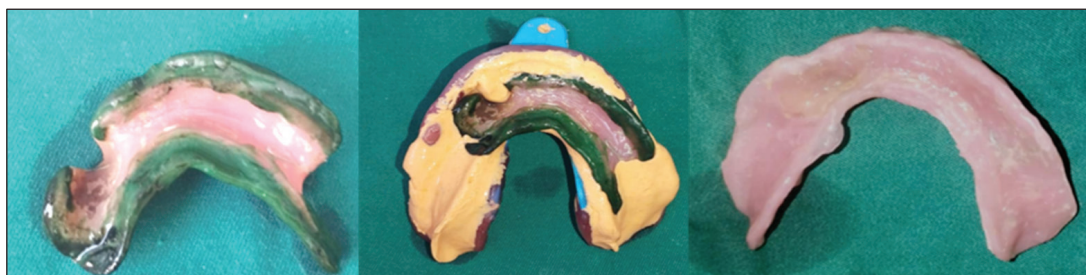


Fig. 4. Conversion of the mandibular partial denture into a complete denture with reduction of overextended borders.

Diagnosis and Treatment Plan: Based on clinical and radiographic findings, the primary diagnosis was inflammatory fibrous hyperplasia (*epulis fissuratum*), attributed to an ill-fitting mandibular denture and inadequate prosthetic maintenance. With the patient's informed consent, the treatment plan included the surgical excision of the hyperplastic tissue and deepening of the anterior mandibular vestibule, followed by the fabrication of new complete removable dentures. For the interim phase, the patient's existing prostheses were reused after necessary adjustments to support

lesion, allowing the denture flanges to apply gentle, gradual and continuous pressure on the *epulis fissuratum*.

Occlusal Reestablishment: The vertical dimension of occlusion and the maxillomandibular relationship in centric relation were accurately reestablished using the Tench registration technique (Fig. 5).

Tissue Conditioning Phase: Tissue conditioning was performed using the previously adjusted dentures, which were relined with a slow-setting tissue conditioning resin. During the setting phase, the patient was



Fig. 5. Occlusal vertical dimension and centric relation reestablishment using the Tench registration technique.

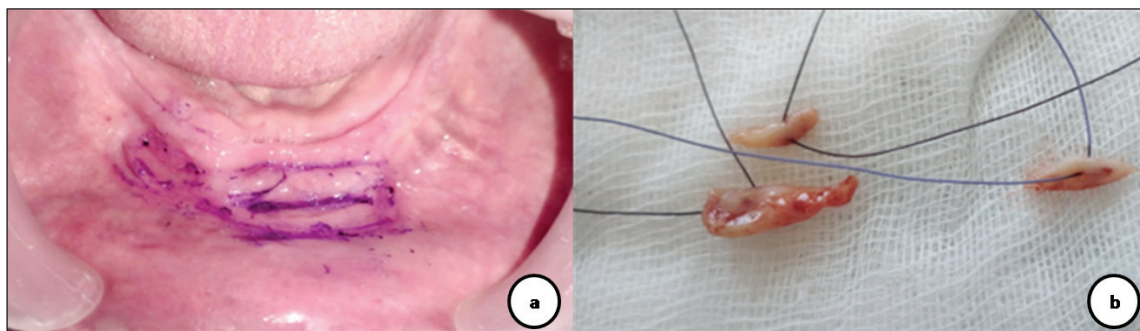


Fig. 6. Preprosthetic surgical phase; *a* – preoperative marking of the oral hyperplasia boundaries, *b* – excision of the hyperplastic tissues using a cold scalpel.

instructed to perform functional movements to aid peripheral adaptation and sealing. The first two follow-up appointments were scheduled at 7-day intervals to renew the conditioning material, and subsequent visits occurred every 15 days. Progressive improvement was noted, with a marked reduction in inflammation and a significant decrease in the size of the hyperplastic tissue.

Pre-prosthetic surgery was performed, consisting of the excision of mandibular hyperplastic tissue and deepening of the anterior mandibular vestibule, followed by tissue conditioning using a slow-setting tissue conditioning resin.

Surgical removal of the inflammatory fibrous hyperplasia was conducted under local anesthesia. A partial-thickness incision was made using a scalpel handle and a No.15 blade, following the outline of the fibrous lesion. The hyperplastic tissue was excised

with an approximate surgical margin of 10–12 mm, exposing the underlying connective tissue (Fig. 6).

The mucosal flap was repositioned apically, leaving a raw area intended to heal by secondary intention through spontaneous epithelialization from adjacent tissues. The inferior border of the incision was stabilized using interrupted periosteal sutures, beginning at the midline and continuing along the incision line, with 3-0 resorbable Vicryl sutures (Fig. 7). A tissue specimen was collected intraoperatively and submitted for histopathological analysis to confirm the clinical diagnosis. The adjusted denture was immediately placed post-surgery to guide tissue healing and prevent the need for subsequent surgical revision. The patient was advised to follow a soft diet and apply an ice pack to the lower lip area. A 0.2% chlorhexidine mouthwash was prescribed twice daily for two weeks. Analgesics were recommended

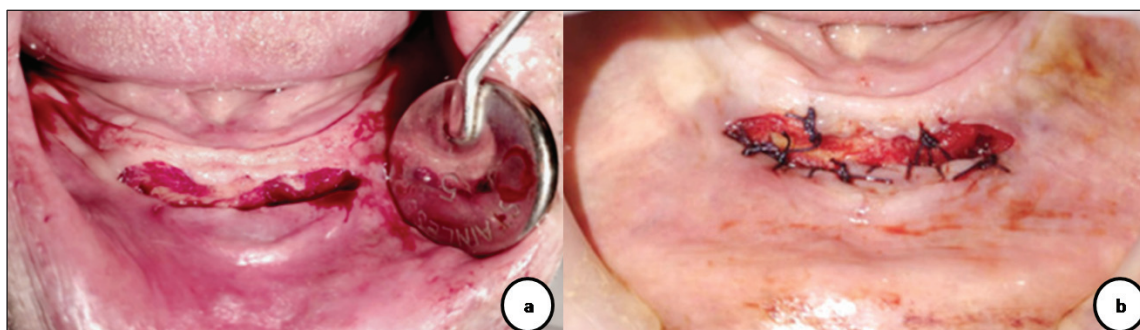


Fig. 7. Vestibuloplasty procedure; *a* – outline of the partial-thickness incision line, *b* – interrupted periosteal stabilization sutures placed after vestibular deepening.

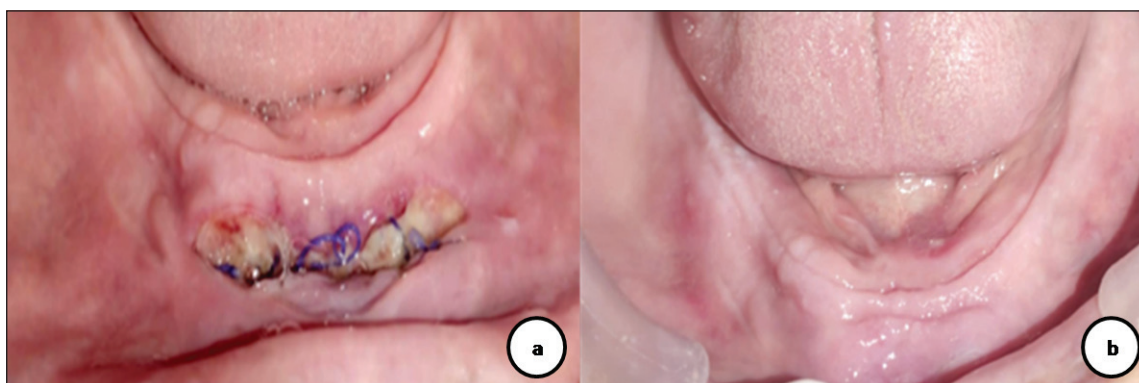


Fig. 8. Follow-up and mucosal healing process; a – control session at one-week post-surgery, b – complete epithelialization and tissue maturation at 2.5 months.



Fig. 9. Delivery of the definitive complete prostheses; a – mandibular prosthesis properly seated and stable in the oral cavity, b – frontal view showing restored aesthetics and vertical dimension.

for five days, to be taken as needed. A follow-up visit was scheduled one week after surgery to assess wound cleanliness, healing progress, and to renew the tissue conditioning material. The tissue conditioner was replaced every 7 to 15 days until complete healing was achieved. At the end of the healing process, approximately two and a half months postoperatively (Fig. 8), the definitive denture was fabricated according to standard protocols.

The definitive maxillary and mandibular prostheses were delivered following necessary occlusal adjustments. The patient received oral hygiene instructions and was advised to remove the prostheses at night. Regular follow-up appointments were scheduled to monitor adaptation and tissue response. The patient expressed high satisfaction with both the aesthetic and functional outcomes of the

prosthetic rehabilitation (Fig. 9). Annual follow-up is recommended to monitor for any potential recurrence of the *epulis fissuratum*.

Discussion

Inflammatory fibrous hyperplasia (IFH) is a reactive lesion resulting from chronic mechanical irritation of the oral mucosa, most commonly induced by ill-fitting or overextended denture flanges. Continuous low-grade trauma leads to epithelial hyperplasia and fibrous connective tissue proliferation, with associated inflammatory infiltrate. In completely edentulous patients, loss of alveolar bone, reduced vestibular depth and altered occlusal relationships further exacerbate tissue compression and displacement, favouring lesion persistence and progression.^{10,11}

Regarding differential diagnosis, IFH must be distinguished from other exophytic oral lesions such as squamous cell carcinoma, papilloma, and other reactive or neoplastic entities that may present with similar clinical features.⁵ In the present case, histopathological examination confirmed the benign nature of the lesion, demonstrating fibrous connective tissue proliferation with inflammatory infiltration and no evidence of epithelial dysplasia or malignancy, thereby validating the diagnosis of inflammatory fibrous hyperplasia.

In the present case, tissue conditioning was implemented as a crucial initial step to eliminate traumatic factors and control mucosal inflammation before definitive surgical management. The slow-setting tissue conditioner redistributed occlusal forces, alleviated localized tissue compression and promoted partial regression of the hyperplastic lesion, thereby creating a more physiological mucosal environment for surgery. Contemporary prosthodontic literature recognizes tissue conditioning not merely as a transitional measure but as a biologically active phase that enhances tissue quality, facilitates surgical handling and may reduce postoperative recurrence. *Dorocka-Bobkowska* et al.¹² demonstrated that modern tissue conditioners supported revascularization, inflammation control and tissue resilience, particularly in extensive inflammatory fibrous hyperplasia, justifying their use prior to surgical excision.¹⁵⁻¹⁷

Vestibuloplasty was indicated in the present case due to a shallow vestibule and a compromised denture-bearing area resulting from prolonged denture-induced trauma, as well as the anticipated tissue contraction following lesion excision. Surgical excision alone is known to further reduce vestibular depth, particularly when primary closure is performed, which may negatively affect denture stability and retention.¹³ Consequently,

vestibuloplasty has been advocated as an adjunctive procedure to restore vestibular depth, improve prosthetic support and enhance long-term functional outcomes in completely edentulous patients.¹⁸ A recent systematic overview by *Schmitt* et al.¹⁹ emphasized that the choice of vestibuloplasty technique should be guided by anatomical conditions, soft tissue availability and patient-related factors rather than a uniform surgical protocol. In accordance with these recommendations, vestibuloplasty with secondary epithelialization was selected in this case due to insufficient vestibular depth and the patient's refusal of grafting procedures, representing a balanced approach between surgical simplicity and functional rehabilitation.

This case differed from typical presentations of *epulis fissuratum* in several key aspects. Unlike the more localized lesions commonly managed by simple excision, the hyperplasia here was extensive, compounded by marked vestibular shortening and altered occlusal relationships. Furthermore, management incorporated the therapeutic use of the patient's existing denture for occluso-tissue conditioning, eliminating the need for a temporary prosthesis and allowing continuous functional use throughout treatment. These factors reflect a tailored approach, adapted to both the anatomical constraints and the severity of the lesion, highlighting the importance of individualized planning in complex cases. By contrast, less extensive cases of inflammatory fibrous hyperplasia may be managed conservatively, with careful adjustment during the secondary impression procedure sufficient to relieve tissue pressure and support denture adaptation.¹⁴

From a clinical perspective, this case underscores the importance of addressing both etiological and anatomical factors in IFH management. Tissue conditioning should not be viewed merely as a temporary measure but as a therapeutic tool that enhances tissue health and guides surgical planning. Additionally,

vestibuloplasty should be considered whenever lesion excision is expected to compromise vestibular depth or prosthetic stability.

The main limitation of this report lies in its nature as a single-case observation, which restricts generalization of outcomes. Furthermore, long-term follow-up remains necessary to evaluate tissue stability, recurrence risk and prosthetic performance over time. Comparative clinical studies are required to better define standardized protocols combining tissue conditioning, surgical excision and vestibuloplasty.

Comparison with existing reports reveals that most published cases describe either surgical excision alone or laser-assisted removal of IFH, often without prior prosthetic conditioning or vestibular reconstruction.^{8,10,20} While laser techniques offer advantages such as reduced bleeding and postoperative discomfort, conventional scalpel excision combined with tissue conditioning and vestibuloplasty remains a predictable and accessible approach. Recent case reports and reviews emphasize that integrating prosthetic and surgical management yields superior tissue healing and prosthetic outcomes compared to isolated interventions.^{17,18}

Conclusion

Surgical management of extensive inflammatory fibrous hyperplasia may be combined with tissue conditioning, which in this case reduced inflammation, partially regressed the lesion, and allowed continued functional use of the existing denture. While limited lesions may respond to tissue conditioning alone, definitive excision is often necessary for extensive hyperplasia. Surgical removal can reduce vestibular depth and keratinized mucosa, potentially compromising denture stability; adjunctive vestibuloplasty was therefore performed to restore vestibular

anatomy and optimize prosthetic outcomes. This case highlights the value of an integrated prosthetic-surgical approach for complex presentations of *epulis fissuratum*.

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