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Epulis Fissuratum: Medical and Surgical Management—Case Report

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Abstract

Introduction: Epulis fissuratum (EF) is a benign inflammatory fibrous hyperplasia of oral mucosa, caused by chronic mechanical irritation from an ill-fitting prosthesis. The aim of this report is to describe the medico-surgical management of fibrous hyperplasia and to demonstrate the continued relevance of conventional surgical techniques in insuring optimal clinical outcomes. **Case presentation:** A 43-year-old female patient presented with upper buccal mucosal growth caused by a traumatic prosthesis. After an initial phase to reduce inflammation, surgical excision was performed. Histopathological examination confirmed the diagnosis of fibrous hyperplasia with no sign of malignancy. **Discussion:** While various technological alternatives exist, traditional surgical excision was chosen in this case due to its superior precision and controlled impact on surrounding tissues. Well-conducted post-operative management ensures optimal healing within 7 days.

Subject Areas

Dentistry

Keywords

Epulis Fissuratum, Conventional Surgery, Post-Operative Management

1. Introduction

Epulis fissuratum (EF) is a benign lesion of the oral mucosa caused by chronic irritation. It is a reactive tissue response to excessive mechanical pressure exerted by a poorly adjusted dental prosthesis [1]. This growth is defined as inflammatory fibrous hyperplasia or denture-induced fibrous hyperplasia. It generally affects

middle-aged and elderly adults, with a marked predilection for women. Although it can appear in both the maxilla and mandible, studies suggest a higher prevalence in the anterior region, with a slight predominance in the maxilla in certain populations [2] [3]. Clinically, this type of lesion often presents as one or more folds of hyperplastic tissue, firm and fibrous to the touch, although erythematous or ulcerated forms have also been reported. While generally asymptomatic in its early stages, EF can develop significantly, compromising the retention and stability of dentures and sometimes leading to pain or ulceration [4] [5].

Treatment of EF relies on various modalities, ranging from conservative approaches to surgical interventions, and is adapted to the severity of the condition and the patient's status. Conservative treatment aims to remove the initial cause, while various surgical methods are considered in the presence of extensive or fibrous hyperplasia. Despite therapeutic advances, the best management of EF remains a subject of debate [6].

This case report aims to outline the comprehensive therapeutic management of EF, with particular focus on the diagnostic workflow and the various treatment modalities.

2. Case Presentation

A 43-year-old female patient categorized as ASA I, presented to the prosthodontics department for complete oral rehabilitation. Her current dentures had been made many years before by an unlicensed practitioner. Upon extra-oral examination, the patient presented a symmetrical face, an absence of lymphadenopathy. Intra-oral examination revealed an inflammatory mucosal growth that appeared a year ago. The lesion size was approximately 60 mm measured using a graduated periodontal probe extending across the maxillary vestibular fold. The growth was located precisely where the denture borders encroached upon the tissues and was showing no sign of ulceration, bleeding or pain. Upon palpation, this lesion was firm, sessile, leaf-like, and did not bleed on contact. A panoramic radiograph was prescribed as a complementary examination; it showed no bone lysis adjacent to the lesion (See **Figure 1**).

Figure 1. Intra oral view of the lesion.

Based on clinical and radiological evidence, the presumptive diagnosis was Epulis Fissuratum caused by ill-fitted prosthesis. Differential diagnoses such as Squamous Cell Carcinoma and True Papilloma were also considered due to their

potential clinical similarity and their possible association with chronic mucosal trauma. Definitive diagnosis could only be established through histopathological examination following surgical excision.

Given the inflammatory appearance and the size of the hyperplasia, a dual therapeutic approach was established: initial non-surgical therapy to reduce inflammation and irritation, followed by surgical therapy consisting of complete excision of the growth. Permanent removal of the current prosthesis was indicated and the following were prescribed: an analgesic (Choline Salicylate) and antiseptic (Cetalkonium Chloride) oral gel for local use, as well as Sodium Bicarbonate mouthwash during one month for its antiseptic and antibacterial properties. During the follow-up session, we observed a decrease in mucosal inflammation; however, the volume of the lesion remained unchanged (See **Figure 2**).

Figure 2. Panoramic radiograph.

The patient was referred one month later for the surgical excision. We chose the conventional surgical approach using a blade. Extra-oral and intra-oral disinfection was performed using Povidone-iodine (Betadine®). Circumferential anesthesia was administered at a distance from the lesion—to avoid altering its structure and volume—along with supplementary palatal anesthesia (**Figure 3**).

Figure 3. Local anesthesia of the surgical site.

The growth was grasped using hemostatic forceps, followed by a partial-thickness incision in the vestibular mucosa and resection of the hyperplasia using an orange wedge shaped incision (**Figure 4**). Removal was performed layer by layer until healthy margins were reached. We ensured the vestibular flap was sufficiently released to avoid shortening the vestibular depth. To further release it, periosteal incisions were made toward the base of the vestibule (**Figure 5**). The surgical site was closed using interrupted periosteal sutures (**Figure 6**).

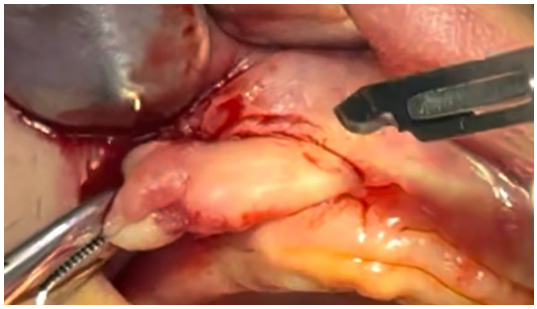

Figure 4. Grasping of the lesion using hemostatic forceps by a wedge—shaped excision.

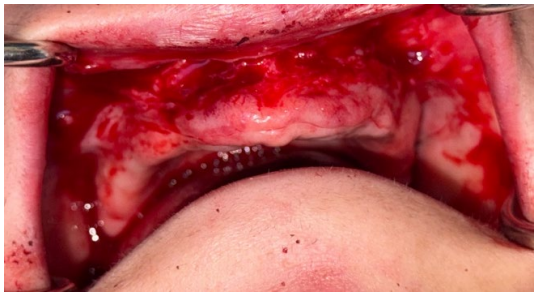

Figure 5. Intra-oral view after the lesion's removal.

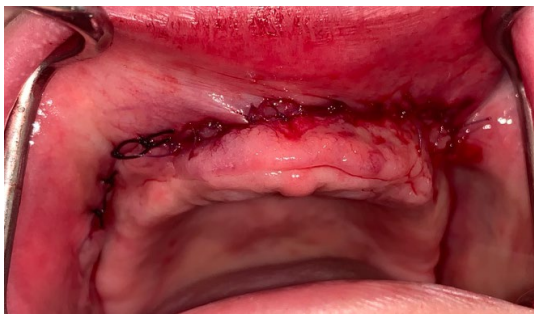

Figure 6. Interrupted sutures of the surgical site.

A post-operative prescription was provided, consisting of:

- Amoxicillin (Antibiotic): 2 g/day for 7 days.
- Corticosteroid (Anti-inflammatory): 60 mg/day for 3 days.
- Level 2 analgesic (Paracetamol/codeine): twice daily for 2 days.

Chlorhexidine mouthwash: twice daily for 7 days, starting 24 hours after surgery to avoid disrupting the formed clot.

A histopathological examination was ordered to confirm the diagnosis. The patient was seen a week later for suture removal, showing healthy and physiological healing of the surgical site (**Figure 7**).

The diagnosis was confirmed by the pathology lab: histological examination shows squamous mucosa with a hyperplastic epithelial surface lining without loss of the polarity or architectural disorganization. The chorion is congestive and dissociated with some neutrophils, all within fibrous tissue. No sign of malignancy was observed (**Figure 8**).

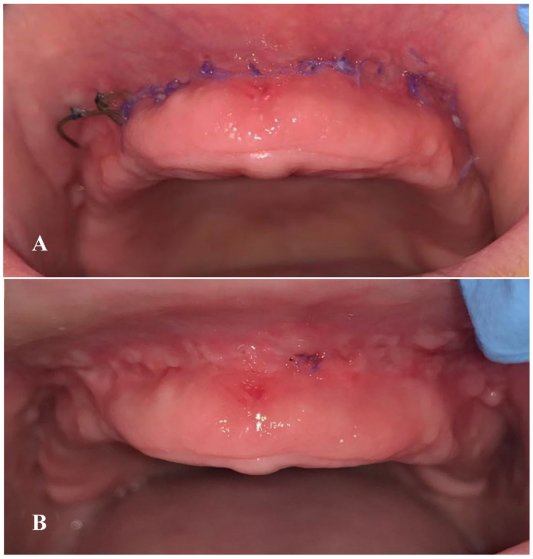

Figure 7. (A) Follow-up at day 7; (B) Suture removal.

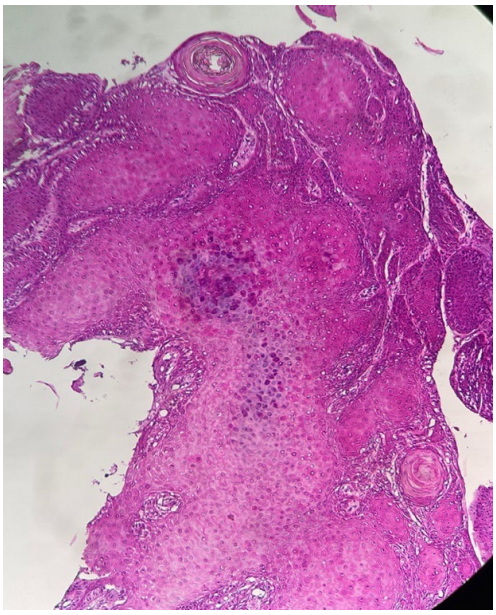

Figure 8. Image of histological section under light microscopy.

Finally, the patient was referred to the prosthodontics department for adequate total prosthetic rehabilitation. Unfortunately, the patient did not return for the prosthetic rehabilitation phase due to missed follow-up appointments, which limited the documentation and presentation of the prosthetic management in this case.

3. Discussion

Removable dentures facilitate functional rehabilitation in edentulous cases; however, suboptimal maintenance or ill-fitting bases often trigger mucosa pathologies. These include reactive lesions such as traumatic ulcerations and denture-induced fibrous hyperplasia, as well as infectious conditions like denture stomatitis, angu-

lar cheilitis, traumatic ulcerations, or inflammatory hyperplasia, also known as *Epulis Fissuratum* [7].

This chronic tumor-like lesion is caused by chronic irritation, which can be exacerbated by poor hygiene, smoking, age related physiological changes, and systemic conditions [8]. Nutritional deficiencies, particularly insufficient intake of vitamins B and C, compromise the quality and integrity of oral mucosa, reducing its ability to respond to prosthetic irritation [5]. In our case the growth was linked to poor denture fit and oral hygiene.

Histologically, EF is composed of an increased amount of fibrous tissue with variable numbers of chronic inflammatory cells, mainly plasma cells. Pathological findings such as acanthosis, irregular hyperkeratosis, or zones of squamous epithelium erosion are indicators of an adaptative response to chronic irritation. Chronic lymphocyte inflammatory infiltrated in the fibrous stroma may also be observed, along with congested capillaries. Fibroblast proliferation and significant accumulation of collagen and elastic fibers give EF its hyperplastic appearance. This fibrous response and the dense architecture of the analyzed specimen can be attributed to the significant activity of fibroblasts mediated by pro-inflammatory mediators TNFα and IL-1 [3] [9]. Histological examination plays a key role in establishing the diagnosis. Squamous cell carcinoma as well as true papilloma developing around denture flanges, should be considered as differential diagnosis [3]. In fact, repeated trauma on the same site over a prolonged period constitutes a form of chronic irritation that may promote the development of squamous cell carcinoma [10].

The management of EF encompasses a spectrum of therapeutic options, from conservative measures to surgical intervention, and is guided by disease severity and patient-related factors. Initial management focuses on eliminating the underlying etiologic factors, while surgical treatment is indicated in cases of extensive of fibrotic tissue overgrowth. Despite advances in treatment strategies, there is no clear consensus regarding the optimal management of EF [6]. Therapeutic decision making depends on the clinical presentation, available resources, and the patient's ability outlines the different treatment approaches, with particular emphasis on surgical management.

In the early stages, EF can be managed through tissue conditioning. Removal of the offending prosthesis is often sufficient to achieve regression of the lesion [8]. However, this conservative approach is time-consuming and requires both patient compliance and sustained follow-up [11].

Commonly described surgical techniques include conventional scalpel incision, electrosurgery, cryosurgery, and laser-based procedures [6].

In the present case, conventional scalpel surgery was selected. This technique has been widely used for many years due to its ease of use, precision, and limited damage to surrounding tissues. Adjunctive vestibuloplasty may be beneficial for improving prosthetic rehabilitation, as it increases the height of edentulous ridge and promotes the formation of a band of keratinized gingiva. Additionally, epithelial—connective tissue grafting represents a valuable option for enhancing ke-

ratinized tissue and restoring vestibular depth, both of which are critical for prosthetic stability [6].

However, achieving adequate hemostasis can be challenging, particularly in patients with underlying or treatment—related bleeding disorders [12].

Laser-assisted approaches, including CO_2, Er: YAG, and Diode lasers, offer several advantages, such as reduced operative time, minimal intraoperative bleeding, increased vestibular depth, improved re-epithelialization, and good patient tolerance. In a randomized clinical trial, Amaral *et al.* showed that diode laser therapy was more effective than conventional techniques in the management of fibrous hyperplastic lesions, significantly reducing both operative time and post-operative analgesic requirements [13].

Similarly, Ortega-Concepción *et al.* compared diode laser with other laser modalities (CO_2 and Nd: YAG) in soft tissue management and concluded that diode laser provides favorable outcomes due to its ease of use, effective coagulation, and absence of suturing, post-operative pain, and inflammation [14].

Other minimally invasive techniques have also been proposed, including cryosurgery. This method involves the destruction of tissue through a rapid in situ freezing. When applied to biological tissues, it induces both direct and indirect effects, ranging from heat transfer and cellular destruction to vascular and inflammatory changes. Cryosurgical systems are available in both open and closed delivery formats and employ different cryogenic agents such as nitrous oxide, liquid nitrogen, carbon oxide, argon, or freon [15].

According to Vyasrayani *et al.*, cryosurgery offers several advantages [9]:

- Excellent hemostasis due to necrosis of capillary endings
- Maintenance of an aseptic environment
- Favorable healing with minimal postoperative edema and pain
- An almost painless procedure resulting from immediate nerve conduction blockade in the treated area
- Lower cost compared with similar techniques such as CO2 laser therapy

Following excisional surgery, several postoperative events or complications may occur, including pain, inflammation, bleeding, or infection. Surgical wounds may act as potential entry points for bacteria, thereby increasing the risk of infection. For this reason, postoperative antibiotic therapy is often recommended. In our case, Amoxicillin, a *ß*-lactam antibiotic, was prescribed. According to the study by Apriadhanti *et al.*, amoxicillin is the most frequently prescribed antibiotic (55%) following oral soft tissue excision procedures [16].

To manage postoperative pain, a short course of corticosteroid therapy (3 days) was prescribed. The use of steroidal anti-inflammatory drugs (SAIDs) is beneficial for prolonged control of postoperative pain after 48 hours. Moreover, due to their role in suppressing the inflammatory cascade, SAIDs are particularly recommended in complex surgical procedures [17].

4. Conclusion

In cases of EF, establishing diagnosis is a crucial step in guiding the therapeutic

strategy. Depending on the clinical presentation, conservative tissue conditioning may be sufficient, whereas surgical intervention may be required in other situations. The success of these procedures largely depends on the clinician's skill and mastery pf the available techniques. To ensure long-term stability of the outcomes and prevent recurrence, close collaboration between the prosthodontist and the dental surgeon is essential in the realization of well-adapted prosthesis. Histopathological examination remains indispensable to confirm the diagnosis and to rule out potentially malignant lesions. Finally, active patient participation through regular follow-up is essential to prevent recurrence and to maintain long-term treatment outcomes.

Informed Consent

The patient has provided informed consent.

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Conflicts of Interest

The authors declare no conflicts of interest.

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