

Epulis Fissuratum: An Overview of Diagnosis and Contemporary Management Strategies

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Abstract

Epulis fissuratum is a benign reactive fibrous hyperplasia of the oral mucosa resulting from chronic mechanical irritation caused by ill-fitting denture flanges. This condition predominantly affects middle-aged and elderly denture wearers, with a higher prevalence in females. The clinical presentation typically features single or multiple tissue folds in the vestibular sulcus or alveolar ridge, often appearing firm and fibrous with intact or ulcerated mucosa. Diagnosis relies primarily on clinical examination correlating tissue overgrowth with denture configuration, although histopathological confirmation remains essential to exclude malignant transformation. Contemporary management encompasses both conservative tissue conditioning approaches for early lesions and surgical excision using conventional scalpels, electrosurgery, or laser modalities, coupled with mandatory prosthetic rehabilitation to prevent disease recurrence.

Keywords: Epulis fissuratum, reactive fibrous hyperplasia, ill-fitting denture.

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1. INTRODUCTION

Epulis fissuratum is a hyperplastic inflammatory response of the oral soft tissues, characterized by fibrous connective tissue proliferation over the alveolar ridge or vestibular sulcus [1]. This denture-induced pathology emerges as a consequence of prolonged mechanical trauma from overextended or poorly adapted prosthetic flanges [2]. The condition preferentially affects individuals in the fifth through seventh decades of life, demonstrating marked female predominance, with reported incidences of females comprising approximately sixty-six to seventy-five percent of cases [3]. Although typically benign and asymptomatic during the initial stages, untreated lesions may progress to compromise denture retention, interfere with masticatory function, and rarely undergo malignant transformation [1]. Epidemiological data indicate that denture-induced fibrous hyperplasia is the most prevalent lesion among denture-associated oral pathologies, with detection rates reaching forty-two percent in affected populations [3]. This review provides

a concise summary of the clinical diagnosis and management strategies for epulis fissuratum.

2. CLINICAL PRESENTATION AND DIAGNOSIS

2.1. Recognition of Clinical Features

The pathognomonic clinical appearance manifests as single or multiple hyperplastic folds of fibrous tissue, typically firm to palpation, arising in the vestibular sulcus, where denture flanges exert chronic pressure [2]. Lesional tissue characteristically demonstrates a sessile configuration, with the denture flange fitting within a groove between tissue folds [4]. Surface characteristics vary from smooth, intact mucosa to erythematous or ulcerated presentations, particularly within fissure depths, where mechanical irritation is most pronounced [5]. The anatomical distribution shows a predilection for the anterior jaw regions, with studies documenting maxillary involvement in approximately fifty-five percent of cases and mandibular localization in forty-five percent [4]. Lesion dimensions demonstrate considerable variability, ranging from focal millimeter-

scale growths to extensive proliferations encompassing the entire vestibular length [5].

2.2. Differential Diagnosis Considerations

Clinical assessment necessitates the systematic exclusion of alternative diagnoses, including squamous cell carcinoma, particularly when lesions display atypical ulceration or irregular surface characteristics [1]. Although malignant transformation is uncommon, it mandates vigilant evaluation for features suggesting neoplastic changes [4]. Additional differential considerations include squamous papilloma, pyogenic granuloma, peripheral giant cell granuloma, and irritation fibroma [6]. A definitive diagnosis integrates clinical findings correlating tissue hyperplasia with denture configuration, alongside histopathological examination confirming fibrous connective tissue proliferation with chronic inflammatory infiltration [1].

3. MANAGEMENT STRATEGIES

3.1. Conservative Non-Surgical Approaches

Early-stage lesions with a limited fibrous component may respond favorably to conservative management through tissue conditioning protocols [4]. This approach involves temporary denture relining with soft conditioning materials, daily lesional massage, and strict adherence to denture hygiene, including overnight removal. Tissue conditioning periods typically extend for two weeks with material renewal until lesional regression occurs [2]. Success rates are highest for small, recently developed hyperplasias that are diagnosed and managed promptly, potentially obviating the need for surgical intervention [4]. However, extensive lesions with substantial fibrous architecture generally require surgical excision because of the limited regression potential of conservative measures alone [2].

3.2. Surgical Excision Techniques

Conventional scalpel surgery remains a well-established modality for complete lesional removal with direct wound approximation using sutures [2]. Carbon

dioxide laser excision has emerged as a preferred alternative, offering distinct advantages, including superior hemostasis, reduced operative time, minimal requirement for sutures, and enhanced preservation of vestibular depth [7]. Alternative laser systems, including erbium chromium yttrium scandium gallium garnet and diode lasers, have demonstrated comparable efficacy with minimal thermal damage and favorable wound healing characteristics [8]. A randomized clinical trial comparing carbon dioxide laser with scalpel demonstrated significantly reduced surgical duration and intraoperative bleeding with laser application, while maintaining comparable healing outcomes by postoperative day 14 [7]. Cryosurgery using liquid nitrogen is a valuable option for medically compromised patients, particularly those receiving anticoagulant therapy, as it provides excellent hemostatic control and satisfactory healing without treatment interruption [9].

3.3. Prosthetic Rehabilitation and Recurrence Prevention

Elimination of causative factors through prosthetic rehabilitation is essential for preventing lesional recurrence [1]. Management protocols incorporate the correction of existing dentures through border adjustment or complete denture replacement to restore appropriate tissue adaptation [2]. In cases involving significant vestibular reduction, surgical management may involve vestibuloplasty with free gingival grafting to optimize ridge morphology for subsequent prosthetic reconstruction [5]. Patient education regarding proper denture maintenance, daily hygiene protocols, and periodic professional evaluation is a fundamental component of comprehensive care [4]. Regular follow-up examinations at three and six-month intervals enable the early detection of recurrent lesions and facilitate timely intervention [2].

3.4. Management Modality and Clinical Considerations

Management Modality	Primary Advantages	Clinical Considerations
Tissue Conditioning	Non-invasive, avoids surgery for early lesions	Limited efficacy for extensive fibrous lesions
Scalpel Excision	Direct visualization, traditional technique	Requires sutures, potential bleeding
CO ₂ Laser	Superior hemostasis, reduced operative time, preserves vestibular depth	Equipment cost, specialized training
Cryosurgery	Excellent for anticoagulated patients, minimal bleeding	Requires liquid nitrogen supply

4. CONCLUSION

Epubis fissuratum is a common yet preventable denture-associated pathology that can be successfully managed using integrated diagnostic and therapeutic approaches. Early recognition through systematic clinical examination enables timely intervention, with conservative tissue conditioning potentially preventing surgical procedures for limited lesions. Advanced or

fibrous lesions necessitate surgical excision, with carbon dioxide laser modalities offering contemporary advantages over traditional scalpel techniques, including enhanced hemostasis and preserved anatomical architecture. Regardless of the excisional methodology selected, successful long-term outcomes mandate concurrent prosthetic rehabilitation, addressing causative factors and implementing rigorous maintenance protocols. This multidisciplinary strategy, combining

precise diagnosis, appropriate surgical intervention, and comprehensive denture management, optimizes functional outcomes while minimizing the recurrence risk in the elderly patient population.

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