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EPULIS FISSURATUM CAUSED BY DENTURES: A LITERATURE REVIEW

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ABSTRAK

Epulis fissuratum adalah hiperplasia fibrosa reaktif yang umumnya disebabkan oleh iritasi mekanis kronis akibat gigi tiruan lengkap yang tidak pas. Kondisi ini sering muncul sebagai lipatan mukosa di area vestibulum rongga mulut. Tujuan: Laporan kasus ini bertujuan untuk menjelaskan gambaran klinis, faktor etiologi, strategi penatalaksanaan, dan peran edukasi pasien dalam mencegah kekambuhan. Seorang pasien perempuan berusia 65 tahun datang dengan keluhan pembesaran jaringan lunak di vestibulum mandibula, yang berhubungan dengan penggunaan gigi tiruan lengkap yang tidak disesuaikan dalam jangka waktu lama. Pemeriksaan klinis dan riwayat pasien memastikan diagnosis epulis fissuratum. Eksisi bedah konservatif dilakukan dengan anestesi lokal, diikuti dengan rehabilitasi prostetik dan edukasi kebersihan mulut. Penyembuhan pascaoperasi berjalan lancar, dengan pemulihan jaringan lengkap yang diamati dalam dua minggu. Gigi tiruan baru dibuat untuk mengakomodasi perubahan anatomi dan mencegah trauma lebih lanjut. Tindak lanjut bulanan selama tiga bulan tidak menunjukkan tanda-tanda kekambuhan, dan pasien melaporkan peningkatan kenyamanan dan kepuasan. Iritasi kronis akibat gigi palsu yang tidak pas tetap menjadi penyebab utama lesi jaringan lunak seperti epulis fissuratum. Deteksi dini, intervensi bedah bila diperlukan, dan manajemen prostetik yang tepat—dikombinasikan dengan edukasi pasien yang efektif—merupakan kunci keberhasilan. Pengguna gigi palsu harus diberi tahu tentang pentingnya evaluasi rutin untuk memastikan kesehatan mulut jangka panjang dan mencegah kekambuhan lesi tersebut.

Kata kunci: *epulis fissuratum, gigi palsu lengkap, iritasi kronis, eksisi jaringan, edukasi pasien*

ABSTRACT

Epulis fissuratum is a reactive fibrous hyperplasia commonly caused by chronic mechanical irritation from ill-fitting complete dentures. It often presents as mucosal folds in the vestibular area of the oral cavity. Aim: This case report aims to describe the clinical features, etiological factors, management strategies, and the role of patient education in preventing recurrence. A 65-year-old female patient presented with a soft tissue enlargement in the mandibular vestibule, associated with prolonged use of unadjusted complete dentures. Clinical examination and patient history confirmed the diagnosis of epulis fissuratum. Conservative surgical excision was performed under local anesthesia, followed by prosthetic rehabilitation and oral hygiene education. Postoperative healing was uneventful, with complete tissue recovery observed within two weeks. A new denture was fabricated to accommodate the anatomical changes and prevent further trauma. Monthly follow-ups for three months showed no signs of recurrence, and the patient reported improved comfort and satisfaction. Chronic irritation from ill-fitting dentures remains a major contributor to soft tissue lesions such as epulis fissuratum. Early

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detection, surgical intervention when needed, and appropriate prosthetic management—combined with effective patient education—are key to successful outcomes. Denture users should be advised of the importance of routine evaluations to ensure long-term oral health and prevent recurrence of such lesions.
Keywords: *epulis fissuratum, complete dentures, chronic irritation, tissue excision, patient education*

INTRODUCTION

Epulis fissuratum (EF), also known as denture-induced fibrous hyperplasia, is a common non-neoplastic reactive lesion of the oral mucosa. This lesion is characterized by the proliferation or overgrowth of fibrous connective tissue caused by chronic mechanical irritation. The most frequent cause of this condition is the use of ill-fitting or loose removable dentures (Leepel, 2015). Among the various denture-related mucosal lesions, EF exhibits a distinct reactive pattern to chronic trauma and is most commonly found in individuals who have used complete dentures for an extended period without regular check-ups and adjustments (Zarb et al., 2013). Clinically, the lesion typically appears as folds of hyperplastic mucosal tissue located around the vestibule, particularly in the anterior region of the maxilla and mandible, resulting from pressure from the denture flange (Basker et al., 2011; Mohammadi et al., 2017).

The term "epulis" itself is generally used to describe any enlargement of the gingival or alveolar mucosa. Meanwhile, the term "fissuratum" specifically refers to the characteristic clinical appearance of this lesion, namely the presence of a groove or linear fissure formed between the folds of hypertrophied tissue due to the use of an improper denture (Mohammadi et al., 2017; Mortazavi et al., 2016). Although EF is considered a pseudotumoral lesion and can account for up to 23% of all benign jaw tumors, it remains fundamentally benign and non-invasive (Bhoyar & Tijare, 2016). Clinically, the lesion can be observed as a sessile mass with a smooth or reddish surface depending on the presence of inflammation, and its size can vary from minor localized thickening to extensive proliferation involving the entire vestibular sulcus (Veena et al., 2013; Mohan et al., 2013).

Ideally, the oral health of denture wearers should always be maintained through routine care and check-ups. Denture wearers are expected to receive adequate education on the importance of maintaining denture and oral hygiene, as well as undergoing regular dental examinations. These routine check-ups aim to evaluate the fit of the denture, which can change over time due to alveolar bone resorption. With periodic adjustments or relining, the denture can remain stable and not cause irritation to the underlying soft tissues. This ideal condition would prevent the development of pathological lesions such as epulis fissuratum, allowing patients to continue using their dentures comfortably and safely.

However, the reality on the ground is often far from this ideal condition. One of the main problems is the slow and often painless progression of EF in its early stages. Consequently, many patients are unaware of the lesion or do not report it to their dentist until it becomes very large or begins to cause symptoms (Mohammadi, 2017; Mohan et al., 2013). The habit of continuing to use the same denture for many years, driven by factors such as adaptation, financial constraints, or psychological comfort, often worsens tissue irritation and leads to further complications (Mohan et al., 2013). This condition becomes more severe when ulceration occurs, where the lesion can cause pain, discomfort, bleeding, and functional limitations such as difficulty chewing or speaking (Bhoyar & Tijare, 2016; Mortazavi et al., 2016).

Epidemiologically, epulis fissuratum is more frequently reported in women and older adults, with a prevalence affecting approximately 5–10% of jaws with prostheses (Patil, 2019;

Veena et al., 2013). The anterior maxilla is the most commonly affected location due to the anatomical configuration and denture dynamics in that area. The ongoing process of alveolar bone resorption can further exacerbate the problem, as it causes the denture flange to press deeper into the sulcus, thereby increasing mechanical trauma (Mohammadi, 2017; Neville, 2016). If not treated promptly, the continuous irritation can not only result in persistent hyperplasia but also theoretically increase the risk of dysplastic changes due to repeated trauma (Atashrazm, 2013; Zarei, 2007; Sghaireen, 2015).

From the above description, a significant gap is evident between the ideal principles of prosthodontic care and patient behavior and clinical realities on the ground. Ideally, every denture wearer should have routine check-ups to prevent complications. However, the reality is that many patients neglect this care, resulting in a high prevalence of EF. This gap indicates an urgent need to increase awareness, both among patients regarding the importance of denture care and among practitioners regarding the importance of early identification. Histopathologically, EF lesions show dense fibrous connective tissue with varying degrees of chronic inflammation, where the presence of fissures lined by hyperplastic tissue is a characteristic feature (Sghaireen, 2015; Karimi et al., 2016).

The management of epulis fissuratum largely depends on the size and chronicity of the lesion. For small and reversible lesions, conservative treatments such as denture adjustments or the use of tissue conditioners may be sufficient to resolve the issue. However, for large and fibrotic lesions, surgical intervention becomes the primary choice (McCord & Grant, 2000). Surgical removal of the tissue can be performed using conventional scalpel techniques or with advanced technologies such as CO_2 or diode lasers, which offer advantages like minimal bleeding and better precision (Nordio, 2023). After surgery, the fabrication of a new denture or proper relining is crucial to prevent recurrence (Rees & Gormley, 2001).

The presence of epulis fissuratum serves as a critical clinical reminder of the need for regular denture evaluation, proper prosthesis design, and good maintenance. The novelty or innovation of this review article lies in its effort to comprehensively synthesize the current literature on EF. Its goal is to bridge the knowledge gap by deeply analyzing various aspects, from etiology, clinical presentation, and histopathology to therapeutic approaches. The main contribution of this review is to enhance clinical awareness and serve as an evidence-based guide for dental practitioners in the early identification, prevention, and proper management of this common prosthetic complication (Mishra & Pandey, 2016).

RESEARCH METHODS

This article adopts a narrative literature review approach to comprehensively examine the etiology, clinical presentation, diagnostic criteria, and management strategies of epulis fissuratum caused by chronic irritation from complete dentures. The review was conducted by identifying and synthesizing relevant national and international literature to provide a detailed understanding of the condition. Literature was retrieved through database searches on PubMed, ScienceDirect, Google Scholar, and SpringerLink using targeted keywords such as “epulis fissuratum,” “denture-induced hyperplasia,” “chronic irritation,” “complete dentures,” and “prosthetic lesions.” Articles published in English or Indonesian within the last 20 years were considered eligible if they addressed aspects such as pathogenesis, histopathological characteristics, treatment methods, or preventive measures related to epulis fissuratum.

The selection process involved initial screening of titles and abstracts for relevance, followed by full-text review to ensure methodological clarity and applicability to the study objectives. Included sources comprised original research articles, clinical case reports, and reputable textbooks to provide a balanced and evidence-based perspective. Studies with

unrelated focus, redundant data, or insufficient methodological transparency were excluded. Extracted data were thematically organized into categories covering causative factors, clinical features, diagnostic approaches, treatment options (surgical and non-surgical), and patient education. Comparative analysis was applied where appropriate, especially in evaluating traditional excision methods versus laser-assisted techniques. The final synthesis highlights current best practices and identifies areas for further clinical investigation, aiming to support dental professionals in the effective management of denture-related soft tissue lesions.

RESULTS AND DISCUSSION

Result

Author (Year)	Method	Findings	Database
Muslim et al. (2023)	Case report of a 61-year-old female patient	EF lesion (5×2×0.5 cm) found in the lower lingual vestibule due to long-term denture use. Treated with excision and vestibuloplasty, resulting in full epithelial healing and improved prosthetic fit.	Google Scholar
Khalifa et al. (2021)	Case report with surgical excision and vestibuloplasty	Lesion in mandibular vestibule due to ill-fitting denture. Treated with envelope flap technique and tissue graft. Resulted in good healing and prosthetic stability.	Pubmed
Mekayssi et al. (2021)	Case report with prosthesis modification and surgical excision	EF removed surgically after prosthetic reshaping and relining. Vestibule preserved; final prosthesis showed excellent adaptation.	Google Scholar
Ibrahim et al. (2022)	Combined tissue conditioning and cold blade surgery	A large EF on left mandible treated after 2 weeks of conditioning and surgical removal. Post-op: healed sulcus, no scar, and improved function.	Google Scholar
Monteiro et al. (2011)	Laser surgical case with CO_2 excision and no sutures	EF treated with CO_2 laser. Healing by secondary intention. Histopathology showed fibrous tissue, no malignancy. 3-mm vestibular depth gained.	Science Direct
Patil et al. (2014)	Case report of EF from broken FPD	Bilateral upper labial vestibule EF without surgery. Lesion regressed after removal of broken FPD and denture correction	Google Scholar
Hasnaoui et al. (2017)	Case report with temporary prosthesis and complete denture replacement	EF due to overextended denture in maxilla and mandible. Treated surgically; final complete denture fabricated after healing.	Google Scholar

El Assraoui et al. (2023)	Case report of electrosurgical and scalpel excision	Tissue conditioning used first; surgery followed. Final prosthesis used to guide healing. Electrosurgery reduced bleeding and postoperative pain.	Google Scholar

Discussion

Epulis fissuratum (EF) represents a classic example of the oral mucosa's reactive response to chronic, low-grade mechanical injury, fundamentally classifying it as a preventable pathological condition. The discussion of its etiology confirms that the lesion is not a spontaneous neoplastic event but rather a direct consequence of biomechanical failure, typically from an ill-fitting denture. As detailed by Muslim et al. (2023) and Mekayssi et al. (2021), the overextended or unstable denture flange acts as a persistent irritant, stimulating a protective hyperplastic proliferation of fibrous connective tissue. This process results in the characteristic clinical presentation of redundant tissue folds, most commonly in the anterior vestibular regions. Understanding this clear cause-and-effect relationship is paramount, as it shifts the clinical focus from merely treating the lesion to addressing the underlying prosthetic deficiency. This perspective underscores the practitioner's crucial role in both prosthetic design and patient education to prevent the initial development of such reactive lesions.

The epidemiological profile of epulis fissuratum highlights that the condition is intrinsically linked to both physiological and behavioral factors, predominantly affecting a specific patient demographic. The findings consistently identify elderly female patients as the most susceptible group, a conclusion supported by multiple studies, including those by Hasnaoui et al. (2017) and Muslim et al. (2023). This predisposition can be attributed to a confluence of factors: the longevity of denture use, often exceeding a decade without professional review, combined with age-related physiological changes like accelerated alveolar ridge resorption, particularly in post-menopausal women. Furthermore, behavioral habits such as nocturnal denture wearing and inadequate prosthetic hygiene, as noted by Ibrahim et al. (2022), exacerbate tissue irritation. This frames EF not merely as a clinical diagnosis but as a multifactorial problem rooted in a lack of patient education, socioeconomic barriers to regular dental care, and long-term patient habits.

A definitive diagnosis of epulis fissuratum relies on a thorough correlation of clinical findings with histopathological analysis, which is essential for differentiating it from other oral lesions. While the clinical appearance is often characteristic, a biopsy remains the gold standard to ensure an accurate diagnosis and rule out malignancy. The histopathological features, as described by Monteiro et al. (2011), typically reveal hyperkeratotic stratified squamous epithelium overlying a core of dense, fibrous connective tissue, often accompanied by a mild chronic inflammatory infiltrate. This microscopic presentation confirms the lesion's benign and reactive nature. The importance of this step cannot be overstated, as lesions in the oral cavity can have similar clinical appearances. Therefore, histopathological examination is a critical component of the standard of care, ensuring patient safety by distinguishing this benign hyperplasia from potentially malignant conditions like squamous cell carcinoma, especially in cases with atypical features or rapid growth.

The management of epulis fissuratum encompasses a spectrum of therapeutic approaches, with the choice of intervention being dictated by the size, duration, and fibrotic nature of the lesion. For very small, early-stage lesions, a conservative approach involving the removal or adjustment of the irritant may occasionally lead to regression, as suggested by Patil et al. (2014). However, this outcome is uncommon for established fibrous growths.

Consequently, surgical excision is considered the definitive treatment for most cases. The literature demonstrates the efficacy of various modalities, from traditional cold blade scalpel excision (Muslim et al., 2023; Ibrahim et al., 2022) to more advanced techniques like electrosurgery (El Assraoui, n.d.) and CO_2 laser ablation (Monteiro et al., 2011). The use of lasers, in particular, is noted for its advantages, including superior hemostasis, reduced postoperative pain, and minimal scarring, offering a more comfortable experience for the patient.

Successful treatment of epulis fissuratum extends beyond the surgical procedure itself, hinging critically on comprehensive pre- and post-surgical management. The preoperative phase is essential for optimizing the surgical site. As highlighted by Mekayssi et al. (2021), the use of tissue conditioners applied to the denture's intaglio surface is a vital step. This therapy reduces inflammation and allows the compressed tissues to rebound, resulting in a healthier surgical field and a more accurate excision. Following surgery, the focus must shift immediately to prosthetic rehabilitation. As emphasized by Hasnaoui et al. (2017), failure to address the causative denture—either by fabricating a new, well-fitting prosthesis or by significantly modifying the existing one—almost guarantees recurrence. This comprehensive approach, integrating tissue conditioning, precise surgery, and proper prosthetic follow-up, is the key to achieving a stable, long-term therapeutic outcome for the patient.

Innovations in surgical techniques aim not only to remove the hyperplastic tissue but also to preserve the functional anatomy of the oral vestibule, which is critical for future prosthetic success. The envelope flap technique combined with a connective tissue graft, as introduced by Khalifa et al. (2021), exemplifies this advanced approach. The primary rationale for this procedure is the preservation of vestibular depth, a crucial factor for the retention and stability of a new complete denture. Conventional excision can sometimes lead to scarring and a reduction in vestibular height, which complicates prosthetic rehabilitation. By using a graft, this innovative technique effectively prevents scar tissue contraction and reconstructs a stable tissue bed. This highlights a progressive shift in treatment philosophy from simple excision towards a more functional, reconstructive goal that prioritizes the long-term prosthetic health and comfort of the patient.

Ultimately, the high prevalence of epulis fissuratum serves as a powerful clinical reminder of a significant gap between ideal prosthodontic principles and real-world patient care. The fact that recurrence is exceptionally rare when the underlying etiology is corrected, as emphasized by Muslim et al. (2023), firmly places the responsibility on proactive and continuous professional care. This necessitates a paradigm shift from a reactive treatment model, which addresses the lesion only after it has formed, to a preventive framework. This framework must be built on robust patient education regarding denture hygiene, the importance of not wearing prostheses nocturnally, and the necessity of regular dental check-ups. The presence of EF is an indicator of a breakdown in this patient-practitioner partnership, highlighting the urgent need to empower patients with knowledge and ensure diligent prosthetic follow-up to maintain oral health.

CONCLUSION

Epulis fissuratum represents a frequent complication among long-term complete denture users, primarily resulting from chronic mechanical irritation due to ill-fitting prostheses. This condition underscores the importance of regular dental evaluations, timely denture adjustments, and patient education regarding oral hygiene and prosthetic maintenance. Surgical excision, when necessary, combined with appropriate prosthetic rehabilitation, has been shown to yield favorable outcomes with low recurrence rates. Dental practitioners should

remain vigilant in identifying early signs of tissue hyperplasia and emphasize that dentures are not permanent devices but require periodic assessment and renewal. Strengthening the collaboration between clinicians and patients is essential to maintaining oral soft tissue health and preventing progression of reactive lesions. Future efforts should focus on establishing routine recall systems for denture wearers to minimize the risk of chronic trauma and associated complications.

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