

Surgical Excision of Fibrous Epulis in Generalized Periodontitis Stage III Grade C

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ABSTRACT

Background: Fibrous epulis was the most frequent non-plaque-induced gingival lesions categories from biopsied cases included hyperplastic lesions, malignancies and benign neoplasms. Because the lesion is nonspecific and histology is the foundation of a more precise diagnosis, dentists may have difficulty identifying fibrous epulis from other disorders. Furthermore, the recurrence rate is significant, thus long-term follow-up is required for fibrous epulis after therapy. **Purpose:** to report the therapy of fibrous epulis and the follow up after eight months. **Case:** A 30-year-old nonsmoker healthy man presented with a 3-month history of an enlarging mass on the anterior left mandible gingiva. A clinical diagnosis was fibrous epulis in generalized periodontitis stage III grade C. **Case Management:** After evaluation of initial therapy, complete excision with a surgical blade and curettage of the lesion were planned for the lesion therapy. Histopathology finding confirm the prior clinical diagnosis of fibrous epulis. Eight months following surgery, the gingiva around the region had a healthy and desirable shape with no signs of recurrence. The patient's surgical recovery was good. **Conclusion:** Within the limitations of this case study, complete excision and curettage of the fibrous epulis lesion are the preferred treatments because of its high recurrence rate. The histopathologic examination is crucial for determining the final diagnosis, and long-term follow-up is essential.

Keywords: Fibrous Epulis, Gingival Lesions, Periodontal Disease, Human and Health, Tumor

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INTRODUCTION

While plaque-induced gingivitis is one of the most common human inflammatory diseases, there are several non-plaque-induced gingival disorders that are less common but can have a significant impact on patients. Nonplaque gingival lesions are frequently indications of systemic diseases, although they can also be pathologic alterations restricted to gingival tissues.¹⁻³ Epulis is a word that is frequently used to describe non-plaque-caused gingival disorders that present as exophytic processes arising from the gingiva.^{1,2,4}

Fibrous epulis is part of true epulides, a form of inflammatory fibrous hyperplasia of the gingiva, also known as focal fibrous hyperplasia and also known as irritation fibroma. True epulides are classified into four types based on their histology: fibrous epulis, calcifying fibroblastic granuloma, pyogenic granuloma (vascular epulis), and peripheral/central giant cell granuloma. Fibrous epulis is commonly present as exophytic smooth-surfaced pink masses with a fibrous nature attached to the gingiva. The size ranges from tiny tumorlike processes with a diameter of a few centimeters to giant tumorlike processes with a diameter of several centimeters.^{1,2,5-7}

Fibrous epulis (35.47%) was the most frequent non plaque-induced gingival lesions categories from biopsied cases including hyperplastic lesions, malignancies, and benign neoplasms.⁸ Fibrous epulis is thought to affect 0.09 percent of the population. The majority of lesions affect the maxillary anterior interdental papilla, affect people of all ages, and affect women more frequently than males.^{4,9} The periosteum and periodontal ligament might be the sources of fibrous epulis.⁵ Local irritations, including poor-quality dental restorations, dental plaque, and calculus, contribute to its development.^{5,10-14} Although the reactive processes are assumed to indicate an excessive tissue response to restricted local irritation or damage, fibrous epulis generally presents with no symptoms.¹

Dentists are the primary healthcare providers for individuals with epulides lesions in terms of determining diagnosis and developing treatment regimens. Any such lesion should be familiar to them, and they should be able to diagnose, treat, or refer them for therapy.¹ However, because the lesion is nonspecific and histology is the foundation of a more precise diagnosis, dentists may have difficulty identifying fibrous epulis from other disorders. Furthermore, because the recurrence rate is significant, ranging from 7 to 45 percent, long-term follow-up is required for fibrous epulis after therapy.^{5,13,14}

The therapy of fibrous epulis in generalized periodontitis stage III grade C patients by conventional scalpel surgical excision was described in this article. The clinical and histological images of the gingival lesion, as well as the surgical techniques and supportive periodontal therapy, are all fully described. The recurrence rate was assessed after eight months.

CASE REPORT

A 30-year-old nonsmoker man presented with a 3-month history of an enlarging mass on the anterior left mandible gingiva. This is the first time this has happened to him. The patient claimed no systematic disease, and the gingiva growth had been asymptomatic except for the discomfort feeling. He was not under any medication and did not have any habits that might have predisposed him to the growth.

Extraoral examination revealed no abnormalities, and regional lymph nodes were normal as well. Intraoral examination revealed a painless gingival enlargement in relation to the lower-left canine and first premolar region, which was pedunculated, 10x10x4 mm in size, fibrous in appearance with a distinct erythematous border at the margins, and non-fluctuant swelling (Figure 1a). Bleeding on probing (BoP) and dental calculus supra and subgingival were found in that area as well by tactile examination. Gingival recession type 1 (RT 1) was assessed



on the labial site of first premolar. No tooth mobility in this region was noted. The radiographic examination did not demonstrate any bone involvement in the lesion area (Figure 1c). The initial diagnosis of the lesion was assessed as fibrous epulis with a differential diagnosis of pyogenic granuloma, peripheral giant cell granuloma, and calcifying fibroblastic granuloma.

In addition, intraoral examinations also revealed BoP on 70% of sites, with moderate oral hygiene status. 2-8 mm of clinical attachment loss (CAL) was observed on 42% of the teeth, with the worst bone loss in tooth 37. The radiographic examination confirms the bone loss and showed some furcation involvement lesion on both lower second molar. His periodontal condition was diagnosed as generalized periodontitis, stage III grade C according to the new periodontal disease classification.^{3,15}

CASE MANAGEMENT

The patient received oral health education as well as scaling and root planing during the initial phase of treatment. The intraoral result indicated that the inflammation had decreased after one week of management, but the mass

remained (Figure 1.B). Complete excision with a surgical blade and curettage of the lesion were planned for therapy. The patient was told about the therapy and given written consent, following local regulations. Local infiltration anesthesia by 2% mepivacaine (Scandonest 2 percent special, Septodont, France) was used on the buccal and lingual area, then the bleeding points were used to outline the epulis' edge with a half-moon dental explorer instrument. The tumor was removed with blade No. 15 angulated 45 degrees to the coronal plane using the conventional technique, which required the involvement of 1 mm of surrounding healthy tissue (Figure 2.A). The tumor was excised in one piece by removing its peduncle, and the excisional masses were preserved in a 10% neutral buffered formalin solution before being transported to the histopathology lab. The bone was carefully curetted once the base was evacuated (Figure 2.B). Mechanical pressure from a sterile cotton gauze is used to limit bleeding, and the final condition seen in figure 2c. Periodontal dressing (Coe pack, GC Asia) was then applied at the site for about one week (Figure 2.D).¹⁶ The patient was given the painkiller mefenamic acid 500 mg and told to come back in one week.

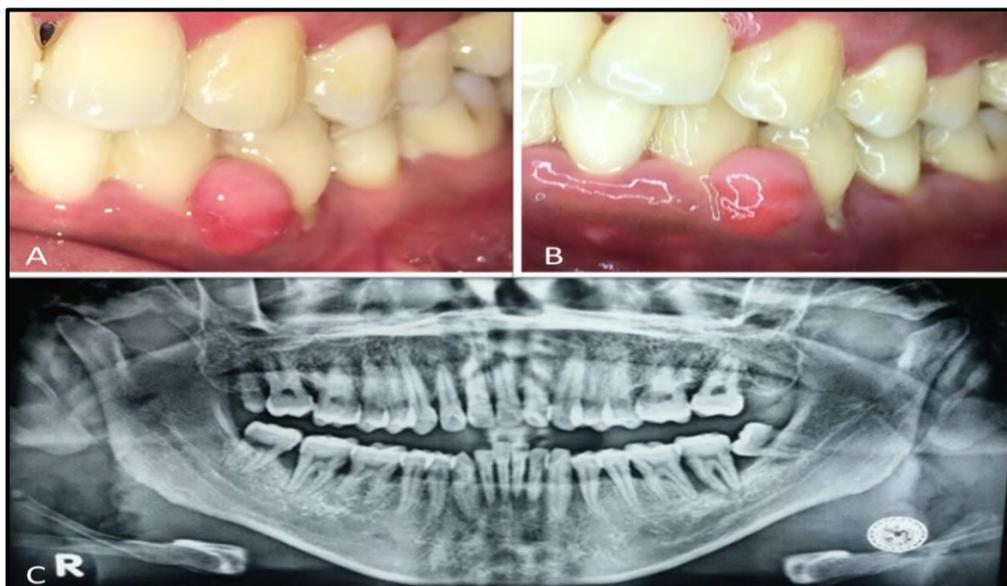


Figure 1. A. Clinical appearance at the first time. B. Clinical appearance after initial phase. C. Radiographic picture shows no bone loss around the mass.

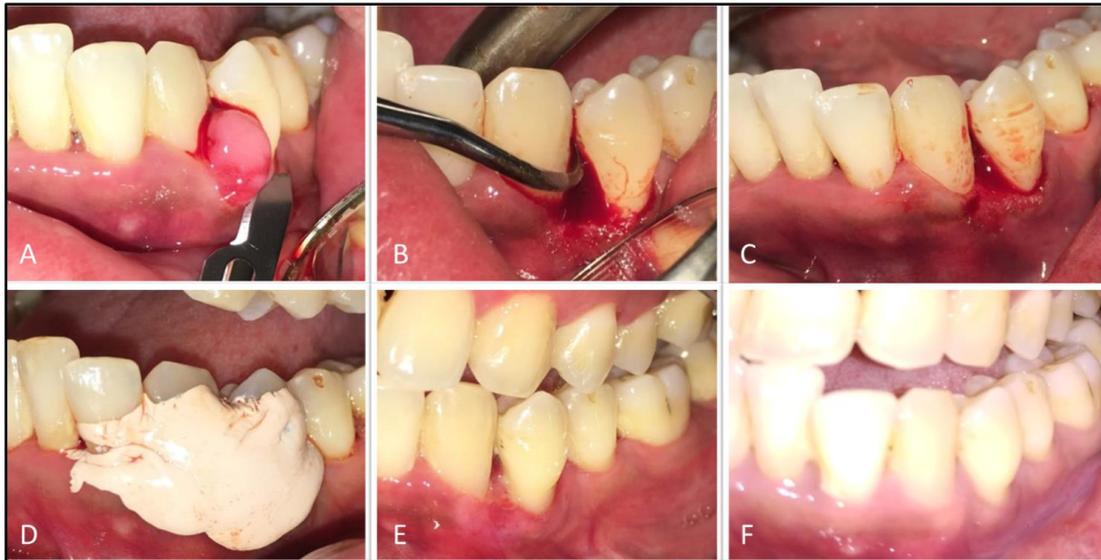


Figure 2. A. Excision by surgical scalpel blade, B. Debridement using curettage and subgingival calculus, C. Final condition after epulis excision, D. Periodontal dressing application, E. Clinical condition on first week control, F. Clinical condition on eight-month control.

The patient returned to the dental hospital a week later. He said that he had only taken the analgesic twice and had experienced no discomfort. After removing the periodontal dressing, the surgical region was irrigated with saline (Figure 2.E). According to an intraoral inspection, there was still some irritation near the gingival edge. Eight months following surgery, the gingiva around the region had a healthy and desirable shape (Figure 2.F) with no signs of recurrence. The patient's surgical recovery was good.

The histological microscopy result revealed hyperplastic squamous epithelium lining the tissue, with fibrous tissue including proliferative capillaries, some hemorrhages. Neutrophils, lymphocytes, histiocytes, and plasma cells infiltrate the stroma. There is no evidence of malignancy. Histopathology finding confirm the prior clinical diagnosis of fibrous epulis.

DISCUSSION

This patient was diagnosed with fibrous epulis in generalized periodontitis stage III grade C. Because of the high recurrence rate (7–45%),^{5,13,14} complete excision and curettage of the lesion is the optimum therapy, and long-term

follow-up is required. The gingiva around the location had a healthy and attractive form after one week and eight months evaluation after therapy, with no evidence of recurrence. The patient made a satisfactory recovery after surgery. The outcomes of this case's therapy are consistent with those of Ohta et al.,⁵ who followed up 20 months following full excision and curettage of the fibrous epulis and found no indication of recurrence. In contrast to our situation, they stated that the teeth affected had to be removed owing to severe underlying bone resorption. This result also consistent with the case reported by Fonseca et al.,¹¹ and Zhu et al.,¹⁴ who evaluated for over a year without lesion recurrence of the epulis after conventional removal surgical therapy.

Fibrous epulis is an exophytic pink mass with a fibrous nature that attaches to the gingiva. The size ranges from a pinhead to a tumor with a diameter of several centimeters. The attached gingiva was the most commonly impacted area (64.36%).¹ Low-level local irritation, traumatic damage, hormonal variables, or some drugs, according to some studies, may be the causes of this illness. Furthermore, because levels of female hormones such as estrogen and progesterone are unpredictable at this age, epulis in women can arise by the age of 20.^{1,5,14}

In the case of fibrous epulis, the most difficult thing for a dentist to do is to make a definitive diagnosis. Non-neoplastic and neoplastic lesions typically afflict the gingiva,⁷ with the latter characterized by gradual development that can be benign or malignant. The majority of localized gingival growths are reactive rather than malignant in character. The establishment of a clinical diagnosis, as well as an acceptable differential diagnosis, is a crucial milestone in case management.^{6,17,18} A histopathological investigation is essential for determining the definitive diagnosis. The histological findings, in this case, were similar to those reported by Zhu et al.,¹⁴ and Tajima et al.,¹⁹ who found that the fibrous epulis was composed of proliferating fibroblasts and collagen fibers with limited inflammatory cell infiltration and vascular dilatation. Collagenous fibromas, for example, might resemble fibrous epulis. On the other hand, collagen fibroma is an uncommon occurrence that is not accompanied by inflammatory symptoms. We disagree with Shimoyama et al.,²⁰ that lesion size may be utilized as a selection criterion in distinguishing between neoplasms and reactive lesions like epulis, is since fibrous epulis instances can range in size.

The treatment of an epulis is determined by its size and location, with excisional biopsy being the preferred technique in the majority of instances. However, dentists should be aware of two disadvantages of excisional biopsy. First and foremost, post-surgery recurrence should not be neglected. If the resection is not performed adequately, failure to eradicate local stimulating components and subsequent injury to the surgical site may result in epulis recurrence. Second, defects in soft tissue in the anterior area will cause cosmetic issues. The patient must be told of this respected finding throughout the informed consent procedure. Considering epulis tissue origin from the periosteum and periodontal ligament cells, fibrous epulis is generally treated with a thorough excision and extensive curettage of the affected area to prevent a reoccurrence. It is

usually not necessary to remove the next tooth unless there is significant underlying bone involvement. In our situation, bleeding was decreased by utilizing a surgical knife to execute a simple but controlled minimum peduncle excision and a modest dressing procedure. Controlled excision of the adjacent periodontal membrane, periosteum, and alveolar bone, as well as root planing to decrease irritation, are critical to avoid recurrence. We chose conservative surgical excision with gingival recontouring since there was no bone invasion and the severity of the treatment was more manageable. Whereas an electric scalpel or CO2 laser may perform bloodless surgery when the lesion is close to a vascular component, it may be a feasible option in instances where the lesion is thought to be close to a vascular component.

Nowadays, Pinguangmycin and propranolol intralesional injections were offered as new therapy options for fibrous epulis.¹² In our case, however, a typical surgical technique was combined with periodontal care to reduce the risk of recurrence and keep the therapy under control. For fibrous epulis removal, Zhu et al.,¹⁴ advocated minimally invasive periodontal surgery. The tumor tissues were removed and the epithelial and connective tissues of the tumor were retained in minimally invasive periodontal surgery. The retained tissues had a thickness of roughly 0.5 mm. The wound surface was then used to cover the reserved epithelial and connective tissues. When compared to traditional periodontal surgery, the study found that minimally invasive periodontal surgery improved the papilla filling index and the width of keratinized tissue. This approach might be utilized as a treatment option for certain epulis patients.¹⁴ In our case, the gingival recession severity was maintained following excisional therapy. After that, we proposed periodontal plastic surgery, but the patient's demands were not met.

According to Zhu et al.,¹⁴ the recurrence rate was also the same for traditional surgical resections and minimally invasive resections.

There were no incidences of recurrence for either treatment method after 0.5 to 2 years of assessment. The key aspects that contributed to the outcome was that all patients had had comprehensive non-surgical periodontal therapy before surgery to address local factors and oral hygiene instruction following surgery to ensure the patient's oral hygiene. The basic rule for preventing recurrence is full excision and curettage of the fibrous epulis lesion.^{5,10,11,13,14}

CONCLUSION

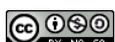
Within the limitations of this case study, complete excision and curettage of the fibrous epulis lesion are the preferred treatments because of its high recurrence rate. The histopathologic examination is crucial for determining the final diagnosis, and long-term follow-up is essential.

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