

CASE REPORT

Massive fibrous epulis—a case report of a 10-year-old lesion

Gabriel M Fonseca¹, Ricardo M Fonseca¹ and Mario Cantín^{2,3}

The fibrous epulis, a common tumor-like lesion of the gingiva, appears in the interdental papilla as a result of local irritation. Lesions are asymptomatic and have a variable growth rate. A 75-year-old woman was referred for the evaluation of a large painless gingival mass. It had started 10 years back and has been increasing in size the last year. No bone involvement was noted. The tumor was totally removed by excision with surgical scalpel under local anesthesia without teeth extraction. The microscopic findings were suggestive of a fibrous epulis. Differential diagnosis, clinical considerations and factors to prevent recurrence are discussed.

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INTRODUCTION

The most common mechanisms in the development of soft tissue tumor-like lesion in the oral cavity included reactive hyperplasia and neoplasia, and the majority of localized overgrowths are considered to be reactive rather than neoplastic in nature.¹ Described under a variety of names, the *Epulis* is a relatively common tumor-like lesion of the gingival.² Epulis is considered to be a reactive massive lesion rather than true neoplasia, usually asymptomatic with a variable growth rate.^{2–3} Reactive lesions are swellings that develop in response to chronic and recurring tissue injury, which stimulates an exuberant or excessive tissue response.⁴

Although epulis is classically categorized into different subtypes, current literature summarized three main types: fibrous epulis, granulomatous epulis and giant cell epulis.⁵ Histologically, intact lesion consists of bundles of collagen fibers covered with keratinized squamous cell epithelium. When traumatized, the lesion contain inflammatory infiltrate and ulcerated area will be covered with fibrin and organisms from the oral flora.⁶

The fibrous epulis usually appears in the interdental papilla as the result of local irritation (calculus, bacterial plaque, caries or restorations with irregular margins).⁶ We present an interesting case of a massive fibrous epulis swelling arising from the maxillary gingiva. Because of the unusual size and evolution, the differential diagnosis and clinical considerations are discussed.

CASE REPORT

A 75-year-old woman was referred to the Laboratory of Oral Pathology (Cordoba, Argentina) for the evaluation of a large painless gingival mass, with approximate 4 cm×6 cm×3 cm swelling arising from the maxillary gingival in relation to the upper central incisors, covered by partially ulcerated mucosa. It was firm in consistency,

irregular surfaced, pedunculated, and did not bleed when touched. No tooth mobility in this region was noted, and regional lymph nodes were normal. Radiographic examination did not demonstrate any bone involvement (Figure 2). The patient presented considerable deposits of bacterial plaque. The mass had started insidiously 10 years back and has been progressively increasing in size the last year. Except for a controlled hypertension (potassium Losartan 50 mg daily), her medical history revealed no other pathological condition. This mass led to some difficulty in speaking, eating and closing her mouth. Operative findings revealed that the lesion was indurated.

The tumor was totally removed in one piece by excision of its peduncle with surgical scalpel under local anesthesia without teeth extraction. The base was evacuated and the bone thoroughly curetted, and the healthy gingiva was sutured over it. Macroscopically, the epulis appeared as a lobulated mass, which on cut surface appears fibrous with a shiny gray-to-white aspect (Figure 3a).

The mass was fixed in 10% neutral buffered formalin solution and embedded in paraffin. Five-micrometer sections were obtained and submitted for routine hematoxylin–eosin staining. On microscopic examination, the lesion appeared densely fibrous with inconspicuous proliferating fibroblasts and moderate lymphoplasmacytic infiltrate and vascular dilatation. The connective tissue was fat infiltrated (Figure 3b). Epithelium was hyperplastic (acanthosis) and partially ulcerated with deposition of a fibrinopurulent exudate. There was no evidence of ossification or calcified structures. These findings were suggestive of a reactive localized inflammatory hyperplasia consistent with a fibrous epulis.

The patient had an uneventful postoperative recovery with minimal scarring. She has been following up with us at regular intervals and for the last year and is without any recurrence at the time of this report (Figure 4).

¹Department of Oral Pathology, Faculty of Dentistry, National University of Cordoba, Cordoba, Argentina; ²Doctoral Program in Morphological Sciences, Faculty of Dentistry, Universidad La Frontera, Temuco, Chile and ³Center for Research in Biomedical Sciences, Universidad Autonoma de Chile, Temuco, Chile

Correspondence: Dr GM Fonseca, Department of Oral Pathology, Faculty of Dentistry, National University of Cordoba, Mariano Moreno 937, Cordoba X5000MRS, Argentina
E-mail: gabriel_fonseca@argentina.com

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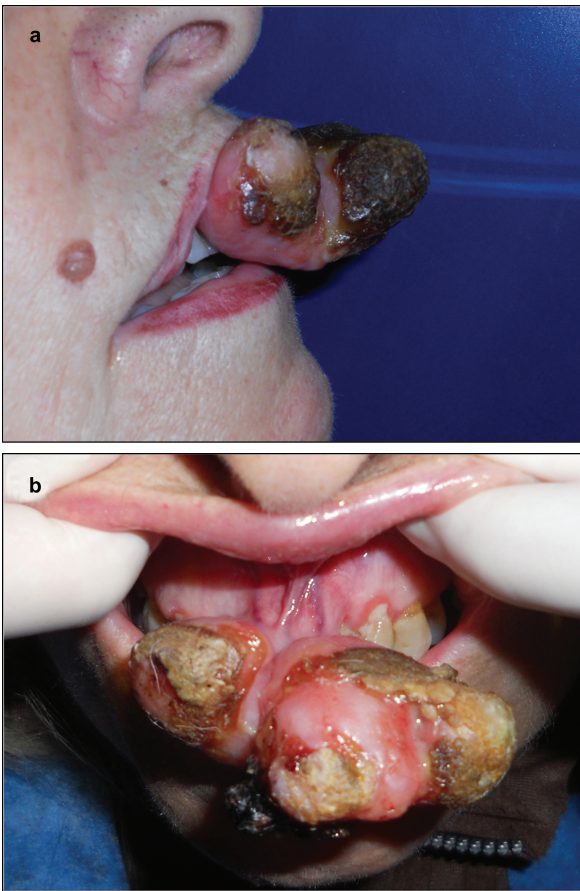


Figure 1 Clinic evaluation of the mass. (a) Lateral view. (b) Intraoral view. Note the peduncle swelling arising from the maxillary gingival in relation to the upper central incisors.



Figure 2 Periapical radiography exhibiting no osseous or dental involvement.

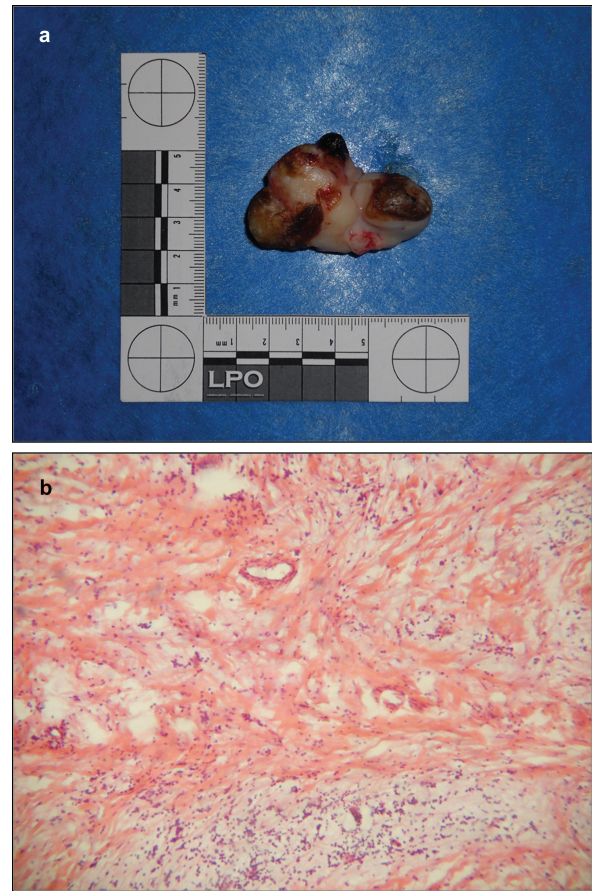


Figure 3 Analysis of the surgical specimen. (a) A lobulated mass with hard consistence, covered by partially ulcerated mucosa. (b) The histopathology of the lesion revealed highly collagenous matrix with moderate lymphoplasmacytic presence and fat infiltration (hematoxylin-eosin staining, original magnification $\times 40$).



Figure 4 Picture of the patient 6 months postoperatively.

DISCUSSION

The most common clinical aspect of the fibrous epulis is the growth of well-delimited tissue, of a smooth surface, usually with normal colored mucosa, sessile or pedunculated base, of hard consistence, usually located on the anterior maxillary, in the interdental papilla.^{2,6-7} Though these characteristics are consistent with our case, report of a fibrous epulis with this size⁸⁻¹⁰ or long evolution are unusual.⁷

There is some question as to whether this lesion represents a neoplasm or a reactive condition. The histopathological findings are consistent with Tajima,³ where the fibrous epulis was composed of proliferating fibroblasts and collagen fibers with a minimal degree of inflammatory cell infiltration and vascular dilatation. This evidence is the most reliable condition to make the differential diagnosis. Although several authors reported cases of an epulis-like neoplasm, the collagenous fibroma (desmoplastic fibroblastoma) originated in the oral cavity;^{11–13} we agree with these authors that the collagenous fibroma is a rare entity, without signs of inflammation. Nevertheless, considering the fibrous epulis, we disagree with Shimoyama *et al.*¹¹ that the size distinct neoplasm. This case demonstrates that the epulis can attain an unusually large size causing considerable facial deformity, an extreme and unusual presentation of a reactive condition. The biggest challenge as a clinician is arriving at a definitive diagnosis.⁴ The gingiva is commonly affected by non-neoplastic and neoplastic lesions, the latter usually being characterized by a progressive growth that can be either benign or malignant. Moreover, the great majority of localized overgrowths of the gingiva are considered to be reactive rather than neoplastic in nature.¹⁴

Fibrous inflammatory hyperplasias may occur on any surface of the oral mucous membrane as either pedunculated or sessile growth. On the gingiva, a similar lesion is often referred to as an epulis, that is, a growth on the gum. The majority remain small, and lesions more than 1 cm in diameter are rare on the cheeks, tongue and floor of the mouth possibly because masticatory trauma restricts their size through necrosis and ulceration.¹ Several authors observed that irritation fibroma is more common in adult females. Also, their research found no marked difference in location of irritation fibroma between upper and lower jaws.^{1,15} Carbone and colleagues¹⁴ reported a significant higher frequency and site distribution in maxilla than the mandible (9/2).

Treatment usually includes complete excision of the lesion and thorough curettage of the area due to its origin from the periosteum and periodontal ligament cells to prevent recurrence. The extraction of the neighboring teeth is usually not considered necessary unless there is extensive underlying bony involvement.^{1,4,7,16} The most widely used instruments are a surgical or electric scalpel, but in cases where an important vascular component of the lesion is suspected intraoperatively, the electrical scalpel or CO₂ laser are theoretically of choice since they afford a bloodless surgical field.¹⁶ In this case, the simple but controlled excision of the minimum peduncle with a surgical scalpel and a basic good suture technique allowed reducing the risk of hemorrhage. We believe that the controlled excision of adjacent periodontal membrane, periosteum and alveolar bone, and the root planning performed to eliminate irritations were essential to avoid the recurrence. A conservative surgical excision with gingival recontouring was preferred because of the absence of bone invasion and the obviously aggressiveness of the classical surgery.

The term ‘epulis’ (from the Greek words ‘epi’ –over– and ‘oulon’ –gums–) was first used by Virchow in 1864, and it has generated great controversies in its use.^{7,16} The International Classification of Diseases is published by the World Health Organization, and it is used to promote the international comparability in the classification of the conditions to be most suitable for general epidemiological purposes and evaluation of health care. According to the current tenth revision (ICD-10), the ‘Fibrous epulis’ is coded as a type of ‘other disorders of the gingival and edentulous ridge’ (K06.8).¹⁷ We coincide with Tamarit-Borràs and colleagues¹⁶ where the word ‘hyperplasia’ is more appropriate since it refers to tissue growth on these cases, where the

determination of the duration of the lesion and its chronic irritative etiological factor turn on the magnitude of the existing fibrous component. In fact, the term ‘reactive localized inflammatory hyperplasia’ has been used more appropriately to describe lesions such as pyogenic granuloma/pregnancy tumor, calcifying fibroblastic granuloma, peripheral ossifying fibroma, fibrous-epithelial polyp, fibrous hyperplasia, denture irritation hyperplasia (epulis fissuratum), peripheral giant cell granuloma and the fibrous epulis.¹⁵

CONCLUSION

In some cases, the dentist may be the first health care professional to detect this oral lesion.¹⁶ In our case, even though 12 odontologists misdiagnosed and/or refused the treatment, it involved a simple resection with gingival recontouring and control of the local irritating factor to prevent recurrence. We can conclude that a thorough knowledge about various aspects of a gingival lesion is the key to a successful diagnosis and treatment planning.⁴ Because of the unusual size, discussion and consideration of the various differential diagnoses should be done tactfully to prevent unnecessary distress to the patient and family.⁷

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- 1 Pour MA, Rad M, Mojtahedi A. A survey of soft tissue tumor-like lesions of oral cavity: a clinicopathological study. *Iran J Pathol* 2008; **3**(2): 81–87.
- 2 Ajagbe HA, Daramola JO. Fibrous epulis: experience in clinical presentation and treatment of 39 cases. *J Natl Med Assoc* 1978; **70**(5): 317–319.
- 3 Tajima H. A histopathological and immunohistochemical study of pathological ossification in epulis osteoplastica. *Oral Med Pathol* 2009; **13**(3): 91–98.
- 4 Rajanikant BR, Srinivas M, Suragimath G *et al*. Localized gingival enlargement—a diagnostic dilemma. *Indian J Dent* 2012; **3**(1): 44–48.
- 5 Liu C, Qin ZP, Fan ZN *et al*. New treatment strategy for granulomatous epulis: intralesional injection of propranolol. *Med Hypotheses* 2012; **78**(2): 327–329.
- 6 Kfir Y, Buchner A, Hansen LS. Reactive lesions of the gingiva. A clinicopathological study of 741 cases. *J Periodontol* 1980; **51**(11): 655–661.
- 7 Alam MN, Chandrasekaran SC, Valiathan M. Fibroma of the gingiva: a case report of a 20 year old lesion. *Int J Contemp Dent* 2010; **1**(3): 107–109.
- 8 Nomura K, Hayashi T, Kunibe I *et al*. A case of huge epulis osteoplastica. *Pract Oto-Rhino-Laryngolog* 2003; **96**(1): 51–55.
- 9 Halliday H, Gordon S, Bhola M. Case report: an unusually large epulis on the maxillary gingiva of a 24-year-old woman. *Gen Dent* 2007; **55**(3): 232–235.
- 10 Dabholkar JP, Vora KR, Sikdar A. Giant fibrous epulis. *Indian J Otolaryngol Head Neck Surg* 2008; **60**(1): 69–71.
- 11 Shimoyama T, Horie N, Ide F. Collagenous fibroma (desmoplastic fibroblastoma): a new case originating in the palate. *Dentomaxillofac Radiol* 2005; **34**(2): 117–119.
- 12 de Sousa SF, Caldeira PC, Grossmann Sde M *et al*. Desmoplastic fibroblastoma (collagenous fibroma): a case identified in the buccal mucosa. *Head Neck Pathol* 2011; **5**(2): 175–179.
- 13 Bhagalia S, Jain M, Pardhe N *et al*. Collagenous fibroma (desmoplastic fibroblastoma) of the oral cavity. *J Oral Maxillofac Pathol* 2012; **16**(2): 277–279.
- 14 Carbone M, Broccoletti R, Gambino A *et al*. Clinical and histological features of gingival lesions: a 17-years retrospective analysis in a northern Italian population. *Med Oral Patol Oral Cir Bucal* 2012; **17**(4): e555–e561.
- 15 Awange DO, Wakoli KA, Onyango JF *et al*. Reactive localised inflammatory hyperplasia of the oral mucosa. *East Afr Med J* 2009; **86**(2): 79–82.
- 16 Tamarit-Borràs M, Delgado-Molina E, Berini-Aytés L *et al*. Removal of hyperplastic lesions of the oral cavity. A retrospective study of 128 cases. *Med Oral Patol Oral Cir Bucal* 2005; **10**(2): 151–162.
- 17 Canadian Institute for Health Information. *International statistical classification of diseases and related health problems*. Vol. 1 – Tabular list. 10th Revision. Ottawa: Canadian Institute for Health Information, 2012: 420.



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