HUGE PERIPHERAL OSSIFYING FIBROMA OF THE LOWER POSTERIOR EDENTULOUS RIDGE : CASE REPORT

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Abstract

The peripheral ossifying fibroma(POF) is a relatively common, non-neoplastic gingival growth that is classified as a reactive hyperplastic inflammatory lesion. The clinical appearance of POF is generally a small, well-circumscribed, focal mass with a sessile or pedunculated base. The pathogenesis of this lesion is uncertain. POFs are believed to arise from cells of the periodontal ligament as hyperplastic growth of tissue that is unique to the gingival mucosa. Approximately 60% of POFs occur in the maxilla, and 55%-60% of all cases occur in the incisor-canine area. Most lesions are less than 2 cm in size. To our knowledge, huge POF of approximately 8 cm in size in the lower posterior edentulous ridge has not been previously described in the English literature. We report an unusually huge POF overlying the lower posterior edentulous ridge mucosa, along with long-term follow up result.

Key words : Peripheral ossifying fibroma, Gingival reactive lesion

Ⅰ. Introduction

Many types of localized reactive lesions may occur on the gingiva, including focal fibrous hyperplasia, pyogenic granuloma, peripheral giant cell granuloma. Also peripheral ossifying fibroma(POF) is considered to be one of the reactive gingival hyperplastic inflammatory lesions[1]. The POF is located almost exclusively on the gingiva[1]. The etiology and pathogenesis of POF remains unknown. Trauma or local irritation such as dental plaque, calculus, ill-fitting dental appliances, and poor-quality dental restorations are known to precipitate the development of POF[2]. POF is widely considered to originate from cells of the periodontal ligament[3,4,5]. The clinical appearance of the lesion is characteristic, although not pathognomonic. It presents as a well-demarcated mass with a sessile or pedunculated base that usually emanates from the interdental papilla[1]. The POF is predominantly a lesion of teen-agers and young adults, with a peak prevalence between the ages of 10 and 19, and has a female predilection by a ratio of 2:1[6]. Approximately 60% of POFs occur in the maxilla with 55-60% presenting in the incisor-canine area[3-5]. Most lesions are less than 2 cm in size, although larger ones occasionally occur[2,5,7]. The differential diagnosis should include peripheral giant cell granuloma, peripheral odontogenic fibroma, focal fibrous hyperplasia, inflammatory fibrous hyperplasia, pyogenic granuloma, hemangioma, and other tumors[1]. The aim of this article is to describe of huge POF with approximately 8 cm in size in the lower posterior edentulous ridge along with long-term follow up result and to emphasize the importance of meticulous surgery to prevent recurrence.

Ⅱ. Case Report

A 66-year-old Korean woman presented in March 1999 with a huge, exophytic, firm mass in the lower posterior edentulous ridge. According to the patient, the slow-growing lesion had been present for approximately 5 years. At the time of presentation, the huge lesion was painless, but was causing difficulties

*This study was financially supported by research fund of chungnam national university in 2008.

in speaking, masticating, and swallowing. Physical examination revealed a pedunculated, non-tender and pinkish mass on the lower posterior edentulous ridge with an irregular, ulcerated, strawberry-like surface(Fig. 1). Radiographic examination was carried out by means of panoramic radiography and computerized tomography(CT) scan. Panoramic radiography revealed radiopaque foci within the mass, resorption of underlying bone, and framework of denture. CT scans of the lesion showed a well-circumscribed mass in the lower right edentulous ridge. The mass contained generally scattered calcifications(Fig. 2). The differential diagnosis consisted of peripheral ossifying fibroma, peripheral odontogenic fibroma, peripheral giant cell granuloma, cavernous hemangioma, malignant tumors. The patient's past medical history was noncontributory. Under general anesthesia, the mass was excised down to periosteum completely. Then, the underlying bone was grinded. The surgical site was exposed for secondary healing(Fig. 3). The removed mass and subjacent periosteum measured 8 cm × 5 cm in size(Fig. 4). The mass was found to arise from the edentulous alveolar ridge mucosa. The tissue submitted to the pathology division for histopathologic diagnosis. The histopathologic diagnosis was peripheral ossifying fibroma(Fig. 5). The surgical site appeared to be healing well. No sign of recurrence has been observed for 10 years following surgery(Fig. 6).

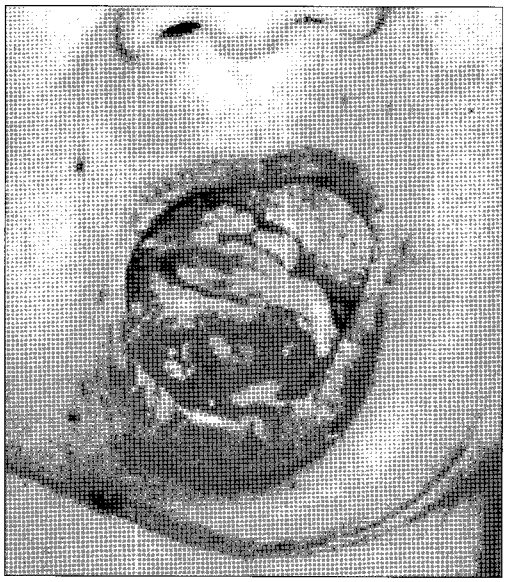

Fig. 1. Clinical aspect of peripheral ossifying fibroma. The lesion is characterized by a huge, exophytic, firm mass in the lower posterior edentulous ridge.

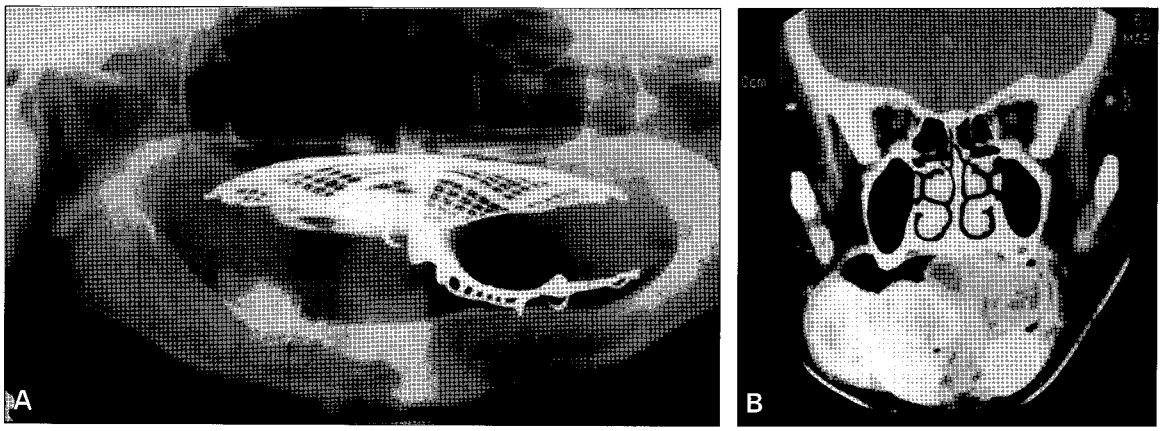

Fig. 2. A, Panoramic view shows focal mass within calcified materials. B, CT scan shows a soft tissue mass in the lower right posterior ridge with scattered calcifications.

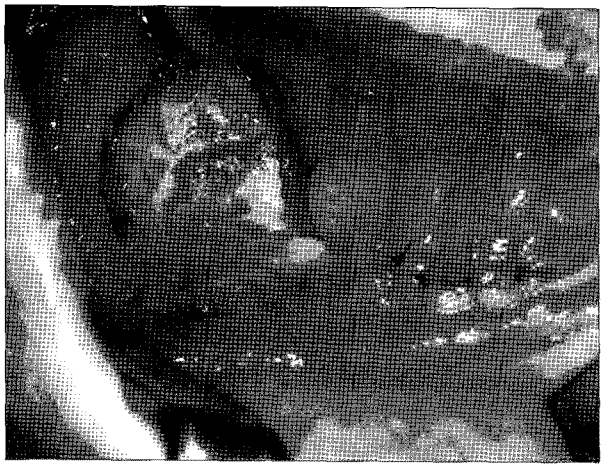

Fig. 3. The surgical site was exposed for secondary healing.

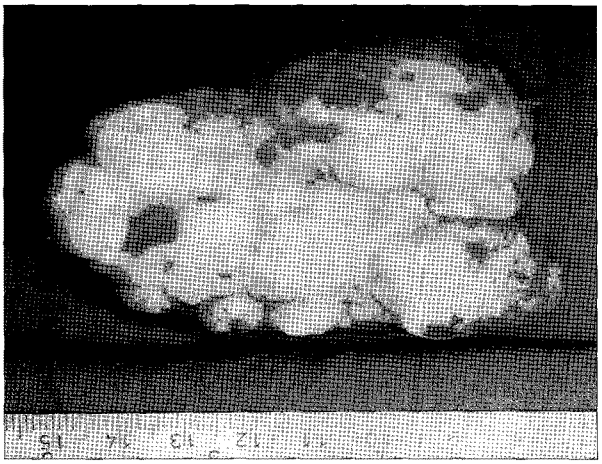

Fig. 4. The removed mass. The mass measured 8 cm x 5 cm in size.

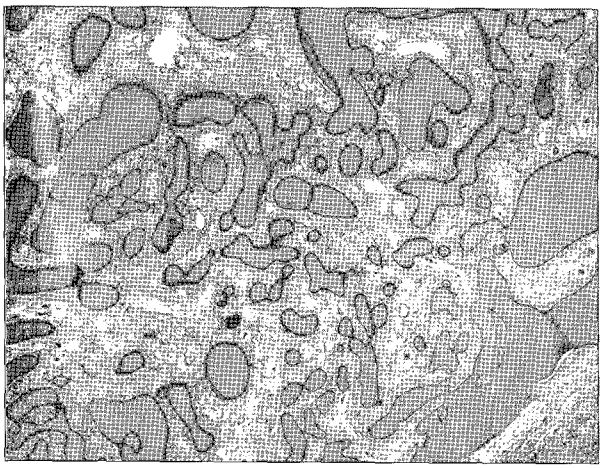

Fig. 5. Histopathologic examination of the lesion showing a dense, cellular, fibrous connective stroma containing numerous calcified osseous structures(H & E, x 40).

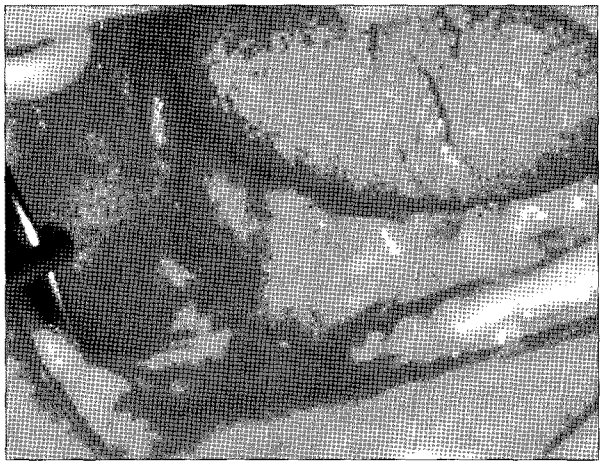

Fig. 6. The surgical defect was healed uneventfully with no sigh of recurrence.

Ⅲ. Discussion

The POF is a relatively common gingival growth that is considered to be reactive rather than neoplastic in nature. The commonly used synonyms for POF include peripheral cementifying fibroma, peripheral cemento-ossifying fibroma, peripheral fibroma with calcification, ossifying fibroid epulis, calcifying fibroblastic granuloma, peripheral fibroma with cementogenesis[8]. In the past, the terms peripheral odontogenic fibroma and POF often were used synonymously, but the peripheral odontogenic fibroma is now considered to be a distinct and separate entity since peripheral odontogenic fibroma has been designated by the World Health Organization (WHO) as the rare and extraosseous counterpart of central odontogenic fibroma.

The main histologic differences between these two lesions is the presence of odontogenic epithelium and dysplastic dentin in the peripheral odontogenic fibroma[8,9]. In spite of confusing terminology, POF is not the peripheral counterpart of the central ossifying fibroma of the mandible and maxilla, but instead is a reactive gingival lesion. The sheer number of names used for fibroblastic gingival lesions indicates that there is much controversy surrounding the classification of these lesions.

The POF is located almost exclusively on the gingi-

va[1]. It presents as a nodular mass with a sessile or pedunculated base. The color ranges from red to pink, and surface is frequently, but not always, ulcerated. The lesion presented in this report is located on the lower edentulous ridge, and presents as a huge mass(approximately 8 cm) with a pedunculated base. Though the pathogenesis of this lesion is uncertain, an origin from cells of the periodontal ligament has been suggested. The reasons for considering a periodontal ligament origin for POF include : exclusive occurrence of POF in the gingiva(interdental papilla), the proximity of gingiva to the periodontal ligament, the presence of oxytalan fibers with in the mineralized matrix of some lesions, the age distribution which is inversely related to the number of lost permanent teeth, and the fibrocellular response in POF which is similar to the reactive gingival lesions of periodontal ligament origin[4]. However, the occurrence of POF at an edentulous site in this case may cast doubt on the periodontal ligament theory of origin, at least with respect to this particular patient.

Dental calculus, plaque, dental appliances, ill-fitting prosthesis, and rough restorations are considered to be irritants causing such localized enlargements[1,2]. Women are more likely to be affected than men. The female to male ratio reported in the literature varied from 1.22:1 to 4.3:1[4,8]. The majority of the lesions occur in the second decade, with a declining incidence in later years[4,8]. But, in a retrospective study by Zhang et al[10], the mean age of incidence of POF was found to be 44 years, which is contradictory to previously reported literature. The age of the patient in this case was 66 years. The size of a POF is reported to range from 0.4 cm to 9.0 cm[2], but is usually smaller than 2 cm. The present lesion was approximately 8 cm in size. Although equal distribution for both the mandible and the maxilla has been claimed, there is a slight predilection for the maxilla. It is most often found in the anterior region. Approximately 60% of POFs occur in the maxilla with 55-60% presenting in the incisor-canine area[7,8]. The lesion presented in this report was located on the lower posterior edentulous area. The histopathological evaluation of the lesion discloses a dense, cellular, fibrous connective tissue stroma containing numerous calcified osseous structure. Calcified osseous structure may represent lamellar or woven bone, cementum-like material, or dystrophic calcifications[4,6].

The differential diagnosis should include POF, peripheral odontogenic fibroma, peripheral giant cell fibroma, hemangioma, inflammatory fibrous hyperplasia, and other tumors. The patient reported that the mass had been present for approximately 5 years. The relatively asymptomatic nature and slowly progressive growth indicated that a malignat process was unlikely. Because blood was not aspirated from the mass, hemangioma was ruled out. The size of the present case was not clinically consistent with pyogenic granuloma, which is a few millimeters to a centimeter or more in diameter. So, pyogenic granuloma was also ruled out. The initial presumptive diagnosis of the present case included POF, peripheral giant cell granuloma, peripheral odontogenic fibroma. The definitive diagnosis of POF is made by histopathological evaluation of biopsy specimens. Pathological evaluation of the present case confirmed the lesion to be a POF. The POF lesion is generally small and does not require imaging beyond radiographs. In this case, scattered calcifications of the POF were best depicted on CT scans and panoramic view.

A POF is known to have a variable amount of mineralization in the form of bone(lamellar or woven), dystrophic calcifications, cementum-like material1). But, it has been reported that mineralized tissue may also be present in 35% of peripheral giant cell granulomas of the gingiva or alveolar mucosa in the form of bone and dystrophic calcification[6].

POF has a tendency to recur and repeated recurrences are not uncommon[3]. The rate of recurrence has been reported at 8.9-20%[3,10]. Total excision is the preferred management of POF. It is extremely important to perform deep excision that includes the periosteum and periodontal ligament. Any identifiable etiologic factors, such as calculus, plaque, ill-fitting dental appliances, or rough restorations should be removed[1,3]. Postoperatively follow-up is mandatory. The present case was followed for 10 years with no sigh of recurrence.

Ⅳ Conclusion

A slowly growing soft tissue mass with speckled calcification on the X-ray image in the lower posterior edentulous ridge of elder adults should raise the suspicion of a reactive gingival hyperplastic inflammatory lesion such as POF. The treatment consists of surgical excision and aggressive curettage of the involved area. Close postoperative follow-up is required because of the high recurrence rate.

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원고 접수일 2009년 5월 22일
게재 확정일 2009년 9월 12일

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Paper received 22 May 2009
Paper accepted 12 September 2009