Focal fibrous overgrowths: A case series and review of literature

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Abstract

Intraoral fibrous overgrowths of the soft tissues are relatively common and may be benign reactive or neoplastic lesions. A series of 10 lesions is presented which included pyogenic granuloma, fibroma and peripheral ossifying fibroma. Almost all the lesions occurred in the second and third decades and were present in the anterior segment of the jaws, with a distinct female predilection. Majority of these lesions were asymptomatic and the patients reported for treatment only due to the discomfort during function. Histopathologic examinations were done for diagnosis of these lesions. Surgical excision along with removal of causative irritants remains the treatment of choice. The extent of excision should depend on the severity of the lesion, as some of these lesions have a tendency for recurrence. All the patients in this series were closely followed up for a period of 2 years and showed no signs of recurrence.

Keywords: Chronic irritation, fibroma, peripheral ossifying fibroma, pyogenic granuloma, reactive lesion

Introduction

Fibrous growths of the oral soft tissues are fairly common and include a diverse group of reactive and neoplastic conditions. The fibroma, also referred to as irritation fibroma, is by far the most common of the oral fibrous tumor like growths. While the terminology implies a benign neoplasm, most, if not all, fibromas represent reactive focal fibrous hyperplasia due to trauma or local irritation. Although the term "focal fibrous hyperplasia" more accurately describes the clinical entity, it is not commonly used. Similar such lesions include pyogenic granuloma (PG), peripheral giant cell granuloma and peripheral ossifying fibroma (POF), which may also arise as a result of irritation due to plaque microorganisms and other local irritants. All the lesions have a similar clinical appearance, i.e., sessile or pedunculated nodule located at the interdental papilla. The color varies from the normal color of the oral mucosa to an erythematous and/or gray ulcerated surface.

The purpose of this study was to review a series of lesions which were encountered in the Department of Periodontics, VSPM Dental College & Research Centre, Nagpur, and are basically reactive focal gingival overgrowths which present themselves as similar clinical entities but have variable histopathologic picture. The diagnosis of such lesions assumes great significance because a few of them may be malignant lesions.

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Radiographic examination

Panoramic and intraoral periapical radiographs were obtained for all the patients. However, the radiographic examination was within normal limits in all the 10 lesions reported here.

Case Report

Intraoral overgrowths, especially over the gingival, have been described in the literature quite regularly. Many names have been given to similar lesions, such as epulis, peripheral fibroma with calcification, peripheral cementifying fibroma, fibroma, cementossifying fibroma, etc. The sheer number of names used for fibroblastic gingival lesions indicates that there is much controversy surrounding the nomenclature and classification of such lesions.[1,2]

The present case series analyzes 10 cases of localized gingival overgrowths which were diagnosed as POF, PG and fibroma.

Pyogenic granuloma

PG is one of the inflammatory hyperplasias seen in the oral cavity. This term is a misnomer in the real sense because the lesion is unrelated to infection and arises in response to various stimuli such as low-grade local irritation, traumatic injury or hormonal factors. It predominantly occurs in the second decade of life in young females, possibly because of vascular effects of female hormones.[3]

The five cases reported of PG presented as smooth, small and inflamed gingival pedunculated lesions which were prone to bleeding. All the patients were young females aged between 21 and 30 years. Local deposits were present adjacent to the lesions. Blood and radiographic investigations did not show any abnormality and hence it was decided to get rid of the local deposits at the first visit to reduce the inflammatory component and an excisional biopsy was planned at a later visit. After excision, the patients were followed up for a period of 2 years and no incidence of recurrence was reported [Figure 1].

Histopathologically, these lesions showed thin parakeratinized stratified squamous epithelium which was atrophic and ulcerated at places. The underlying connective tissue showed delicate fibrocellular stroma with abundant endothelial lined blood capillaries which were engorged with RBCs and dense chronic inflammatory cell infiltrate, chiefly of lymphocytes and plasma cells. So, they were diagnosed as PG. These findings are similar to those reported by Neville *et al*. and Regezi *et al*.[4-6] The third lesion showed normal bony trabeculae which prompted a diagnosis of PG with bone formation. It has been reported that the prevalence of calcifications in fibrous lesions of gingiva varies from 20 to 62.8%. Such lesions may show variations in calcified material, ranging from mature lamellar type bone to dystrophic like calcifications which may also resemble globules of cementum[7,8] [Figure 2].

Figure 1: Pyogenic granuloma clinical picture

Fibroma

A fibroma may occur at any oral site but it is seen most often on the buccal mucosa along the plane of occlusion of the maxillary and mandibular teeth. At times, it may also occur on the gingiva. It is a round to ovoid, asymptomatic, smooth-surfaced, firm, sessile or pedunculated mass, the diameter of which may vary from 1 to 2 cm. The surface may be hyperkeratotic or ulcerated owing to repeated trauma. Fibromas are most often observed in adults, but they may occur in individuals of any age and either sex.

The four cases which are presented exhibited similar clinical findings. One of the lesions was based on buccal labial mucosa, whereas three of them were present over the gingiva. Clinically, the lesions were hard in consistency and pale pink in color, with no signs of inflammation or surface ulcerations which have been reported by some authors [Figure 3].

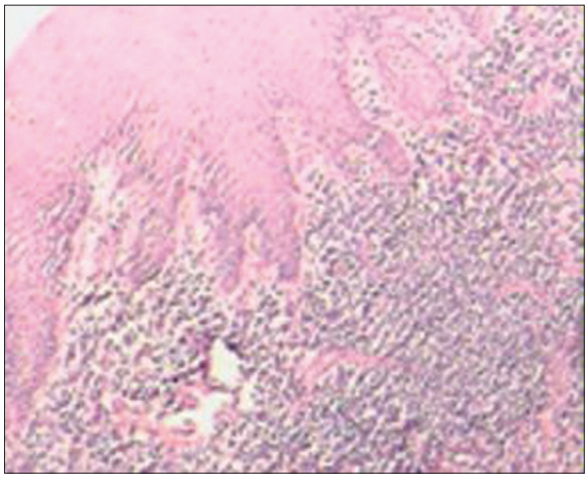

Figure 2: Pyogenic granuloma histopathological picture

Figure 3: Fibroma clinical picture

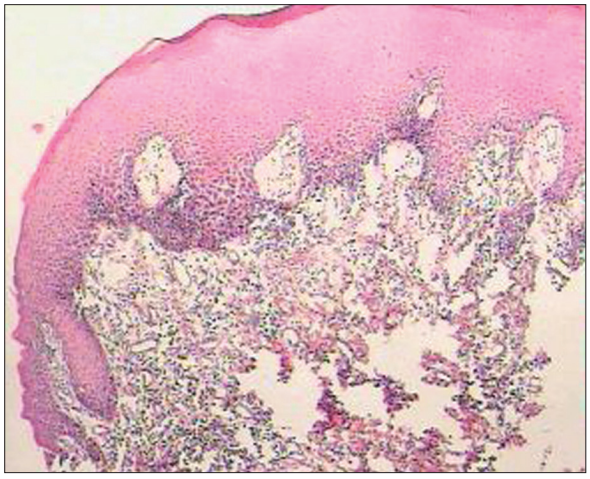

Figure 4: Fibroma histopathological picture

Figure 5: Peripheral ossifying fibroma clinical picture

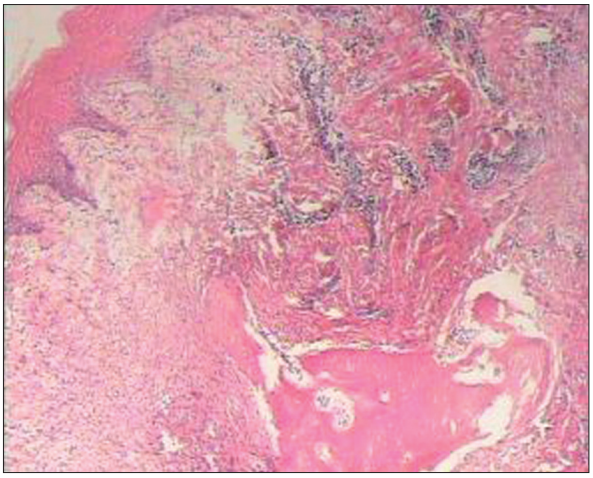

Figure 6: Peripheral ossifying fibroma histopathological picture

Histopathologically, the sections showed hyperplastic stratified squamous epithelium which was partly hyperkeratotic and hyperorthokeratotic at some places. Thin, finger like rete ridges extend into underlying connective tissue stroma which was fibrocellular. Solid nodular mass of dense hyalinized fibrous connective tissue arranged in haphazard fascicles was seen in one of the lesions. Moderate chronic inflammatory cell infiltrate was seen at a few sites [Figure 4]. These findings are similar to those reported by Basker *et al.* and Esmeili *et al.*[9,10] The clinicopathologic diagnosis of fibroma was done in all these lesions.

Peripheral ossifying fibroma

POF is a non-neoplastic enlargement of the gingival tissue and is precipitated by local irritation and minor trauma. Although they are reported to reach more than 6 cm, they are usually less than 1.5 cm in diameter, and the diagnosis can be made by clinical inspection and biopsy.[11,12]

The clinical presentation of the case in our series was of a round to oval mass on the gingival tissue in mandibular anterior region [Figure 5] and was measuring around 1.5 × 2 cm in size. The patient was a lady of 40 years of age and had no complaints from the tumor except for the appearance of it while talking and smiling. The histopathologic section showed fibrocellular connective tissue stroma comprising moderate chronic inflammatory cell infiltrate and dilated endothelium lined blood vessels. The deeper part showed dense aggregates of spindle-shaped fibroblasts, bundles of collagen fibers along with irregular bony trabeculae, focal areas of basophilic small globules of cementum like material [Figure 6]. These findings are similar to those reported by Buchner and Hansen and confirmed the diagnosis.[13]

The radiographic and blood investigations of the patients were within normal limits. However, lesions which are larger in size may at times require imaging with computerized tomography (CT) scan or magnetic resonance imaging (MRI), as has been reported by Moon *et al*.[14]

Differential diagnosis

When presented clinically with an intraoral or gingival lesion, it is important to establish a differential diagnosis. Although it is important to maintain a high index of suspicion, discussion with family members should prevent undue distress amongst them till a definitive histopathologic diagnosis is established.

The differential diagnosis in such lesions should include PG, POF, metastatic cancer, fibroma, hyperplastic gingival inflammation, hemangioma and angiosarcoma.[15,16]

Depending on its duration, PG will vary in texture from soft to firm and can be suggestive of fibroma, and also, peripheral odontogenic or ossifying fibroma may be another consideration, although these tend to be much lighter in color. Like PG, it is commonly encountered among pregnant women; but unlike PG, this lesion is found exclusively on the gingiva and has minimal vascular component.

Although metastatic tumors of the oral region are uncommon, the attached gingiva is the most common affected soft tissue site followed by the tongue. In nearly 30% of cases, the metastatic lesion in the oral region is the first indication of an undiscovered malignancy at a distant site and so the microscopic appearance should resemble the tumor of origin.[17]

One important differential diagnosis of PG is hemangioma which is a developmental disorder, but small lesions may be clinically indistinguishable. Diascopy, the technique of applying pressure to a suspected vascular lesion to visualize the evacuation of coloration, supports the fact that patent blood filled spaces constitute the lesion.

Conclusion

Majority of the intraoral localized gingival lesions are slowly progressing, the growth of which is generally limited. Many

cases progress for long periods before the patient seeks treatment for them as they are asymptomatic. However, it was observed that patients usually undergo treatment once the lesion becomes visible. The reactive focal fibrous overgrowths arise in response to chronic stimuli and are generally non-neoplastic growths. Proper diagnosis, prevention, management and treatment of these lesions are of utmost importance due to the occurrence and similar presentations of neoplastic growths though the incidence is rare. Treatment involves removal of the local irritants along with surgical excision of the lesion. Close postoperative follow-up is required as some of the lesions may exhibit recurrence.

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