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Case Report:

Peripheral Ossifying Fibroma

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Abstract:
Peripheral ossifying fibroma is a relatively uncommon gingival growth that is considered to be reactive in nature and postulated to appear secondary to irritation or trauma. They usually occur in young adults with a female predominance and are solitary in nature. We report a case of peripheral ossifying fibroma in a 55-year old female.
Key Words: Peripheral ossifying fibroma; Gingiva; Multicentric; Periosteum; Recurrence

Introduction:

Peripheral ossifying fibroma (POF) is a solitary, non-neoplastic gingival growth usually arises from the interdental papillae. As the clinical spectrum of this entity has resemblance to other common gingival masses a thorough diagnostic sequence is necessary to rule out other common benign gingival lesions.

Case Report:

A 55-year old female patient reported with a complaint of painless swelling in the upper front gum region since 2 months. Patient's history revealed that she had noticed the swelling 2 months back and had gradually increased in size. There was no history of associated symptoms such as pain, paraesthesia or numbness; however, the patient had a history of occasional bleeding on provocation. There was no history of trauma or similar growth in the past. The medical, surgical and family histories were non-contributory. Extra-oral examination did not reveal any abnormalities. Intra-oral examination revealed a pink, solitary, well defined oval shaped gingival growth ranging 2x1 cm in size in relation to 12, extending from the distal aspect of 11 to mesial aspect of 13. The growth had a smooth surface and appeared to arise from the underlying soft tissue. It was pedunculated, mobile, non-tender, firm in consistency and bled to touch (Fig. 1).

Based on the history and clinical findings the following differential diagnoses were considered: fibrosed pyogenic granuloma, peripheral ossifying fibroma, peripheral odontogenic fibroma, solitary fibroma, fibrosed peripheral giant cell granuloma.

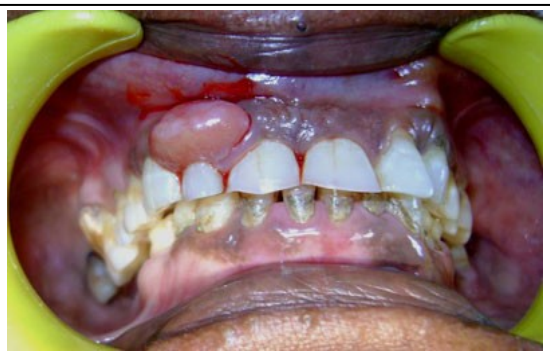

Figure 1: Intra oral photograph showing the gingival growth

Patient was then subjected to routine hematological and radiographic investigations. The complete hemogram was within the normal limits. Intra oral periapical radiograph (IOPAR) and orthopantomograph did not reveal any pathological changes except for generalized horizontal bone loss (Fig. 2 & 3).

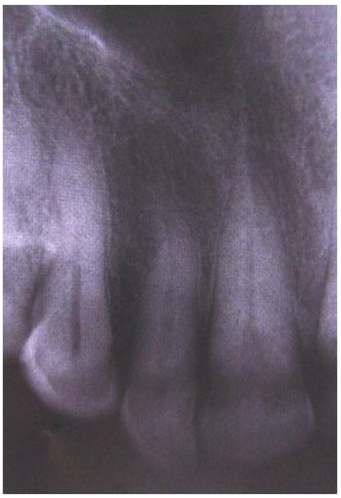

Figure 2: IOPAR showing right maxillary anteriors

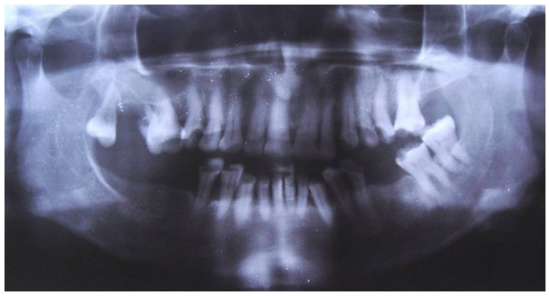

Figure 3: Orthopantomograph showing generalized horizontal bone loss

Excisional biopsy was performed and the lesion was removed along with its surrounding tissue. (FIG 4). Histopathological examination of the specimen showed presence of ulcerated stratified squamous epithelium. The underlying connective tissue was highly cellular with plump fibroblasts intermingled in a delicate fibrillar stroma associated with areas of woven trabecullar bone and osteoids.

Based on the clinical, radiographic and histopathological findings, a final diagnosis of peripheral ossifying fibroma was arrived. The patient is on regular follow-up for the past 6 months with no signs of recurrence.

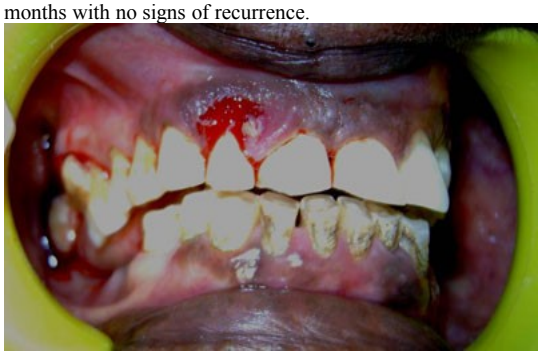

Figure 4: Post operative intra-oral photograph

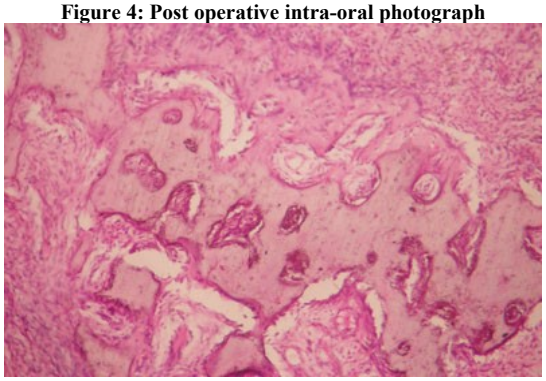

Figure 5: Photomicrograph 10X

Discussion:

POF is a relatively uncommon, solitary, non-neoplastic gingival growth, coined by Eversole and Rovin.(1) Over the years, various terminologies have been considered for its description and it includes: peripheral odontogenic fibroma, peripheral cemento-ossifying fibroma, peripheral cementifying fibroma, ossifying fibro-epithelial polyp, peripheral fibroma with osteogenesis, peripheral fibroma with cementogenesis, peripheral fibroma with calcification, fibrous epulis, calcifying or ossifying fibrous epulis, calcifying fibroblastic granuloma. (2,3) The term cement-ossifying fibroma is scientifically invalid, as there is no histomorphic or biochemical difference between bone and cementum.(4) Whereas, peripheral odontogenic fibroma is a true neoplasm of odontogenic origin and it is the counterpart of central odontogenic fibroma (World health organization type).(5,6) The peripheral ossifying fibroma however does not represent the soft tissue counterpart of the central ossifying fibroma, as the latter arise from the endosteum and causes expansion of the medullary cavity.(5)

The pathogenesis of POF is uncertain. As they resemble clinically and histopathologically to pyogenic granuloma, some consider POF to develop secondary to fibrosis of granulation tissue.(4) Moreover, due to its female gender and second decade predilection, the role of hormones has also been questioned.(7) The most widely acceptable histiogenesis for POF is the inflammatory hyperplasia of the cells of the periosteum or periodontal ligament.(1,7-9) The inflammatory reaction is believed to occur secondary to trauma from local irritants such as plaque, calculus, restorations or ill fitting dental appliances. (1,7-9) This is convincing, as they occur exclusively in gingiva and with the histomorphological evidence of oxytalan fibers within the mineralized matrix.(4,10) Another interesting observation is the decline in number of cases as age advances. (6,11)

POF clinically appears as a solitary nodular mass, either pedunculated or sessile and arise from the interdental papilla. (8,10) The color ranges from pink to red and the surface is frequently but not always ulcerated.(8) Most lesions are usually 1-2 cm in size, however, cases ranging more than 2cm have also been reported.(5) POF's are usually solitary, rarely, it can be multicentric.(10) Multicentric variants are reported at times in association with conditions such as nevoid basal cell carcinoma syndrome, multiple endocrine neoplasia type II, neurofibromatosis and gardener's syndrome.(10) The peak incidence of POF is between second and third decades and almost two thirds of all cases are reported in females.(4,8,10,11) There is a slight predilection for the maxillary arch and are frequently observed in the incisor-cuspid region.(4,8) Usually, the teeth are unaffected; rarely, it may cause migration, mobility and delay in eruption of permanent tooth.(8,10)

The radiographic features may range from no changes, as seen in the present case to destructive changes.(10,11) In certain cases, superficial erosion of underlying bone, cupping defect and focal areas of radiopaque calcifications at the center of the lesion can be seen.(4,10,11) Considering the size of the lesion and details the plain radiography provides, additional imaging studies are rarely required. If performed, CT (computed tomography) and MR (magnetic resonance) images can aid in evaluation of the epicenter of the mass.(5) On CT, they appear as a well circumscribed mass with evidence of calcification and mild enhancement after contrast agent administration. At MR imaging, an isointense signal to muscle on non-enhanced T1 weighted sequence and an iso-to-low signal on T2 weighted sequence can be seen.(5)

Microscopically, the epithelium can be intact or ulcerated. If ulcerated, superficial areas of fibrinopurulent membrane with a subjacent zone of granulation tissue can be noticed.(4,8) Abundant fibroblastic proliferations, variable mineralized component, sparse endothelial proliferation and few inflammatory cells are other predominant findings of POF.(4,10) The mineralized components may consist of bone, cementum like material or dystrophic calcifications.(4,8) Less frequently, ovoid droplets of basophilic cementum-like material are formed. Usually the bone is woven, lamellar or trabecular in type and rarely contains unmineralized osteoids and multinucleated giant cells.(4,8)

The treatment of choice is local surgical excision. (8,12) POF has a high recurrence rate of about 8% to 16%; hence the mass should be excised deep into the periosteum with complete removal of all irritants. In extensively destructive cases, reposi-

tioned flaps or connective tissue grafts may be necessary to repair the gingival defects.(8,12)

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