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Peripheral Ossifying Fibroma – Case Report

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Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

The term a peripheral ossifying fibroma, also known as ossifying fibrous epulis, is "a gingival nodule which is composed of a cellular fibroblastic connective tissue stroma which is associated with the formation of randomly dispersed foci of mineralised products, which consists of bone, cementum-like tissue, or a dystrophic calcification. The lesion is considered part of an ossifying fibroma, but that is usually considered to be a jaw tumor.

Keywords: POF; Benign Soft Tissue Lesions, Oral Cavity

Introduction

Hence the aim of this article is to describe a case report of Peripherial Ossifying fibroma on upper front tooth region which was treated using Novolase laser (high temperature Laser working on a power supply of 2.5 watt and 980 nm frequency) in 32-year-old Female patient .[9]

Case Report

A 32-year-old female patient reported to the Department of Periodontology and Oral implantogy with a chief complaint of an intra-oral swollen gums in his upper front teeth region.

The patient had noticed the swelling 2 months previously and observed that at present increased in size. The patient appeared apparently healthy with no any significant medical history and dental history. Intraoral examination revealed an oval shaped gingival mass in relation to the labial aspect of maxillary central incisor to premolar on left side, which interfered with his bite and the patient felt uncomfortable.

On intraoral examination, on inspection small a solitary, well-circumscribed, erythematous, oval-shaped overgrowth seen in relation to the labial aspect of maxillary central incisor to premolar on left side. On inspection measurement was done by using university of north Carolina (UNC 15) probe (LX B= 5x7mm) in its largest diameter with well defined borders. (Figure C & D) with a smooth, shiny surface and having a slightly erythematous, was present in relation to the upper left marginal gingiva 2122,23,24. Overgrowth extending from anterio-posterioly distal surface 21 to mesial surface of 24 region and superior inferiorly from marginal gingiva to incisal edge with respect 21 to 24. The overgrowth was painless and was reported to be initially small in size by the patient at the onset which gradually increased in size to attain the present size (Figure A & B). On palpation, all the inspector findings were confirmed. The overgrowth was firm in consistency, Base of the overgrowth is sessile, non tender, fluctuant and clinically slip sign negative. The temperature of the overlying surface was normal and the associated lymph nodes of the region were non-palpable. The patient had no significant medical, dental, family history. The lesion was asymptomatic. The overjet/overbite was observed was normal.

Extra-oral examination revealed no remarkable findings. There was no difficulty in speaking or chewing. No other oral anomalies were detected. Radiographic examination in the region of 21, 22, 24 reveals the presence of irregular radiopacity evident in the mesial aspect of 21 and mesial aspect of 24 with areas of cuffing evident in crestal region between 21 and 24. Based on the history, clinical examination and investigations, the case was provisionally diagnosed as peripheral ossifying fibroma [POF].

Based on above history and clinical examination of the patient, a provisional diagnosis of POF on upper left marginal gingiva was arrived-at while the important differentials included a fibroma, pyogenic granuloma and hemangioma. For making the differential, the relatively, well-known and simple, clinical slip sign for lipomas and diascopy procedure for lesions of vascular origins including hemangiomas was performed and were found to be negative.

The patient was, thus, advised to excisional biopsy of the lesion along with the removal of the affected adjacent tissue. The lab investigations like HB, TLC and DLC were conducted and the values were found to be normal. A written, informed consent was obtained from the patient. Removal of the lesion was performed under local anesthesia by using laser. Local anesthesia was administered around the lesion. In this case, local anesthesia of 1.8 ml Lidocaine with 1:100,000 epinephrine, was administrated through the local infiltration on the marginal gingiva. Before infiltration, a topical anesthetic gel for 2 minutes was applied. The BP blade that was used in this case was Bonart ART-E1 Electrosurgery Unit, with a Coagulant setting and with tip no T7.

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The marginal gingiva was then everted with digital pressure to increase the lesion's prominence. A The tip of laser was directed to the surface of the marginal gingiva at the base of the lesion. Movements were performed around the base, while the POF was grabbed by HDT Tissue forceps Adson 1x2 12cm [TP42] used (Figure E).

The site was slowly and continuously mopped by sterile wet gauze to avoid tissues overheating. Care was taken also to always control the tip. If upon inspection, any damage or collection of debris was observed during treatment, the tip Laser was cleaned with a sterile gauze.. The perfect way to oblige the lesion for minimally invasive treatment was by circular motion surrounding the lesion. Marginal gingiva around the lesion were also excised to prevent a recurrence (Figure G).

The POF was totally removed in 15 minutes No bleeding was observed in the operative site and no sutures were necessary. An analgesic was prescribed for 5 days and post-operative instruction was given. Follow up of was taken after 15 days. No any evidence of recurrence of the lesion. The excised tissue was submitted to the pathological investigations which confirmed the diagnosis and ruled out the lesion. (Figure F). The specimen was sent for histopathology analysis which identified the H and E Stained section shows single bit of tissue showing squamous keratinized epithelium and connective tissue stroma, the subjacent connective tissues is edematous with inflammatory inflate and deeper cellular connective tissues stroma show collages fibers with spindle shaped fibroblasts bony trabecular along with numerous pale eosinophilic small round area of ossification are seen along with the lining cells. Small blood vessels with extravasated RBC are seen chronic inflammatory cell infiltrate is also evident overall feature are suggestive as "peripheral ossifying fibroma" (Figure H). The patient was recalled after 1 week for suture removal.

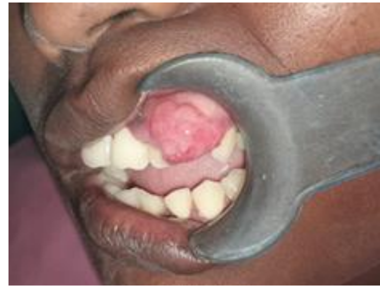

Figure A & B: Solitary, well-circumscribed, oval-shaped over growth with largest diameter with a smooth, shiny surface and having a slightly erythematous present on marginal gingival in relation to 21 to 24.

Figure C & D: Measurement was done by using university of North Carolina (UNC 15) probe (LX B= 5x7mm)

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Figure E: Excision of the lesion using Novolase Laser and with fibroma grabbed by HDT Tissue forceps Adson 1x2 12cm [TP42] used.

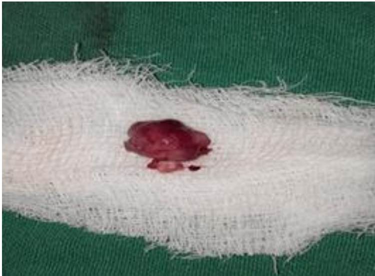

Figure F: Grossing it is a single bit tissue approximately 0.5 xo.7cm in size ovoid in shape reddish brown in colour with smooth in surface texture

Figure G: Foci of calcification on radiograph

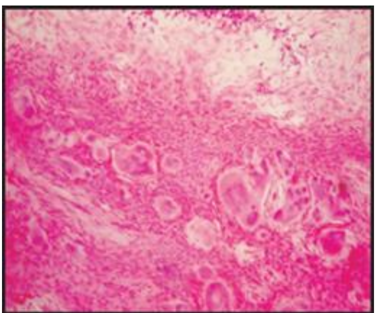

Figure H: Histopathological examination with H & E stained section revealing lesional tissue to be composed of minor salivary gland tissue with pooled mucinous areas and chronic inflammatory cell infiltration.

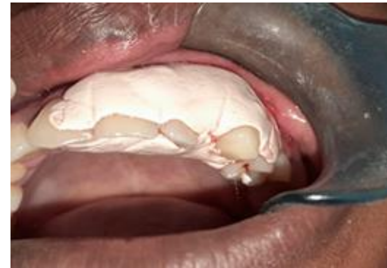

Figure I: Periodontal dressing placed, maxillary left anterior region

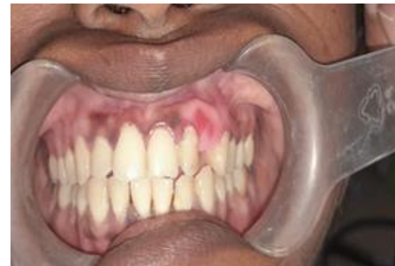

Figure J: Follow up after treatment

Discussion

Peripheral ossifying fibroma (POF) is a solitary gingival growth thought to arise from the gingiva, periosteum or the periodontal ligament. This fibroma of the gingiva presents with areas of calcification or ossification. However, this enlargement of the gingiva is a non-neoplastic lesion.[1]

These lesions arise due to overgrowth and proliferation of different components of connective tissue in periodontium, i.e. the fibers, bone, cementum, blood vessel or any particular type of cell. [2]

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Table 1:

Also called	Ossifying fibroid epulis, peripheral fibroma with calcification, calcifying fibroblastic granuloma.
Site	Maxillary arch incisor cuspid region
Appearance	Nodular mass, either pedunculated or sessile ,which usually originates from the interdental papilla.
Color	Ranges from red to pink
Radioghphically	Calcification can be seen as radiopacity that are mostly concentrated in central area of the lesion
Differential diagnosis	Irritational fibroma, peripheral giant cell granuloma, giant cell fibroma, pyogenic granuloma
Treatment	Local surgical excision

Almost 60% of the lesions occur in the maxilla and mostly occur anterior to molars. The lesion is most common in the second decade of life affecting mainly females. Furthermore, high female predilection, rare occurrence in the first decade, and decline in incidence after age 30 suggest that hormonal influence may be a lesional growth factor.[3] Dental calculus, plaque, microorganisms, dental appliances, and restorations are considered to be the irritants triggering the lesion. The lesion though usually smaller than 1.5 cm in diameter can reach a much larger size and can cause separation of the adjacent teeth, resorption of the alveolar crest, destruction of the bony structure and cosmetic deformity.[4]

Histologically, the POF appears to be a nonencapsulated mass of cellular fibroblastic connective tissue of mesenchymal origin, covered with stratified squamous epithelium, which is ulcerated in 23%–66% of cases. Most ulcerated lesions occur in patients in the second decade. POFs contain areas of fibrous connective tissue, endothelial proliferation and mineralization. Endothelial proliferation can be profuse in the areas of ulceration, which can be misleading in clinical diagnosis, as the lesion may appear to be a pyogenic granuloma.[5] following features are usually observed during microscopic evaluation:

(I) Benign fibrous connective tissue with varying content of fibroblast, myofibroblast and collagen.

(II) Sparse to profuse epithelial proliferation.

(III) Mineralized material which may represent mature, lamellar or woven osteoid, cementum like material or dystrophic calcifications.

(IV) Acute and chronic inflammatory cells are also identified.[6]

They noted the importance of early diagnosis and conservative management of such lesions, as they can become more destructive over time if left untreated. Regular follow-up is essential after excision due to the high growth potential of the lesion (8–20% recurrence rate).[7]The observed mineralized tissue observed can be classified into blended irregular bone trabecular, lamellar trabecular bone, curved bone trabeculae and oval and/or spheroid ossicles .[8]

Radiographic feature of POF may rare radiopaque foci of calcification have been reported to be scattered in central area of the lesion, but not all lesion demonstrate radiographic calcification. underlying bone involvement is usually not visible on a radiograph in rare instances ,superficial erosion of bone is noted.[9]

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Due to the high rate of recurrence (8% to 20%), close postoperative monitoring is required in all cases of POF. POF recurs due to 1) the incomplete removal of the lesion, 2) the failure to eliminate local irritants and 3) difficulty in accessing the lesion during surgical manipulation as a result of the intricate location of the lesion (usually an interdental area) .[10]

Histopathological research is essential for such lesions to be definitively diagnosed and treated. Although it has a low rate of recurrence, peripheral ossifying fibroma will require complete surgical excision, including the underlying periosteum, to prevent recurrence.[11]

Ossifying fibroma can become large, causing extensive destruction of adjacent bone and significant functional or esthetic alteration. It is vital to identify such lesions and manage them at the earliest, there are different modalities of treatment available which include surgical excision by scalpel, laser, or electrosurgery.[12]

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