ORIGINAL RESEARCH PAPER

Volume-8 | Issue-8 | August - 2019 | PRINT ISSN No. 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

PERIPHERAL OSSIFYING FIBROMA : A CASE REPORT

Dental Science

Dr Keshapaga Meena* MDS, Senior Resident, Department Of Periodontics, GDC, Hyderabad *Corresponding Author

Dr Salavadi Shyam Sunder MDS, Reader, Department Of Periodontics, Mamata Dental College, Khammam

Dr Tunkimetla Srilatha MDS, Senior Resident, Department Of Oral And Maxillofacial Surgery, GDC, Hyderabad

ABSTRACT

Gingival growths are one of the most frequently encountered lesions in the oral cavity. Different lesions with similar clinical presentations make it difficult to arrive at a correct diagnosis. One of the infrequently occurring gingival lesions is peripheral ossifying fibroma (POF) which is a reactive gingival overgrowth.. Exuberant connective tissue response to chronic irritation due to plaque, calculus, restorative, or orthodontic appliances are thought to be responsible for the initiation of the lesion. This article describes a case of POF in an 18-year-old female in an unusual location with rare involvement of bone. Clinical, radiographic, and histologic characteristics are discussed and recommendations regarding differential diagnosis, treatments are provided.

KEYWORDS

Gingival hyperplasia, peripheral ossifying fibroma, ossifying fibroma.

INTRODUCTION

Focal overgrowths which may occur on the gingiva are usually the result of a reactive response to local irritation rather than neoplastic in nature. Reactive lesions on gingiva, includes peripheral giant cell granuloma, pyogenic granuloma, fibrous hyperplasia, and peripheral ossifying fibroma[1]. Peripheral ossifying fibroma is considered to be a non-neoplastic enlargement of the gingiva. Ossifying fibromas are the central type and the peripheral type, former type arises from the endosteum or the periodontal ligament adjacent to the root apex and causes expansion of medullary cavity. The later type occurs solely on the soft tissues covering the tooth bearing areas of the jaws i.e. it occurs solely on the gingiva[2]. These lesions widely considered to be associated with trauma or local irritants such as sub gingival plaque and calculus, dental appliances, and poor dental restorations[3,4]. Peripheral Ossifying Fibroma is considered as a non-neoplastic enlargement of gingiva, classified as a reactive hyperplastic inflammatory lesion, a common gingival growth, which is typically seen on the interdental papilla and is believed to comprise about 9% of all gingival growths[5]. Clinically appears as a slow growing solitary nodular mass, either sessile or pedunculated with a smooth or ulcerated surface[6]. Females are more commonly affected than males, and the anterior maxilla is the most common site of occurrence[7]. Though the etiopathogenesis is uncertain, an origin from cells of the periodontal ligament has been suggested. POF tends to occur in the 2nd and 3rd decades of life, with the peak prevalence between the ages of 10 and 19 years[8]. An important clinical aspect of POF is the high recurrence rate, which ranges from 8% to 45%[9]. Radiographically, in majority of cases, there is no apparent underlying bone involvement visible; rarely superficial erosion of bone may appear[10]. Treatment for peripheral ossifying fibroma includes surgical excision including the Periosteum and periodontal ligament, as well as aggressive agent removal.

The main purpose of this case report is to emphasize the importance of a reasonable differential diagnosis with the patient.

CASE REPORT

A 18-year-old female patient reported to our department with the complaint of swelling of the gums in the lower front tooth region since 5 years. The swelling started as small nodule that progressed gradually to the present size. There was no relevant family and medical history and patient did not give any history of trauma, injury, or food impaction. Initially started as a small growth and continued to grow to the present size. Occasionally, bleeding occurred when she brushed her teeth.

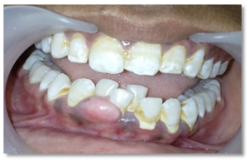

Fig 1: Pre-Operative before SRP

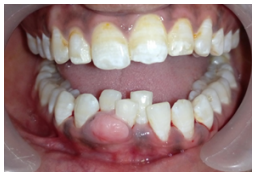

Fig 2: Pre-Operative after SRP

On intraoral examination, a well-defined growth was present in relation to 41, 42, and 43 measuring about 2 cm × 1 cm in diameter extending from mesial aspect of 41 to mesial aspect of 43 along the labial surface (Fig 1). On palpation, swelling was non-tender, sessile, and soft in consistency. No evidence of erythema, ulceration or spontaneous bleeding was noticed. It was tender to firm on pressure. On Radiographic examination in the region of 41, 42, and 43 reveals no signs of involvement of alveolar bone were observed. Based on the history, clinical examination and investigations, the case was provisionally diagnosed as POF. The differential diagnosis considered was PGCG, irritation fibroma, aneurysmal bone cyst, gingival cyst and pyogenic granuloma.

TREATMENT

Under local anesthesia, excisional biopsy was performed using an Electrocautery device (Fig 3). Adjacent teeth were scaled and root planed to remove any local irritants (Fig 2). The excised tissue (Fig 4) was submitted to the Department of Oral Pathology for histopathological diagnosis. Histologically, the tissue section revealed highly cellular collagenous fibers and proliferating plumb fibroblasts, with focal areas of trabecular bone lined by osteoblasts. The parakeratinized stratified squamous epithelium with broad rete pegs and underlying connective tissue shows loosely arranged stroma and collagen fibers interspersed with irregular metaplastic bone and concentrically arranged calcifying masses. The section also showed numerous dilated capillaries. On the basis of clinical, histopathological, and radiographic examination, the diagnosis of POF was given. The patient presented for a follow-up examination 15 days and 1 year postoperatively (Fig 7). The surgical site appeared to be healing well.

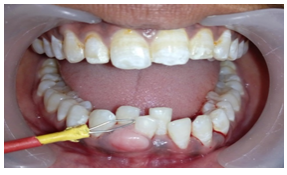

Fig 3: Excision using Electrocautery

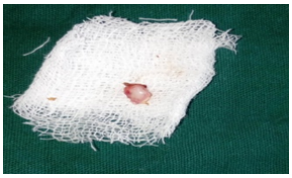

Fig 4: Excised tissue

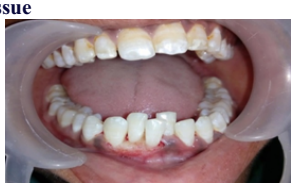

Fig 5: Immediately after excision

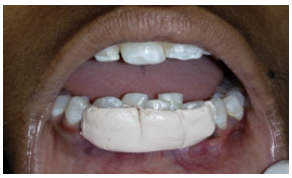

Fig 6: With periodontal dressing

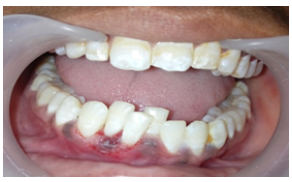

Fig 7 (a)

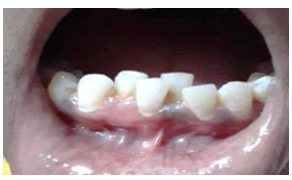

Fig 7 (b)

Fig 7: Post-operative view with 15 days (a) and (b) 1 year follow up

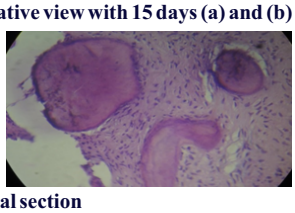

Fig 8: Histological section

DISCUSSION

Gingiva is often the site of localized growths that is considered to be reactive rather than neoplastic in nature[11]. In 1982, Gardner coined the term POF for a lesion that is reactive in nature and is not the extraosseous counterpart of a COF of the maxilla and mandible.[12]

Since late 1940s Intraoral ossifying fibromas have been described and many names given to similar lesions like epulis, peripheral fibroma with calcification, POF, calcifying fibroblastic granuloma, peripheral cementifying fibroma, peripheral fibroma with cementogenesis and peripheral cemento-ossifying fibroma. The sheer number of names used for fibroblastic gingival lesions indicates that there is much controversy surrounding the classification of these lesions.[13,14]

Peripheral ossifying fibroma was coined by Eversole and Rovin[15]. The etiopathogenesis of peripheral ossifying fibroma is uncertain; an origin from cells of periodontal ligament was suggested[16]. The reasons for considering periodontal ligament origin for POF include exclusive occurrence of POF in the gingiva (interdental papilla), proximity of gingiva to the periodontal ligament and presence of oxytalan fibers within the mineralized matrix of some lesions [16]. Excessive proliferation of mature fibrous connective tissue is a result of gingival injury, gingival irritation, subgingival calculus or a foreign body in the gingival sulcus. Chronic irritation of the periosteal and periodontal membrane causes metaplasia of the connective tissue with the resultant initiation of bone formation and dystrophic calcification. It has been suggested that the lesion may be caused by fibrosis of granulation tissue[17]. High female predilection, rare occurrence in the 1st decade, and decline in incidence after age 30 years suggest that hormonal influence may be a lesional growth factor.[18,19]

In this case, the patient had subgingival and supragingival calculus which probably contributed etiopathogenesis of the lesion.

Peripheral ossifying fibroma tends to occur in the 1st and 2nd decades of life, with peak incidence between the ages of 10 and 19. Almost two thirds of all cases occur in females, with a predilection for the anterior maxilla.[20]

In the present case, the clinical findings correlate well with these general characteristics. The surface is not always ulcerated but frequently. Ulceration was not noted in the present case.

Hormonal influence gives the higher incidence of POF among females, increasing occurrence in the second decade, and declining incidence after the third decade.

Radiographic features of POF vary. Radiographic foci of calcifications have been reported to be scattered in the central area of some lesions. Underlying bone involvement is usually not visible on a radiograph. In rare instances, superficial erosion of bone is noted.[21]

In the present case, no radiographic findings were found which indicated that this could be an early stage of the lesion.

The definitive diagnosis of POF is made by the histologic evaluation of biopsy specimen. Histologically, the key feature of this lesion is exceedingly cellular mass of connective tissue comprising large number of plump, proliferating fibroblasts intermingled throughout with delicate fibrillar stroma.

Buchner and Hansen[11] observed that the mineralized tissues observed in POF can be of three basic types: (1) Bone that may be woven, lamellar or trabecular, sometimes surrounded by osteoid, (2) cementum like material that appears as spherical bodies resembling cementum or large acellular round to oval eosinophilic bodies, which seemed to have coalesced to form islands in various size and shape, (3) dystrophic calcification ranges from small clusters of minute basophilic granules or tiny globules to large, solid irregular masses.

Treatment of Peripheral ossifying fibroma is complete surgical excision as was done in the present case (Fig 3, 4, 5, 6). Proper excision and aggressive curettage of the adjacent tissues is required for the prevention of the recurrence. The recurrence rate (8%–20%) of POF has been considered high for reactive lesions and it probably occurs due to incomplete initial removal, repeated injury, or persistence of the local irritants.[10]

CONCLUSION

POF is a progressing lesion with high recurrence rate. It should be differentiated clinically, radiographically and histologically from various other gingival lesions, so that appropriate treatment can be carried out at the earliest. Thorough surgical removal should be done along with removal of all the irritants and etiological factors so as to prevent the recurrence. Though it's most accepted origin is from periodontal ligament but still further research is needed regarding its origin by using various advanced techniques like immunohisto chemistry. High rate of occurrence among females may indicate some hormonal role in its etiopathogenesis but yet to be proved.

REFERENCES

1. Buchner A, Hansen LS. The Histomorphologic spectrum of peripheral ossifying fibroma. Oral Surg Oral Pathol. 1987 Apr; 63(4):452-61.
2. Neville et al. in textbook of oral and maxillofacial pathology. 2nd edition Saunders Elsevier Philadelphia 2004.451-452.
3. Bhaskar SN, Jacoway JR. Peripheral fibroma and peripheral fibroma with calcification: report of 376 cases. J. Am Dent Assoc 1966; 73(6): 1312-1320.
4. Eversole LR, Rovin S. Reactive lesions of the gingiva. J Oral Pathol 1972; 1(1): 30-8.
5. Poonacha KS, Shigli AL, Shirol D. Peripheral ossifying fibroma: A clinical report. Contemp Clin Dent 2010; 1:54-6.
6. Kumar R S, Sateesh CP, Shreedhar A. Peripheral ossifying fibroma: A rarity in elderly males. J Dent Sci Res 2017; 2:1-5.
7. Buchner A, Hansen LS. The histomorphologic spectrum of peripheral ossifying fibroma. Oral Surg Oral Med Oral Pathol. 1987; 63:452–61
8. Kumar SK, Ram S, Jorgensen MG, Shuler CF, Sedghizadeh PP. Multicentric peripheral ossifying fibroma. J Oral Sci. 2006; 48:239–43.

9. Cuisia ZE, Brannon RB. Peripheral ossifying fibroma – A clinical evaluation of 134 pediatric cases. Pediatr Dent. 2001; 23:245–8.
10. Keeney J N, Kaugara GE, Abbey LM. Comparison between the peripheral ossifying fibroma and peripheral odontogenic fibroma. J. Oral Maxillofac Surg 1989; 43: 378-82.
11. Buchner A, Hansen LS. The histomorphologic spectrum of peripheral ossifying fibroma. Oral Surg Oral Med Oral Pathol 1987; 63: 452-61.
12. Gardner DG. The peripheral odontogenic fibroma: An attempt at clarification. Oral Surg Oral Med Oral Pathol 1982; 54: 40-8.
13. Arunachalam M, Saravanan T, Shakila KR, Anisa N. Peripheral ossifying fibroma: A case report and brief review. SRM J Res Dent Sci 2017; 8: 41-5.
14. Kumar SK, Ram S, Jorgensen MG, Shuler CF, Sedghizadeh PP. Multicentric peripheral ossifying fibroma. J Oral Sci 2996; 48(4) 239-43.
15. Eversole LR, Rovin S. Reactive lesions of the gingiva. J Oral Pathol 1972; 1 (1): 30-8.
16. Bhaskar SN, Jacoway JR. Peripheral fibroma and peripheral fibroma with calcification: repot of 376 cases. J Am Dent Assoc 1966; 73(6): 1312-1320.
17. Kendrick F, Waggoner WF. Managing a peripheral ossifying fibroma. J Dent Child 1996; 63: 135-138.
18. Kenney JN, Kaugara GE, Abbey LM. Comparison between the peripheral ossifying fibroma and peripheral odontogenic fibroma. J Oral Maxillofac Surg 1989; 43: 378-82.
19. Miller CS, Henry RG, Damm DD. Proliferation mass found in the gingiva. J Am Dent Assoc 1990; 121: 559-560.
20. John R, Prabhu NT, Munshi AK. Peripheral ossifying fibroma report of a case. J Indian Soc Pedod Prevent Dentist 1996; 63: 135-138.
21. Glick G. Text Book of Burket's Oral Med Diag and Treatment 10th ed. BC Decker, Ontario Hamiton 2003. p. 142.