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Peripheral Giant Cell Granuloma of the Palatal Gingiva- A Case Report

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Abstract: *The peripheral giant cell granuloma is a reactive exophitic polyploidy or multi nodular red purple nodules in the oral cavity, proliferates under local irritation and trauma. The present case was a slowly enlarging gingival mass with a reddish-purple surfaceis observed at the palatal gingiva in a school-girl of three months duration. Recently it started to interfere with mastication processas the size of the lesion was enlarged. Periapical radiography revealed crestal bone loss between the teeth 21 and 22. However, hematological examination revealed normal serum level of calcium, phosphorous and alkaline phosphatase and the condition was diagnosed as a benign peripheral giant cell granuloma after surgical excision of the mass and histopathology. A follow up schedule was arranged for the patient for checking recurrence and there was no evidence of recurrent.*

Keywords: *peripheral, Giant cell,reactive ,exophitic ,histopathology*

I. Introduction

Peripheral giant cell granuloma (PGCG)presents itself clinically as an infrequentexophitic polyploidy or multinodular red purplenodules in the oral cavity, it is accepted that PGCG originates either from the connective tissue of the periostium or from periodontal membrane in response to persistent trauma or local irritation such as tooth extraction [1,2]. It is considered as one of the most frequent giant cell lesions of the oral cavity. Numerous names and descriptions were given to the lesion such as giant cell epulis, osteoclastoma, giant cell reparative granuloma, or giant cell hyperplasia[3].The etiology of PGCG is unknown, however several factors found to play an important role in the development of the lesion. Numerous studies suggested trauma, chronic irritation, increased levels offemale sex hormones[4].Nevertheless, other studies related the cause to Patients poor oral hygiene – increased amount of calculus and plaque retention[5].It was believed that PGCG is a jaw lesion develops during the first 2 decades of life with a predilection for female (2:1), which was considered as an odontogenic lesion arises from the odontoclaststhat led to root resorption of the deciduous teeth. This might explain the developing site within the jaws[6].

Moreover, the origin of giant cell granuloma is not yet identified clearly, in the literatures few cells have been accused to be responsible for giant cell proliferation such as osteoblast, endothelial cells, phagocytes and spindle cells[7].

Histologically, PGCG appear as a diffused tissue mass containing a large number of newly formed connective tissue cells as well asnumerous multinucleated giant cells and chronic inflammatory cells. In addition, hemmorage, hemosidrine and calcified mass of bone/bone like materials could also be seen[5]

Radiographically, no evidence of radiographic changes could be usually detected as the lesion is a soft tissue lesion that very rarely affects the underlying bone[8]. However,careful examination and appropriate diagnosisis required to avoid confusion with other lesions exhibiting very similar clinical and histological features. These clinically similar lesions usually sharing the same sites within the jaw bones such as central giant cell granuloma[9].Nevertheless, central giant cell granuloma reveals more aggressive behavior; theymust be carefully distinguished from PGCG radiographically as some cases of giant cell granuloma might be locally invasive and causes destruction of the underlying bone.

In this article we are attempting to present a case of palatal granuloma for a12 years school-girl, diagnosed as PGCG and accordingly it was treated surgically. Furthermore, the patient was involved in a follow-up schedule for checking any evidence of recurrence.

II. Case Report

A twelve yearssystemically healthy school girl attended to a private periodontal clinic at city of sulaimani - Iraq with pinkish lobulated mass in the anterior part of hard palate at the region of left incisors for three months duration. Clinical examination revealed a pink mass (Figure1-A), firm in consistency with no bleeding on touching. Furthermore, no history of pain associated with the lesion. Examination of the patient's jaw relation showed a deep anterior bite on the palatal mucosa by the mandibular incisors (Figure 1-B). Clinical examination also revealednormal condition of the teeth, no tooth mobilityand no tenderness in percussion. Furthermore,there was no discolored tooth, carious or fractured tooth in the region.Regarding the periodontal

condition there was no bleeding on probing, no gingival recession, and no periodontal pocket and a fair oral hygiene. Moreover, no history of trauma was recorded from the patient and her parents.

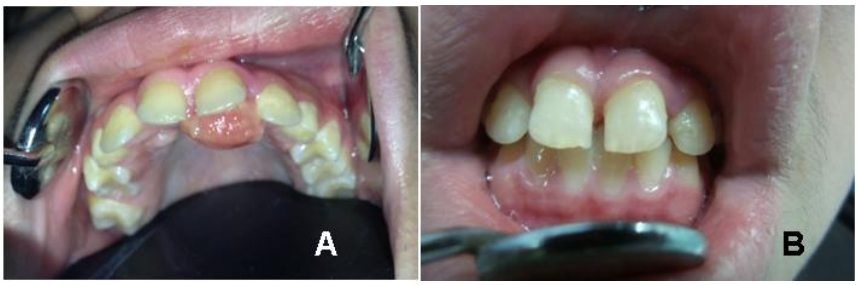

Figure 1:A - pinkish lobulated mass in the anterior part of hard palate at the region of left incisors. B- Jaw relation showing a deep anterior bite on the palatal mucosa by the mandibular incisors.

2-1Radiographical examination was undertaken by periapical,occlusal and OPG films for the area that revealed evidence of interseptal bone loss between the teeth 21 and 22 where the lesion was originated (Figure 2). Furthermore radiographs showed un-erupted 23 and 13 in addition of retained both deciduous canines.

Figure 2 :periapical Radiograph of upper anterior teeth

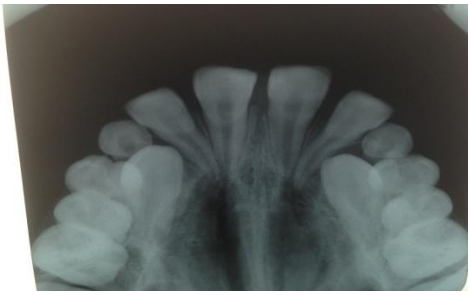

Figure3 :Occlusal Radiograph of upper anterior teeth

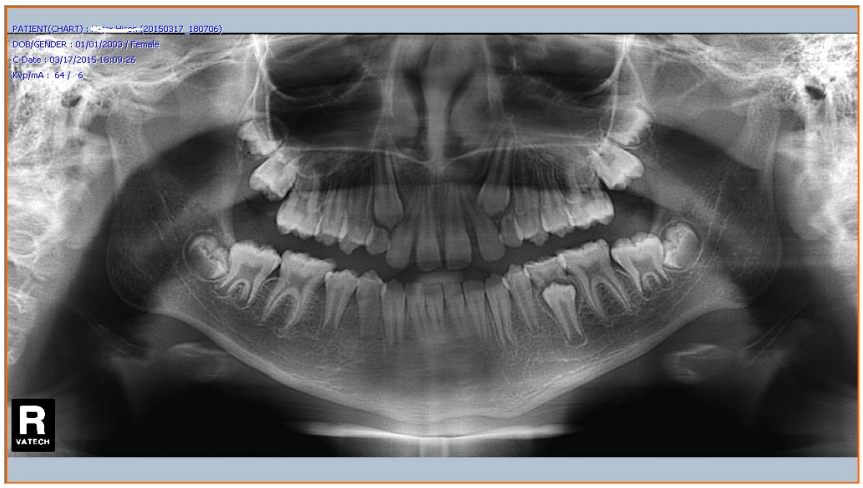

Figure 4: OPG of the patient

Patient was referred for hematological investigations in order to detect the serum level of phosphorous, calcium and alkaline phosphatase to exclude central giant cell granuloma after detection of bone loss radiographically at the site of the lesion. Results of the hematologic investigations showed that all the tests were within normal limits.

Treatment was performed by surgical excision under local anesthetics for total elimination of the mass, the area was curetted and the exposed parts of the roots with Gracey curette. After irrigation of the surgical site, periodontal dressing was applied for one week, after one week the dressing was removed and there was a normal postoperative healing response. Moreover the patient recalled after two weeks for checking and 2 months, 4 months six months withno evidence of recurrent of the lesion was detected (Figure 3 a and b).

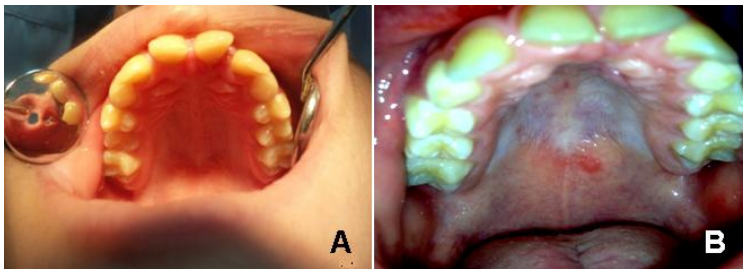

Figure 3: postoperative healing follow-up, A: Two weeks postoperative healing, B: 4 months postoperatively with no evidence of recurrence.

2-2 Histopathology report: The gross features of the lesion were described as a single formalin fixed piece of tissue, measured 1.5cm x10 mmx4 mm. The surface was whitish brown in color. The sample was cut in three pieces and all embedded (Figure 5).

Figure 5: The gross feature of the lesion,a single formalin fixed piece of tissue, measured 1.5cm x10 mmx4 mm.

Histologically the lesion revealed hyperplastic stratified squamous epithelial cells. The underlying connective tissue displayed focal collection of chronic inflammatory cells with dense collagen fibers. The lesion also showed ovoid to spindle shaped mesenchymal cells aggregation the background view (Figure 6-A). Furthermore, few multinucleated giant cells are seen adjacent to bone trabecule, as shown in Figures 6-B.

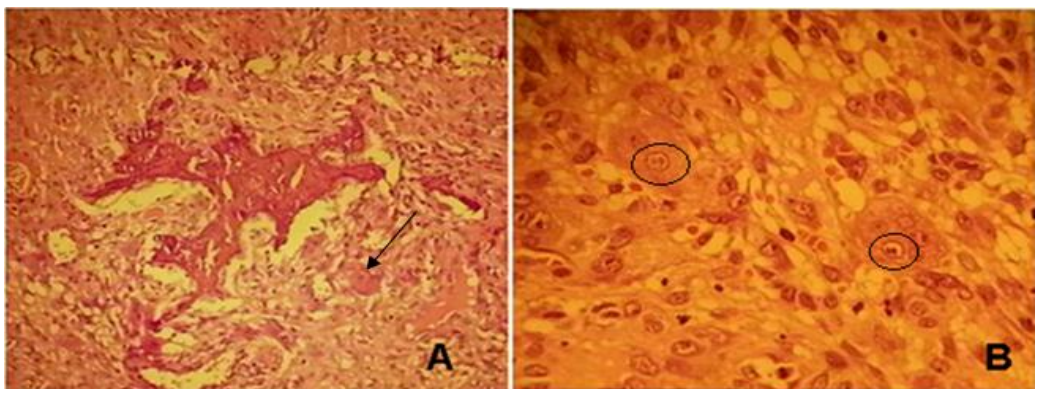

Figure 6: Histopathology of the lesion, A- Spindle shaped mesenchymal cells. B- Multinucleated giant cells

III. Discussion

Peripheral giant cell granuloma PGCG is a relatively frequent benign reactive lesion of the oral cavity [10].PGCG ariseinterdentally or from the gingival margin, occur mostfrequently on the labial surface, and may be sessile orpedunculated. They vary in appearance from smooth,regularly outlined masses to irregularly shaped,multi-lobulated protuberances with surface indentations[11].The consistency of the lesion vary from soft reddish to firm pinkish dependant of the age of the lesion, more time passes the lesion becomes more fibrotic [12].

The present case reported a firm pinkish lesion with no bleeding tendency. There is no characteristic or indicative clinical feature distinguish the lesion from clinically and histologically similar lesions such as central giant cell granuloma since both lesions sharing similar clinical and histological feature. However differentiation is done through the clinical behavior of CGCG which is more aggressive in nature[9]. Furthermore, radiographic evaluation of both lesions might determine thenature and type of the granuloma,radiographically distinction is based on presence or absence of radiographic evidence of bone destruction at the site of the lesion as CGCG usually is locally invasive and causes bone resorption at the site of the lesion[11]. Another method ofdifferentiationbetween both central and peripheral giant cell lesions is performed by hematologic investigation for detection of serum calcium, phosphorous and alkaline phosphatase levelthat usually records elevated levels of calcium and alkaline phosphatase in patients with CGCG rather than PGCG, where as phosphorous level reduced[13]. The present case, recorded evidence of marginal interseptal bone resorption, although we attributed the cause to trauma from occlusion or aggressive form of periodontitis but we still needed to exclude the central type of giant cell granuloma, hence we referred the patient hematologist for detection of serum level of calcium, phosphorous and alkaline phosphatase. Results revealed normal serum level of these elements. Therefore, we excludedcentral giant cell granuloma and the case was diagnosed as peripheral giant cell granuloma and consequently treated by simple excision of the lesion plus curetting the lesion's base.

IV. Conclusion

A case of palatal granuloma for a 12 years school girl was diagnosed as peripheral giant cell granuloma after a thorough clinical, radiographical and hematological investigation. A surgical treatment and a follow-up schedule were arranged for the patient for fourmonths postoperatively with no incidence of recurrence. Moreover, the patient was referred to an orthodontic clinic for correction of anterior deep bite jaw relation.

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