ORAL PATHOLOGY

GIANT CELL EPULIS: REPORT OF 2 CASES.

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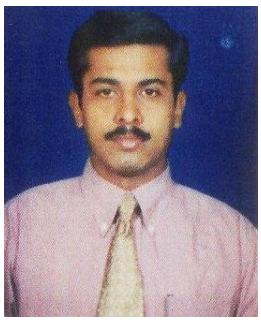

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ABSTRACT:

The word epulis is a clinical term used to describe a localized growth on the gingiva. Histologic examination of epulides indicates that the vast majority are the focal fibrous hyperplasia's, peripheral ossifying fibomas, pyogenic granulomas or peripheral giant cell granulomas. The major epulides are common oral lesions with which dentists should be thoroughly familiar. The clinical and histological relevance of the two cases are discussed and analyzed for their biological behaviour.

Key words: Epulis, Peripheral Giant Cell Granuloma, Giant Cell Epullis, Reparative Giant Cell Granuloma, Giant Cell Granuloma.

INTRODUCTION

Epulis is a nonspecific term applied to tumors and tumor like masses of the gingiva. Specifically, it is a term used to describe subepithelial tumifications of the gingiva or alveolar mucosa, with or without ulceration. Therefore, lesions occurring on the gingiva but exhibiting distinct epithelial changes, such as verruca vulgaris, papilloma and primary squamous cell carcinoma are not epulides. On the other hand, odontogenic tumors such as the peripheral ameloblastoma and odontogenic cysts such as the gingival cyst of the adult occur on the gingiva and appear clinically as epulides. Benign connective tissue neoplasms such as neurofibromas and leiomyomas may occasionally present as epulides. Malignant epulides are fortunately, rarely encountered. Primarily, however epulides represent reactive hyperplasias of connective tissue cells of gingiva or superficial periodontal ligament. These common epulides are focal fibrous hyperplasia, peripheral ossifying fibroma, pyogenic granuloma and peripheral giant cell granuloma[1]. This paper reviews the clinical and histological features of 2 cases of giant cell epulis and discusses their biological and clinical behaviour.

CASE REPORTS:

Case 1: A 40 yr old female patient reported to the dept of Oral Medicine & Radiology, Pacific Dental College & Hospital with a chief complaint of severe pain associated with swelling in left maxillary posterior region which was static in size since 4 months. Extra-oral examination showed a diffuse, firm, tender, non-fluctuant, febrile swelling of 5 x 6 cms in size over the left middle third of face [fig 1]. Intra-oral examination revealed reddish-pink, well defined, firm, tender, non-fluctuant swelling of 4 x 5 cms and extending from distal aspect 25 to 28 bucco-palatally with a sessile base. First molar was supra erupted & grade 3 mobile. The periodontal status of all teeth was compromised [fig 2].

Routine blood tests like blood sugar, serum alkaline phosphatase, calcium & phosphorus levels were within normal limits. Imaging with orthopantomograph (fig 3) and intraoral periapical radiograph (fig 4) revealed widening of periodontal ligament space, diffuse radiolucency with ill-defined borders in relation to 26, 27 & 28 region along with external root resorption of 26.

As Fine Needle Aspiration Cytology report was non specific and the lesion was very big, an incisional biopsy was planned. Histopathologically, Hematoxyline & Eosin stained sections revealed a parakeratinized stratified squamous epithelium with acanthosis & sub epithelial pseudocapsule formation (fig 5). The stroma was fibrocellular in nature with numerous small and large vascular spaces, multinucleated giant cells & areas of hemosiderin pigment (fig 6). Chronic Inflammatory cells like lymphocytes and plasma cells along with few bony spicules were also present. The over all features were suggestive of Peripheral Giant Cell Granuloma. Under general anesthesia, lesion was excised using cautery and curetted, with smoothening of underlying bone. Sutures were then placed. After a week the wound healed satisfactorily.

Case 2: A 23 year old female lactating patient reported to the department of Oral Medicine & Radiology with a chief complaint of asymptomatic swelling of gums in left mandibular posterior region since 1 month. Extraorally there were no significant findings (fig 7). Intraorally minimal amount of stains and calculus was noted, with a bluish-pink, firm, tender, non fluctuant, soft tissue swelling of 1 x 1 cm in size on left premolar region and with a sessile base extending buccolingually (fig 8). Intraoral periapical radiograph revealed interdental bone loss in premolars with widened periodontal ligament space (fig 9). Blood investigations & fine needle aspiration cytology were not conclusive of any abnormality. Histopathologically, fibrovascular connective tissue stroma with numerous collagen fibers, plump fibroblasts, numerous large multinucleated giant cells & numerous capillaries with foci of hemorrhage & hemosiderin pigments were seen (fig 10). A diagnosis of Peripheral Giant Cell Granuloma was then made. Complete excision of lesion under local anesthesia was done. Wound healed satisfactorily after 1 week.

DISCUSSION

An epulis is a localized gingival growth, typically starting in the interdental papillae. The lesions which contain relatively little vascularity are focal fibrous hyperplasia and peripheral ossifying fibroma which are pink, smooth surfaced elevations that are usually asymptomatic. Those lesions which contain numerous vascular spaces (pyogenic granuloma and peripheral giant cell granuloma) are usually red smooth surfaced elevations and the degree of trauma to which they are subjected is often sufficient to cause focal ulceration and pain[1].

Earlier the term “peripheral giant cell reparative granuloma” was suggested for the epulides lesions, considering that the giant cells may represent a phagocytic response to local hemorrhage. However this term was later discarded, because of lack of evidence to support the concept that it occurred in response to the healing process.

Peripheral Giant Cell Granuloma is one of the common lesions seen in oral cavity and appears as localized tumor like enlargement of gingiva. The local irritating factors like teeth extraction, poor restoration, food impaction, calculus, ill fitting dentures and plaque are said to be the

etiologic factors, though exactly not known[1]. Food lodgement was present in both the cases reported, where as poor oral hygiene was only noted in case-1.

A possible hormonal (Estrogen & progesteron) influence for some Peripheral Giant Cell Granuloma has been postulated by Whitaker[2] & Giansanti[3]. Chambers discussing caillouette & mattar's paper suggested that these hormones have immunosuppressive actions which contribute to growth of lesions[2]. In the present Case-2, this could also be one of the reasons, as the patient was lactating.

Peripheral Giant Cell Granuloma shows a wide age distribution. Cooke[4] quoting Darlington's study & others showed that majority of cases are between 4 - 6 decades. Brown, Darlington & Kupfer[5] showed 37% of lesions in range of 31 - 45 years of age, whereas Anderson[6] stated that it was found in younger patients. The present case-1 was 40 year old patient and case-2 was 23 year old. Bhasker[7] & Daley et al[1] have shown male predilection whereas several authors have noted a female predilection. Both cases which are mentioned here were female patients.

They are rather unique lesions of oral cavity occurring on gingiva or alveolar mucosa, but never been found on non-osseous supported tissues. Peripheral Giant Cell Granuloma is small, well-demarcated, soft swelling, sessile or pedunculated, deep red to bluish red in color, usually originating from periodontal ligament or mucoperiosteum. The size of lesion varies between 0.5 to 1.5 cms[8]. However, Bodner et al[9] reviewed 15 cases of large (more than 2 cms) lesions suggesting its growth potential & showed that patients with poor oral hygiene or with xerostomia are more prone to have large lesions. In both cases the lesion was present on gingiva, sessile and reddish in color. Where as in case-1 size of the lesion was more than 2cm and correlated with poor oral hygine.

The histopathology reveals large number of multinucleated giant cells in vascularized fibrocellular stroma. In some cases the giant cells may be found in lumen of Capillaries. Hemorrhage, hemosiderin pigment, inflammatory cells & newly formed bone or mature calcified material through out the cellular stroma can be seen. Lesion may be covered by stratified squamous epithelium and ulcerated in some cases.

A zone of dense fibrous connective tissue representing a pseudocapsule, usually separates the giant cell proliferation from superficial epithelial surface[10]. In both cases the histopathological findings were corresponding to the above description, however the fibrous pseudocapsule was present in only Case-1.

Some times Peripheral Giant Cell Granuloma causes cupping resorption of the underlying alveolar bone and the presence of recurrent lesion was associated with root resorption[11]. In case-1 the external root resorption was evident in relation to 26 with out any evidence of recurrence for the period of one year follow up.

Dayan D., Buchner A. and David R[12] however proposed the stromal cells to be comprised of proliferating osteo-progenitor cells, pericytes, fibroblasts and myofibroblasts. The presence of myofibroblasts was made evident by histochemical procedures and electromicroscopy, which displayed intra-cellular collagen fibrils, supporting the reactive nature of these lesions. The nature of giant cells remains debatable. Lim & Gibbins[13] carried out immunohistochemical staining on giant cells granulomas & supported earlier findings that these giant cells may be macrophages. However Flanagan et al[14] along others[15] supported that the giant cells are osteoclastic in origin.

The treatment is simple conservative excision of lesion with removal of any local source of irritation. Bhasker et al reported recurrence rate of 12%, Katsikeris et al[15] reported 9.8% of recurrence rate and Anderson et al[6] on other hand reported a rate of 70.6%. However in both cases there were no recurrences in 1 year follow up series.

Smith[16] and his coworkers recognized that the central giant cell granuloma and hyperparathyroidism may perforate the bony cortex and appear in the soft tissue as an epulis like lesion. Thus the diagnosis of this lesion may, in some cases may lead to the discovery of primary hyperparathyroidism.

Conclusion

Although the etiology was not exactly determined, low socioeconomic status of the patients and unfavorable oral hygiene seemed to be predisposing factors in both cases. Since the periosteal region of the jaw is said to be the most exposed site for the development of chronic inflammation through trauma, irritants and infections, it is not easy to determine the exact cause favoring the development of lesion. Clinically it is difficult to diagnose the lesion differentially with other closely resembling lesions like pyogenic granuloma, peripheral ossifying fibroma and fibroma. Hence a histopathological examination of the tissue specimen is mandatory for confirming the diagnosis. In conclusion, for treating Peripheral Giant Cell Granuloma, a complete surgical excision along with its base and elimination of irritating factors seems satisfactory to prevent further recurrence.

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FIGURE LEGENDS:

Figure 1: Extra oral swelling in left maxillary region obliterating infraorbital region.

Figure 2: Intraoral swelling extending on the buccal aspect from 25 to 28 region.

Figure 3 and 4: Both OPG & IOPA revealed advanced interdental bone loss and root resorption of 26.

Figure 5: A stratified squamous parakeratinized epithelium with sub epithelial pseudocapsule formation.

Figure 6: Multinucleated giant cells with numerous nuclei with in it.

Figure 7: Extra orally no gross abnormality was noted

Figure 8: Intra orally the lesion extends from 34 to 35 region buccolingually.

Figure 9: Intraoral periapical radiograph shows cupping type of bone resorption around 35.

Figure 10: Histopathologically numerous giant cells and hemosiderin pigment seen dispersed with in the fibrovascular stroma.

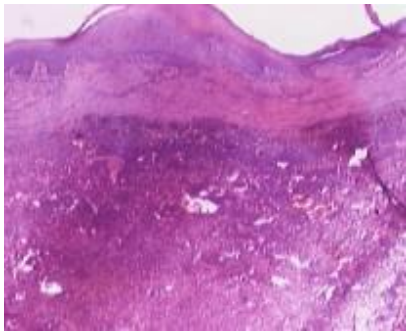
CASE No:1

FIGURE :1

FIGURE :2

FIGURE :3

FIGURE :4



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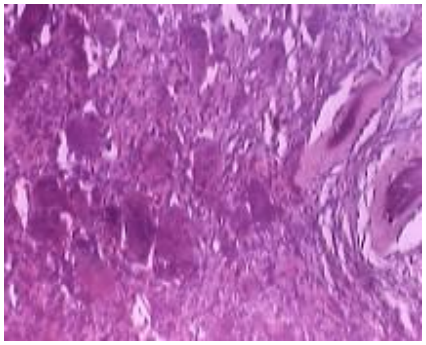
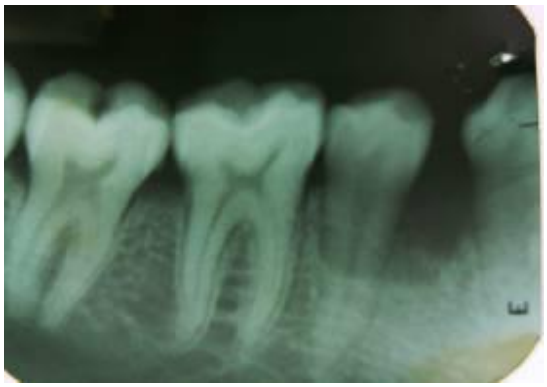


FIGURE :6

CASE No:2

FIGURE :7

FIGURE :8



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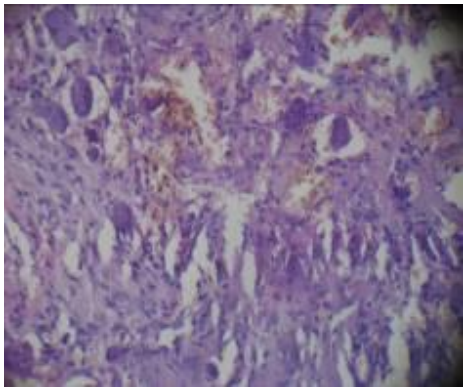

FIGURE :10

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