Lobular Capillary Haemangioma - A Series of Three Cases

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ABSTRACT

Lobular capillary hemangioma (Pyogenic Granuloma - PG) is a common benign vascular lesion of the skin and mucosa. It is a reactive enlargement that is an inflammatory response to local irritation such as calculus, fractured tooth, minor trauma, rough dental restorations etc. It is mostly seen in second decade of life in young females. Clinically, presents as smooth or lobulated exophytic lesion manifesting as small, red erythematous papules on pedunculated or sessile base, which is usually hemorrhagic. The surface ranges from pink to red to purple ranging from few mm to several cms. Gingiva is the most common site affected followed by buccal mucosa, tongue and lips. Although surgical excision is treatment of choice , some other treatment protocols such as use of Nd:YAG laser,cryosurgery, intralesional injection of steroid and sodium tetradecyl sulfate have been proposed. We report a series of three cases of pyogenic granuloma managed by surgical intervention.

Key words : Inflammatory hyperplasia , lobular capillary hemangioma , pyogenic granuloma

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INTRODUCTION

Pyogenic granuloma is the most common of all the oral tumorlike growths. While the terminology implies a benign neoplasm, most if not all fibromas represent reactive focal fibrous hyperplasias due to

trauma or local irritation. Although the term "focal fibrous hyperplasia" more accurately describes the clinical appearance and pathogenesis of this entity, it is not commonly used.[1] Pyogenic granuloma (PG) is a kind of inflammatory hyperplasia. The term "inflammatory hyperplasia" is used to describe a large range of nodular growths of the oral mucosa that histologically represent inflamed fibrous and granulation tissues. It includes fibrous inflammatory hyperplasia (clinical fibroma and pulp polyp), palatal papillary hyperplasia, giant cell granuloma, pregnancy epulis and PG .[2,3,4]

Hullihen's description in 1844 was most likely the first PG reported in English literature, but the term "pyogenic granuloma" or "granuloma pyogenicum" was introduced by Hartzell in 1904.[5,6] Pyogenic granuloma of the oral cavity is known to involve the gingiva commonly (75% of all cases). Uncommonly it can occur on the lips, tongue, buccal mucosa, palate and so on.[7,8,9] There are two kinds of PG namely lobular capillary hemangioma (LCH type) and non-LCH type, which differ in their histological features .[2]

It usually arises in response to various stimuli such as low-grade local irritation, traumatic injury, hormonal factors , or certain kinds of drugs .[1,9] The pyogenic granuloma has been called as "pregnancy tumor" and occurs in 1% of pregnant women while the remaining lesions occur because of local irritation or trauma.[11] The increased incidence of these lesions during pregnancy may be related to the increasing levels of estrogen and progesterone.[7]

Case Report Series

Case Report 1

A 26 yrs old male patient reported to our department with a chief complain of growth in upper anterior region of jaw since 3 years. On examination there was a solitary well defined sessile lobulated dome shaped mass of 3 cm X 2 cm on the labial gingival in relation to 11,12 involving papillary ,marginal and attached gingival extending superior-inferiorly from the cervical one third of 11 and 12 upto mucogingival junction and medio-laterally from labial frenum to the distal aspect of 12 (Figure 1). Lesion was firm, non tender on palpation and no visible pulsations and bleeding was

evident. Provisional diagnosis of pyogenic granuloma was made.

Intra oral periapical radiograph (IOPA) of the region showed no bony changes. Lesion was excised under local anaesthesia. Biopsy tissue showed (Figure 2) both the epithelium and connective tissue. The epithelium is stratified squamous para-keratinized in nature. Epithelium is hyperplastic at places and at places it is atrophic. Basilar hyperplasia and whirling of epithelium is evident. The connective tissue shows thick bundles of collagen fibres interspersed with fibroblasts with chronic inflammatory cell infiltration. Blood vessels were dilated and filled with Red Blood Cells (RBC), here after known as "RBCs". Proliferating endothelial cells are seen around blood vessels. Patient was completely normal with no sign and symptoms (Figure 3).

Figure 1: Intraoral preoperative view showing lesion in maxillary anterior region of jaw.

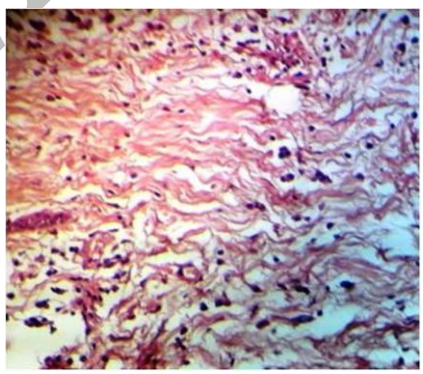

Figure 2: Histopathological view of the lesion

Figure 3: Postoperative view

Case Report 2:

A female patient aged 45 yrs reported to Department Of Oral Medicine And Radiology with the chief complaint of a growth in the upper anterior region of the jaw since 5-6 days. Lesion was initially small but the patient did not take any treatment and gradually it increased to the present size.

On examination there was a single well defined reddish white pedunculated, dome shaped, lobulated growth of 1cm x 1.5 cm size with an overlying smooth surface seen on the gingiva in relation to 21 on palatal aspect extending superior – inferiorly from the incisal one third of 21 to alveolar mucosa and medio-laterally from distal aspect of 21 to about 0.5 cm away from it on edentulous region of 11 (Figure 4). On palpation lesion was soft to firm in nature, non tender and was associated with bleeding. Provisional diagnosis of pyogenic granuloma was made and lesion was excised under local anaesthesia. Histopathological report showed epithelium is hyperplastic and showed acanthosis and underlying connective tissue showed endothelium lined, dilated blood vessel. There is proliferation of fibroblasts seen with moderate inflammatory cell infiltration and extravasated RBCs are seen (Figure 5). Intraoral periapical radiograph showed alveolar crestal bone loss at level of apical third of root of 21 indicating severe localized periodontitis with 21(Figure 6). Follow up was done where in patient was free of any recurrence.

Figure 4: intraoral preoperative view showing lesion in maxillary anterior region of jaw.

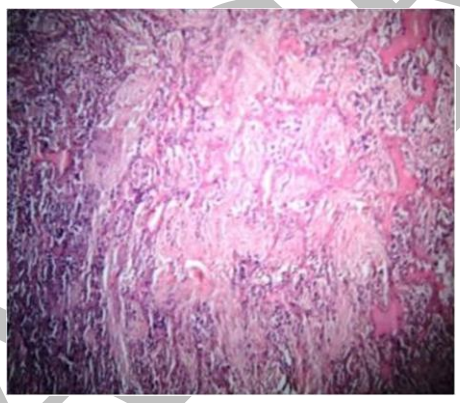

Figure 5: Histopathological view of the lesion

Figure 6: Intraoral periapical radiograph of maxillary anterior region of jaw

Case Report 3

A 50 yrs old male patient reported to the department with a chief complain of growth in upper left posterior region of jaw since 20 days. On examination there was a solitary, reddish pale, well defined sessile nodular growth present in upper left posterior alveolar mucosa in the region of 28 measuring about 2cm × 2.5 cm in dimensions and extending antero posteriorly from distal aspect of 27 upto edentulous alveolar ridge of 28 posteriorly and medio laterally slanting from palatal mucosa in the region of 28 and obliterating buccal vestibule in region of 28 (Figure7) .

Lesion was soft, non tender on palpation and no visible pulsations and bleeding was evident. Provisional diagnosis was Pyogenic granuloma. Lesion was excised under local anaesthesia. Biopsy tissue showed (Figure 8) both the epithelium and connective tissue. The epithelium is stratified squamous parakeratinized in nature. Epithelium is hyperplastic at places and at places it is atrophic. Basilar hyperplasia and whirling of epithelium is evident.

The connective tissue shows thick bundles of collagen fibres interspersed with fibroblasts with chronic inflammatory cell infiltration. Blood vessels were dilated and filled with Red Blood Cells (RBC), here after known as "RBCs". Proliferating endothelial cells are seen around blood vessels. Intra oral periapical radiograph (IOPA) of the region showed erosion of bone at cervical one third level on distal aspect of 27 (Figure 9). Patient was completely normal with no sign and symptoms (Figure 10).

Figure 7: intraoral preoperative view showing lesion in maxillary left posterior region of jaw.

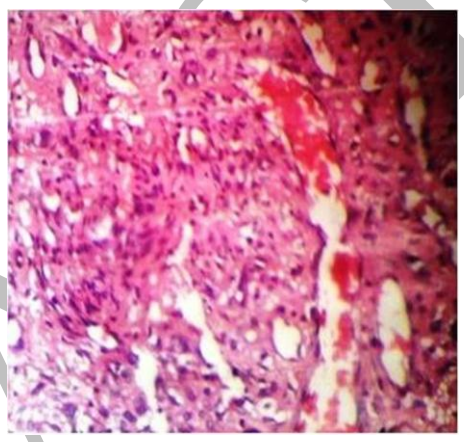

Figure 8: Histopathological view of the lesion

Figure 9: Intraoral periapical radiograph of maxillary left posterior region of jaw

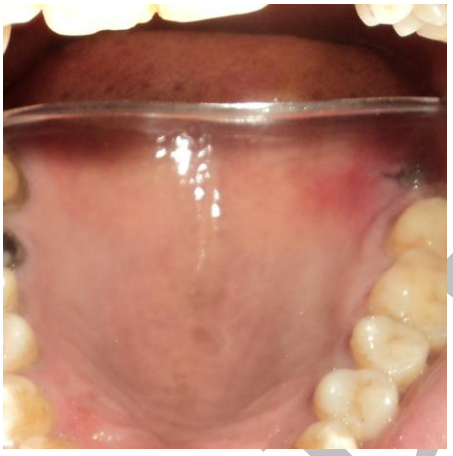

Figure 10: postoperative view

DISCUSSION

Pyogenic granuloma was first described by Poncet and Dor in 1897 as 'human botryomycosis'which was transmitted from horse to man. Subsequently it was proposed that these lesions are caused due to some pyogenic bacteria like streptococci and staphylococci. However there is no evidence of any infectious organisms isolated from the lesions confirming the unlikely relation to any infection and hence the name is a misnomer .[12,13]

Over the years various authors have suggested other name, such as granuloma gravidarum / pregnancy tumor, Crocker and Hartzell's disease, vascular epulis, benign vascular tumor, hemangiomatosis granuloma, epulis, teleangiectaticumgranulomatosa and lobular capillary hemangioma.[13] Pyogenic granuloma is an inflammatory hyperplasia affecting the oral tissues. Hullihen's description in 1844 was most likely the first pyogenic granuloma reported in the English literature.

It was only in1904 that Hartzell first ever introduced the term pyogenic granuloma . It is now universally agreed that this lesion is formed as a result of an exaggerated localized connective tissue reaction to a minor injury or any underlying irritation. The irritating factor can be calculus, poor oral hygiene, nonspecific

infection, over hanging restorations, cheek biting etc. Because of this irritation, the underlying fibrovascular connective tissue becomes hyperplastic and there is proliferation of granulation tissue which leads to the formation of a pyogenic granuloma . Pyogenic granuloma may occur at all ages but is predominantly seen in the second decade of life in young adult females, possibly because of the vascular effects of female hormones .Studies by Zain RB *et al.*, in Singapore populations have also shown the greatest incidence of pyogenic granuloma in the second decade of life . In present paper two cases were found in male patients and two cases were in fourth decade of life.

The gingiva is the most commonly site affected followed by the buccal mucosa, tongue and lips. Pyogenic granuloma in general, does not reoccur when excised along with its base and all the causative factors are removed. This paper presents 3 cases of pyogenic granuloma which were managed by surgical intervention.

According to Vilmann et al, the majority of the pyogenic granulomas are found on the marginal gingiva with only 15% of the tumors on the alveolar part. The typical clinical presentation of pyogenic granuloma is a small, deep red to reddish-purple lesion occurring on the gingiva, which is either sessile or pedunculated. The surface may be smooth, lobulated or occasionally, warty which is commonly ulcerated and shows a tendency for hemorrhage either spontaneously or upon slight trauma. The lesion is painless and soft in consistency; although older lesions tend to become more collagenized and firm.[1] The size of the lesion usually ranges between 0.5 cm and 2 cm, and they may grow at an alarming rate reaching that size within just 4 to 7 days.[13]

Depending on its rate of proliferation and vascularity, there are 2 histological variants of pyogenic granuloma called Lobular Capillary Hemangioma (LCH type) and Nonlobular Capillary Hemangioma (non- LCH type).[8,10,12,14]

Treatment of pyogenic granuloma involves a complete surgical excision . Recurrence of pyogenic granuloma after excision is a known complication but can be

prevented. Other conventional surgical modalities for the treatment of pyogenic granuloma reported are cryosurgery in the form of either liquid nitrogen spray or a cryoprobe. Nd:YAG, CO2 and flash lamp pulsed dye lasers have also been used for the treatment of oral pyogenic granuloma .[2,12]

The recurrence rate for pyogenic granuloma is said to be 16% of the treated lesions and so re-excision of such lesions might be necessary. Various other benign soft tissue lesions need to be differentiated from pyogenic granuloma. Differential diagnosis of PG includes parulis, peripheral giant cell granuloma, peripheral ossifying fibroma, hemangioma, peripheral fibroma, leiomyoma, hemangioendothelioma, hemangiopericytoma, bacillary angiomatosis, kaposis sarcoma, metastatic tumor, post extraction granuloma and pregnancy tumor .[1,11,12] Differentiation is done on clinical and histological features which help in providing adequate treatment and therefore a good prognosis. No recurrence was seen in these cases and overall prognosis was good.

CONCLUSION

Lobular capillary hemangioma although is non neoplastic lesion. It can be present in uncommon site and with unusual size; therefore, proper management including diagnosis, treatment and further prevention is very important. It is advised to maintain good oral hygiene and regular follow up to avoid further recurrences.

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