PYOGENIC GRANULOMA- A THREE YEAR FOLLOW UP CASE REPORT

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Pyogenic granuloma is one of the inflammatory hyperplasia seen in the oral cavity. This term is a misnomer because the lesion is unrelated to infection and in reality arises in response to various stimuli such as low-grade local irritation, traumatic injury or hormonal factors. Clinically, oral pyogenic granuloma is a smooth or lobulated exophytic lesion manifesting as small, red erythematous papules on a pedunculated or sometimes sessile base, which is usually hemorrhagic. The surface ranges from pink to red to purple, depending on the age of the lesion. Because of the high frequency of pyogenic granuloma in the oral cavity, especially during pregnancy, and necessity for proper diagnosis and treatment, a complete information and investigations about this lesion, in addition its treatment is presented.

Keywords: Inflammatory hyperplasia; oral cavity; pregnancy; Pyogenic Granuloma.

Pyogenic granuloma (PG) is a common tumor-like growth of the oral cavity or skin that is considered to be non-neoplastic in nature. Hullihen's description 1 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. While some investigators regard PG as a benign neoplasm, it is usually considered to be a reactive tumor like lesion which arises in response to various stimuli such as a chronic low-grade local irritation 2 traumatic injury, hormonal factors 3 or certain kinds of drugs.

Case Report -1

A 60 yr old female patient reported to the Dental Office with a chief complaint of swelling on the upper left part of the gums since 3 months. History revealed that the swelling was of pinhead size between #12 and #13 and it gradually increased .The patient was in good systemic health and his family history, medical and dental history was non-contributory

Intra oral examination revealed the presence of a solitary growth on the gingiva extending from distal aspect of #12 and #13 (Fig.1).

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The lesion was pink in color, measuring about 0.3 x 0.8 mm, irregular in shape and was pedunclated (Fig.2). On palpation, the surface was fibrotic. On the basis of history and clinical presentation a provisional diagnosis of 'Pyogenic Fibroma' was made and an excisional biopsy was planned. There was no apparent underlying involvement of bone visible roentgenographically.

Case Report-2

A 50 yr old male patient was reported to the Dental Office with a chief complaint of pain and swelling in upper right part of the gums since 6 months. History revealed that the swelling grows gradually The patient was in good systemic health and his family history, medical and dental history was non-contributory. However his oral hygine maintenance was compromised due to lack of motivation.

Intra oral examination revealed the presence of a solitary growth on the gingiva extending from distal aspect of #12 and #13 (Fig.3).The lesion was reddish pinkish in color, measuring about 0.2 x 1.2 cm , irregular in shape and was pedunclated (Fig.4).

The surface was ulcerated and on palpation it was fibrotic. On the basis of history and clinical presentation a provisional diagnosis of 'Pyogenic Fibroma' was made and an excisional biopsy was planned. Radiographically there was no loss of alveolar bone.



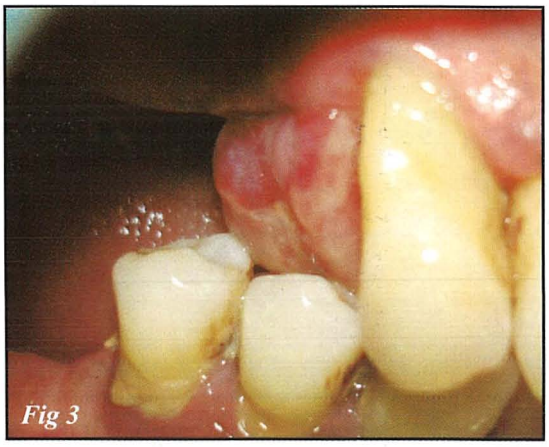
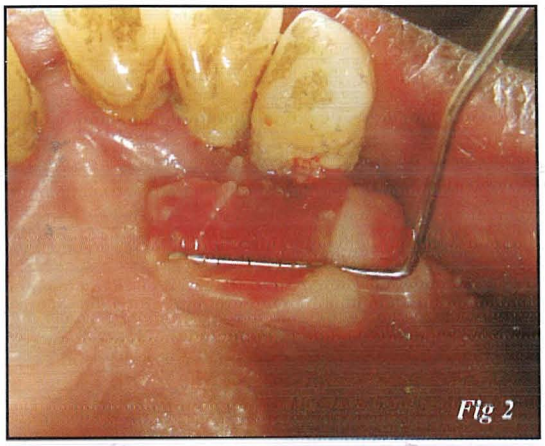


Fig.1,3. Pre Operative



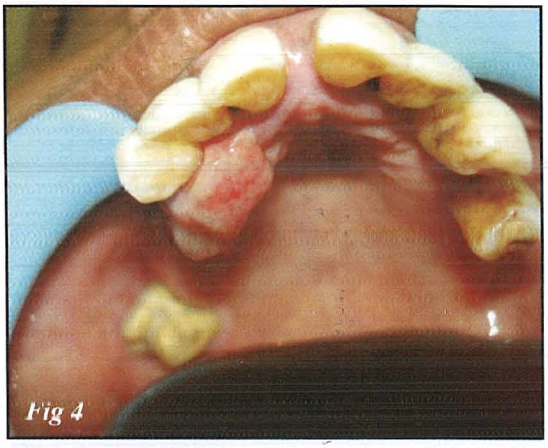


Fig.2,4. Pedunclated Base

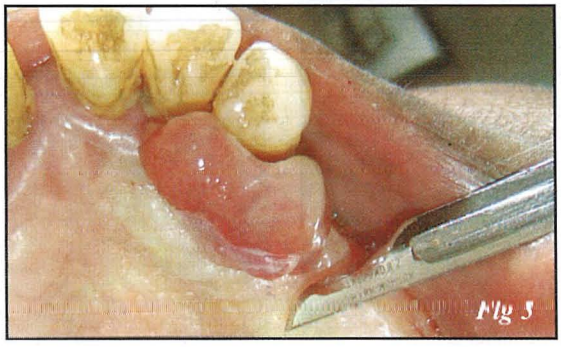
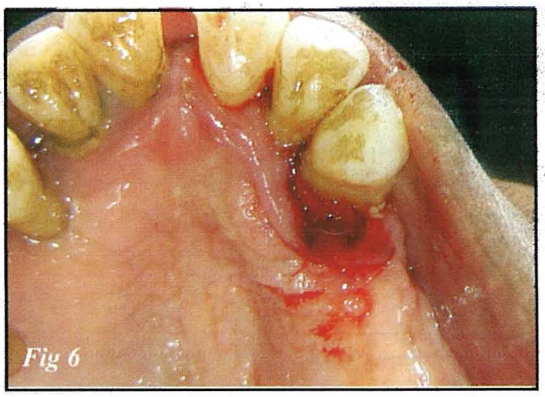


Fig.5. Surgical Excision



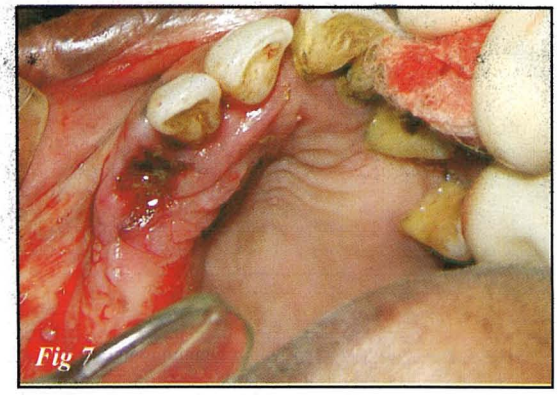
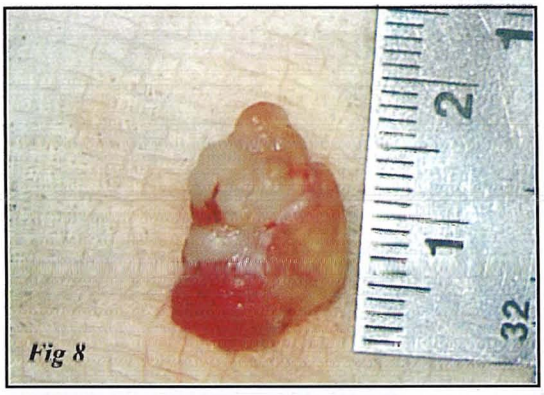


Fig.6,7. Immediate Post Operative



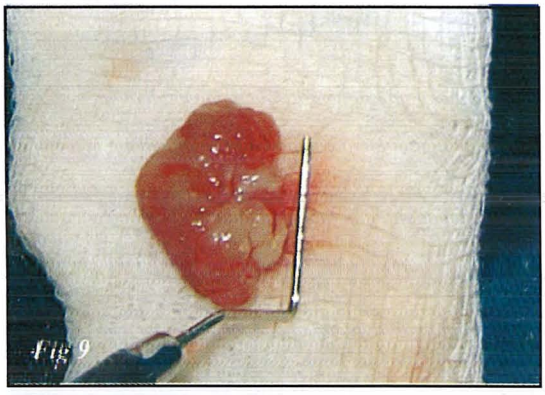
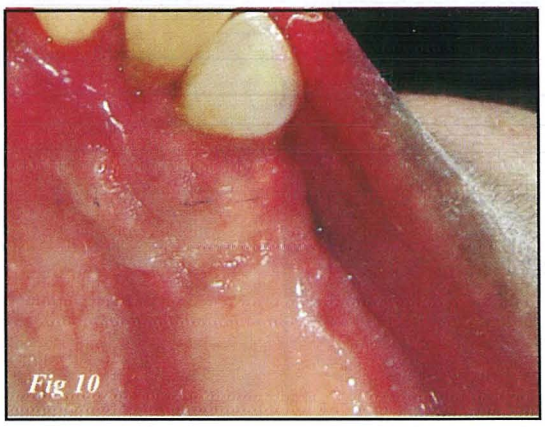


Fig.8,9. Pyogenic Granuloma Excised



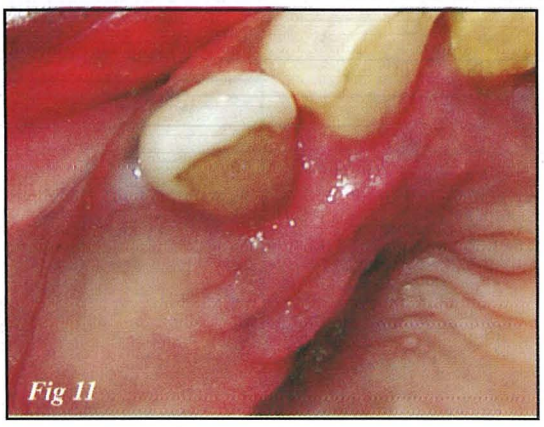


Fig.10,11. 3yr. Post Operative

Surgical Procedure

Both the patients were operated under 2% xylocaine HCL with 1:80,000 adrenaline .The soft tissue mass was excised (Fig.5,6,7,8,9) along within border of healthy gingival tissue. A thorough degranulation was done followed by scaling and root planning of the adjacent teeth. The area was thoroughly irrigated with normal. Antibiotics and analgesics were prescribed and the patient was discharged after giving him post operative instructions.

Patients reported after one week and the area was thoroughly irrigated with saline .The oral hygiene was reinforced and patient was called for checkups at regular interval. Patients was under three year (Fig.11,12) observation and so far there was no evidence of recurrence.

Histopathological Examination

The histopathologic report read as "The H and E stained sections" revealed that PGs appear covered by a stratified squamous epithelium, which is atrophic or ulcerated. The underlying connective tissue is edematous and occupied by exuberant granulation tissue featuring a large proliferation of small capillaries. A mixed inflammatory infiltrate, mainly composed of polymorphonuclear leukocytes, and to a lesser extent, lymphocyton, in evident. These pathological characteristics, along with the clinical features, make these lesions very similar to exophytic capillary haemangiomas.

At low magnification, particularly at the lateral edges, a lobular arrangement is noted wherein groups of capillaries proliferate but abruptly stop. Each lobule is surrounded by a thin collagen layer. This arrangement is disrupted at the base, where irregularly shaped larger vascular channels reside and presumably communicate with the proliferation. It is here that some anastomosing channels (resembling angiosarcoma) can occasionally be identified, but they are focal rather than an integral part of the lesion.

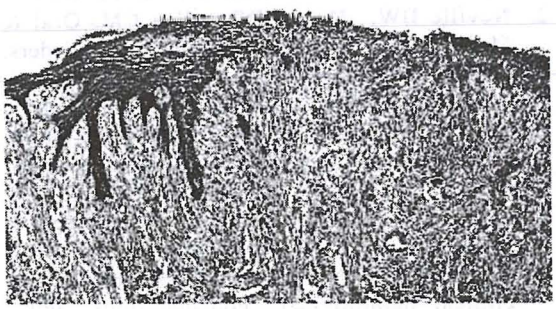


Fig. 12

At higher magnification, another discriminating feature of benign vascular lesion is found: the small capillary endothelial-lined spaces are themselves surrounded by a perithelial or pericytic layer of cells.

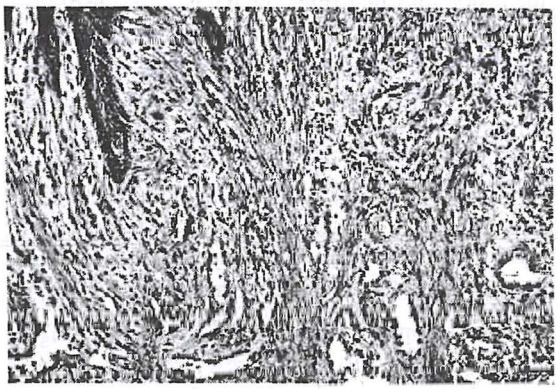


Fig. 13

Discussion

PG is a common reactive neoformation of the oral cavity, which is composed of granulation tissue and develops in response to local irritation or trauma.

The term "pyogenic" implies pus production related to an infectious actiology, however, no pus-producing microorganisms are associated with PG. Moreover, the lesion is not a true "granuloma" (i.e. a specific type of persistent chronic inflammation). It is a relatively common oral lesion, possibly affecting 1% of the general population with a predilection for the female sex. PGs may occur at any age with a predilection for young adults, most of the patients being in the third or fourth decade of life. The predominant location for PGs is the gingiva, the labial maxillary gingiva being the most frequently affected site, especially anteriorly. Any other oral location may

be affected, including the lips, buccal mucosa, and tongue.

PGs present clinically as exophytic, not well-delimited, widely based or pedunculated lesions. The surface is smooth or rough and deep red in colour and the consistency is softer than the rest of the mucosa. Ulceration is a frequent finding, sometimes covered by a fibrinous pseudomembrane, which imparts a whitish appearance. This white necrotic material may resemble pus, but, in the absence of a bacterial infection, no actual pus is produced. Depending on the duration and degree of fibrosis, the lesion may be firmer and paler. The size of PG is usually between 1-3 cm, although much larger lesions are not uncommon. The majority of PGs are asymptomatic; however, lesions with an intense inflammatory component can be rather painful. Bleeding following mild trauma, or even spontaneously, is frequent. When PGs occur in the gingivae, they are also complicated with specific periodontal alterations (bleeding, periodontal pocket formation, gingival retraction, and tooth mobility).

Microscopic examination of PG shows a highly vascular proliferation that resembles granulation tissue . Numerous small and large channels are formed which are engorged with red blood cells and lined by banal flat or plump endothelial cells that may be mitotically active 4. The blood vessels often show a clustered or medullary pattern separated by less vascular fibrotic septa, leading some authorities to consider PG as a polypoid form of capillary hemangioma or nothing more than an inflamed lobular hemangioma; others prefer to use the term granulation tissue-type hemangioma . Some pathologists require these vessels, which are sometimes organized in lobular aggregates, for diagnosis (lobular capillary hemangioma) 5

Surgical excision of PGs is the treatment of choice. Excision should also include removal of the base of the lesion, with extension down to periosteum, and curettage. Extraction of associated teeth is rarely necessary. In small incipient lesions, extirpation of the lesion and electric-coagulation of the base is recommended. Elimination of the responsible chronic irritating factor is always of paramount importance. Hence, the suggested protocol of action for PG includes initial elimination of the traumatic factors with subsequent surgical excision. If the lesion is small, reddish and free of fibrosis, the elimination of the traumatic factors may be sufficient for its own self extinction. Even if total resolution is not achieved, PG will likely lose its inflammatory and granulation tissue component, thus being smaller, less haemorrhagic and less prone to surgical complications. Because of the risk of complications and a higher risk of recurrence for HT removed during pregnancy, surgical excision should be deferred with the exception of cases featuring excessive haemorrhage and ulceration, or marked functional and aesthetic problems. If surgery is necessary, it is preferably done after the second trimester and, due to the high content of vascular tissue, LASER treatment is advisable.

Conclusion

Prevention of recurrent or newly-developed lesions of PG entails complete removal of the causative traumatic insult. For gingival lesions, implementation of meticulous oral hygiene is of paramount significance. In cases that dental restorations and appliances, or tooth and periodontal abnormalities are implicated, these factors should be corrected or eliminated. The adoption of preventive measures during pregnancy, such as better oral hygiene, will reduce the risk of pregnancy associated PG.

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