

Recurrent Localised Gingival Overgrowth: A Case Report

Abstract:

Pyogenic granuloma is a hemorrhagic nodule that happens utmost often on the gingiva(although it can occur on any surface) and that has a robust penchant to persist after simple excision if the connected irritant is not removed. Clinically these lesions usually present as single nodule or sessile papule with smooth or lobulated surface. These may be seen in any size from a few millimeters to several centimeters. Here, we report a case of Pyogenic granuloma in the gingiva of a 20 years old female patient which reoccurred after excisional biopsy.

Key-words: Pyogenic granuloma, Gingival overgrowth, Biopsy, Excision

Introduction:

The pyogenic granuloma (PG) or pyogenic fibroma is a common vascular proliferation first described in 1844 by Hullihen.[1] Pyogenic granuloma (PG) is a non neoplastic, benign inflammatory lesion, which occurs as one primarily a disease of the oral cavity and skin.[2] The name pyogenic granuloma is a misnomer since the condition is not associated with pus and does not represent a granuloma histologically some authors use the term lobular capillary hemangioma for this lesion.[3] Their friable, hemorrhagic, and frequently ulcerated appearance correlates with their histological structure. They are composed of proliferating endothelial tissue, much of which is canalized into a rich vascular network with inflammatory cells, are consistently present throughout the edematousstroma, with microabscess formation.[4]

In addition to lowgrade irritation, traumatic injury, it also develops as an overgrowth of tissue in response to other stimuli like hormonal factors. Young females in the second decade of their life, possibly because of a vascular effect due to hormonal changes develop such lesions.[2]

This lesion is also suggested to be one of the common benign oral soft tissue masses occurring in the oral cavity, those include traumatic fibroma, pyogenic granuloma, mucocele, warts or papilloma, peripheral giant cell granuloma, generalized gingival hyperplasia, lateral periodontal cyst, lipoma, denture induced hyperplasia. Vascular lesions of skin like port-wine stains, has been described to be associated with the occurrence of recurrent pyogenic granuloma.[2]

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Surgical removal of the lesion through total excision biopsy with removal of irritants like occlusal interferences, plaque, calculus, periodontal pockets, defective restorations are the recommended line of treatment. The literature has shown that, In addition to use of normal scalpel blades, electro cautry, lasers, is also one very useful technique for treatment of oral lesions of pyogenic granuloma.

Case Presentation:

A 20 year female reported to the department of periodontology and oral implantology, Hazaribag College of dental science and hospital, with the complain of swelling on the lower left central and lateral incisor in the interdental area. While taking history it is learnt that, the patient had developed this growth 3 months back, which reoccurred after excisional biopsy, which was performed 25 days ago.

The biopsy report revealed parakeratinized stratified squamous epithelium of variable thickness. The underlying connective tissue stroma shows fibrovascular with bundles of collagen intersecting, patchy distribution of chronic inflammatory cells predominantly plasma cells & lymphocytes. Numerous areas of endothelial lined blood vessels are also evident. Hence, the overall features are suggestive of PYOGENIC GRANULOMA based on a clinic-pathological correlation.

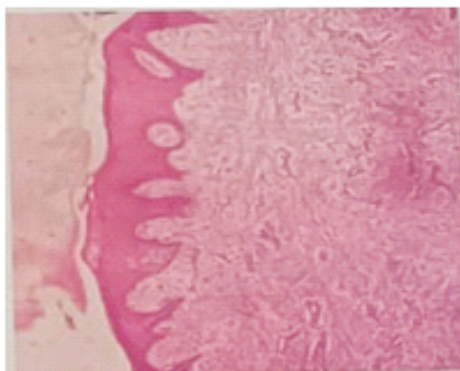


Figure 1: Histopathology of the lesion

The patient's medical history was unremarkable. Clinical examination revealed an exophytic, pedunculated lesion that measured approx. 8mm x 7mm in dimension, and was firm in

consistency and non-tender. Patient also complains of bleeding gums while brushing.

Scaling and curettage was done and the patient was recalled after 1 week but she turned up to the department after 1 month. And this time on clinical examination it was observed that the size of the lesion has increase shown in fig. 2



Figure 2: Pre operative

Excision of the lesion was done using Electrocautry as shown in fig. 3



Figure 3: During the Procedure with electrocautry

Coe-pak dressing was given and NSAIDs was prescribed for the same. Patient is recalled after 10 days.

After 10 days patient reported to the department, re-evaluation was done. Healing was uneventful as shown in fig. 4 and patient was perfectly alright.



Figure 4: 15 days post operative

Discussion:

Pyogenic granuloma is caused by local irritation, injury, stimulant such as calculus, occlusal interferences, foreign material and routine tooth brushing habits causing repeated trauma to the gingiva. Repeated trauma within the gingival crevice results in exuberant proliferation of connective tissue. Pyogenic granuloma is one of the member of reactive hyperplastic lesions, those can be classified broadly into 4 groups such as: 1- fibrous hyperplasia, 2- pyogenic granuloma, 3- peripheral ossifying fibroma, 4- peripheral giant cell granuloma.[2]

Oral pyogenic granuloma occurs over a wide age range of 4.5 to 93 years with highest incidence in second and fifth decades and females are slightly more affected than males. Gingiva was the predominant site followed by lips, tongue, buccal mucosa, and hard plate. Other sites were the cheek, lips, tongue, palate, mucobuccal fold, and frenum. Intraorally, it can present with a wide array of clinical appearances, ranging from a sessile lesion to an elevated mass. Pyogenic granulomas generally are soft, painless, and deep red to reddish-purple in color.[6]

Sangueza and Requena stated that pyogenic granuloma lesions express factor VIII – related antigen positivity in the endothelial cells lining large vessels, but are negative in the cellular areas, whereas Ulexeuropaeus I lectin binds to endothelial cells in both large vessels and cellular aggregates. Enhanced expression of the bFGF, Tie-2, anti-CD34 and anti-alpha SMA antibodies, and vascular morphogenesis factors such as angiopoietin-1, angiopoietin-2, ephrinB2, and ephrinB4. There is also expression of inducible nitric oxide synthase, increased expression of vascular endothelial growth factor, low apoptotic rate expression of Bax/Bcl-2 proteins and strong expression of phosphorylated mitogen activated protein kinase. Polymerase chain reaction investigations for human papilloma virus and human herpes virus type have yielded negative results.[6]

Sternberg et al. suggested three distinct phases to describe the course of pyogenic granuloma. The “early phase” reveals a compact cellular stroma with little lumen formation. The next

phase described as the capillary phase reveals lobules which are highly vascular with abundant intraluminal red blood cells. The final phase referred to as “involutionary phase” shows intra- and perilobular fibrosis. This phase is suggestive of healing phase of pyogenic granuloma. Clinical correlation should be done for various phases of pyogenic granuloma.[7]

Clinically, oral pyogenic granuloma appears as a nodular mass ranging from few millimetres to centimetres in size and are usually slow growing and asymptomatic. These lesions show a striking predilection for gingiva involving the marginal gingiva and interdental papilla commonly. The colour of the lesion varies from pink, purplish, to red and is dependent on the vascularity of the lesion.[7]

Treatment of pyogenic granuloma consists of conservative surgical excision which is usually curative. It is documented that up to 16% of the cases has shown reoccurrence of the lesion. It is believed that reoccurrence of the lesion takes place in case of incomplete excision, failure to remove etiologic factors or re-injury of the site. And it is observed that gingival cases shows much higher reoccurrence rate than any other site.

Conclusion:

Knowledge of the occurrence and origin of the most common oral lesions is beneficial for dental professionals during their practice in order to minimize dentoalveolar complications. All reactive hyperplastic lesions of gingiva show some differences in sex predilection, location, clinical and histopathologic features. Pyogenic granuloma is one of the important reactive hyperplastic as well as benign lesions of the gingiva. Complete excision of the lesion and elimination of local irritants with follow-up care, as well as dental hygiene maintenance are the recommended treatment protocol of this lesion.

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