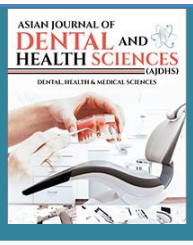

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Granuloma Pyogenicum in an Extraction Site: An Unusual Case Report

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Abstract

Pyogenic granuloma also known as Granuloma pyogenicum is a typical, acquired, benign vascular lesion of the skin and mucous membranes. It can occasionally present intravascularly or subcutaneously. This report discusses the case of pyogenic granuloma in a 25-year-old male in extraction site in lower left back tooth region.

Keywords: Pyogenic granuloma, lobular capillary hemangioma, benign neoplasm, hyperplastic lesion.

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Introduction:

One of the most frequently occurring benign mucocutaneous lesions is pyogenic granuloma which is also known as lobular capillary hemangioma [1]. It is believed that this soft tissue tumor of the oral cavity, is reactive rather than malignant in nature [2,3].

From clinical point of view, Pyogenic granuloma is present as a solitary nodule or sessile collagenous papule with a smooth or lobulated surface. Lesions become less vascular as they become mature, and clinically it is more pink and [4,5]. The marginal gingiva is the most frequently observed site, but lesions have also been reported on the palate, buccal mucosa, tongue, and lips[6].

The preferred method of treatment for these lesions has always been complete surgical excision with sub-periosteal curettage. Plaque, swollen restorations, etc. are examples of potential irritating elements that must be similarly eliminated to prevent recurrence [7].

This article includes a case of pyogenic granuloma present in extraction site in the lower left back tooth region.

Case Report:

A 25-year-old male patient reported to the Department of Oral Medicine and Radiology, Karpaga Vinayaga Institute Of Dental Sciences, Chengalpattu district, Tamil Nadu, India.

The patient's chief complaint was pain in his left lower back tooth region for past 1 month. History revealed tooth extraction in left lower back tooth region before 2 years. Growth which is initially small in size and gradually increased to the present size for past 1 month. Pain is present which is dull throbbing, intermittent and non-radiating in nature. Aggravated by mastication and relieved by medications. Spontaneous bleeding was present.

Figure1: Front view

On extra-oral examination, there was no evidence of external swelling, no palpable lymph node in submental and submandibular region and no evident of pus discharge or bleeding.

On intra-oral examination, presence of single well-defined growth of size 2x2 cm is seen in relation to 37 region. It is roughly oval in shape and sessile in nature extending anteriorly distal aspect of 36, posteriorly mesial aspect of 38, superiorly along the alveolar mucosa and inferiorly along the lower left buccal vestibule (fig.2). No secondary changes were seen. On palpation, all inspectory findings are confirmed with respect to number, site, size, shape and extent. It is non-tender, fibrous in consistency with bleeding discharge.

Figure 2: Intra oral Photograph

Histopathological examination

Section studied show a polypoidal lesion lined by ulcerated stratified squamous epithelium with underlying stroma showing lobules of proliferating capillary sized blood vessels lined by plump endothelial cells with interstitial lymphoplasmacytic infiltrate. (Fig.3)

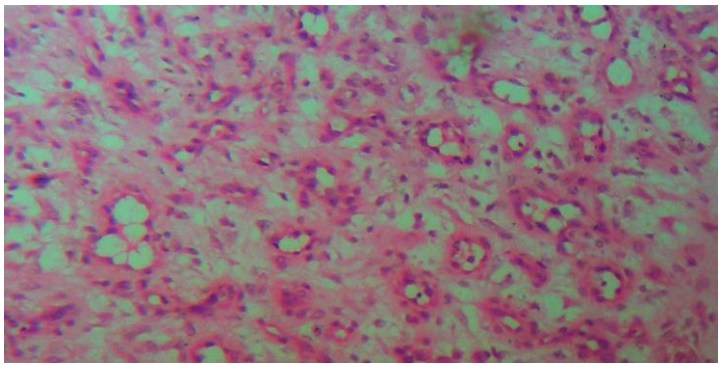

Figure 3: Histopathology

Radiographic examination

Intra oral periapical examination reveals radiolucency in relation to 37. It also reveals vertical bone loss and widening of periodontal in relation to 36. (Fig.4)

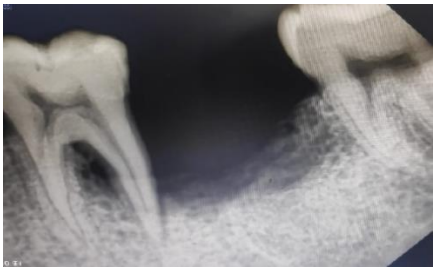

Figure 4: Radiographic image

Treatment:

Patient positioned 2% lignocaine with adrenaline administered as left Inferior alveolar nerve block. Extraction of 36 done under local anaesthesia and a tissue of size 1x2 cm excised and placed in formalin container for histopathological study (Fig.5). Bone filing done. Granulomatous tissue removed. Saline irrigation done. Suturing done with 3-0 silk. Hemostasis achieved.

(a) (b)

Figure 5(a) Surgical excision of the lesion (b) Extracted 36

(a) (b)

Figure 6: Post Op image (a) Day 1 (b) Day 7

Discussion:

A pyogenic granuloma is an inflammatory hyperplasia that develops when connective tissue reacts excessively to a localized small injury or any underlying irritation[8]. Dental calculi, poor oral hygiene, an unidentified illness, and over-contoured restorations are all potential sources of irritation [7,8].

Pyogenic granulomas can develop anywhere on the body's surface. They are most common around the fingers and toes. Pyogenic granulomas in the oral cavity have a strong predilection for the gingiva, with interdental papillae being the most frequent site in 70% of cases[9]. Vilmann et al. claim that only 15% of pyogenic granulomas are found on the alveolar portion, with the majority of them being found on the marginal gingiva [10]. The second decade of life is when pyogenic granuloma most frequently occurs, according to studies by Zain RB et al. among Singaporean communities [11].

A smooth or lobulated exophytic lesion with a pedunculated or sessile base is the most common clinical manifestation of pyogenic granuloma. The size of a pyrogenic granuloma can range from a few millimeters to several centimeters, but it rarely exceeds 2.5 cm[12,13]. It bleeds readily, grows quickly, and is typically asymptomatic and painless. Due to the masticatory trauma, the surface is frequently covered in fibrin, ulcerated, and friable. The surface color varies from pink to red or purple depending on how old the lesion is. While older PGs contain more collagen, younger PGs have more vascularity and hyperplastic granulation tissue[13].

Since they infect minor trauma sites during the healing process, bacteria like streptococci and staphylococci may be involved in the etio-pathogenesis of this lesion. As a result, there may be an increase in vascular growth and tumor-like hyperplasia.[12,15]

The histopathological examination consists of numerous thin-walled arterial channels visible inside an edematous connective tissue matrix[9,16]. Sometimes, these vessels are grouped into lobular aggregates, and some pathologists need this lobular arrangement to make a diagnosis. Moreover, there is a mixed cellular infiltration that is rather dense. The underlying stratified squamous epithelium is typically deteriorated or ulcerated in large sections, and the ulcer edge may have a primitive dysplastic look. It can also be atrophic or hyperplastic[9,16].

The majority of vascular tumors, such as haemangiomas, oral fibromas, peripheral giant cell granulomas, and peripheral ossifying fibromas, as well as neoplastic lesions, such as Kaposi sarcoma, metastatic carcinoma, and other malignant tumors, are included in differential diagnosis[17]. There have been some reports of drug-induced gingival hypertrophy among Nifedipine users. Drug-induced gingival enlargement is a generalized fibrotic event that affects a significant section of upper and lower gingiva and has a pebbly surface. It is pale-pink in color[13].

With respect to treatment, Powell mentioned using a Nd YAG laser to remove this lesion because there were fewer chances of bleeding than with previous surgical methods.[18] In a case study by Kocaman et al., bleeding time and operating time were decreased during surgery when Nd:YAG laser was utilized to treat PG. Additionally, postoperative hemostasis was accomplished quickly, and no scars or discomfort were seen[19]. According to a report by Fekrazad et al., who used an Er:YAG laser for the excision of PG, CO2 and Er:YAG lasers aids in better cutting than Nd:YAG and diode lasers because of their high water absorption, less penetration, and reduced coagulation[20].

But as of right now, the majority of reports recommend using surgical excision as the preferred treatment. It is advised to do curettage of the underlying tissue following lesion excision, performing an excision with 2 mm margins in the periphery and at a depth that will include periosteum. Additionally, it is necessary to remove any foreign objects, calculi, or restorations that may be connected to the development of pyogenic granulomas.[21]

Pyogenic granuloma recurrence following excision is a known hazard. Re-excision of such lesions may be required due to the pyogenic granuloma recurrence rate, which is reported to be 16% of treated lesions[15]. Pyogenic granuloma can be effectively treated if the right diagnosis and course of action are taken. A meticulous approach to the lesion's therapy also aids in preventing its recurrence.

Conclusion

Literature on oral pyogenic granulomas is extensive. However, the occurrence on the extraction site is very rare. Since tooth extraction is a common dental procedure, professionals should be aware that pyogenic granuloma can also develop from an extraction socket. A practitioner may misinterpret this reactive lesion for a more serious one due to lack of awareness about its atypical location. Histopathology validates its innocuous nature, making it easy to overcome.

Conflicts of interest: None.

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