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A Reactive Hyperplasia in Disguise: Clinical Insights into Pyogenic Granuloma.

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Abstract:- Pyogenic granuloma is frequently encountered, benign vascular lesion, distinguished by its rapid proliferation and hypervascular nature that can affect individuals of all ages. It typically occurs on both the skin and mucous membranes, with trauma being the most frequent cause.. The development of a pyogenic granuloma progresses through three stages, with bleeding being a hallmark symptom throughout. Owning to its characteristic appearance, pyogenic granuloma is frequently misidentified as other vascular lesions, solid tumors, or soft tissue infections. This case report describes Pyogenic granuloma located on the mandibular anterior gingiva.

Keywords:- *Pyogenic Granuloma, Anterior Gingiva, Tumour.*

I. INTRODUCTION

Pyogenic granuloma is a benign, tumour-like growth that predominantly arises in the oral cavity and skin tissues. It is the most common form of hyperplasia found in the oral cavity[1]. This condition was first described in 1897 by French surgeons *Poncet and Dor* as *Botryomycosis Hominis*, it was reclassified as *Pyogenic granuloma* by *Hartzell* in 1904. It is occasionally referred to as Crocker and Hartzell's disease [2,3,4].

Although pyogenic granuloma appears tumor-like, it is actually an exaggerated tissue response to minor trauma. Its prevalence ranges from 6-10%, with a higher incidence in women[5]. Despite its name, the condition lacks both granulomatous characteristics and pus formation, making the term "*pyogenic granuloma*" inaccurate[6].

Histologically, it shows a proliferation of granulation tissue with inflammatory cells. The lesion usually starts as a small, raised growth with a smooth or lobular surface presenting as a red, erythematous papule. It may have pedunculated or less commonly, a sessile base. Although it most commonly occurs on the gingiva, pyogenic granuloma can also manifest on the lips, tongue, oral mucosa, and palate[7]. The preferred treatment is surgical excision with curettage of the surrounding tissue to prevent recurrence[8,9].

II. CASE REPORT

A 66-year old male patient presented to the department with primary complaint of swelling in lower front tooth region from one month. The swelling developed gradually, starting as a small lesion and progressively increasing in size to the current form. There was no associated symptoms except the discomfort. There was a history of mild bleeding from the same region. Patient also gives history of similar swelling 4 years back for which excision was done and he was asymptomatic for about 4 months. Patient was a known case of hypertension since 10 years and has undergone cardiac surgery for placement of stent 1 year back.

On extra-oral examination no abnormalities were detected. Intraoral soft tissue examination revealed a solitary erythematous irregular shaped swelling noted on the lower front tooth region of size (5× 3) cm extending from interdental and attached gingiva between 34 and 35 from labial aspect to lingual and floor of the mouth. The swelling was exophytic with well-defined borders and had smooth surface [FIGURE 1 & 2] Overlying mucosa appeared to be erythematous and surrounding mucosa appeared normal. On palpation, inspectory findings in relation to site size and colour were confirmed. The swelling was non-tender, firm in consistency and had a pedunculated base. No bleeding or pus discharge were noted.

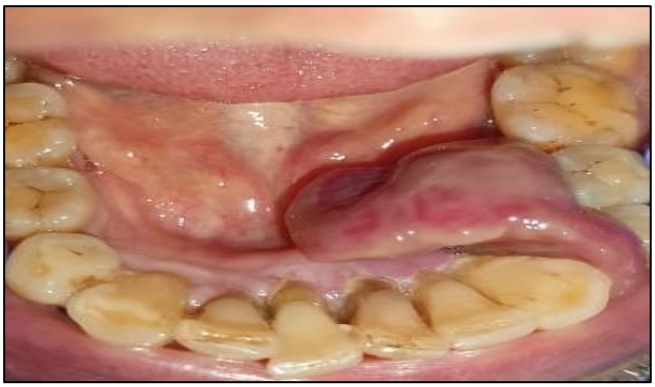

Fig 1 Shows Swelling on Anterior Gingiva

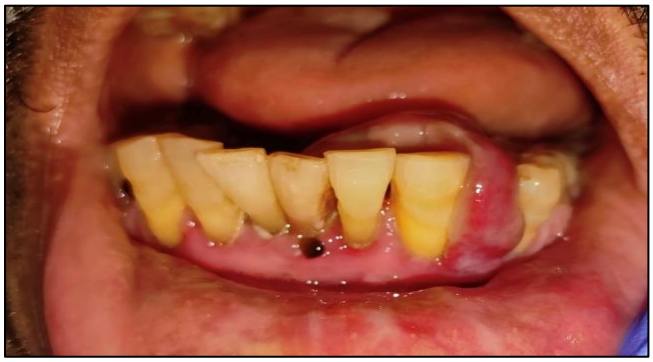

Fig 2 Shows Swelling in Anterior Labial Extending Onto Floor of Mouth Mucosa

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On hard tissue examination grade I Mobility in relation to 35,34 & 45, Grade III Mobility in relation to 33,32,31 &41, Grade II Mobility in relation to, Class I gingival recession in relation to 31,32,33,41,42, & 43 was noted. A provisional diagnosis of pyogenic granuloma of the mandibular anterior gingival and chronic generalised periodontitis was established based on the patients history and clinical findings. A differential diagnosis of peripheral giant cell granuloma, peripheral ossifying fibroma and Brown's tumor were considered.

An IOPA were taken in relation to lower anterior which revealed severe horizontal bone loss [Figure 3]. An incisional biopsy was conducted which revealed proliferating connective tissue rich in endothelial cells and blood vessels along with moderate inflammatory cells indicative of pyogenic granuloma. Considering the clinical presentation and histopathological analysis a final diagnosis of pyogenic granuloma involving the mandibular anterior gingiva was established. Patient was sent for surgical excision of the lesion along with oral prophylaxis and periodontal evaluation. The patient is currently under regular follow up.

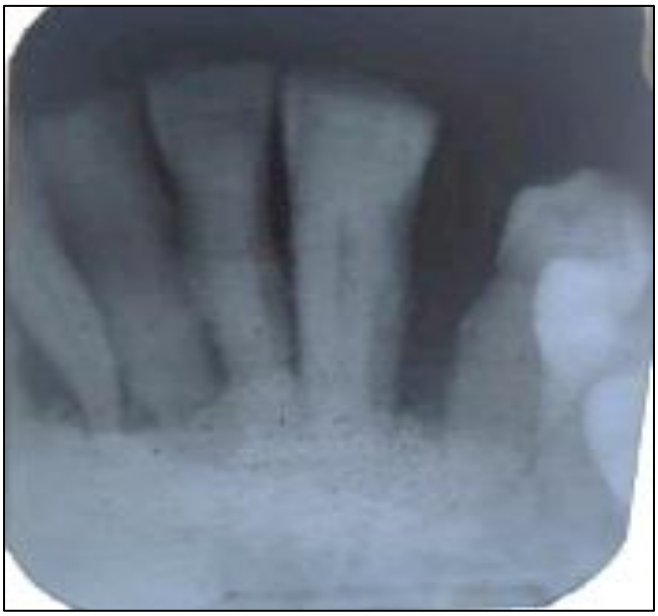

Fig 3 Shows Severe Horizontal Bone Loss in Mandibular Anterior Region

III. CASE DISCUSSION

Pyogenic granuloma is a benign growth found in the oral cavity[10]. Contrary to what its name suggests, Pyogenic granuloma is not a true granuloma and is not linked with pus nor infection. Instead, it represents a form of inflammatory hyperplasia, arising in response to local irritation, trauma, or hormonal variations[10,11,12]. Although pyogenic granuloma can occur at any age, it is most commonly seen in children and young adults, with a higher prevalence among females, likely due to hormonal influences[10, 11]. During pregnancy, the condition is more common and is referred to as a "pregnancy tumor" or"granuloma gravidarum"[12, 13, 14].

Radiographic examinations usually do not show distinct features for diagnosing pyogenic granuloma. In uncommon cases, chronic pyogenic granuloma of gingiva may lead to localized alveolar bone resorption,. In some instances, the extent of bone loss can be substantial, resembling characteristics typically associated with malignancy[12, 13, 14]. Recurrence of pyogenic granuloma after surgical excision is a frequently observed complications, nonetheless it can be effectively prevented with comprehensive and strategic management. Histologically, the overlying epithelium may show focal ulceration, with occasional evidence of hyperkeratosis. Beneath the epithelial layer, a dense proliferation of connective tissue is observed. To date, most studies advocate surgical excision as the preferred treatment for pyogenic granuloma. Following excision, curettage of the underlying tissue is advised, ensuring a 2mm peripheral margin and sufficient depth to include the periosteum. Additionally, any contributing factors, such as foreign bodies, calculus or restorative materials linked to the lesion's development, should be removed.

IV. CONCLUSION

This study suggests that a multifactorial interplay of etiological factors likely facilitated the progression from simple gingivitis to the development of a granulomatous lesion. The lesion remained asymptomatic, as nerve fibers do not proliferate within the reactive hyperplasic tissue. Therefore, accurate diagnosis and thorough treatment planning are essential. Effective management of the lesion is crucial to preserving and optimising the mucogingival complex. Proper planning, addressing the causative factors, and maintaining optimal oral hygiene are essential to minimise the risk of recurrence in cases of pyogenic granuloma.

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