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Case Report

Rare presentation of pyogenic granuloma: a case report

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ABSTRACT

The pyogenic granuloma (PG) Also called lobular capillary hemangioma, is a prevalent tumor like growth and vascular hyperplasia of the skin and mucous membranes. The condition arises in reaction to a chronic, recurring tissue injury that stimulates an exuberant or excessive tissue repair response. It can manifest at any age. The most common site is gingiva, extra gingival occurrence of PG is rare, although have been reported. Management of PG Depends on the area, size of lesion and patient preferences. However, the conservative surgical excision usually the curative treatment of PG. Alternative treatment modalities that have been employed include laser therapy, corticosteroid injections, cryosurgery, and sclerotherapy. In the case report has described an extra gingival PG which occurred on the lower lip in a 19-year-old female patient. The clinical and histopathological assessments confirmed the diagnosis of PG.

Keywords: PG, Soft tissue growth, Lip, Oral medicine, Extra gingival

INTRODUCTION

The pyogenic granuloma (PG), also called lobular capillary hemangioma, is a prevalent tumorlike growth and vascular hyperplasia of the skin and mucous membranes. While it can manifest at any age, but most frequently affect children and young adults. The condition arises in reaction to a chronic, recurring tissue injury that stimulates an exuberant or excessive tissue repair response.[1,2] Notably, females exhibit a higher susceptibility compared to males.[3]

PGs typically manifest as smooth, lobulated soft tissue masses, single nodules, or sessile papules. They are characterized by their red, elevated appearance and often present with ulceration. These lesions most commonly occur on the gingiva. Sizes can range from a few millimeters to up to 2 cm in diameter.[2,4] The management of PG varies based on factors such as the affected area, the size of the lesion, and patient preferences. However, treatment typically involves conservative surgical excision, which is often effective in resolving the condition. The recurrence rate of PG is 15%.[1,3] In this case report, a 19-year-old female presented with extra gingival lesion on her left side of lower lip. The lesion appeared for two months and affecting her aesthetic. A clinical and histopathological assessments were made for the lesion, which confirmed a definitive diagnosis of PG.

CASE REPORT

A 19-year-old female patient presented to the oral medicine department of King Saud university-dental university hospital in Riyadh, Saudi Arabia, with a chief complaint of a growth on her left side of lower lip affecting her aesthetic." In the history of the chief complaint the patient reported that the lesion had evolved

for two months, had no complaint of painful sensation. Bleeding happened only when she removed it with her finger and the swelling came back on the same site. Patient mentioned she has a habit of biting her lip. The patient's medical history was unremarkable. Clinical examination revealed an exophytic, pedunculated smooth red lesion that measured 0.6 cm x 0.5 cm x 0.4 cm at the left side of the lower lip. The lesion was firm in consistency and non-tender (Figures 1). In addition, the patient has fair oral hygiene.

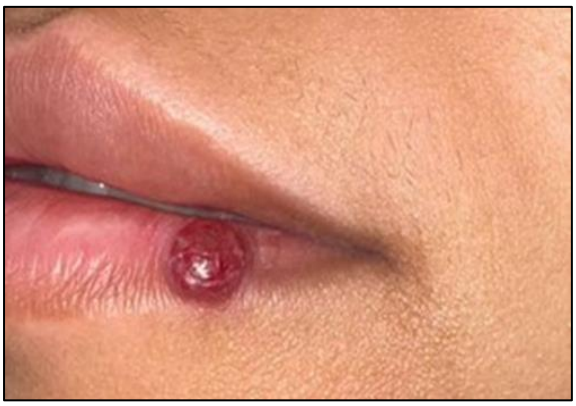

Figure 1: Clinical appearance: an exophytic smooth red pedunculated lesion.

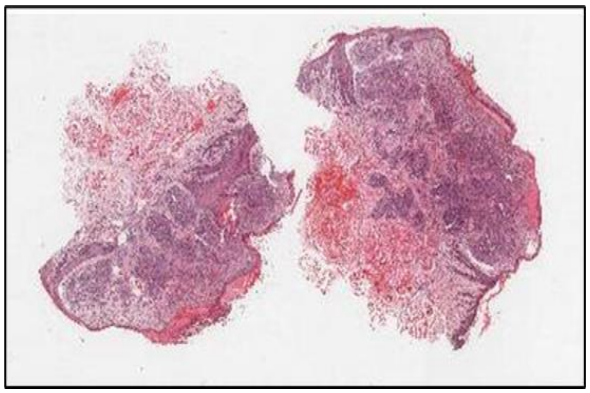

Figure 2: Low-power view showing an exophytic mass of granulation-like tissue.

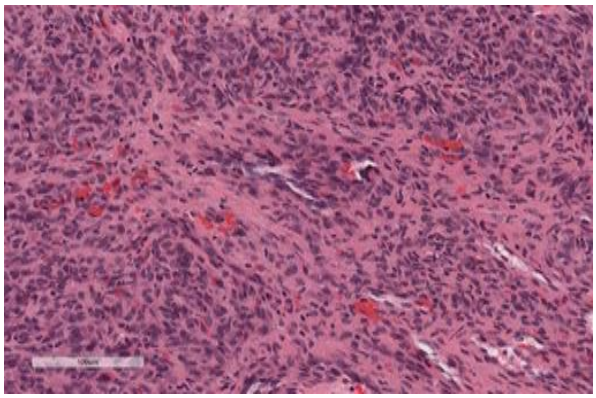

Figure 3: Higher-power view showing a capillary blood vessel and scattered.

For diagnostic purposes, an excisional biopsy was approached due to the small size of the lesion. Histopathological assessment revealed an exophytic mass of granulation-like tissue and multiple lobules of proliferating small blood vessels. These vessels were lined by pleomorphic endothelial cells exhibiting scattered mitosis upon examination with hematoxylin and eosin staining under a microscope (H and E staining). Additionally, pseudo-epitheliomatous hyperplasia was observed in the surface epithelium. Reactive atypia indicators, such as hyperchromatism, increased nuclear size, and mitotic activity, were also present. (Figure 2 and 3). The microscopic findings indicate PG. Case is being monitored closely to ensure lesion heals completely.

DISCUSSION

This case report has described an extra gingival PG which occurred on the left side of lower lip in a 19-year-old female patient. The incidence of PG has been described to be between 26.8% and 32% of all the reactive lesions.[3] PG occurs most commonly in the gingiva, accounting for 75% of all cases. Extra gingival occurrence of PG is rare although have been reported.[3,5,6] In the present case, the lesion was present on the lip. Most studies demonstrate a definite female predilection with a female to male ratio of 2:1 because of the hormonal changes that occur in women during puberty, pregnancy and an menopause.[4,6]

Pyogenic granuloma exhibits a notable occurrence in individuals during their second and fifth decades of life. Some researchers propose that this condition primarily affects males under 18 years of age and females between 18 and 39 years of age. However, in older patients, there seems to be an equal distribution between genders. [7] The cause of pyogenic granuloma remains unexplained, and its formation appears to be linked to various factors. Previous reports have implicated trauma, chronic irritation, hormonal influences, medications, calculus, foreign objects in the gingival crevice, gingival inflammation due to inadequate oral hygiene, and injury to primary teeth as potential triggers for PG development.[8] In the case described, continuous trauma resulting from lip biting was identified as a contributing factor.

The characteristics utilized to distinguish oral PG from other conditions include red or reddish-blue growths such as gingival hyperplasia, peripheral giant cell granuloma, hemangiomas, conventional granulation tissue, peripheral ossifying fibroma, peripheral odontogenic fibroma, metastatic cancer, Kaposi's sarcoma, melanoma, bacillary angiomatosis, angiosarcoma, and non-Hodgkin's lymphoma.[7]

Surgical excision stands as the primary treatment option for PG, typically resulting in a low recurrence rate.[9] Alternative treatment modalities that have been employed

include laser therapy, corticosteroid injections, cryosurgery, and sclerotherapy.[3]

Submitting the excision specimen for microscopic examination is crucial to exclude more severe diagnoses. The histopathological characteristics of extra-gingival PG closely resemble those found on the gingiva or elsewhere in the body. Histologically, the lesion is typically covered partly or entirely by parakeratotic or non-keratinized stratified squamous epithelium. It closely resembles granulation tissue, displaying a highly vascularized connective tissue with numerous capillaries and venules. These vessels sometimes are organized in lobular aggregates, and some pathologists require this lobular arrangement for the diagnosis (lobular capillary hemangioma).[6,10]

In a retrospective study involving 242 cases, the recurrence rate of PG following surgical treatment was observed to be 15.8%. Notably, recurrence tends to be more prevalent after excising gingival lesions compared to extra-gingival sites, often attributed to incomplete lesion removal and failure to address underlying etiological factors. However, the recurrence of PGs following surgical removal from extra-gingival sites such as the lip is rare.[3,5] The present case was followed up for 3 months after excision. The wound healing was complete, and no recurrence was noted.

CONCLUSION

PG presents as a benign proliferation of connective tissue, chiefly characterized by hyperplasia of granulation tissue. Oral PGs are extensively documented in literature, their occurrence on extra-gingival sites within the head and neck region is uncommon. It's essential to differentiate PG from conditions like Kaposi sarcoma, melanoma, and metastatic carcinoma. Hence, we advocate for histological confirmation of the initial diagnosis during the treatment of PGs to prevent potential misdiagnosis with other lesions.

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