CASE REPORT

Oral pyogenic granuloma of upper labial mucosa: An unusual case presentation

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Abstract

This case report intends to highlight the clinical differential diagnosis and dilemma in diagnosing simple mucosal lesions like pyogenic granuloma (PG). PG is a benign and non-neoplastic lesion. It is manifested as a sessile or pedunculated growth, which is resilient, erythematous, exophytic and painful. Seldom it appears as papular or nodular growth with a smooth or the lobulated surface that bleeds easily. PG affects the gingival preferentially but may also occur on the lips, tongue, oral mucosa and palate. This paper presents an unusual case report where PG was present on the upper labial mucosa. The lesion presented as an exophytic growth with history of occasional pain and bleeding on manipulation. On palpation, the growth was pedunculated, soft to firm and asymptomatic with bleeding on manipulation. This case presented as an atypical form of PG, which easily mislead to various differential diagnosis. Bleeding on manipulation was the only positive finding pointing towards PG. This clinical presentation presents a platform to discuss some unusual differential diagnosis of PG like squamous papilloma, mucocele with PG and traumatic eosinophilic granuloma.

Keywords: Mucocele, pyogenic granuloma, squamous papilloma

Introduction

Oral pyogenic granuloma (PG) is a benign non-neoplastic lesion. The term “pyogenic” is a misnomer as this condition does not generate any purulent secretion and is unrelated to infection.1 PG is also called as pregnancy granuloma or pregnancy tumor when it occurs in pregnant women. It is also known as vascular epulis, benign vascular tumor or hemangiomatous granuloma.2,3

PG has been defined as an inflammatory overgrowth of the oral mucosa caused by minor trauma or irritation. PG is manifested as a sessile or a pedunculated growth which is erythematous, exophytic, resilient and painful nodule or papule. It presents as a smooth or lobulated surface that bleeds easily. Intra orally, the most commonly affected site is gingiva accounting for 75% of all cases.3 Although the occurrence of these lesion on the lips, tongue, oral mucosa, palate and fingers has also been reported. PG affecting the labial mucosa is uncommon.2

The vascular effects of hormones are a probable reason for the occurrence of PG with a higher frequency among females in the second decade of life especially.4

Microscopically, PG is characterized by increased vascular proliferation associated with granulation tissue and chronic inflammatory infiltrative cells. The surface is covered with fibrin when it is ulcerated, the surface of the lesion is covered with fibrin. Older lesions may present as areas of fibrosis.5

Case Report

A 35-year-old female patient visited Sri Rajiv Gandhi College of Dental Sciences and hospital, Bangalore with a chief complaint of growth in the inner side of upper lip since 15 days. It began as a blister, which gradually increased in size over a period of 15 days. The growth was not painful, but was associated with bleeding whenever the toothbrush touched it. There was negative history of trauma to the site as per the patients’ remembrance. On inspection, the present lesion was a solitary exophytic growth present on the labial mucosa adjacent to facial surface of tooth number 22 measuring 1.5 cm × 2.5 cm, irregular shape, surface appearing whitish with an erythematous base [Figure 1]. On palpation, the growth was pedunculated, non-tender, non-fluctuant, soft to firm in consistency, smooth surface and the whitish coating was separable with bleeding at the base of the growth on probing. Patient’s past medical and dental history was non-contributory. Based on the clinical findings, a provisional diagnosis of PG of the upper labial mucosa was given.
The patient was subjected to complete hemogram. All parameters were within normal limits. Surgical excision of the lesion was planned. An elliptical incision extending into the submucosa was made, and the lesion was excised. Hemostasis was attained, and two interrupted sutures were placed. The specimen was sent for histopathological examination.

The hematoxylin and eosinphilic stained histopathology section revealed stratified squamous epithelium of varying thickness overlying a connective tissue stroma. Connective tissue stroma was vascular and fibrous [Figure 2]. Numerous blood vessels of varying sizes along with many newly forming blood vessels were evident. Chronic inflammatory cells like lymphocytes and plasma cells were seen [Figure 3].

In a 1-week post-operative follow-up, the surgical site had healed uneventfully [Figure 4].

Discussion

The clinical appearance of PG is usually red to purple, smooth or lobulated mass. It may be either pedunculated or sessile. Granuloma has a wide variation in size from a few millimeters to several centimeters. These tumors are soft and non-tender on palpation. Extreme vascularity makes the early lesions bleed easily. The vascularity decreases and the clinical appearance are more collagenous and pink on maturation of the lesion. A number of PG undergo fibrous maturation and resemble a fibroma if left untreated. Surgical intervention is warranted in situations where frequent trauma on the lesion during mastication causes bleeding and pain. In such cases, if the patients is pregnant it should be done before parturition.\(^{[1]}\)

The occurrence of PGs on the gingival is more frequent than on upper lip.\(^{[6]}\) Thus, the present case of PG affecting the upper lip, a region rarely subjected to trauma, is unusual.

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Figure 1: Pre-operative photograph showing lesion on the upper left labial mucosa adjacent to 22

Figure 2: H and E, stained slide in ×10 magnification shows breach in the continuity of the epithelium with various sized blood vessels

Figure 3: H and E, stained slide in ×100 magnification showing proliferating blood vessels indicative of neoangiogenisis

Figure 4: One week post-operative photograph with a scar tissue formation on left upper labial mucosa
Differential diagnosis

The clinical presentation of the lesion which appears as solitary exophytic growth, surface appearing whitish with erythematous base opens various avenues for differential diagnosis such as papilloma, fibrous hyperplasia, mucocele with PG and peripheral giant cell granuloma and traumatic eosinophilic granuloma.

 Fibrous hyperplasia is a healed end product of inflammatory hyperplasia, which occurs commonly on gingiva, tongue, buccal mucosa and palate. Histopathologically there are cellular and granulation tissue elements.

 Oral squamous papilloma is a general term used to include papillary and verrucous growths. It is composed of benign squamous epithelium and minor amounts of connective tissue supporting the stroma. Squamous papilloma is usually associated with human papillomavirus (HPV) types 6, and 11 (Major et al., 2005). The most common papillary lesion of the oral mucosa is squamous papilloma on the vermilion border of the lip and it constitutes approximately 2.5% of all oral lesions.

 Oral squamous papillomas may be occasionally found on the vermilion portion of the lips and any intraoral mucosal site. But, it has a site predilection for hard palate, soft palate and uvula (Abbey et al., 1980).

 Papillomavirus causing PG of oral cavity can be prophesied. The causative organism for condyloma acuminate and PG share similar locations and risk factors. HPV types 6 and 11 are the common causative organism for condyloma acuminate, but their association with PGs has not been established yet. However, Miller concluded that PG is not caused by HPV 6, 11, 16, 31, 33, 35, 42, or 58 which are the common strains causing oral papilloma.

 In our case, the patient gave a history of a blister which later proliferated as a growth. The upper labial mucosa is a frequent site for trauma. Thus, it would be logical to believe that PG developed due to reactive proliferation caused by mucocele.

 Peripheral giant cell granuloma is also called as “giant cell epulis.” It is the most common oral giant cell lesion. It normally appears purplish red nodule, which is soft consisting of multinucleated giant cells in a background of and extravasated red blood cells and mononuclear stromal cells. The clinical appearance resembles oral PG. This is despite the fact that peripheral giant cell granuloma (PGCG) is often more bluish to purple compared with the bright red appearance, which is typical of PG. Though, PGCG develops within soft tissue, radiographically, “cupping” superficial resorption of the underlying alveolar bony crest is seldom seen. Seldom it may be difficult to ascertain whether the mass arose as a central giant cell granuloma eroding through the cortical plate into the gingival soft tissues peripheral lesion or as soft tissue lesion.

 Eosinophilic ulcer of the oral mucosa also known as traumatic eosinophilic granuloma or traumatic ulcerative granuloma is a rare entity. It is self-limiting and inflammatory in nature affecting the tongue commonly. Gingiva, palate and lips are also affected. There are no gender predilections, but it found to be more common in females in the age group of 30-40 years. It presents commonly as an ulcerative lesion, but it can also present as self-limiting growth. The etiology remains obscure, but trauma from toothbrush, ill-fitting dental prosthesis has been identified. The histopathology is similar to PG showing intact epithelium with intense inflammatory cell infiltrate. But what distinguishes this lesion is the presence of pronounced eosinophilia.

 Treatment and prognosis

 Although the occurrence of scar is common with a biopsy, it is still the method for adequate diagnosis. In this case, surgical excision of the lesion was done in order to diagnose and treat the case. Since the lesion was in a non-esthetic zone, scar formation was not an issue. Overall, the excision satisfied the patient needs.

 Conclusion

 Though PG has a variety of clinical presentations, an exophytic variety on the upper labial mucosa is unusual. This case opens new avenues in formulating various differential diagnoses for a commonly occurring lesion like PG.

 Clinical significance

 Clinical appearance of PG is characteristic. But, atypical presentations are rare. Identifying such variants of PG is important as it would prevent the clinician from subjecting the patient to unwanted diagnostic tests.

 References