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## Research Article

### EXTRAGINGIVAL PYOGENIC GRANULOMA: A MISNOMER IN AN ANOMALOUS SITE WITH AN UNUSUAL PRESENTATION

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#### ABSTRACT

Pyogenic granuloma (PG) is thought to represent an exuberant tissue response to a constant local irritation or trauma and it might be related to hormonal changes. Clinically, oral pyogenic granuloma is a smooth or lobulated exophytic growth, pedunculated or sessile, which usually bleeds on provocation. Pyogenic granuloma of the oral cavity is known to involve the gingiva more commonly (75% of all the cases). On rare occasion, it can be found extrajugally on lips, tongue, buccal mucosa, and palate which may mimic more serious pathological conditions such as malignancies. The purpose of this case report is to describe a rare case of extrajugival pyogenic granuloma with an unusual proliferative appearance on the right buccal mucosa in a 65 years old female patient and its management using 810 nm diode laser.

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#### INTRODUCTION

Pyogenic granuloma (PG) is a relatively common, soft tissue tumor of oral cavity that is believed to be reactive and not neoplastic in nature.<sup>1</sup> The term pyogenic granuloma is a misnomer as it does not produce pus and does not show granulomatous changes, microscopically.<sup>2</sup> PG is thought to represent an exuberant tissue response to a local irritation or trauma. Some authors use the term, 'lobular capillary hemangioma' for this lesion or the terms, 'vascular epulis', 'benign vascular tumour', 'hemangiomas granuloma' and 'pregnancy tumour' when it occurs in pregnant women. Occasionally, a nonspecific granulation tissue may proliferate from a recent extraction socket and it may resemble a PG. Such lesions are called as "epulis granulomatousum".<sup>3</sup> Clinically these lesions usually present as single nodule or sessile papule with smooth or lobulated surface.<sup>4</sup> It predominantly occurs in second decade of life in young females (female: male=2:1).<sup>5</sup> In the oral cavity, the most common site of involvement is the gingiva (75%), maxilla being more involved than mandible. In rare instances, it may occur extrajugally on the lips, tongue, buccal mucosa, and palate.<sup>6</sup> The purpose of this case report is to describe a rare case of extrajugival pyogenic granuloma with an unusual proliferative appearance on the right buccal mucosa in a 65 years old female patient and its management using 810 nm diode laser.

#### Case Report

A 65-year-old female patient by named Hanumakka has reported with the chief complaint of growth on the inner aspect of right cheek since 3 months. The lesion was initially small in size which gradually increased to attain the present size. The patient's medical and family history was insignificant. Extra oral examination showed no swelling or facial asymmetry. Regional lymph nodes were not palpable. Intraoral soft tissue examination revealed a solitary pink, exophytic, pedunculated growth on the right side of buccal mucosa.



Figure 1 Clinical Presentation

On examination the growth was about approximately 3.0 x 1.5 cm size in diameter, which was soft to firm in consistency and bled on provocation. There was no evidence of pus discharge

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from the lesion. Hard tissue examination revealed sharp buccal edge cusp of the right upper 1<sup>st</sup> molar. Based on the history and clinical appearance of the lesion, provisional diagnosis of benign exophytic growth of right buccal mucosa was considered. And the differential diagnosis included traumatic fibroma, pyogenic granuloma, and capillary hemangioma (Figure 1 and 2).



Figure 2 Clinical Presentation

As the lesion was pedunculated with exophytic growth, considering the size of lesion it was excised using 810 nm Diode laser (Figure 3) and was sent for histopathological examination. H & E stained tissue sections reveal para-keratinized stratified squamous epithelium. Underlying connective tissue shows numerous endothelial lined blood capillaries of varying sizes, with extra-vascular RBC's and dense inflammatory infiltrate predominantly of lymphocytes. Histological features in correlation with clinical findings final diagnosis was Pyogenic granuloma (Lobular capillary hemangioma) of the buccal mucosa. (figure 4).



Figure 3 Excision Using Diode Laser

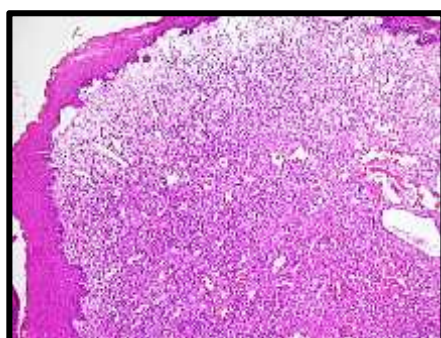


Figure 4 H/E OF Lesion

## DISCUSSION

Pyogenic granuloma of the oral cavity is a relatively common entity first described by Poncet and Dor in 1897 as "human botryomycosis."<sup>6</sup> The name "pyogenic granuloma" was first given by Hartzell in 1904.<sup>7</sup> It was also called as Crocker and Hartzell's disease. Angelopoulos histologically defined it as hemangiomatous granuloma due to the presence of frequent blood vessels and the inflammatory nature of the lesion.<sup>8</sup>



Figure 5 Post op After 6 Months

Pyogenic granulomas commonly occur in the gingiva (keratinized mucosa), often in the anterior segment of the maxillary jaw. Other sites in the head and neck occurring extrajawally in which the lesion tends to occur as a result of trauma include the buccal mucosa, the alveolar mucosa of edentulous ridge, the palate, and the lower lip, which are very rare. The floor of the mouth has not been reported as a site as the tongue provides protection against any traumatic injuries and also due to lack of sufficient connective tissue in the mucosa of this region.<sup>6</sup> In the present case, the consistent trauma inflicted by the sharp cuspal edges of the right 1<sup>st</sup> molar could have been the etiology behind the development of this lesion.

Clinically, the lesion typically appears as red to purple nodular growth depending upon the duration and vascularity of the lesion. The surface of the lesion can show areas of erythema or ulcerations, as was seen in the present case, which indicate impingement of the adjacent teeth during functions such as mastication or speech. It may be pedunculated or sessile. Pyogenic granuloma grows in size up to several centimeters in size but is usually less than 2.5cm.<sup>5</sup> Pyogenic granuloma can grow rapidly and will often bleed profusely with little or no trauma.<sup>9</sup> In this case, the size of the lesion was 3\*1.5cm. Pyogenic granulomas of head and neck are uncommonly seen extrajawally. Such atypical presentation, like the case in discussion can be rather confusing and can lead to erroneous diagnoses of other more serious lesions. These include amelanotic melanoma, basal metastatic carcinoma and squamous cell carcinoma, Kaposi's sarcoma and hemangioma.<sup>3</sup> Although pyogenic granuloma can be diagnosed clinically with considerable accuracy, radiographic and histopathological investigations, aid in confirming the diagnosis and treatment. Radiographs are advised to rule out bony destruction suggestive of malignancy or to identify a foreign body.

Differentiation is done on clinical and histological features which also help in adequate treatment and good prognosis. The histopathological picture of the extra gingival pyogenic granuloma is quit similar to the ones occurring on the gingival.<sup>5</sup> Histopathologically, it consists of many dilated blood vessels in a loose edematous connective tissue stroma. In this case on H & E stained tissue sections reveal para-keratinized stratified squamous epithelium. Underlying connective tissue shows

numerous endothelial lined blood capillaries of varying sizes, with extra-vascular RBC's and dense inflammatory infiltrate predominantly of lymphocytes. Histological features in correlation with clinical findings are suggestive of Pyogenic granuloma (Lobular capillary hemangioma) of the buccal mucosa.

PG is a benign lesion; therefore, a surgical excision is the treatment of choice. If the lesion is small, painless and free of bleeding, oral prophylaxis and removal of causative irritants is advised. If the lesion is of large size, a thorough oral prophylaxis followed by surgical excision using gingivectomy or flap surgery procedures is done.<sup>10</sup> Other treatment protocols have also been proposed such as cryosurgery which is safe, easy and inexpensive; and also Nd: YAG and CO<sub>2</sub> and flash lamp pulsed dye lasers. Lasers have advantage of minimum pain and invasiveness and the lack of need for suturing or packing.<sup>11</sup>

There is a relatively high rate of recurrence (about 16%) after a simple excision. Recurrences after surgery of extralingival pyogenic granuloma is however uncommon.<sup>3</sup> In this case patient was followed for 6 months and no recurrence was seen and patient is under follow up for further evaluation. (figure 5).

## CONCLUSION

The diagnosis of the oral lesions is complex and it leads the dentist to consider the distinct lesions with different diagnostic methods. As the occurrence of pyogenic granuloma in extra gingival sites is unusual, this case report emphasizes the importance of the correct diagnosis of this lesion and differentiating this from other benign and malignant oral mucosal lesion which have similar characteristics before the adequate treatment is instituted.

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