

# Pyogenic Granuloma or Hemangioma: An Insoluble Dilemma

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## Abstract

Pyogenic granuloma (PG) is a tumor-like ulcer that often affects the oral cavity. These lesions usually appear as localized bumps with a moving or pedunculated base and vary in color from reddish, purple, or pinkish, depending on the wound severity. These lesions are more common in boys. It is often difficult to diagnose and treat ulcers. Often, there is a dilemma to correctly differentiate vascular lesions from PG. In this case, a separate diagnosis and management of PG and other vascular lesions of an 11-year-old boy is discussed.

**Keywords:** Children, hemangioma, histopathology, pyogenic granuloma

## INTRODUCTION

Lobulated capillary hemangioma also known as pyogenic granuloma (PG) is a common lesion of the skin vessels or mucous membranes characterized by rapid growth and inflammation of the mucosa. It occurs in adults at middle age of life. Ages 6–10 are often the most affected by male predicament.<sup>[1]</sup> As the name suggests, it has no redness and historically does not represent any granuloma, so the name is not true. Histopathological examination revealed it as lobulated capillary hemangioma.<sup>[2]</sup>

A hemangioma is a malignant tumor that affects head and neck and commonly occurs on the lips, cheeks, and tongue. They usually appear during the initial months of life, show a rapid growth, and are gradually involved in near-term resolution. Most head-and-neck hemangiomas are not common in the oral cavity, but mainly affect the tongue, buccal mucosa, gingiva, palatal mucosa, salivary glands, lips, alveolar ridge, and jaws.<sup>[3]</sup>

Clinically, PG appears to be soft, smooth, or lobule, as well as pedunculated or sessile and may be variable in size from a few millimeter to a few centimeter.<sup>[4]</sup> Although a hemangioma is a deep red lesion and may be blackened by manual pressure and if giant, it may interfere with inflammation.<sup>[5]</sup>

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## CASE REPORT

An 11-year-old boy reported to the pediatric dental department about a serious complaint of inflammation of the back gums for 2 weeks. Inflammation was initially tiny in size, gradually increasing to reach the current size, and softening in chewing. There was no considerable medical and history of past dental experience. In further observations, no findings were significant. In intraoral examination of soft tissue, a single, pedunculated, spherical, red-pink size 2 cm × 2 cm with a distinct border and abnormal area was found associated with 46 and 47 [Figure 1a]. The surrounding gingival tissue was normal in appearance. On palpation, the swelling was not tender and the softness would harden in harmony. Intraoral periapical radiograph revealed no bone loss associated with the lesion and 47 was entirely covered with soft tissue [Figure 1b].

Based on history and clinical signs and symptoms, a provisional diagnosis of PG was made. Under local anesthesia [Figure 1c], growth was investigated to assess its tendency to bleed. When it was affirmed that the wound was bleeding slightly, an excisional biopsy with wide margin and curettage was performed [Figures 1d and 2a]. As it was a small

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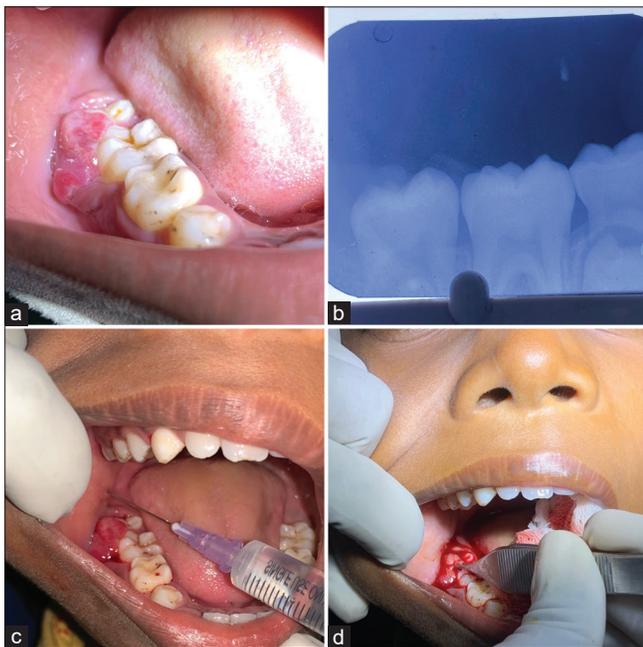
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**Figure 1:** (a) Clinical picture of pyogenic granuloma (capillary lobulated hemangioma) (b) IOPA showing erupting 47 and no bone loss (c) local anesthesia administration (d) Surgical removal of lesion along with curettage. IOPA: Intraoral periapical.

wound, a packet of zinc oxide eugenol was applied to the wound [Figure 2b]. The patient had no symptoms in follow-up visits [Figure 2c]. In the histopathological phase, the excised tissue showed parakeratinized stratified squamous epithelium of various sizes and areas of lesions. Numerous endothelial vessels of various sizes and a few blood vessels which were yet to light up were present in fibrous connective tissue. Many of the mixed inflammatory components following the wound were present [Figure 2d].

## DISCUSSION

Hemangioma of the head-and-neck region is common and accounts for 7% of all malignant tumors in childhood and adolescence. It is a rare entity in the oral cavity mainly in the soft tissues of the mouth and is usually found by the dentist. Contagious proliferation of endothelial cells causes hemangioma, though the etiology remains unclear.<sup>[6]</sup> Typically, PG (capillary lobulated hemangioma) develops, occurring in children and adults, while vascular abnormality is normally present at birth. Hemangiomas are more common in young women and in men than in men at 3:1. Vascular paralysis occurs with equal incidence between men and women.

Since a hemangioma may resemble other lesions clinically as well as in radiographs and in some cases historically, confusion and other conditions may result in a lower diagnosis of other malignancies. Different diagnoses include PG, epulis granulomatosa, telangiectasia, inflammatory gingival hyperplasia, squamous cell carcinoma, angiosarcoma, and other vascular lesions like Sturge-Weber Syndrome.<sup>[7]</sup>



**Figure 2:** (a) Postoperative picture (b) Zinc oxide eugenol pack placed (c) Follow-up after 1 week (d) Histopathological picture.

The classification of hemangiomas is based on histological observations, so histopathological examination remains a satisfactory and accurate method of diagnosis. Radiographs were advised to exclude bone destruction indicating a moderate form of hemangioma, a lesion or to identify an external body that needs to be removed with a concomitant wound.<sup>[2]</sup> In this case, clinical features are similar to PG. Histopathologically, it consists of blood capillaries encased in a layer of endothelial cells in the stroma of connective tissue and lesions that elevate capillary lobulated hemangioma (PG). Clinically, the wound was in the form of a peduncle with a small stem. No bone marrow transplants were found in intraoral periapical radiographic. It may be difficult to distinguish between a PG and a real hemangioma. However, PG is mainly perithelial, rather than endothelial tumor.<sup>[8]</sup> A significant factor in vascular paralysis is a balanced growth throughout human life.

Most small capillary hemangiomas similar to the ones, reported in the literature, are treated with complete incision and treatment. Middle jaw hemangiomas or intraosseous hemangiomas are the large lesions that will not be shown in this treatment due to the rich collateral circulation of the maxilla; the connection of one or more arteries may not stop bleeding at the surgical site. Other treatments include grafting and cutting, artificial wounds, electrolysis and thermocautery, treatment of sclerosant, radiation, and congestion depending on clinical signs and symptoms and anatomic morphology.<sup>[9]</sup>

## CONCLUSION

Although hemangioma has a benign origin, in oral cavity, it is important clinically for pediatric dentists. It usually resembles other lesions clinically and requires proper clinical

diagnosis and proper interventions. Attempts to excise them using a simple cut can lead to dangerous complications. Dental surgeons should therefore consider the risks during management and should consider appropriate precautionary measures before removing any such lesions. In such a situation where the clinic is in crisis, histopathological examination remains an accurate and satisfactory diagnostic method.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

There are no conflicts of interest.

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