

Pyogenic Granuloma - Presenting as Midline Swelling of Tongue

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Abstract

Pyogenic granuloma is an inflammation induced hyperplastic lesion involving oral cavity in response to various stimuli such as low grade local irritation, traumatic injury or hormonal factors. We report a case of 8 years old female patient with a midline lesion on the dorsum of tongue which was successfully excised under local anaesthesia and the histopathological study revealed it as pyogenic granuloma.

Keywords: Pyogenic Granuloma; Tongue; Midline.

Introduction

Hullihen [1-8] reported the first case of Pyogenic granuloma in 1844. But Hartzell in 1904 [1,8] coined the current term, pyogenic granuloma or granuloma pyogenicum. Pyogenic granuloma is a common lesion occurring on the skin [8] and extremely rare in the oral cavity where it is present over the keratinized tissue [1]. The name pyogenic granuloma is a misnomer since the condition is not associated with pus and does not represent a granuloma histologically [1,4,5]. The role of infective agents may play a part in recurrent Pyogenic granuloma. There are two types of Pyogenic granuloma, Lobular Capillary haemangioma (LCH) type and non-Lobular Capillary Haemangioma (non-LCH) type [1,8].

The pyogenic granuloma is a non-neoplastic [2,5] soft tissue tumour of oral cavity that is believed to be reactive to stimuli such as local irritation [2], traumatic injury, hormonal factors, and involves the gingiva most commonly [1,2]; rarely it can occur on lips, tongue, buccal mucosa and palate [3]. There is a high degree of occurrence in second [4], third, fourth

decade [6], with male to female ratio of 1:1.7 [6,10]. Characteristically, pyogenic granuloma of tongue is more common on the lateral side of the tongue which may be related to trauma from adjacent sharp teeth or ill-fitting dentures [4,9].

The purpose of this article is to report an unusual case of pyogenic granuloma with the lesion occurring in the midline on the dorsum of the tongue.

Case Report

A 8 years old female child reported to Department of Otorhinolaryngology OP, Rajah Muthiah Medical college Hospital, with complaints of swelling over the dorsum of the tongue for the past two months with complaints of discomfort while eating and history of bleed from the lesion sometimes. Clinically, intra oral examination revealed, a 1.0 x 0.8 x 0.5 cms pedunculated growth, red in colour which was present in the midline on the dorsum of the tongue (Figure 1 a). It was firm in consistency, non-tender, bled on touch. Routine laboratory investigations were normal. The lesion was excised

completely including a cuff of normal tissue (Figure 1b) under local anaesthesia and biopsy specimen was sent for histopathological examination. The raw area was closed with chromic catgut (Figure 1c)

Histopathological Examination

HPE study shows tissue lined by stratified

squamous epithelium showing mild hyperkeratosis, marked acanthosis and ulceration.

The underlying tissue shows a tumor mass comprising of numerous small capillary spaces lined by benign vascular endothelial cells, surrounded by fibrous stroma. Stroma is infiltrated with acute and chronic inflammatory cells (Figure 1d).

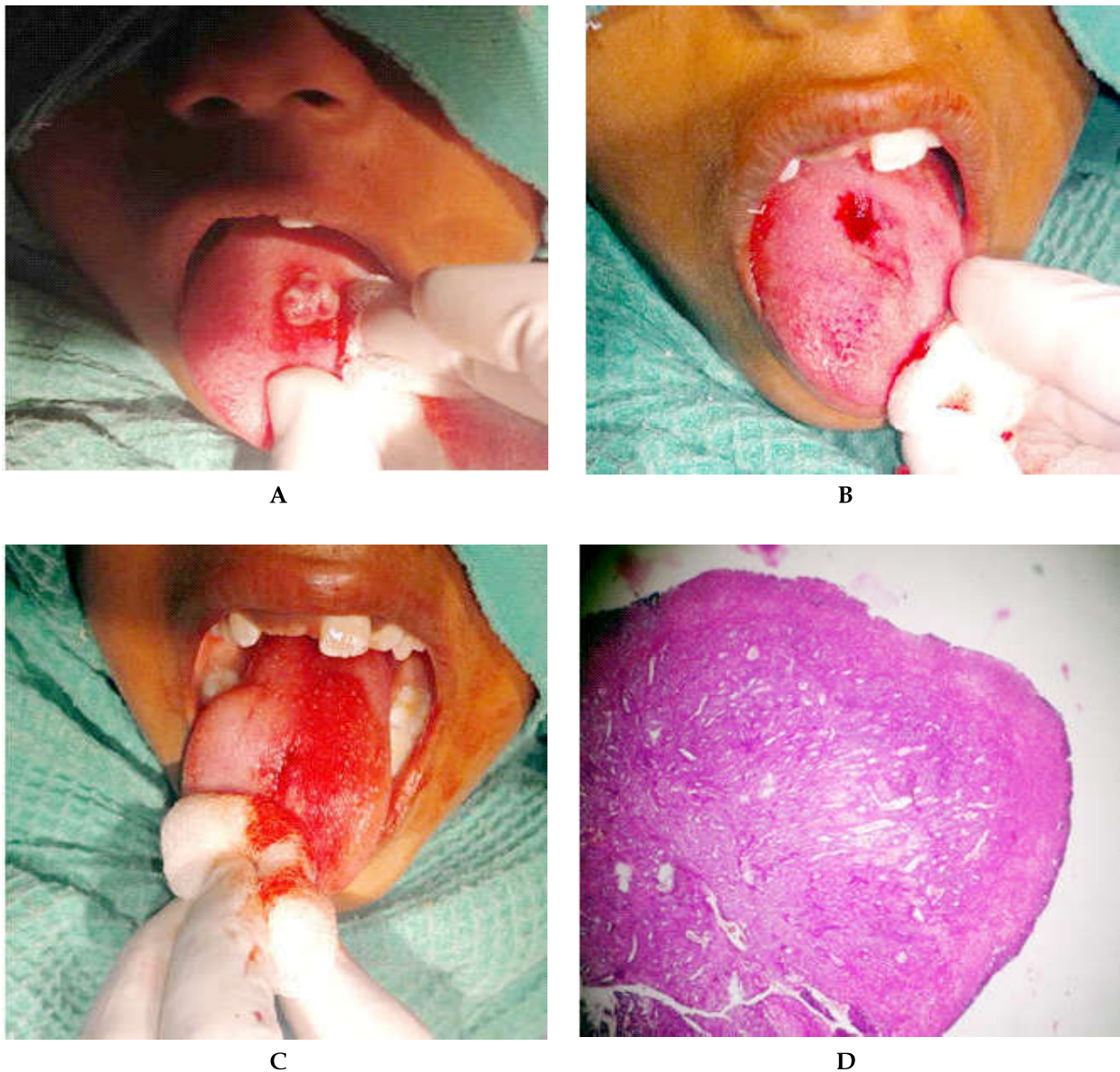


Fig. 1: (a) Shows red pedunculated lesion on the midline of the dorsum of tongue, (b) after removal of the lesion, (c) Sutured with catgut (d) Histopathological study section.

Discussion

Pyogenic granuloma is more commonly seen on the gingiva [1,10], particularly in the anterior segment [7], and uncommonly seen elsewhere in the

mouth, such as the upper and lower lip, buccal mucosa, tongue, and the alveolar mucosa, particularly in edentulous regions [7]. The causative factors may be exaggerated localized tissue reaction to a trauma or any irritation like calculus, poor oral hygiene [8], nonspecific infection, overhanging

restorations, cheek biting, previous dental extractions, exfoliating primary teeth, bone spicules, root remnants, tooth brush trauma [5]. Characteristically, lateral side of tongue will be affected and may be related to trauma from adjacent structures [9]. In our case the lesion was found to arise unusually from one of the rare extra gingival site, on the midline on the dorsum of the tongue.

The pathogenesis of pyogenic granuloma can be attributed to an imbalance between inducers and inhibitors of angiogenesis. Excessive formation of Vascular Endothelial Growth Factor (VEGF), basic Fibroblast Growth Factor (bFGF) and lowering of angiostatin, thrombospondin-1 and Estrogen receptors leads to the formation of Pyogenic Granuloma [4].

Clinically these lesions usually present as a single red to purple nodule or sessile papule with smooth or lobulated surface depending upon the duration and vascularity of the lesion [5]. Younger lesions are usually red because they are highly vascular and are mainly composed of hyperplastic granulation tissue in which capillaries are prominent and older lesions are pink because they tend to become more collagenized [1,4]. Studies show that there are two types of Pyogenic granuloma clinically, LCH type occurring as sessile mass and histologically it is characterised by proliferating blood vessels that are organised in lobular aggregates though the lesion does not undergo specific change such as edema, capillary dilation or inflammatory granulation tissue reaction. The lobular area of LCH type Pyogenic Granuloma, has a greater number of blood vessels with small luminal diameter [1,8]. The non-LCH type Pyogenic Granuloma occurs as a pedunculated mass and histologically it consists of highly vascular proliferation that resembles granulation tissue and the central area contains a significantly greater number of vessels with perivascular mesenchymal cells non-reactive for alpha-smooth muscle actin and muscle specific actin [8]. The non-LCH type Pyogenic Granuloma is more frequently associated with etiological factors [1] like local irritation, trauma, hormonal imbalance.

Pyogenic granuloma varies in size from millimetres to centimetres but usually they are less than 2.5cms in size [1,5]. The lesion usually starts as small swelling and reaches its maximum size within weeks and remains stationary. It presents as a slow growing, asymptomatic and painless tumor [10]. It can be painful and may bleed if the lesion is present in areas where it is subjected to repeated irritation.

The diagnosis can be made Clinically and confirmed by Histopathology [7]. Radiographs are

suggested to rule out bony involvement, malignancy and to identify any foreignbody as an etiological factor [2,5].

When a mass lesion is found in the oral cavity, it is important to formulate a differential diagnosis, including Traumatic fibroma, peripheral giant cell granuloma, peripheral ossifying fibroma, odontogenic fibroma, post extraction granuloma, metastatic cancer, kaposi sarcoma, non hodgkins lymphoma, haemangioma, basillary angiomatosis, angiosarcoma [4,5]. All excised Pyogenic granulomas should be sent for histopathological examination to rule out malignant changes and for the treatment and prognosis.

Management is based on the severity of symptoms [1]. If lesion is small, and there is no pain or bleeding, the removal of irritants and follow up can be advised. If the lesion is large, painful and bleeds, then complete surgical excision is the treatment of choice [3,5].

Other modalities have been proposed. Cryosurgery is the safe, easy and inexpensive procedure [6]. Nd:YAG laser excision is preferred than CO₂ laser because of its superior coagulation characteristics. In some studies, Flash lamp pulsed dye laser was used in masses which are concluded as resolute tissue, responded well to series of treatment. Ultrasonic scissors [4] is a newly developed technique and is also used in Pyogenic granuloma excision with the advantages of less blood loss and operative time. Sodium tetradecyl sulfate sclerotherapy is better alternative for excision as the technique is simple, produces less scarring even though multiple sessions are required. Series of Intra lesional corticosteroid injection, absolute ethanol [4] are used if there is any recurrence. Recurrence is believed to be due to incomplete excision, failure to remove irritants, re injury, poor oral hygiene.

Conclusion

Although the occurrence of non-LCH type Pyogenic Granuloma in the Dorsum of the tongue is rare, poor oral hygiene could be a causative factor. Prevention, prompt diagnosis, management and treatment are important. Pyogenic granuloma occurs as a result of various stimuli such as low grade irritation, trauma, poor oral hygiene, hormonal factors, certain drugs, thus removal of cause is an important step in treatment. Although the diagnosis is made clinically, histopathological confirmation is mandatory for the final diagnosis and effective management.

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