

Pyogenic granuloma in ventral surface of tongue: A Rare case.

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Abstract: Pyogenic granuloma represents an over-exuberant tissue reaction to some known stimuli or injuries. It is a distinctive clinical entity originating as a response of the tissues to a non-specific infection. The term "Pyogenic Granuloma is misnomer since the condition is not associated with pus formation. Pyogenic granuloma mostly occurs in relation to the gingiva. Other mucosal sites are rarely involved. Female in second decades of life mostly suffers due to vascular effects of female hormone. Here we report about Pyogenic granuloma in a 4 year girl patient in ventral (inferior) surface of the tongue which is a rare presentation .

Keywords: Pyogenic granuloma, Tongue, Ventral (inferior) surface.

I. Introduction-

The term "Pyogenic granuloma" was introduced by "Hartzell" in 1904, which can also be termed as "granuloma pyogenicum". It is a benign hyperactive inflammatory lesion which is commonly seen in the oral cavity in association with gingiva, followed by buccal mucosa, tongue and lips.¹ This tumor like growth is usually considered as a conditioned response to minor trauma. The lesion is usually an elevated, pedunculated or sessile vascular mass with a smooth, lobulated, or even a warty surface, which is commonly ulcerated and shows a tendency for hemorrhage either spontaneously or on slight provocation. The lesion varies from few millimeter to centimeter or it may be more in diameter.² The lesion is a vascular one and it occurs due to proliferation of the endothelial cells. Microscopically, the lesion is composed of lobular masses of hyperplastic granulation tissue, containing multiple proliferating fibroblasts, many blood capillaries and variable number of chronic inflammatory cells. Surgical excision is the treatment of choice.³ The other treatment modalities such as Nd:YAG laser, flash lamp pulsed dye laser, cryosurgery, electrodissection, injection of absolute "Ethanol", sodium tetradecyl sulfate(STS) sclerotherapy, series of intralesional corticosteroid injection can also be the treatment of choice for the management of Pyogenic granuloma.⁴

II. Case Report-

A 4.5 year girl patient reported to the department of pedodontics and preventive dentistry with a chief complaint of growth in the lower part of the tongue since 3 months. Parents also reported enlargement of growth which sometime rupture, to become smaller size. On intraoral examination, the lesion presents a solitary red exophytic, pedunculated growth measuring about 1 x 2cm present in inferior(ventral)surface of tongue (figure 1).

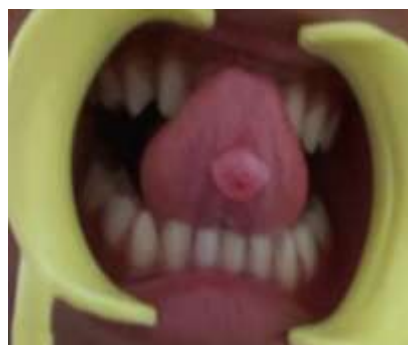


Figure 1

On palpation the growth was firm, non tender and no discharge was present. Bleeding on provocation was positive. No relevant past dental and medical history was found. Routine blood investigation was found to be under normal limits. No abnormality was detected in Intraoral Periapical radiograph. Excisional biopsy followed by cauterization was the treatment of choice (Figure 2,3).



Figure 2



Figure 3

Cautery was used to control bleeding because of lingual anatomy of the tongue. Excised lesion was then sent for histopathologic examination. Histopathologically, the lesion is composed of lobular masses of hyperplastic granulation tissue, containing multiple proliferating fibroblasts, many blood capillaries, dense mixed inflammatory infiltrate, and extravasated red blood cells. The histopathological examination confirmed the clinical diagnosis of Pyogenic granuloma(Figure 5,6).⁴

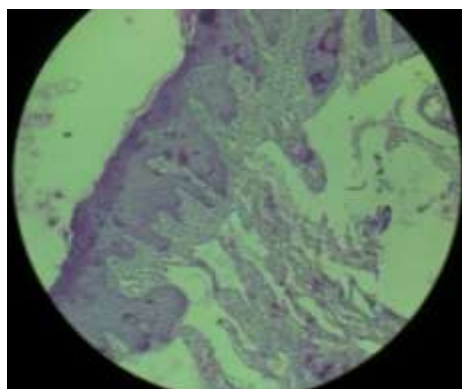


Figure 5

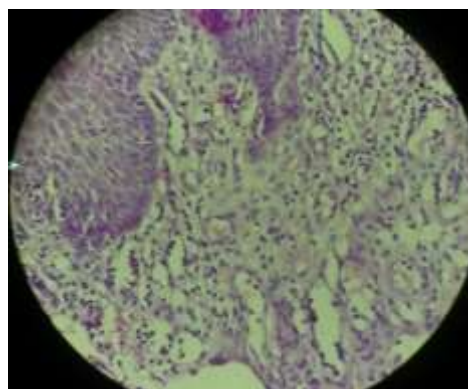


Figure 6

The patient was then recalled after a week and the excised area was evaluated. Healing was satisfactory. The patient was recalled periodically at two weeks, 1 month, three months and six months respectively(Figure 7).



Figure 7

Oral hygiene instructions were implemented at each visits. There was no recurrence of the lesion after six months.

III. Discussion-

Pyogenic granuloma is a polypoid form of capillary hemangioma on the skin & mucosal surfaces. The inflammatory changes that are accompanied by these tumors may be so pronounced that the lesion bears a striking resemblance to granulation tissue. PG mostly present in relation to gingiva (61%), lip (14%), tongue

(9%) and buccal mucosa (7%).⁵ Here, the lesion was present on the ventral (under surface) surface of tongue. Poncet & Dor in 1897 described pyogenic granuloma as a “granuloma pyogenicum”. Different authors suggest different names such as granuloma gravidarum/ pregnancy tumors, Rocker & Hartzell’s disease, vascular epulis, benign vascular tumors, epulis telangiecticum granulomatosa, & lobular capillary hemangioma.⁶

Here, IOPA revealed no abnormalities. Different studies revealed that PG occur as a result of an exaggeration of the localized connective tissue reaction to a minor injury or any underlying irritation. Poor oral hygiene, nonspecific infection, over hanging restorations, cheek biting etc. might be some of the irritating factors. The underlying fibrovascular connective tissue becomes hyperplastic because of this irritation and the granulation tissue proliferated which leads to the formation of a pyogenic granuloma.

Because of its appearance and evolution of growth, it might be confused whether it is benign or malignant; hence, biopsy findings are most important in establishing the diagnosis. Final diagnosis of PG depend on histopathological as well as clinical.

Anguilo reported the formation of PG as a result to a primary tooth⁷ and Milano et al reported a case of PG associated with aberrant tooth development.⁸ The size varies in diameter from a few mm to several cm. Rarely, the size of PG exceed 2.5 cm in size and it usually reaches its full size within weeks or months, which remain indefinitely thereafter. In this case the size of lesion was 1x2cm.

Although many treatment techniques have been described for PG, choosing an appropriate treatment modality can be difficult when it is large or occurs in a surgically difficult area. Young PG’s are highly vascular in appearance because they are composed predominantly of hyperplastic granulation tissue in which capillaries are prominent. Thus, minor trauma to lesion may cause considerable bleeding, due to its pronounced vascularity. In this case the treatment of choice was surgical excision followed by cauterization to control bleeding, since inferior border of the tongue is highly vascularized area comprising of lingual artery which is a branch of external carotid artery and deep lingual vein and also the age of the child is such that it is quite difficult to gain cooperation for sutures .

It has been reported that PG recur in 16% of case. It has been believed that recurrence is due to incomplete excision, failure in removing the etiologic factors, or re-injury of the area. The patient was recalled for regular maintenance visits, and after 6 months of the treatment there was no recurrence seen.

The mechanism of development of pyogenic granuloma is unknown. Trauma, hormonal influences, viral oncogens, underlying microscopic arteriovenous malformations, the production of angiogenic growth factors, & cytogenic abnormalities have all been postulated to play a role. The over expression of transcription factors, P- ATF2& STAT3 also may play role in tumorigenesis.^{3,6,9}

Peripheral giant cell granuloma, peripheral ossifying fibroma, hemangioma, peripheral fibroma, leiomyoma, hemangioendothelioma, hemangiopericytoma, bacillary angiomatosis, kaposi’s sarcoma, angiosarcoma, Non- hodgkin’s lymphoma, metastatic tumor, post extraction granuloma and pregnancy tumor are some of the differential diagnosis.

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