

Pregnancy Tumor of Gingiva: A Case Report with Review of Literature

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ABSTRACT

Pyogenic granuloma or granuloma pyogenicum or pregnancy tumor is a well-known oral lesion which is a fast growing reactive proliferation of endothelial cells mainly seen on the gingiva. It usually arises in response to various stimuli such as traumatic injury, local irritation, hormonal factors, or certain kinds of drugs. This article presents a detailed case history with complete investigation and thorough review of pregnancy tumor.

Key words: Pregnancy tumor, Hormonal changes, Nd-YAG laser

INTRODUCTION

Pyogenic granuloma is a distinct clinical entity. It originates as response to nonspecific infection. It is tumor like growth that is considered as an exaggerated conditioned response to minor trauma². This benign hyperplastic lesion of the oral mucosa occurs in up to 5% of the pregnancies which is called pregnancy tumor¹.

The etiology of the lesion is not known, though it was originally believed to be a botryomycotic infection. Other etiological factors are: trauma, hormonal influence, viral oncogenes, arterio-venous malformation, cytogenic abnormalities³. It is theorized that pyogenic granuloma possibly originates as a response of tissues to minor trauma and/or chronic irritation, thus opening a pathway for invasion of non-specific microorganisms, although microorganisms are seldom demonstrated within the lesion.

The typical clinical presentation of pyogenic granuloma is a small, deep red to reddish-purple lesion occurring on the gingiva, which is either sessile or pedunculated. The surface may be smooth, lobulated or occasionally, warty which is

commonly ulcerated and shows a tendency for haemorrhage either spontaneously or upon slight trauma.

Pyogenic granuloma is treated by surgical excision. It occasionally recurs because it is not encapsulated and the surgeon may have difficulty in determining its limits and excising it adequately. Use of Nd:YAG laser for the excision of tumors in pregnant patient is also found advantageous due to lower risk of bleeding compared to other techniques⁷.

CASE REPORT

A 22 years old female housewife came to the OPD of Karnavati School of Dentistry with chief complaint of pain and growth over upper left back teeth region since 2 months. She was relatively asymptomatic before 2 months but then she felt something lodged between her teeth and so she tried to remove it with a toothpick because of which she noticed bleeding from that area. Then she noticed a small pea nut size growth in that area which gradually increased in size and reached up to present size. She also complained of dull aching

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continuous pain in that area which got relieved by scrapping in that area with a stick. On examination there was a exophytic, pedunculated, oval growth present in gingiva in upper left molar region, approximately 3cmx1.5cm in size, extending from mesial margin of 24 to distal margin of 26 and from attached gingiva to the approximately 1 cm away from the gingival margin in palatal mucosa (Figure 1,2). Buccal growth was covering approximately half-crown of the 24,25,26 and overlying mucosa was smooth, red, inflamed with heavy calculus deposits in relation to 24,25,26. There was no displacement of any related teeth. On palpation swelling was soft and tender and it bled on palpation. There was no mobility or pain on percussion present in any related teeth. IOPA of 24,25,26 (Figure 3) did not show any significant changes in that area.

Excisional biopsy of the swelling with a wide margin was performed (Figure 4,5). The histopathological section (Figure 6) showed stratified squamous epithelium with hyperkeratosis and acanthosis. The connective tissue stroma showed marked inflammation consisting of neutrophils, plasma cells and lymphocytes. The lesion comprised of proliferating capillaries that were arranged in a lobular fashion. Distinct capillary lumina lined by flattened endothelium was seen beneath the surface epithelium. Mitotic activity was evident. There was no evidence of malignancy. These findings were consistent with a histopathological diagnosis of pyogenic granuloma.

DISCUSSION

Poncet and Dor in 1897 first described pyogenic granuloma. Over the years various authors have suggested other names such as granuloma gravidarum/pregnancy tumour, Crocker and Hartzell's disease, vascular epulis, benign vascular tumour, hemangiomas granuloma, epulis teleangiectaticum granulomatosa and lobular capillary hemangioma.⁶

Pyogenic granuloma of the oral cavity occurs at any age and in all populations with no racial predilection. Population studies have determined a prevalence rate of 1 lesion per 25,000 adults. Most studies demonstrate a definite female predilection with a female to male ratio of 2:1. This is attributed to the vascular effect of female hormones that occur

in women during puberty, pregnancy and menopause. The lesions tend to occur more often during the second and third trimester of pregnancy and such lesions are referred to as 'pregnancy tumors'⁶.

Increased incidences of this ratio during pregnancy may be related to the increased level of estrogen and progesterone⁵. Commonly involves gingiva (75%), rarely it can occur on lips, tongue, buccal mucosa and palate⁵.

Progesterone is partially metabolized in inflamed gingival tissues thus generating greater amount of active form of hormone which in turn favours proliferation of different cell types. High progesterone also suppresses immunity which contributes in inhibiting inflammatory cell functions and produces alteration in the response to bacterial plaque.⁴ Some authors have reported fibroblastic growth factors in these lesions⁴.

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.⁵ All clinically suspected pyogenic granulomas must be biopsied to rule out more serious conditions. Histologically, pregnancy tumor presents loose granulation tissue rich in capillary vessels and proliferation of endothelial cells, typically accompanied by a mixture of infiltrated inflammatory cells. A thin epithelial layer overlies the lesion and is often ulcerated due to trauma associated with eating or tooth brushing¹.

Pyogenic granulomas are considered of two types: Lobular capillary hemangioma type (LCH) and Non lobular capillary hemangioma (NLCH) type. Immunohistochemistry study of the both type of lesion suggests that LCH type can behave more aggressively and seems to be histologically more similar to benign vascular neoplasm⁷. Management of pregnancy tumor depends on the severity of the symptoms. If the lesion is small, painless and free from bleeding in clinical observation and follow-up then maintenance is advised. During pregnancy surgery should be recommended if bleeding or pain from the lesion impedes routine brushing or other daily activities or after delivery if the lesion has not



Figure 1: Presence of growth on the left side gingiva



Figure 2: Occlusal view and palatal extension of the growth.



Figure 3: IOPA of affected region

regressed completely.⁸ Use of Nd:YAG laser for the excision of this tumor can be done because of the lower risk of bleeding compared to other surgical techniques¹. For gingival lesions, the excision should extend down to periosteum and adjacent teeth should be thoroughly scaled to remove any source of continuing irritation.

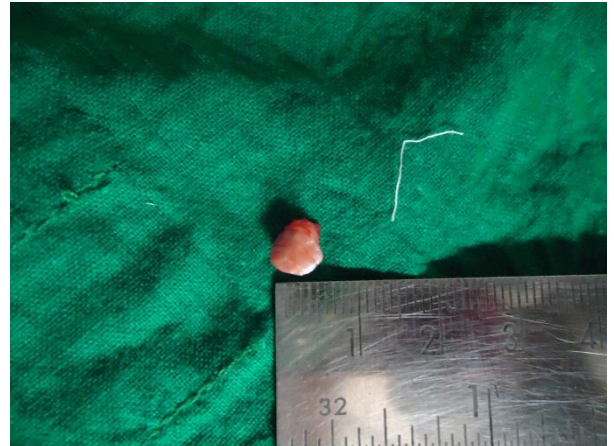


Figure 4: Tissue specimen after excision of the lesion



Figure 5: Postoperative photograph (after 3 days of excisional biopsy)

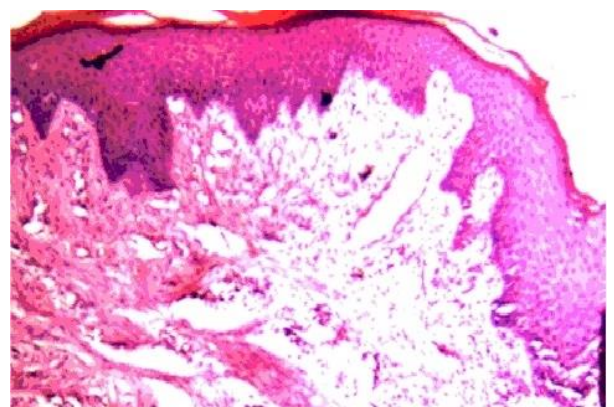


Figure 6: Photograph showing histologic picture of the lesion

After surgical removal, occasionally the lesion recurs and excision is necessary.

CONCLUSION

Pregnancy tumor is a very common entity which develops usually in 2nd and 3rd trimester of pregnancy. Regular oral health check-up is

mandatory in pregnancy. It should be removed after the pregnancy or during pregnancy if it impedes routine functions.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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