Persistent large oral pregnancy tumor: A rare case report

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Abstract
Oral pyogenic granuloma is a hyperplastic inflammatory lesion commonly seen in females probably due to the vascular effects of hormones that occur during puberty, pregnancy and menopause, associated to local irritation or trauma. During pregnancy, such lesions are known as pregnancy tumor and tend to occur frequently during the second and third trimester. Clinically, they appear as a smooth or lobulated exophytic lesion on a pedunculated or sessile base, which is usually hemorrhagic. Lack of oral health awareness among pregnant patients results in occurrence of such oral lesions which poses a great challenge to the dentist and gynecologist. Here, we present an unusual case of large persistent oral pregnancy tumor with complete management post parturition.

Keywords: Estrogen, Gingiva, Plaque, Pyogenic granuloma.

Introduction
Oral pregnancy tumor is a non-neoplastic, inflammatory gingival lesion occurring during the 2nd and 3rd trimester of pregnancy.[1] The term was first coined by Blum in 1912 and is also known as "granuloma gravidarum."[2] Such lesions are typified as oral pyogenic granuloma which tends to occur in 1-5% females during pregnancy and is termed as pregnancy tumor. The hormonal imbalance concurrent with pregnancy enhances the organism's response to irritation. Although an involution usually occurs after parturition, interference with the function may make the excision of the tumor inevitable.[3] Here, we present a rare case of persistent oral pregnancy tumor in a 20 year old female with complete management.

Case Report
A 20 year old pregnant woman reported with growth in the upper front gums since 2 months. The patient noticed the growth 2 months back which started as a small growth, gradually increased in size to attain the present size. There was history of mild pain, bleeding, pus discharge and difficulty in speech and mastication associated with the growth. Medical history revealed that the patient was in her third trimester of pregnancy (8^{th} month).

On clinical examination, solitary, well-defined, exophytic growth was seen in the labial and palatal aspect of gingiva i.r.t. 11, 12 region measuring approximately 3x1 cm in size. The surface of the growth was smooth and erythematous with indentations of the opposing teeth on the palatal aspect. The growth was non-tender, firm, sessile and bled profusely on slight provocation. Hard tissue examination revealed grade II mobility i.r.t. 11, 12 and oral hygiene was found to be very poor. [Fig. 1] Based on history and clinical findings, a provisional diagnosis of oral pregnancy tumor was obtained. The patient was given proper oral hygiene instructions and was asked to report after her delivery if symptomatic.

The patient again reported 2 months after uneventful parturition with a larger growth in spite of the oral hygiene measures. The growth had increased in size from 3x1cm to 5x2cm, completely interfering with the occlusion and mastication. The patient's oral hygiene was deteriorated even after educating the patient about various oral hygiene measures. On intraoral examination, the growth extended from mesial aspect of 11 to mesial aspect of 13 labially and palatally completely covering the teeth surface. Surface of the growth was lobulated and erythematous with a scab formation on the labial aspect. [Fig. 2] The growth was tender, firm associated with blood and purulent discharge on slight provocation. Intraoral periapical radiograph i.r.t 11,12 revealed alveolar crestal bone resorption and displacement of 12 due to pressure effect.

As the growth persisted and increased in size, surgical intervention was planned. The patient was subjected to complete hematological examination and all the parameters were within normal limits. Excisional biopsy was done under local anesthesia along with curettage; sutures placed i.r.t 11, 12, 21 and periodontal dressing given. [Fig. 3]

On microscopic examination, the photomicrograph showed parakeratinized hyperplastic epithelium overlying connective tissue stroma. Underlying connective tissue showed fibrous dense collagen bundles with numerous chronic inflammatory infiltrate chiefly comprising of lymphocytes and plasma cells. Numerous dilated endothelial vascular channels with engorged red blood cells were also seen. [Fig. 4] Based on the history, clinical, radiological and histopathological investigations, a final diagnosis of oral pregnancy tumor (pyogenic granuloma) was confirmed.

The patient was recalled after 2 weeks for suture removal and proper oral hygiene instructions were given. Oral prophylaxis was also performed and the patient was kept under periodic follow-up. [Fig. 5] No recurrence of the growth was noted till date.

Fig 1: Solitary exophytic growth in the labial and palatal aspect of 11, 12 gingival region measuring 3x1 cm.

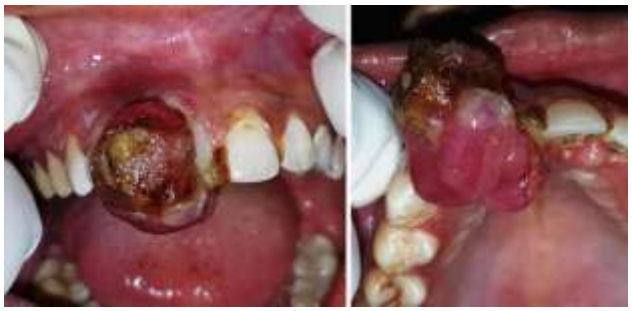

Fig 2: Enlarged exophytic growth to 5x2 cm, 2 months post parturition.

Fig 3: Post-treatment immediately after excisional biopsy of the growth.

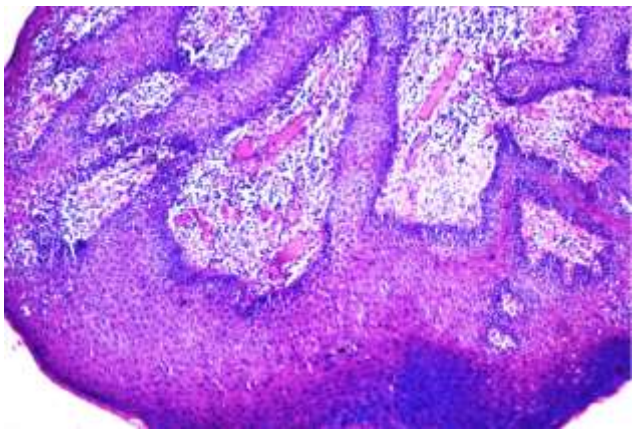

Fig 4: Photomicrograph showing hyperplastic epithelium with dense collagenous connective tissue comprising of chronic inflammatory infiltrate and RBC engorged blood vessels.

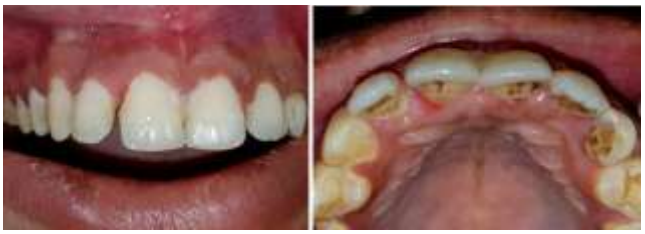

Fig 5: Post-operative clinical picture after 1 month.

Discussion

The physical and emotional changes that occur during pregnancy have a great influence on oral health. Oral pregnancy tumor occurs as a hyperplastic inflammatory response to local irritation, trauma and repeated gingival inflammation secondary to plaque, calculus or foreign body.[4] 0.2 to 9.6% of pregnant women have been reported to experience localized gingival enlargement consistent with pyogenic granuloma. It occurs frequently during the second and third trimester of pregnancy with maxillary site predominance and usually regresses after pregnancy.[3] These findings were consistent with our case except for the persistence of the growth even after parturition.

Estrogen augments vascular endothelial growth factor (VEGF) production in macrophages, an effect that is estranged by androgens, related to the development of pregnancy tumor. Both progesterone and estrogen induce changes in vascular permeability, leading to gingival edema and increased inflammatory response to bacterial plaque. Gestational steroid changes do not alone trigger the development of pregnancy tumor but exacerbate the previously latent gingivitis leading to development of this proliferative lesion.[1,2,5]

Kornman and Loesche (1980) reported changes in the subgingival flora to a more anaerobic milieu with P. Intermedia predominance, as pregnancy progresses. This increase is attributed to the elevations in systemic levels of Estradiol and Progesterone, which can substitute for menadion (Vitamin K), essential growth factor for P. Intermedia corresponding to gingival bleeding. O'Neil (1979) proposed that pregnancy can lead to depression of maternal T-lymphocytes, as a factor in the exuberant tissue response to the plaque microorganisms.[2,4]

In 1946, Ziskin and Ness compiled a clinical classification of pregnancy gingivitis as follows: Class I - Characterized by bleeding gingiva with more or less no other manifestations, Class II - Characterized by changes in interdental papilla-edema and swelling which exhibits a tendency to recur. Subsequent blunting of interdental papilla, Class III - Characterized by involvement of the free gingival margin giving raspberry appearance, Class IV - Generalized hypertrophic gingivitis of pregnancy and Class V - The pregnancy tumor.[2-4] The present case was classified as class V.

Spontaneous reduction in the size of the enlarged lesion typically follows the termination of pregnancy. Although the process of degeneration of pregnancy tumor is unclear, it may be related to the absence of VEGF and Angiopoietin-2 causing the blood vessels to regress, leading to regression of

the tumor.[6] In the present case, the growth was persistent and enlarged to 5x2cm in size even after parturition, so surgical intervention was planned. A recurrence rate of 16% has been reported, as a result of incomplete excision, failure to remove etiologic factors or recurring injury of the area.[2,3] The aforementioned case was kept under periodic follow-up and no recurrence was noted.

Conclusion

Oral health care in pregnancy is often avoided and misinterpreted by physicians, dentists, and patients. Every pregnant woman should be screened for oral risks, counseled on proper oral hygiene, referred for dental treatment when necessary and motivated for periodic recall visits. The present case presented with a large persistent oral pregnancy tumor due to poor oral hygiene and lack of awareness. Accurate diagnosis with identification of etiology and appropriate treatment planning along with patient education is vital.

Conflict of Interest: None.

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