Pregnancy Tumor: A Concern for Pregnant Females

Himanshi Agarwal, RG Shiva Manjunath, Ashutosh Agarwal, Vineet Garg, Pooja Mittal, Abhinav Rastogi

ABSTRACT

Pregnancy in a woman's life is associated with a variety of physiological, anatomical, and hormonal changes that can affect the cardiovascular, respiratory, and gastrointestinal systems. Such hormonal changes may lead to periodontal diseases and may be associated with generalized or localized gingival enlargements. Pregnancy does not cause the condition, but altered tissue metabolism in pregnancy accentuates the response to the local irritants, thereby causing gingival enlargements. In this report, a 25-year-old pregnant female had a localized gingival enlargement in the palatal aspect of the maxillary left first and second premolars.

KEYWORDS: Gingival enlargement, Hormonal changes, Periodontal diseases, Pregnancy.

INTRODUCTION

Pregnancy tumor is a benign, non-neoplastic overgrowth, mostly affecting the gingiva of a pregnant female.1 It is mostly associated with poor oral hygiene, which serves as an irritant.2 Pregnancy has been observed to increase susceptibility to gingival inflammation, leading to gingival and periodontal diseases.3 Pregnancy tumor is also known as pyogenic granuloma during pregnancy, granuloma pyogenicum, and granuloma gravidarum.4 The term was coined by Blum in 1912.5 The etiology of pregnancy tumor is unknown, but local factors like infection, irritation, poor oral hygiene, hormonal changes, or certain kinds of drugs can be some of the predisposing factors.6

The incidence of pregnancy tumor varies from 5 to 9% in pregnant female.5 It appears most commonly during the 2nd or 3rd month of pregnancy. It is more susceptible than males because of the hormonal changes that occur in women during puberty, pregnancy, and menopause.6 The most common site for pregnancy tumor involves the interdental papillae of the maxillary anterior teeth. The gingiva is the most common site followed by the tongue, lips, palate, and oral mucosa.9 Clinically, the lesion enlarges rapidly, has a tendency to bleed, and becomes hyperplastic. The color varies from bright red to dark purple, depending on the vascularity of the lesion.7

Pregnancy does not cause the condition, but altered tissue metabolism in pregnancy accentuates the response to the local irritants. The increased level of progesterone and estrogen causes an exaggerated gingival inflammatory reaction to local irritants. They potentiate the effects of local irritants on gingival connective tissue, leading to gingival enlargement.9 In all forms of enlargements, excision of growth is done through gingivectomy. The oral hygiene should be maintained for limiting the effects of systemic factors.10 Lesions that do not cause significant functional or esthetic problems should be avoided during pregnancy as they may resolve spontaneously postpartum and have high recurrence rate.9

CASE REPORT

A 25-year-old female patient reported to the Department of Periodontology and Implantology, Institute of Dental Sciences, Bareilly, with a chief complaint of swelling in the upper left back tooth region since 1 month. Patient was a 8 months pregnant lady and she complained that her gums used to bleed on brushing since 3rd month of pregnancy, but the enlargement came to the present size at this time. She also complained of difficulty in chewing on that side. On intraoral examination, a solitary, diffused swelling was present in the palatal interdental area between maxillary left first and second premolar (Fig. 1). The lesion was reddish pink in color and soft in consistence with sessile base, which bled even on slight provocation, measuring 1 × 0.9 cm in greatest dimension. Plaque and calculus were present in the affected area, leading to poor oral hygiene. On the basis of patient’s history and clinical examination, a provisional diagnosis of pregnancy-induced pyogenic granuloma was made. The differential diagnosis was comprised of peripheral ossifying fibroma, peripheral giant cell granuloma, and fibroma. Routine blood examination was carried out, with all values lying within the normal limits. Due to her pregnancy, no
invasive surgical procedure was carried out. Scaling was done for the removal of plaque and calculus. Oral hygiene instructions were given and recalled after her parturition. The patient reported after 1 month of an uneventful first pregnancy. Enlargement had slightly reduced in size. Oral prophylaxis was done, which resulted in the removal of plaque, calculus, and reduction in gingival inflammation. After reduction in inflammation, surgical excision was planned. Prior to surgery, 0.2% chlorhexidine mouthwash was used as a preprocedural rinse. Excision was performed using 15 number blade after giving local anesthesia on the palatal surface of maxilla (Figs 2 and 3). After removing the overgrowth, excised lesion was sent for histopathological examination (Fig. 4). Periodontal dressing was placed on the surgical area, postoperative instructions were given, and patient was placed on medications. The patient was recalled for follow-up examination after 10 days to see the healing and gingival tissue status. The histopathological report under low power revealed irregular stratified squamous hyperkeratinized epithelium overlying fibrovascular and cellular connective tissue stroma (Fig. 5). Under higher magnification, the connective tissue stroma comprised of loose to dense bundles of collagen fibers with predominantly plump-shaped fibroblasts. Numerous endothelial lined blood vessels (few dilated) with red blood cells and extravasated red blood cells were evident. Budding capillaries along with endothelial cell proliferation were also seen in many areas. Chronic inflammatory cells predominantly comprising of lymphocytes and few plasma cells were evident (Fig. 6). On the basis of histopathological report and clinicopathological
correlation, a final diagnosis of pyogenic granuloma was made. On postoperative recall after 10 days, the site healed uneventfully (Fig. 7). The patient was advised to maintain her oral hygiene. The patient was free from any obvious clinical recurrence during a follow-up period of 6 months.

DISCUSSION

Gingival changes in pregnancy were described as early as 1898, even before the knowledge of hormonal changes was available. The etiological cause of gingivitis in pregnancy as well as in nonpregnant individuals is bacterial plaque accumulation. Pregnancy accelerates the gingival response to plaque. Increased progesterone and estrogen hormone levels during pregnancy are related to the increased susceptibility to gingival inflammation, without a certain association with the amount of dental plaque accumulation. Hormonal changes aggravate the previously latent gingivitis, leading to increased inflammatory tissue response and causing the development of this proliferative gingival lesion. In 1946, Ziskin and Ness compiled a clinical classification of pregnancy gingivitis into five types. Class I is characterized by bleeding gingiva with more or less no other manifestations. Class II is characterized by changes in interdental papilla, edema, and swelling that exhibit a tendency to recur. Subsequent blunting of interdental papilla is also evident. Class III is characterized by the involvement of free gingival margin, which takes on the color and general appearance of a raspberry. Class IV is generalized hypertrophic gingivitis of pregnancy. Class V is pregnancy tumor. Saravana in 2009 demonstrated that 55% of pyogenic granuloma lesions involved the maxilla, and 83% occurred in the gingiva. Lawoyin et al in 1997 found gingiva to be the most common affected site by pyogenic granuloma (44.4%). Krishnapillai et al in 2012 evaluated the characteristic site of oral pyogenic granuloma in patients from South India and concluded that lesions occurred mostly in the maxillary gingiva than mandibular gingiva. Antoniadis et al in 1990 studied the frequency of occurrence of pregnancy tumors. A total of 27.5% of rats fertilized 7 days after wire irritation and sacrificed at day 50 manifested lesions that histologically resembled pregnancy tumors. Kornman and Loesche in 1980 reported that the subgingival flora changes to a more anaerobic flora. As pregnancy progresses, mainly Prevotella intermedia will predominate. The elevated systemic levels of estradiol and progesterone substitute as essential growth factor for P. intermedia and lead to gingival bleeding. O’Neil in 1979 reported that pregnancy can lead to depression of maternal T-lymphocytes, diminishing the mother’s immunity. This may also be responsible for the exuberant tissue response to the plaque. Patil et al conducted a study in 1991 and they indicated that the clinical diagnosis of “pregnancy tumor” can be given when describing a pyogenic granuloma occurring in pregnancy, because it describes a distinct lesion not on the basis of histologic features but on etiology, biologic behavior, and treatment protocol. Recurrence is rarely observed with these lesions. Tiara et al in 1992 studied the recurrence rate of pregnancy tumor, which was found to be 16% and which may be due to incomplete excision of the lesion, incomplete removal of etiological agents, or reinjury to that area. The rate of recurrence is the highest in the gingival and mucosal lesions.

CONCLUSION

Pregnancy tumor is a non-neoplastic growth in the oral cavity. The hormonal factors along with local factors like plaque and calculus are known to be responsible...
for gingival enlargement during pregnancy. Proper oral hygiene must be maintained to avoid the occurrence of pyogenic granuloma, although the size of gingival lesion subsides after childbirth. Complete elimination of the lesions along with etiological factors must be done to avoid the recurrence of this gingival overgrowth. In the present case, size of the hyperplastic tissue was reduced, but the mass was still interfering with the patient’s ability to chew, so it was excised completely 1 month after delivery.

REFERENCES


