

Generalized Gingival Enlargement During Pregnancy Following Infertility Treatment – A Case Report.



Medical Science

KEYWORDS : Pregnancy, gingival enlargement, infertility treatment

Dr. Chandulal D. Dhalkari

Associate Professor and PG Guide

Dr. Pallav V. Ganatra*

PG student, Room no. 151, Dept. Of Periodontology, Govt. Dental College and Hospital, Aurangabad, 431001 Maharashtra, India. * Corresponding Author

ABSTRACT

Gingival enlargement is a frequent finding in patients suffering from gingival and periodontal diseases. When systemic condition of the patient exaggerates or distorts the usual gingival response to microbial plaque, conditioned gingival enlargements occur. These conditions may include pregnancy, puberty, vitamin C deficiency or plasma cell gingivitis. This is a case report of 29 year old female suffering from pregnancy induced generalized gingival enlargement. Pregnancy gingivitis and pregnancy tumors are common; however generalized gingival enlargement during pregnancy following infertility treatment is rare.

Introduction:

The concepts of sex steroid hormones modulating the periodontal tissues have been discussed over more than two centuries now. It is well evidenced that there is increase in microbiota of dental plaque during different endocrinal events like puberty, menstrual cycle, pregnancy, etc. along with changes in the vascular properties, immune and cellular functions in gingiva. [6] Gingival response during pregnancy is similar to plaque-induced gingivitis, except for the propensity to develop explicit signs of gingival inflammation in the presence of relatively little plaque during pregnancy.[7]

This report presents a case of 29 year old women suffering from generalized gingival enlargement during pregnancy following infertility treatment. Infertility is the incapacity to carry out a pregnancy to live birth or inability to achieve conception. Women undergoing infertility treatment are mainly given drugs like clomiphene citrate, gonadotropins such as follicle stimulating hormone etc to stimulate ovulation induction so that the ovaries can produce healthy follicles. These drugs may exacerbate gingival inflammation and have a dose related association. [3]

Case History:

This is a case report of 29 years old female, of middle socio-economic status, presented to the department with the chief complaint of swollen gums since six months associated with difficulty in mastication since 4 months. Patient was eight months pregnant on the day of presentation. She had history of infertility for five years and had undergone successful treatment for ovulation induction. She was relatively asymptomatic before six months following which she noticed slight gingival enlargement which rapidly increased within short period of few months covering most of her teeth up to or beyond the crowns of teeth resulting in compromised masticatory efficiency. [Figure-1]

Intraoral examination showed pale pink gingival enlargement which was smooth and shiny and covered 80% of her teeth. The plaque levels were minimal and inconsistent with the amount of enlargement. The amount of local deposits rules out chronic periodontitis related inflammatory enlargement. The generalized involvement rules out possibility of a benign solitary tumour. The appearance of enlargement during pregnancy and its rapid enlargement along with progression of pregnancy favours the diagnosis of pregnancy induced gingival enlargement.

Since patient was in third trimester of pregnancy, surgical intervention was not carried out considering the morbidity associated with it. Patient was asked to consume soft nutritious diet and was assured of regression of enlargement following parturition. Patient is asked to report after delivery and surgical intervention will be carried out if complete regression does not occur.



Figure:1 Pregnancy induced generalized gingival enlargement.

Discussion:

Increased levels of sex steroid hormones during pregnancy are maintained from implantation of the embryo, until parturition. A pregnant woman produces large quantities of oestrogen, and progesterone which increases in level as the pregnancy progresses. During pregnancy, there is an increase in levels of progesterone and estrogen, 10 and 30 times the levels during the menstrual cycle, respectively.[1] Pre-existing plaque induced gingivitis may be an important factor for detecting hormone induced changes, with prevalence of pregnancy gingivitis ranging from 35-100%.[2,5]

During second and third trimester of pregnancy gingival inflammation initiated by plaque may be exacerbated by these hormonal changes resulting in pregnancy gingivitis. High levels of progesterone and oestrogen associated with pregnancy have been shown to alter the immune response to plaque.[9] Depression of neutrophil chemotaxis and phagocytosis, along with antibody and T cell responses, have been reported in response to high levels of gestational hormones.[8]

Non-physiological conditions like exogenous drug intake such as oral contraceptives have been documented for their effect on periodontium. Poorer periodontal health has been found to be associated with oral contraceptive use. This response results due to altered microvasculature, increased gingival permeability, and increasing synthesis inflammatory mediators, which appears to rise significantly with increasing levels of sex hormones.[4] One of recent study showed that there may be an association between Depot Medroxyprogesterone Acetate injectable contraception and the prevalence of periodontal diseases among premenopausal females.[10]

Another recent study evaluated the effect of ovulation induction during infertility treatment in non-pregnant females on gingival inflammation, and found that, ovulation induction which is the

most common method in management of infertility, exacerbates gingival inflammation, bleeding and gingival crevicular fluid volume.[3]This case report presents a women who had history of infertility and was treated for the same. During infertility, the levels of sex steroid hormones may be lower than their normal values. A rise in these hormones from a below normal level to an exaggerated level during pregnancy may explain the amount of severity of gingival enlargement in this case.

Conclusion:

This article along with reporting a case of generalized gingival enlargement during pregnancy also hypothesizes the association between history of infertility treatment and increased severity in gingival response during pregnancy.

REFERENCE

1. Güncü, G. N., Tözüm, T.F., Çağlayan, F. (2005). Effects of endogenous sex hormones on the periodontium -- review of literature. *Aust Dent J*, 50, 138-45. | 2. Hasson, E. (1966) Pregnancy gingivitis. *Harefuah*, 58, 224-30. | 3. Haytac, M. C., Cetin, T., Seydaoglu, G. (2004). Effects of ovulation induction during infertility treatment on gingival inflammation. *J Periodontol*, 75, 805-10. | 4. Kalkwarf, K. L. (1978) Effect of oral contraceptive therapy on gingival inflammation in humans. *J Periodontol*, 49, 560-3. | 5. Lundgren, D., Magnusson, B., Lindhe, J. (1973). Connective tissue alterations in gingiva of rats treated with estrogen and progesterone. *Odontol Revy*, 24, 49-58. | 6. Mariotti, A. (1994). Sex steroid hormones and cell dynamics in the periodontium. *Crit Rev Oral Biol Med*, 5, 27-53. | 7. Mariotti, A. (2005). Estrogen and extracellular matrix influences human gingival fibroblast proliferation and protein production. *J Periodontol*, 76, 1391-7. | 8. Raber-Durlacher, J. E., Leene, W., Palmer-Bouva, C. C. R., Raber, J., Abraham-Inpijn, L. (1993). Experimental gingivitis during pregnancy and post-partum: Immunological aspects. *J Periodontol*, 64, 211-8. | 9. Sooriyamoorthy, M., Gower, D. B. (1989). Hormonal influences on gingival tissue: relationship to periodontal disease. *J Clin Periodontol*, 16, 201-8. | 10. Taichman, L. S., Sohn, W., Kolenic, G., Sowers, M. (2012). Depot medroxyprogesterone acetate use and periodontal Health in 15- to 44-year-old US females. *J Periodontol*, 83, 1008-17. |