

## Epulis in Pregnancy Disturbing Speech and Mastication.



### Medical Science

**KEYWORDS :** Pregnancy epulis, pregnancy tumor, pyogenic granuloma

\* **Snigdha Kumari**

MBBS, MS, DNB, ex-Resident, Department of obstetrics and gynecology. Vivekananda Institute of Medical Sciences, Ramakrishna Mission Seva Pratishthan. Kolkata-26. West Bengal. India.\* corresponding Author

**Ashok Kumar Biswas**

MBBS, MD, DNB. Associate Professor, Department of obstetrics and gynecology. Vivekananda Institute of Medical Sciences, Ramakrishna Mission Seva Pratishthan. Kolkata-26. West Bengal. India.

**Goutam Giri**

MBBS, MD. Assistant Professor, Department of obstetrics and gynecology. Vivekananda Institute of Medical Sciences, Ramakrishna Mission Seva Pratishthan. Kolkata-26. West Bengal. India.

### ABSTRACT

*Pyogenic granuloma of the gingiva, which develops rarely during pregnancy in women is also known as pregnancy epulis. The incidence is during the third decade of life. Epulis is more prevalent among women than men (1:4), however its prevalence is not known. It is also known as "pregnancy tumor" or "granuloma gravidarum". This lesion is identical to a pyogenic granuloma in all respects apart from the fact that it occurs exclusively in pregnant females. The most common site of epulis is the frontal part of the maxilla. It usually occurs during third trimester of pregnancy. It causes no symptoms apart from its very presence. Improper oral hygiene leading to chronic gingivitis and high gingival levels of active progesterone is cited as a common etiology. Treatment is removal of irritating factors followed by surgical excision of the lesion. Here, we report an unusual case of pregnancy epulis in a 33-year pregnant woman.*

### INTRODUCTION-

Epulis is a benign tumor of gingiva or, alveolar mucosa. The literal meaning of epulis is "on the gingiva", and describes only the location of the lesion. It is of three types: ossifying, fibromatous and acanthomatous. Pyogenic granuloma is a misnomer because this type of epulis is neither pyogenic nor a true granuloma. It is mainly a vascular lesion. Approximately 3/4<sup>th</sup> of all pyogenic granulomas occur on the gingiva. This lesion is hypothesized to be due to chronic local irritation of the tissues and improper oral hygiene. It appears as a red-purple swelling which bleeds to touch.

### CASE REPORT-

A 33-year-old nulliparous experienced the rapid growth of an oral lesion on the left upper gingiva which she had first noticed at 26 weeks gestation. The history revealed that the growth had been gradually increasing in size to the present size with occasional bleeding from the growth following trauma. The lesion interfered with oral hygiene and eating. Clinical examination of the oral cavity revealed a lobulated mass in the region of left canine and left premolars (Fig. 1). Radiographic evidence could not be provided as the patient was in her third trimester of pregnancy and not cooperative. Routine hemogram was found to be within normal limits. A provisional diagnosis of pregnancy epulis was made. The patient was then subjected to excision of the mass along with extraction of left lateral incisor, canine, and two premolars under general anesthesia at 36 weeks and 3 days gestation (Fig. 2). The excised mass was sent for histopathological examination (Fig. 4). At surgery, the lesion measured 3.0 x 2.5 x 2.0 cm. Histopathological examination revealed polypoidal and nodular lesion lined by ulcerated and hyperplastic keratinizing stratified squamous epithelium partly covered by inflammatory exudate. The lesion was composed of proliferating capillaries and endothelial cells, arborizing vessels and dilated vascular channels. There was diffuse chronic inflammatory cell infiltration throughout the tissue (Fig. 3 and 4). Thus, the final diagnosis of 'pyogenic granuloma' was confirmed. There was an uneventful healing and the patient did well postoperatively. She delivered a healthy 3.984 kg baby at 39 weeks and 6 days gestation (Fig. 5). She has had no recurrence after 15 months of follow-up.

### DISCUSSION

Gingiva is often the site of localized growths that are considered

to be reactive rather than neoplastic in nature. Most of the lesions in the gingiva are reactive chronic inflammatory hyperplasias with minor trauma and chronic irritation being the main etiologic factors. They found an almost equal distribution of lesions between the maxilla and mandible, with the anterior maxilla the most prevalent site.<sup>2</sup> It predominantly occurs in young females in their 2nd and 3rd decades due to hormonal influences on vasculature.

There is a higher incidence of pyogenic granuloma in women during pregnancy termed as pregnancy epulis. Clinically, the pregnancy epulis appears as a smooth or lobulated and ulcerated mass that is usually pedunculated or, sometimes sessile. Younger tumors are soft in consistency, progressing to a rubbery texture on maturation. The color may range from pink to bright red to purple or brown.<sup>1</sup> Such lesions begin to develop in first trimester and their incidence increases upto 7th month of pregnancy. The cause for the pyogenic granuloma in pregnancy is the raised levels of progesterone and estrogen and it is seen that the tumor usually regresses postparturition.<sup>1</sup>

The hormonal imbalance coincident with pregnancy heightens the organism's response to irritation<sup>3</sup> however, bacterial plaque and gingival inflammation are necessary for subclinical hormone alterations leading to gingivitis.<sup>4</sup> The development of this particular kind of gingivitis, typical in pregnancy, not different from that appearing in nonpregnant women, suggests the existence of a relationship between the gingival lesion and the hormonal condition observed in pregnancy. Sometimes pregnancy gingivitis can show a tendency towards localized hyperplasia, which is called pregnancy granuloma. Generally, it appears in the 2nd - 3rd month of pregnancy, the persistent influence of plaque induces catarrhal inflammation of the gingiva that serves as a base for development of hyperplastic gingivitis during the last months, modulated by the cumulating hormonal stimuli. In uncontrolled cases, pyogenic granuloma may arise. This lesion is rarely observed in women with poor oral hygiene in areas with local irritating factors such as improperly fitting restorations or dental calculus. During pregnancy, pyogenic granuloma when treated by surgical excision may reappear due to incomplete excision or inadequate oral hygiene.<sup>5</sup>

The molecular mechanism behind the development and regres-

sion of pyogenic granuloma during pregnancy is due to changes associated with the functions and structure of the blood and lymph microvasculature of the skin and mucosa due to profound endocrine upheaval.<sup>6</sup> Recent studies have revealed that sex hormones manifest a variety of biological and immunological effects. Estrogen accelerates wound healing by stimulating nerve growth factor (NGF) production in macrophages, granulocyte-macrophage colony stimulating factor (GM-CSF) production in keratinocytes and basic fibroblast growth factor (bFGF) and transforming growth factor beta 1 (TGF- 1) production in fibroblasts, leading to granulation tissue formation. Estrogen enhances vascular endothelial growth factor (VEGF) production in macrophages, an effect that is antagonized by androgens and which may be related to the development of pyogenic granuloma during pregnancy. The molecular mechanism for the regression of pyogenic granuloma after the pregnancy is not clear. It is proposed that in the absence of VEGF, the Angiopoietin (Ang-2) causes the blood vessels to regress and VEGF, which was found high in pregnancy was found undetectable after parturition.

There are two histological types of pyogenic granuloma. One type is characterized by proliferating blood vessels that are organized in lobular aggregates although superficially the lesion frequently undergoes nonspecific changes like edema, capillary dilation or inflammatory granulation tissue reaction. This is known as lobular capillary hemangioma type, whereas the second type nonlobular capillary hemangioma type consists of highly vascular proliferation that resembles granulation tissue. In the case presented, the histological picture was that of chronic inflammatory cell infiltration, which showed that it was non-lobular capillary hemangioma.

Differential diagnosis includes pyogenic granuloma, peripheral giant cell granuloma, peripheral ossifying fibroma and metastatic cancer. The clinical features of growth with ulceration and bleeding present interdental during the period of pregnancy made us give a provisional diagnosis of pregnancy epulis.

Possible treatment modalities are excision, curettage, cryotherapy, chemical and electric cauterization, and the use of lasers. The lasers commonly used are argon lasers, continuous wave (CW) Nd:YAG laser, pulsed dye laser and CW carbon dioxide laser, which permits rapid, minimally invasive surgical treatment, but the nonspecific coagulation may lead to scars.<sup>7</sup> The management of pyogenic granuloma depends on the severity of symptoms. Excisional biopsy is indicated for treatment of pyogenic granuloma, except when the procedure would produce marked deformity.<sup>8</sup> Recurrence rate after excision ranges from 0% to 16%. Pyogenic granuloma of pregnancy often regresses postparturition, they need not be excised unless symptomatic.<sup>1</sup>

Treatment considerations during pregnancy are very important as it is considered that there is a biological plausibility that periodontal diseases in pregnancy are associated with pregnancy complications like preterm births, preterm low birth weight (LBW) babies or even pre-eclampsia.<sup>9</sup>

**Fig. 3 and 4- Photomicrograph showing hyperplastic keratinizing stratified squamous epithelium partly covered by inflammatory exudate, proliferating capillaries and endothelial cells, arborizing vessels and dilated vascular channels. Presence of diffuse chronic inflammatory cell infiltration throughout the tissue.**



Fig.1



Fig.2

**Fig.1 – Photograph showing intraoral view of lobulated mass prior to excision**

**Fig.2-Postoperative photograph shows good healing after one day.**

#### REFERENCES

1. Sheth SN, Gomez C, Josephson GD. Pathological case of the month: diagnosis and discussion; pyogenic granuloma of the tongue. Arch Pediatr Adolesc Med 2001;155:1065-6.
2. Buchner A, Shnaiderman-Shapiro A, Vered M. Relative frequency of localized reactive hyperplastic lesions of the gingiva: a retrospective study of 1675 cases from Israel. J Oral Pathol Med 2010;39(8):631-8.
3. Eversole LR. Clinical outline of oral pathology: diagnosis and treatment. 3rd edition, Decker BC (Ed.), Hamilton 2002;p.141-2.
4. Sooriyaamoorthy M, Gower DB. Hormonal influences on gingival tissue: relationship to periodontal disease. J Clin Periodontol 1989;16(4):201-8.
5. Boyarova TV, Dryankova MM, Bobeva AI, Genadiev GI. Pregnancy and gingival hyperplasia. Folia Med (Plovdiv) 2001;43(1-2):53-6.
6. Henry F, Quatresooz P, Valverde-Lopez JC, Pierard GE. Blood vessel changes during pregnancy: a review. Am J Clin Dermatol 2006;7(1):65-9.
7. Raulin C, Greve B, Hammes S. The combined continuouswave/ pulsed carbon dioxide laser for treatment of pyogenic granuloma. Arch Dermatol 2002;138(1):33-3.
8. Jafarzadeh H, Sanatkhan M, Mohtasham N. Oral pyogenic granuloma: a review. J Oral Sci 2006;48(4):167-75.
9. Bobetsis YA, Barros SP, Offenbacher S. Exploring the relationship between periodontal disease and pregnancy complications. J Am Dent Assoc 2006;137 Suppl:75S-135S.

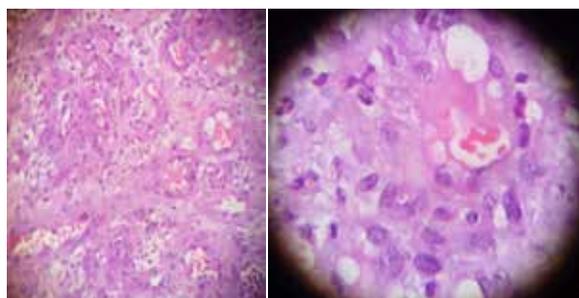


Fig.3

Fig.4