



## PYOGENIC GRANULOMA IN PREGNANCY: A STUDY AT LIAQUAT UNIVERSITY HOSPITAL.

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**ABSTRACT... Objectives:** To evaluate pattern and presentation of pyogenic granuloma in pregnant patients. **Study Design:** Descriptive study with non-probability purposive technique. **Setting:** Department of Oral & Maxillofacial Surgery Liaquat University hospital Hyderabad. **Period:** From February 2013 to January 2017. **Material & Methods:** A total number of fifty pregnant patients were included in the study and preliminary diagnosis of gingival pyogenic granuloma was made clinically. The clinical diagnosis was confirmed by excisional biopsy under local anesthesia (surgical procedure was done following consultation with primary care physician in second trimester or after parturition), and sent for histopathological examination. Removal of dental plaque performed before surgical therapy. **Results:** Most of the females involve were in age group of 21-30 (68%). Maxillary anterior region was most frequently involved followed by mandibular anterior region. The smallest size of lesion was 1.5mm and largest was 3cm. **Conclusion:** Pyogenic granuloma in pregnancy occur due to hormonal imbalance, however bacterial dental plaque, calculus and poor oral hygiene are also key factors in development.

**Key words:** Granuloma, Lesion, Pyogenic, Pregnancy, Plaque.

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### INTRODUCTION

Pyogenic granuloma or pregnancy epulis means localized inflammatory tumor like lump or cellular proliferation on gingiva, it may also describes chronic inflammatory hyperplasia.<sup>1</sup> The first case was reported by Hüllihen in 1844 and termed as pyogenic granuloma but currently histological term is lobular capillary hemangioma.<sup>2</sup> It is hyperactive benign neoplasm occurring usually in 2nd trimester of pregnancy.<sup>3</sup>

The term is considered as misnomer as it does not present true granuloma. because lesion is not associated with pus or infection.<sup>4</sup>

On clinical grounds it is smooth lobulated exophytic lesion with erythromatous papules that have immense predisposition to bleed on palpation and typically it is painless and soft in character. Early lesion is more hemorrhagic as it appears extremely vascular but in maturation phase it appears collagenous and less vascular.<sup>5</sup>

Interdental papilla of anterior maxillary teeth is the site where this lesion is mostly located. The gingiva is most commonly involved but tongue, lip, oral mucosa and palate might be involved.<sup>6</sup> These lesions also occur in pregnancy, so it is also called pregnancy tumor.<sup>7</sup>

Etiology of pregnancy tumor is due to hormonal imbalance especially elevated progesterone level, repeated chronic inflammation, local irritant, plaque, bacteria and trauma is always associated with epulis.<sup>8</sup>

High level of progesterone and estrogen hormones stimulated basal and spinous stratum of epithelium and connective tissues, Progesterone dilate blood vessels and increased capillary proliferation and estrogen regulate proliferation of gingival tissues.<sup>3</sup>

Radiographically pyogenic granuloma findings are usually absent, localized bone resorption usually

present in long standing tumor. Treatment during period of pregnancy is very important, care of oral hygiene, removal of calculus and soft brushing is important to avoid occurrence of epulis. Surgical treatment should be completed if justified in only 2<sup>nd</sup> trimester.<sup>9</sup>

**METHODOLOGY**

This descriptive study with non probability purposive technique was conduct at oral and maxillofacial surgery department of Liaquat university hospital Hyderabad at outdoor department, in four year period.

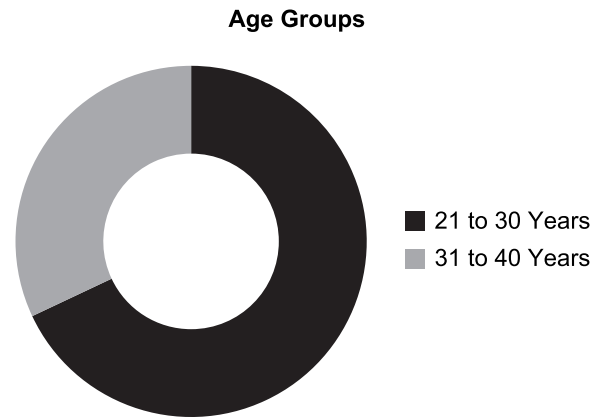
A total number of fifty pregnant patients were included in the study and preliminary diagnosis of gingival pyogenic granuloma was made clinically (color ranging from red to purple, smooth or lobulated, size of lesion, location, tenderness).

Question were asked regarding occlusal interference of lesion, bleeding from lesion after little or no trauma, trimester of pregnancy during epulis develop and maintenance of oral hygiene. The clinical diagnosis was confirmed by excisional biopsy under local anesthesia (surgical procedure was done following consultation with primary care physician in second trimester or after parturition), and sent for histopathological examination. Removal of dental plaque performed before surgical therapy.

Data was entered and analyzed with statistical package for social sciences (SPSS) version 16.0. An appropriate format was designed for data entry, storage of information of clinical findings. Graphical software program was developed with help of qualified software programmer.

**RESULTS**

Fifty pregnant patients were observed in this study. In terms of age group maximum number of patients 34 (68%) were in 21-30 years of age group, followed by 16 (32%) patients in the 31-40 years of age. Figure-1 shows percentage of age wise distribution of patients.



**Figure-1. Distribution of age groups**

In the present study maxilla is more affected than mandible. The most common site of occurrence is anterior maxillary area followed by anterior mandibular, maxillary posterior, mandibular posteriors. See (Table-I) for complete details.

Site of Lesion	No. of Patients	%
Maxillary Anterior Area	24	48%
Maxillary Posterior Area	05	10%
Mandibular Anterior Area	18	36%
Mandibular Posterior Area	03	06%
<b>Total</b>	50	100%

**Table-I. Shows anatomic location of Lesion**

There was a greater variation in size of granuloma, the smallest size of lesion was 1.5mm and largest was 3cm. It was found that lesion usually appears during second or third trimester of pregnancy with a great tendency to bleed. We have divided the patients in two categories.

Category 1: Patients with size less than 1cm  
 Category 2: Patients with size greater than 1cm  
 See Table-II for details.

Size of Lesion	No. of Patients	%
Less than 1cm	31	62%
Greater than 1cm	19	38%
<b>Total</b>	50	

**Table-II. Shows size of Lesion**

A direct relation between pyogenic granuloma and severity of plaque and calculus was seen

in our study; almost all patients had prolonged exposure of dental plaque, poor oral hygiene, as well as malocclusion and anatomical abnormalities which favor plaque retention.

## DISCUSSION

Pyogenic granuloma is a common solitary, lobulated, non-neoplastic inflammatory and highly vascular proliferation, mostly involve gingiva and rarely involve other sites of oral cavity.<sup>10</sup> It is strongly associated with hormones such as increased concentrations of circulating estrogen or progesterone, also in presence of local irritants and trauma. The mechanism by which these steroids increase gingival inflammation is not known. Steroid hormones may have dual effects on the pathogenesis of pregnancy, hormones increased angiogenic factors in inflamed tissue, and also decrease apoptosis of granuloma.<sup>11,12</sup>

The present study specified a correlation between pregnancy related hormones and calculus or plaque formation, results shows that almost all pregnant patients suffering from pyogenic granuloma also must have bacterial plaque. Recurrent insignificant gingival inflammation secondary to plaque, calculus and trauma are enough for development of lesion, these factors necessary for subclinical hormonal changes and to lead gingivitis. According to Kapoor and Malhotra, they reported that pregnancy accentuates the gingival response to plaque.<sup>13</sup> The correlation between gingivitis and quantity of plaque was greater after parturition than during pregnancy.

Ramesh A & Prakash AP reported same etiology, according to them pregnancy itself cannot cause gingivitis, it is bacterial hormonal interaction, may change composition of plaque their by lead to gingival inflammation.<sup>14</sup>

Based on clinical examination our findings indicated maxillary anterior area was mostly affected followed by mandibular anterior, maxillary posterior, mandibular posterior region. Facial aspect of gingiva is more common as compare to palatal or lingual aspect of gingiva. Jafarzadeh H et al (2006) reported that pyogenic granuloma

are much more common on maxillary gingiva than mandibular gingival.<sup>16</sup> He also reported that anterior region is more affected than posterior region. Ramesh<sup>14</sup> similarly described maxillary gingiva (especially in the anterior region) is involved more frequently than mandibular gingival.

Pushpendra (2012)<sup>4</sup> reported that Pyogenic granuloma grows in size from a few millimeters to several centimetres in size but rarely exceed more than 2.5cm but many of the pyogenic granulomas grow rapidly and attain large sizes. In our study we found almost same results, according our research the smallest lesion was from few mm to largest as in cm.

In this study it was established that lesion usually appears during second/third trimester of pregnancy with susceptibility to bleed and possible disturbance with mastication, Baldava RS et al (2011) suggested that pyogenic granuloma appears in second or third trimester of pregnancy with tendency to bleed and possible interference with mastication.<sup>15</sup>

## CONCLUSION

It was concluded that pyogenic granuloma in pregnancy is hormonal induced but aggravates due to dental plaque accumulation, calculus, poor oral hygiene. It usually occurs in second and third trimester of pregnancy with peak age involved is 21 to 30years. It is also concluded that maxillary anterior region is most commonly affected with these types of lesions.

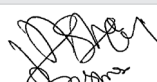
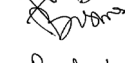

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2	Agha Taj Mohammed	Discussion, References.	
3	Batool Bibi	Manuscript designing.	
4	Salman Shams	Data collection, Results & Proof reead.	