British Journal of Medicine & Medical Research
10(3): 1-5, 2015, Article no.BJMMR.17312
ISSN: 2231-0614

SCIENCEDOMAIN *international*
www.sciencedomain.org

Pyogenic Granuloma: An Unusual Presentation

Mayuri Vajawat[1*], P. C. Deepika[2] and Usha Hegde[3]

[1]Department of Periodontology, Jodhpur Dental College General Hospital, Jodhpur, India.
[2]Department of Periodontology, JSS Dental College and Hospital, India.
[3]Department of Oral and Maxillofacial Pathology, JSS Dental College and Hospital, JSS University, Mysore, India.

Authors' contributions

This case report was carried out in collaboration between all authors. Author MV carried out the surgical procedure, under the guidance of author PCD. Author UH did histologic examination of the specimen. Author MV wrote the first draft of the manuscript. Authors PCD and UH managed the literature searches. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/BJMMR/2015/17312
Editor(s):
(1) Emad Tawfik Mahmoud Daif, Professor of Oral & Maxillofacial Surgery, Cairo University, Egypt.
Reviewers:
(1) Rodrigo Crespo Mosca, São Paulo University (USP), Brazil.
(2) Anonymous, Bayero University, Nigeria.
Complete Peer review History: http://sciencedomain.org/review-history/10415

Case Report

Received 7th March 2015
Accepted 3rd April 2015
Published 5th August 2015

ABSTRACT

Pyogenic granuloma is one of the inflammatory hyperplasia seen in the oral cavity. It arises in response to various stimuli such as low-grade local irritation, traumatic injury, or hormonal factors. It is most commonly seen in females in their second decade of life due to vascular effects of hormones. This paper presents an unusual form of pyogenic granuloma and its treatment.

Keywords: Pyogenic granuloma; pregnancy; oral contraceptives; excision.

1. INTRODUCTION

Gingival enlargement is defined as an overgrowth or increase in size of the gingiva. Enlargement can be of many types depending on etiologic factors like inflammation, drug-induced effects, neoplasm, hormonal imbalance, and systemic involvement. Drugs and hormonal imbalance are the most common causes of gingival enlargement [1].

**Corresponding author: Email: mayurivajawat@yahoo.com;*

Nonspecific conditioned enlargement or pyogenic granuloma is considered an exaggerated conditioned response to minor trauma or chronic irritation [1]. Pregnancy-associated pyogenic granuloma or “pregnancy tumor” was described over a century ago [2]. It is a hyperactive benign inflammatory lesion that occurs mostly on the gingival mucosa surrounding the anterior teeth, in females with high levels of steroid hormones [3]. Approximately one-third of the lesions occur due to trauma. Poor oral hygiene may also be one of the precipitating factors. It often presents as a painless, pedunculated or sessile mass on gingiva, which bleeds easily upon mild provocation [4]. Pregnancy-associated pyogenic granuloma has been reported to occur in 0.5-5.0% of pregnant women and commonly in the maxilla. It may develop as early as the first trimester, ultimately regressing or completely disappearing following parturition [5].

2. CASE REPORT

A 28 year old female patient reported to the Out Patient Department, complaining of a swelling in the lower left back tooth region since 2.5 years. She gave history of pregnancy 3 years back. She also mentioned that the swelling was increasing in size slowly and consistently. The lesion was painless and asymptomatic, except for the slight discomfort to the patient due to the growth. Patient also gave a history of using oral contraceptive pills for 1 year, prior to her conception. Otherwise, her medical history was non-contributory.

On clinical examination, a sessile, hyperplastic lesion with irregular shape and outline measuring about 6× 4 cm, involving the marginal and interdental papilla in relation to 35,36,37 and 38, both on labial and lingual sides was seen. The lesion was lobulated with multiple folds (Figs. 1, 2 and 3). Overlying mucosa appeared normal. The mass was soft-firm, non-tender and non-compressible on palpation. The mass covered the occlusal surface of 38 and also involved the lingual mucosa. The Orthopantomograph showed generalized interdental bone loss without any other pathologic changes. Routine blood investigations were carried out, which were normal. Clinical provisional diagnosis of gingival enlargement was given and the patient was scheduled for excisional biopsy. Under local anaesthesia, the mass was excised and sent for histopathologic examination. After excision, the crest of remaining gingiva was broad and flat. Hence, flap was reflected, the inner surface of the gingiva was trimmed and was sutured back to regain the physiologic contours. During surgery, it was discovered that 38 was grade III mobile and hence the tooth was extracted (Figs. 4 and 5).

Hematoxylin & Eosin stained section revealed stratified squamous atrophic epithelium and connective tissue stroma. The collagenous stroma consisted of numerous, small blood vessels and few inflammatory cells. Correlating the clinical findings and histologic sections, the pathologist diagnosed it to be “Pyogenic Granuloma” (Figs. 7 and 8).

The patient is on regular follow up and is maintaining good oral hygiene with regular brushing and flossing. The patient was recalled at 1,2,3,6 and 9 months for check-up and there was no recurrence at the end of 9 months (Fig. 6)

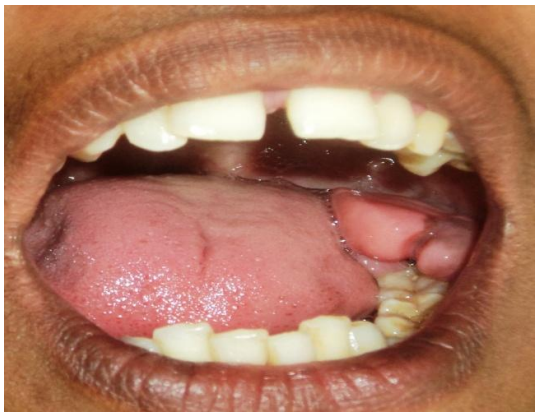

Fig. 1. Pre operative view of the enlargement

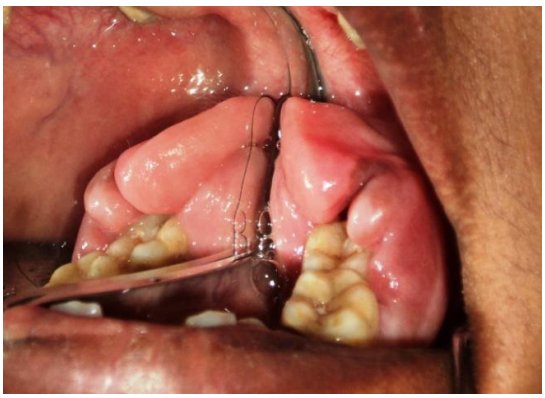

Fig. 2. Pre operative buccal and occlusal view of the enlargement

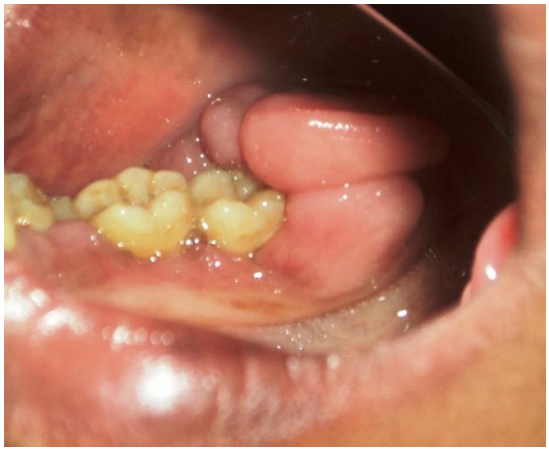

Fig. 3. Pre operative lingual view

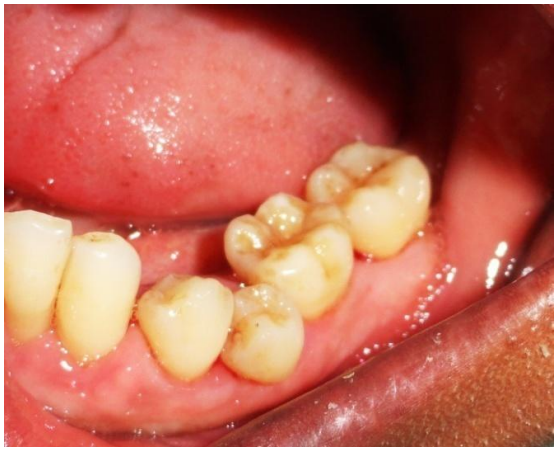

Fig. 6. 9 months post operative view

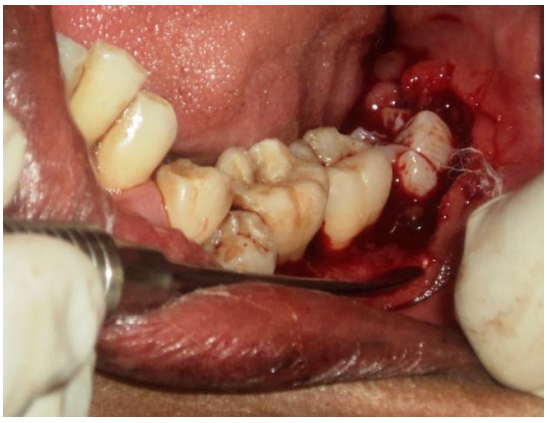

Fig. 4. Intra operative view

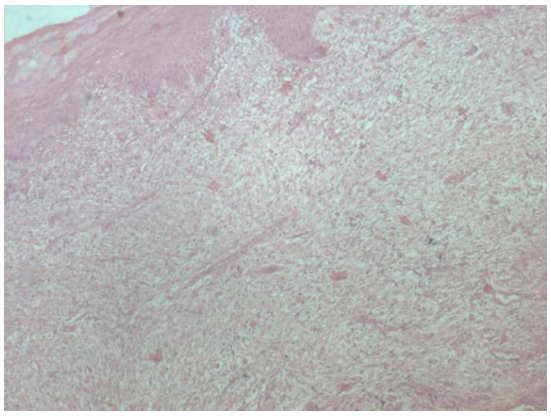

Fig. 7. Histopathologic view: low magnification

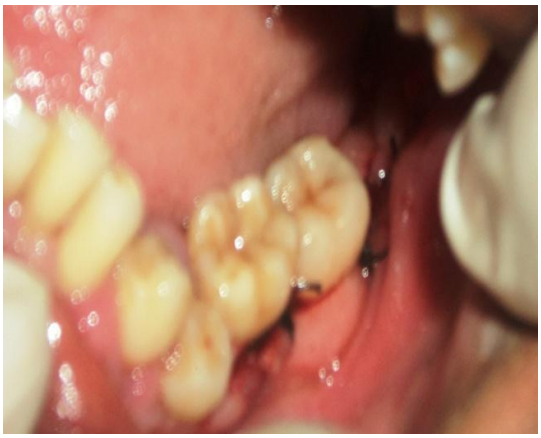

Fig. 5. Sutures placed

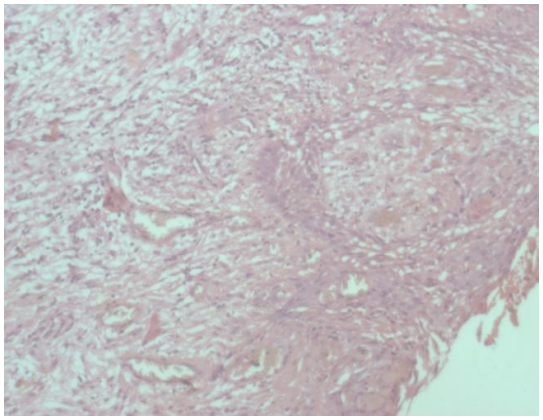

Fig. 8. Histopathologic view: high magnification

3. DISCUSSION

The present case report presents to the literature an unusual form of pyogenic granuloma. The lesion was coral pink in color, large in size, lobulated, irregular in shape and did not bleed profusely. This was probably due to the long standing nature of the lesion and hence had started undergoing fibrous maturation. Pyogenic granuloma usually arises in response to various stimuli such as low-grade local irritation, traumatic injury, hormonal factors or certain kinds of drugs [3]. In this case the etiology could probably be regarded as pregnancy, use of contraceptive pills and/or associated local plaque factors. The patient gave history of using contraceptive pills 4 years back.

The most remarkable endocrine related oral alterations occurring during pregnancy are due to increased plasma hormone levels [6]. Pregnancy is accompanied by remarkable endocrine alterations. During this period, both progesterone and estrogen are elevated due to continuous production of these hormones by the corpus luteum. By the end of the third trimester, progesterone and estrogen reach peak plasma levels of 100 and 6ng/ml respectively, 10 and 30 times the levels observed during the menstrual cycle [7]. The Clinical and microbial changes in the periodontal tissues during pregnancy are increase in gingival probing depths, gingival inflammation, gingival crevicular fluid flow, bleeding upon probing and tooth mobility. There is also increased incidence of pyogenic granulomas and numbers of periodontopathogens especially *P. gingivalis and P. intermedia* [8]. Themorphogenetic factors are higher in pyogenic granuloma rather than normal gingiva supporting the mechanism of angiogenesis in oral pyogenic granulomas in pregnant females [9]. Thus, hormonal changes and reaction of plaque bacteria are responsible for pregnancy gingivitis in some pregnant female patients [10].

Oral contraceptives act to establish hormonal levels of pregnancy and they have similar clinical incidence on tissues [8]. Kaufman and Gan showed that a patient who received a weakly progestonic and strongly estrogenic contraceptive (1 mg ethynodioldiacelate + 0.1 mg mestranol) presented with hyperplastic gingivitis and a pregnancy-tumor [11]. Impact of contraceptives on clinical and microbial features of periodontal tissues are inflammation from mild edema and erythema, to severe inflammation with hemorrhagic or hyperplastic gingival tissues. There is upto 50% increase in gingival fluid volume and a 16-fold-increase in *Bacteroides* species [8].

In the present case, the patient gave a history of using contraceptive pills 4 years ago, the nature of which is unknown. These were then discontinued and patient had conceived. The lesion had initiated during pregnancy and did not regress even after parturition. Instead it was slowly growing in size without causing any major distress to the patient except for a slight discomfort due to its huge size. Considering the above clinical presentation, arriving at a diagnosis initially was perplexing to the authors. Only after histopathologic investigation it was confirmed to be a pyogenic granuloma.

4. CONCLUSION

The long standing nature of pyogenic granuloma can make the lesion appear firm and fibrous, making the clinical diagnosis perplexing. Thus, thorough history should be taken from the patient. The importance of regular dental check ups during pregnancy should be empahasized.

CONSENT

All authors declare that 'written informed consent was obtained from the patient for publication of this case report and accompanying images.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Shivaswamy S, Siddiqui N, Jain SA, Koshy A, Tambwekar S, Shankar A. A rare case of generalized pyogenic granuloma: a case report. Quintessence Int. 2011;42:493-9.
2. Coles O. On the condition of the mouth and teeth during pregnancy. American Journal of Dental Science. 1874;8361-369.
3. Chandrashekar B. Minimally invasive approach to eliminate pyogenic granuloma: A case report, Case Reports in Dentistry. 2012;2012:3. Article ID 909780.

4. Bhaskar SN, Jacoway JR. Pyogenic granuloma—clinical features, incidence, histology, and result of treatment: report of 242 cases, Journal of Oral Surgery. 1966;24:391-398.
5. Hamid Jafarzadeh, Majid Sanatkhani and Nooshin Mohtasham. Oral pyogenic granuloma: a review. Journal of Oral Science. 2006;48:167-175.
6. Markou E, Eleana B, Lazaros T, Antonios K. The influence of sex steroid hormones on gingiva of women. Open Dent J. 2009;3:114-9.
7. Amitabh Srivastava, Krishna Kumar Gupta, Sunita Srivastava and Jaishree Garg. Effects of sex hormones on the gingiva in pregnancy: A review and report of two cases. J Periodontol Implant Dent. 2011;3:83-87.
8. Guncu GN, Tozum TF, Caglayan F. Effects of endogenous sex hormones on the periodontium –Review of literature. Australian Dental Journal. 2005;50:138-145.
9. Yuan K, Jin YT, Lin MT. Expression of Tie‐2, angiopoietin‐1, angiopoietin‐2, ephrinB2 and EphB4 in pyogenic granuloma of human gingiva implicates their roles in inflammatory angiogenesis. J Periodontal Res. 2000;35:165‐71.
10. Sooriyamoorthy M, Gower DB. Hormonal influences on gingival tissue: Relationship to periodontal disease. J Clin Periodontol. 1989;16:201‐8
11. Kaufman A, Gan R. An oral contraceptive as an etiologic factor in producing hyperplastic gingivitis and a neoplasm of the pregnancy tumor type. Oral Surgery Oral Med Oral Pathol 1969;28:666-70.

Peer-review history:
The peer review history for this paper can be accessed here:
http://sciencedomain.org/review-history/10415