Research Paper

Volume : 4 | Issue : 9 | Sept 2015 • ISSN No 2277 - 8179

Oral Pyogenic Granuloma - Red Nodular Overgrowth : A Case Report

Medical Science

KEYWORDS : Pyogenic granuloma, gingiva, oral cavity, excision

Aditya Mengji	Post Graduate Student, Navodaya Dental College & Hospital, Raichur, Karnataka.
Gautam Thumar	Post Graduate Student, Navodaya Dental College & Hospital, Raichur, Karnataka.
Amit Kumar	Post Graduate Student, Navodaya Dental College & Hospital, Raichur, Karnataka.
Jyothi Lakshminarayan	Reader, Navodaya Dental College & Hospital, Raichur, Karnataka

ABSTRACT

Pyogenic granuloma is a common, usually solitary, benign sessile or pedunculated vascular proliferation of the skin and mucous membranes, presenting as hemorrhagic growth. It usually arises in response to various stimuli such as low-grade local irritation, traumatic injury, hormonal factors, or certain kinds of drugs hyperplasia of connective tissue in response to local irritants. Gingiva is the most common site affected followed by buccal mucosa, tongue and lips. This case report describes a case of pyogenic granuloma present since 3 months in a 15-year-old female patient where the lesion was managed by surgical intervention.

INTRODUCTION

Pyogenic Granuloma(PG) is the second most common lesion found in the oral cavity. It is a lesion frequently arising on the gingival tissue. Pyogenic granuloma also known as a "Granuloma gravidarum," and "Pregnancy tumor" represents an exuberant connective tissue proliferation to a known stimulus or injury. [1] It is a benign hyper reactive inflammatory lesion that shows a fast growing focal reactive growth of fibrovascular or granulation tissue with extensive endothelial proliferation. [2] Clinically it appears as a tumor like growth, but it is considered as a non - neoplastic growth. [3,4]

PG was first reported in the English literature by Hullihen in 1844 [4] and was introduced by Hartzell in 1904. [5] The term PG is a misnomer since the condition is not associated with pus and does not represent a granuloma histologically. [6] Oral pyogenic granulomas show a predilection for the gingiva, accounting for 75% of the cases. [7] Local irritants such as calculus, foreign material in the gingiva [1] and poor oral hygiene [8] are the precipitating factors. Pyogenic granuloma may occur in all age groups, though it is predominantly seen in young females in the second decade of life because of the hormonal changes in this period. [9] Clinically these lesions usually present as a localized elevated lump with a sessile or pedunculated appearance. The surface may be smooth or lobulated, and when exposed to traumatic irritation it becomes ulcerated. The color may range from pink to red or purple. [10] Diagnosis of the lesion is mainly by histopathological examination and treatment of Pyogenic granuloma consists of surgical excision along with elimination of irritating local factors where the recurrence rates may vary from 0% to 16%. [11]

CASE REPORT

A 15 year old female patient reported to the Department of Periodontology with a chief complaint of swelling in gums in relation to upper right front teeth palatal region since 3 months which bleeds frequently and interfered while eating. She found it aesthetically unacceptable. The lesion was of negligible size when the patient first noticed it 3 months ago but had gradually increased in size followed by tooth movement, and the condition caused her discomfort while eating.

The patient had no relevant dental and medical history. Extraoral examination did not reveal any facial asymmetry. Intraoral examination revealed a roughly oval exophytic sessile lesion present in the interdental area between 11 & 12 on palatal surface, measuring about 1x0.5cms. The lesion was bluish red in colour, soft and edematous in consistency [Figure 1,2]. Spontaneous bleeding was present. The lesion involved the interdental papilla and attached gingiva. Maxillary central incisors showed grade I mobility. The oral hygiene status was fair. Blood investigations showed normal levels and radiographic examination revealed no bone loss in the lesion area [Figure 3]. Differential diagnosis of pyogenic granuloma, peripheral giant cell granuloma and peripheral ossifying fibroma was made. The irritational factors (Plaque and Calculus) were eliminated by scaling and root planning. Patient was educated about the oral hygiene, treatment plan was explained to the patient and informed consent was obtained. Surgical excision of the lesion up to and including the mucoperiosteum was carried out under local anesthesia using a scalpel and blade [Figure 4]. Profused bleeding was experienced during excision because of excessive proliferation of capillaries. It was controlled by pressure pack. Periodontal dressing was placed and the patient was recalled after 1 week for removal of the pack and checkup [Figure 5]. The excised tissue was sent to the Department of Oral Pathology for histological examination [Figure 6]. The case was followed for 6 months and no signs of recurrences or any discomfort was seen [Figure 7].

The histopathologic examination revealed parakeratinized stratified squamous epithelium with underlying connective tissue stroma. Epithelium is hyperplastic and showed broad rete ridges. Connective tissue showed fibrocellular myxoid stroma with numerous endothelial cells proliferation. Few areas showed dilated blood vessels with extravassated RBC's. Also sparse infiltrate of inflammatory cell predominantly lymphocytes are seen [Figure 8].These findings were suggestive of pyogenic granuloma.

DISCUSSION

Oral pyogenic granuloma (synonyms—eruptive haemangioma, granulation tissue-type haemangioma, granuloma gravidarum, lobular capillary haemangioma and pregnancy tumour) is a non-neoplastic inflammatory hyperplasia originally thought to be caused by pyogenic organisms, but it is now believed to be unrelated to infection. Now it is theorized that pyogenic granuloma possibly originates as a response of tissues to minor trauma and/or chronic irritation, hormonal factors or even due to certain kinds of drugs. [9] Occurrence of pyogenic granuloma in man was first described in 1897 by Poncet and Dor. [12] At that time, it was called botryomycosis hominis. There are two types of pyogenic granuloma: lobular capillary haemangioma (LCH) (66%)—sessile form and non-LCH (77%)—pedunculated form. The most common intraoral site is the interdental gingiva (75%) of maxillary anterior region, but it also affects the lips, mucosa and tongue. [13] According to Vilmann et al., [3] majority of the PGs are found on the marginal gingival, with only 15% of the tumors on the alveolar part. Lesions are slightly more common on the max-

illary than the mandibular region, anterior areas are more frequently affected than posterior areas. Individuals with poor oral hygiene and chronic oral irritants (e.g., overhanging restorations, calculus) are most frequently affected.

Clinically, Pyogenic Granuloma is a smooth or lobulated exophytic lesion manifesting as small, red erythmatous papules on a pedunculated or sometimes sessile base, which is usually hemorrhagic and Compressible. The size varies in diameter from few millimeters to several centimeters, rarely exceeding 2.5 cm. [14] Colour of the lesion changes from pink to red and from red to purple depending on the age of the lesion. Young PG's are highly vascular in appearance because of increased number of capillaries. [8] Radiographic findings are usually absent. However, Angelopoulos concluded that in some cases long standing gingival pyogenic granulomas caused localized alveolar bone resorption. [2] Histopathologically pyogenic granuloma is partly or completely covered by parakeratotic or non-keratinized stratified squamous epithelium. Major bulk of the lesion is formed by a lobulated or a non lobulated mass of angiomatous tissue. Usually, lobulated lesions are composed of solid endothelial proliferation or proliferation of capillary sized blood vessels. The amount of collagen in the connective tissue of pyogenic granuloma is usually sparse. Surface can be ulcerated and in such ulcerated lesions, edema was a prominent feature and the lesion is infiltrated by plasma cells, lymphocytes and neutrophils. [14] Biopsy findings have an important role and are definitive in establishing the diagnosis. [1] Differential diagnosis included peripheral giant cell granuloma, peripheral ossifying fibroma, metastatic cancer, [1] hemangioma, [15] pregnancy tumor, [16] conventional granulation tissue hyperplasia, Kaposi's sarcoma, bacillary angiomatosis [17] and non-Hodgkins lymphoma. [18]

Management of pyogenic granuloma depends on the severity of symptoms. If the lesion is small, painless and free of bleeding, clinical observation and follow up are advised. Before treating any case, the etiology must be clearly identified and eradicated. Various treatment protocols have also been suggested such as: surgical excision using gingivectomy or flapsurgery procedures, Nd: YAG and CO2 Laser can also be used for surgical excision with minimal bleeding, [19] cryosurgery, [20] sodium tetradecyl sulfate sclerotherapy, [21] intralesional corticosteroid injections. [22]

After excision, recurrence occurs in up to 16% of the lesions. Recurrence is believed to result from incomplete excision, failure to remove etiologic factors or re-injury of the area. Lesions involving the gingiva shows much high recurrence rate than lesions from other oral mucosal sites. [23]

CONCLUSION

A pyogenic granuloma is an exuberant growth of granulation tissue secondary to irritation. Eventhough pyogenic granuloma is a non- neoplastic growth in the oral cavity, proper diagnosis, prevention and treatment of the lesion are very important to avoid recurrence.

ACKNOWLEDGMENT

The authors would like to thank, Department of Oral Pathology, for their help and guidance.

Figure 1

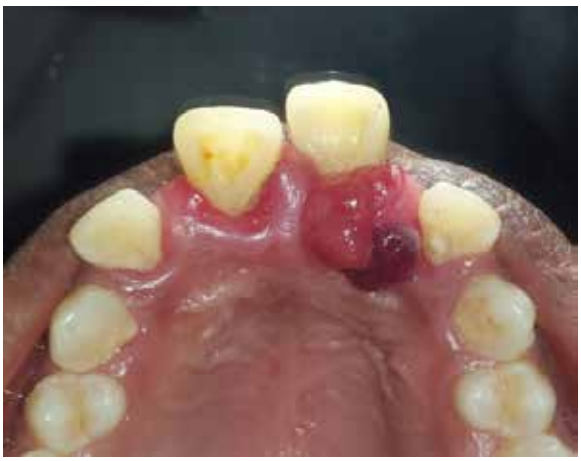

Figure 2

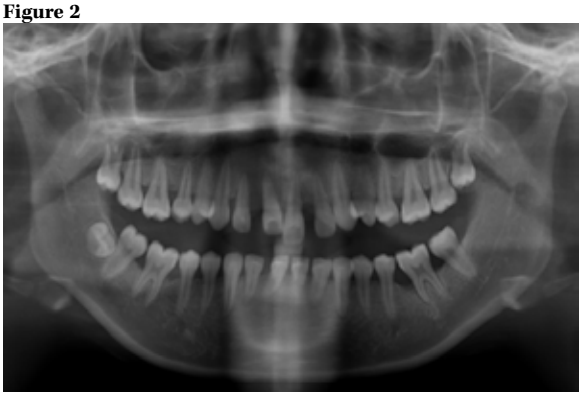

Figure 3

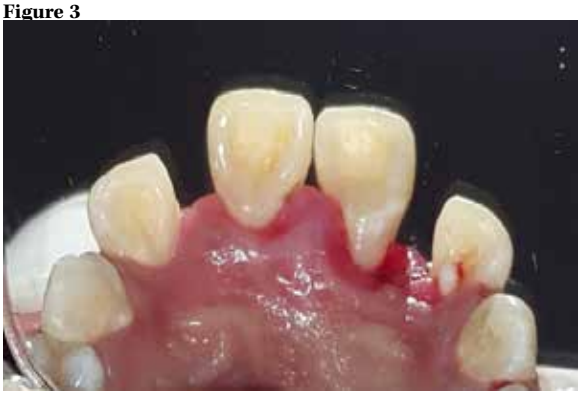

Figure 4

Figure 5

Volume : 4 | Issue : 9 | Sept 2015 • ISSN No 2277 - 8179

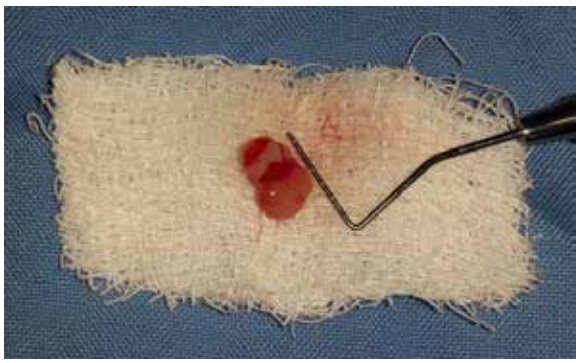

Figure 6

Figure 7

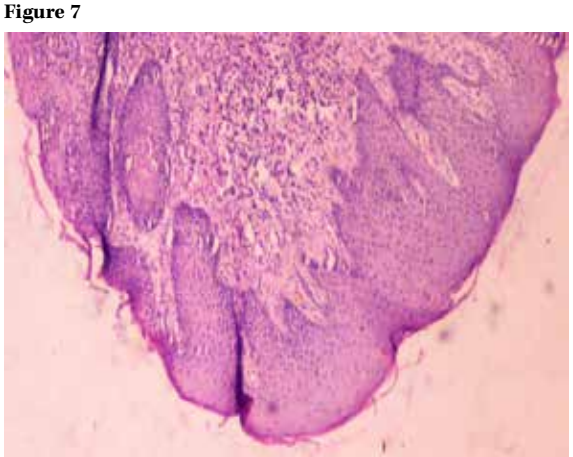

Figure 8

REFERENCE

1. Regezi JA, Sciubba JJ, Jordan RCK. (2003). Oral pathology: clinical pathologic considerations. 4th ed. WB Saunders: Philadelphia:p115-6. | | 2. Angelopoulus AP. (1971). Pyogenic granuloma of oral cavity: Statistical analysis of its clinical features. J Oral Surg; 29:840-45. | | 3. Villman A, Villman P, Villman H. (1986). Pyogenic granuloma: evaluation of oral conditions. Br J oral maxillofac Surg;24:376-82. | | 4. Hullihen SP. (1844). Case of aneurism by anastomosis of the superior maxillae. Am J Dent Sci;4:160-2. | | 5. Hartzell MB. (1904). Granuloma pyogenicum, J Cuttan Dis Syph;22:520-5. | | 6. Patil K, Mahima VG, Lahari K. Extragingival pyogenic granumoma. (2006). Indian Journal of Dental Research;17:199-02. | | 7. Sternberg SS, Antonioli DA, Carter D, Mills SE, Oberman H. (1999). Diagnostic Surgical Pathology. 3rd ed. Philadelphia: Lippincot Williams and Wilkins;. p. 169-74. | | 8. Neville BW, Damm DD, Allen CM, Bouquot JE. (2002). Oral and Maxillofacial Surgery. 2nd ed. Philadelphia: Saunders;. p. 447-9. | | 9. Jafarzadeh H, Sanatkhani M, Mohtasham N. (2006). Oral pyogenic granuloma: A review. J Oral Sci;48:167-75. | | 10. Al-Khateeb T, Ababneh K. (2003). Oral pyogenic granuloma in Jordanians: a retrospective analysis of 108 cases. J Oral Maxillofac Surg;61:1285–88. | | 11. Zain R, Khoo S, Yeo J. (1995). Oral pyogenicgranuloma clinical analysis of 304 cases. Singapore Dent J;20:8-10. | | 12. Ferry AP, Zimmerman LE. (1965). Granuloma pyogenicum of limbus. Arch Ophthalmol;74:229-30. | | 13. Regu P, Aatman S, Murali GV, et al. (2013). Pyogenic granuloma of the tongue—a rare clinical finding. Int J Dent Case Rep;3:57–61. | | 14. Bhaskar SN, Jecoway JR. (1966). Pyogenic granuloma clinical features, incidence, histology and result of treatment. Report of 242 cases. J Oral surgery; 24:391-8. | | 15. Eversole LR. (2002). Clinical Outline of Oral Pathology: Diagnosis and Treatment. 3rd ed. Hamilton: BC Decker;. p. 113-4. | | 16. Tumini V, Di Placido G, D Archivio D, Del Giglio Matarazzo A. (1998). Hyperplastic gingival lesions in pregnancy. I. Epidemiology, pathology and clinical aspects. Minerva Stomatol;47:159-67. | | 17. Calonje E, Wilson-Jones E. (1997). Vascular tumors: Tumors and tumor like conditions of blood vessels and lymphatics. In: Elder D, Elenitsas R, Jaworsky C, Johnson B Jr, editors. Lever's Histopatology of the Skin. 8th ed. Philadephia: Lippicott-Raven;. p. 895. | | 18. Raut A, Huryn J, Pollack A, Zlotolow I. (2000). Unusual gingival presentation of post-transplantation lymphoproliferative disorder: A case report and review of the literature. Oral Surg Oral Med Oral Pathol Oral Radiol Endod;90:436-41. | | 19. Powell JL, Bailey CL, Coopland AT, Otis CN, Frank JL, Meyer I, et al. (1994). Nd: YAG laser excision of a giant gingival pyogenic granuloma of pregnancy. Lasers Surg Med;14:178-83. | | 20. Ishida CE, Ramos-e-Silva M. (1998). Cryosurgery in oral lesions. Int J Dermatol;37:283-5. | | 21. Moon SE, Hwang EJ, Cho KH. (2005). Treament of pyogenic granuloma by sodium tetradecyl sulfate sclerotherapy. Arch Dermatol;141:644-6. | | 22. Parisi E, Glick PH, Glick M. (2006). Recurrent intraoral pyogenic granuloma with satellitosis treated with corticosteroids. Oral Dis;12:70-2. | | 23. Hamid Jafarzadeh. (2006). Oral pyogenic granuloma: A review. J Oral science;48:167-75. |