

Pyogenic Granuloma of Palate– Report of 2 Cases

Abstract:

A pyogenic granuloma is a common benign vascular tumor that typically appears as a rapidly growing, red or purplish nodule on the skin or mucous membranes. Despite its name, it is neither pyogenic (pus-producing) nor a true granuloma. Instead, it is characterized by an overgrowth of small blood vessels and fibrous tissue. Pyogenic granulomas often occur in response to minor trauma, hormonal changes, or certain medications. While usually harmless, they can bleed easily and may cause discomfort or cosmetic concerns. Treatment options include surgical removal, laser therapy, or cauterization, depending on the size and location of the lesion. In this study, surgical excision was performed revealing the uneventful healing and no recurrence thereafter. The elimination of irritating factor is important for the success of treatment

Key-words: Granuloma, Pregnancy tumor, Hyperplasia

Introduction:

Pyogenic granuloma is a benign connective tissue lesion found predominantly in the oral cavity. It represents reactive process, in which connective tissue proliferates in response to various stimuli(1,2). The Etiological factors considered as stimuli that trigger this reactive process are trauma, dental calculus, dental biofilm, chronic irritation, pre-existing vascular lesions, injury of a primary tooth, ectopic eruption of permanent teeth, defective restorations in the area of the lesion, occlusal interference, food impaction, periodontitis, and trauma from tooth brushing(3).

Pyogenic granuloma is commonly found in the oral cavity, wherein the most common site being the gingiva. Here, we are presenting 2 case reports of pyogenic granuloma in female patients with similar clinical features. In both the patients, surgical excision was done with excellent recovery without any signs of recurrence till date.

Material and Methods:

For this study, 2 patients who visited the Department of Oral and Maxillofacial Surgery in Punjab Government Dental

College and Hospital, Amritsar with chief complaint of swelling on hard palate were selected. Complete history was recorded and clinical examination was performed. Thorough examination was performed to rule out the presence of irritating stimulus. The pyogenic granulomas were excised using conventional surgical procedure along with removal of the causative irritating factor. The samples were sent for histopathological examination. The patients were recalled at regular intervals and followed up for 6 months.

Case Report 1

A 28 years old, female patient reported to the department of Oral and Maxillofacial surgery with the chief complaint of bleeding from the growing mass on the inner side of upper left posterior teeth since 1 year.

¹PARAMJIT, ²MANPREET

¹⁻²Department of Oral and Maxillofacial surgery, GDC Amritsar

Address for Correspondence: Dr Paramjit (Assistant Professor, Department of Oral and Maxillofacial surgery, GDC Amritsar)
Email : drpammi2013@gmail.com

Received : 1 July, 2024, **Published :** 30 Sept., 2024

How to cite this article: Manpreet Kaur. (2024). Pyogenic Granuloma of Palate. UNIVERSITY JOURNAL OF DENTAL SCIENCES, 10(3).

Access this article online	
Website: www.ujds.in	Quick Response Code 
DOI: https://doi.org/10.21276/ujds.2024.10.3.7	

The clinical examination revealed the presence of single reddish pink, lobulated mass with pedunculated base, exhibiting numerous deep red pinpoint markings, 2.5x1.5cm in size on the palate in relation to the left maxillary first, second and third molars (fig. 1A). The lesion was painless except for the slight discomfort due to growth. Associated teeth were not carious nor showing any signs of mobility. There was no history of fever or significant weight loss. Patient's medical history was non contributory

From history and clinical examination, provisional diagnosis of pyogenic granuloma was made. There was no suspicion of any malignancy.

Routine blood investigations were carried out and her vitals were within normal range.

Informed written consent was taken and excisional biopsy was done under local anesthesia. After excision of the lesion to the periosteum, there was complete exposure of the roots of tooth #27, #28, which might be attributed to the pressure resorption. Therefore, the teeth were extracted considering their poor prognosis (fig 1B). Bleeding from the extraction site was controlled using pressure pack. Antibiotics and analgesics were prescribed for 5 days. The excised mass was sent for histopathological examination.

Histopathological examination revealed presence of acute and chronic inflammatory infiltrate and numerous tiny capillary vessels with ulcerated superficial epithelium. More deeper, the stroma exhibits an intense lymphoplasmacytic inflammatory infiltrate. Focal intact squamous epithelium shows mild hyperplasia. No atypia was seen.

The patient was recalled after 3 days, 1 week, 1 month, 3 month and at 6 months. NO sign of recurrence was visible at follow up, suggesting uneventful healing (fig 1C)

Case Report-2

A 25 years old female was referred to the department of oral and maxillofacial surgery, with the chief complaint of presence of growth and associated bleeding from the mass on the inner side of upper left teeth since 9 months. She noticed the presence of this lesion during the 5th month of her pregnancy and reporting with the same size at 5th month postpartum



Fig 1A-pyogenic granuloma on palate



Fig 1B- excised specimen and extracted teeth



Fig 1C- 3 month follow up

On examination, there was a single ,reddish pink mass which is non tender, having smooth and shiny surface with sessile base, measuring approximately 1.5cm , in relation to the left maxillary second premolar, first and second molars over the hard palate(fig2A,2B).There was presence of increased tendency for bleeding on slight provocation. The associated teeth were not showing any signs of mobility. There was no cervical lymphadenopathy.

Her history and clinical features suggestive of presence of pregnancy tumor(pyogenic granuloma).Routine preoperative investigations done and were in normal range.After taking the informed written consent , surgical excision was performed under local anaesthesia(fig2C).After excision, periodontal dressing was applied to enhance the healing(fig2D).The patient was prescribed antibiotics and analgesics for 5 days and advised to mouthrinse using chlorhexidine gluconate 0.12 %



Fig 2B-view from occlusal side



Fig 2D- periodontal pack placement

The sample obtained was sent for histopathological examination.

3 months follow up of the patient showed no recurrence of the lesion.

Histopathological Examination :

The H &E staining of the specimen (fig3A) revealed presence of acute and chronic inflammatory infiltrate and numerous tiny capillary vessels. More deeper, the stroma exhibited an intense lymphoplasmacytic inflammatory infiltrate. No atypia was seen.



Fig 2A- pyogenic granuloma on palate



Fig 2C- excised specimen

The surface epithelium was mostly ulcerated and was replaced by exuberant granulation tissue.(fig3B)

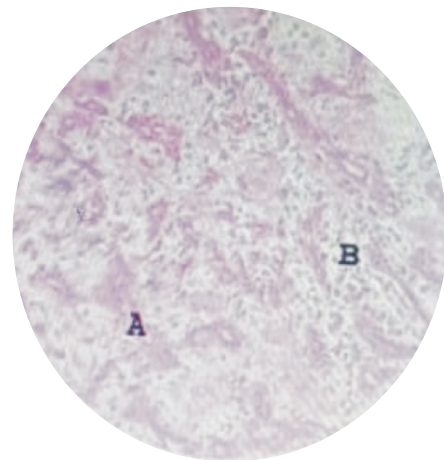


Fig 3A-Histopathology reveals

A-Engorged capillaries B- Inflammatory infiltrate

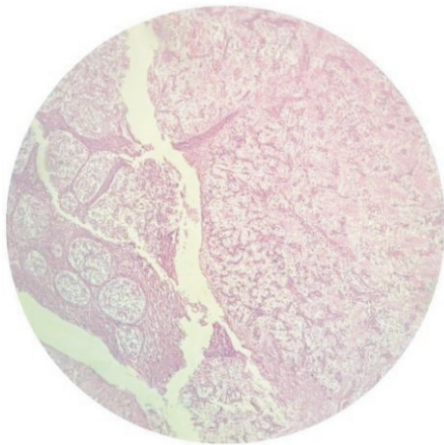


Fig 3B-Histopathology reveals ulcerated epithelium

Discussion:

Pyogenic granuloma is a lesion that represents inflammation and repair attempts due to ongoing etiologic stimulation (3,4). It, therefore amounts to hyperplastic granulation tissue. In case 1, we could not find any irritating stimulus while, In the case 2, hormonal changes were the vital predisposing factor. Progesterone and estrogen aggravated the gingivitis, enhances the production of VEGF (vascular endothelial growth factor) in the macrophages. Progesterone may act as an immunosuppressant in the periodontal tissues of pregnant women, thereby preventing the appearance of an acute inflammatory response to an irritating stimulus(3). However, it allows an increase in chronic tissue reactions, which results in an exaggerated appearance of inflammation clinically. Moreover, the presence of periodontal pathogens, such as *Porphyromonas gingivalis*, *Prevotella intermedia* and *Prevotella melanogenica* during pregnancy, can activate gingival fibroblasts and keratinocytes, in order to form a tumor against the plaque, demonstrating that the lesions are biofilm associated(5). As pyogenic granuloma is a lesion of clinical recognition. It needs to be differentiated from other soft tissue growths like peripheral giant cell granuloma, peripheral ossifying fibroma, fibroma, hemangioma, conventional granulation tissue, hyperplastic gingival inflammation, Kaposi sarcoma, bacillary angiomatosis and non-hodgkin's lymphoma(6).

Radiographic findings with respect to bone changes do not exist in PG, except in rare cases due to pressure resorption.(7)

The mainstay treatment remains the surgical excision with 2mm margins at its clinical periphery and up to depth of the periosteum. Additionally, it is important to remove all irritating factors, that are present in the area of the lesion.(8)

New innovative measures like Laser therapy, Er:YAG, Nd:YAG laser can be used. Various other therapeutic methods, such as the Flash lamp pulsed dye laser, cryosurgery, sodium tetradecyl sulfate sclerotherapy can also be used(9).

Recurrence after surgical excision of pyogenic granuloma is rare, provided that the irritating stimulus has been removed.

Conclusion:

With the presentation of above mentioned case reports, it can be concluded that irritating stimulus is the primary causative agent, that can be modified by hormonal changes causing granulomatous proliferation. Surgical excision is a treatment of choice in minimizing its recurrence despite the advent of various other techniques.

Bibliography:

1. Neville BW, Damm DD, Allen CM, Bouquot JE: oral and maxillofacial pathology Second edition. W.B. Saunders co; 2004:444-449
2. Karthikeya Patil, Mahima VG, Lahari K: Extragingival pyogenic granuloma. Indian journal of dental research 2006, 17(4):199-202
3. Kamal, R.; Dahiya, P.; Puri, A. Oral pyogenic granuloma: Various concepts of etiopathogenesis. J. Oral Maxillofac. Pathol. 2012, 16, 79– 82. [CrossRef] [PubMed]
4. Gomes, S.R.; Shakir, Q.J.; Thaker, P.V.; Tavadia, J.K. Pyogenic granuloma of the gingiva: A misnomer?—A case report and review of literature. J. Indian Soc. Periodontol. 2013, 17, 514–519. [CrossRef] [PubMed]
5. Kornman KS, Loesche WJ. Effects of estradiol and progesterone on *Bacteroides melaninogenicus* and *Bacteroides gingivalis*. Infect Immun. 1982;35:256–263
6. Rajendran R. Benign and malignant tumors of the oral cavity. In: Shafer, Hine, Levy. Shafer's Textbook of Oral Pathology. 7th ed.. Amsterdam: Elsevier Health Sciences; 2012. p. 559-754
7. MARTINS-FILHO, P. R. S.; PIVA, M. R.; DA SILVA, L. C. F.; REINHEIMER, D. M. & SANTOS, T. S. Aggressive pregnancy tumor (pyogenic granuloma) with extensive alveolar bone loss mimicking a malignant tumor: case report and review of literature. Int. J. Morphol., 29(1):164-167, 2011.
8. Neville BW, Damm DD, Allen CM, Bouquot JE. Oral & maxillofacial pathology. 2nd ed, Philadelphia: WB Saunders; 2002. p. 437-95
9. Parajuli R, Maharjan S. Unusual presentation of oral pyogenic granulomas: a review of two case Clin Case Rep 2018;6(4):690–693