

How to Cite:

Neetu , Garg A, Vaid N, Motwani N (2022). Pyogenic granuloma: A casereport. *International Journal of Health Sciences*, 6(S6), 10104–10108.
<https://doi.org/10.53730/ijhs.v6nS6.12680>

Pyogenic granuloma: A case report

Dr. Neetu

Senior Resident, Department of Periodontics, JCD, Dental College, Sirsa, Haryana
*Corresponding author email: neetubamble@gmail.com

Dr. Arun Garg

Head of department, Department of Periodontics, JCD, Dental college, Sirsa, Haryana
Email: doc7602@gmail.com

Dr. Neha Vaid

Reader, Department of Oral Pathology, JCD, Dental college, Sirsa, Haryana
Email: dr.nehavaid@gmail.com

Dr. Niraj Motwani

Reader, Department of Periodontics, College of Dental Science Amargadh, Dist Bhavnagar
Email: nirajmotwani@yahoo.com

Abstract---Pyogenic granuloma (PG) is a Non neoplastic, inflammatory hyperplasia of skin and oral mucosa which is often caused by constant low-grade local irritation, traumatic injury or hormonal factors. It is most commonly seen on the gingival/Alveolar Crest. It is a benign reactive hyperplasia of the connective tissues. Another name suggested by various authors for Pyogenic Granuloma (PG) are Granuloma Gravidarum/ Pregnancy tumors, Rocker and Hartzell's disease, Vascular epulis, Benign Vascular Tumors, Epulis Telangectium Granulomatousa and Lobular Capillary Hemangioma (LCH). These lesion are solitary and vascular. The exact pathology is unclear but trauma, infection and hormonal imbalance, food impaction are attributed as reasons for occurrence. The maintreatment modalities of Pyogenic granuloma is surgical excision followed by curettage of the underlying lesion and elimination of all the irritating factor. In this article will discuss a short case suggestive of Pyogenic granuloma.

Keywords---Pyogenic granuloma, Gingival Enlargement, Pregnancy tumor.

Introduction

Soft tissue enlargements of the oral cavity often present a diagnostic challenge because a diverse group of pathologic processes can produce such lesions and pyogenic granuloma is one of the most common type of these enlargement.^[12] Pyogenic granuloma was first reported by Hüllihen's in 1844.^[8] Occurrence of pyogenic granuloma in man was first described in 1897 by Poncet and Dor as *Botryomycosis hominis*.^[4] Various author coined a variety of names for Pyogenic Granuloma such as granuloma pediculatum benignum, benign vascular tumor, pregnancy tumor, vascular epulis, Crocker and Hartzell's disease,^[6] hemangiomatous granuloma,^[3] granuloma telangiectacticum.^[5] Treatment is usually by surgical excision and elimination of possible irritant factors. In this article we report a case of Pyogenic Granuloma in female patient.

Case

A 21-year-old female was referred to the Department of Periodontics and Oral Implantology of JCD Dental College for evaluation and treatment of soft tissue enlargement regarding maxillary right sextant. History dated 5 months back as given by the patient with tooth brush trauma. Initially the lesion when noticed was negligible in size but had grown rapidly within a span of 1 month to attain the present size. She denied any prescription, over-the-counter, or illicit drug use. Intraoral examination revealed a large lobulated smooth gingival enlargement extending on the buccal surface of second premolar, first, second and third molar beyond the occlusal plane of molars. This gingival enlargement was bluish red in color approximately (21×16mm) in size and round in shape (Figure 1,2). It was noncompressible, nonfluctuant, erythematous, and semi firm in consistency with sessile base non tender with minimal bleeding. On routine, hematologic tests were observed to be within the normal range. After this patient underwent phase I periodontal therapy followed by Surgical excision of the pathology. A conventional Scalpel method was preferred for the excision of the lesion. A full thickness flap was reflected including the growth. Then fibrous and pathologic granulation tissue was excised involving normal tissue at its periphery with a depth to the periosteum and curettage of the underlying tissue. The site was irrigated with normal saline. Flap was repositioned and then sutured. The patient was advised postoperative antibiotic, analgesic and chlorhexidine mouth rinse of 0.2% and maintenance of oral hygiene measures. The excised tissue was preserved in 10% formalin for histopathological examination. The patient was recalled after one week for suture cutting.

Histopathological

Histopathologic examination revealed the presence of granulation tissue with proliferation of endothelial cells, dilated and engorged blood vessels, extravasated red blood cells, angiogenesis, few inflammatory cells and bundle of collagen fibers. (Figure 3) Based on clinical, histopathological features diagnosis of Pyogenic granuloma was given.

Clinical Outcome

On the day of suture removal, slight edema was noticed at the operated site. (Figure-4) At 3-month follow-up, soft tissue healing appeared complete, leaving no traces of the lesion. The patient was followed up for 1 year, and no recurrence was reported.

Discussion

Pyogenic Granuloma is thought to arise from the periodontal ligament or the periosteum. Pyogenic granuloma is not considered as an appropriate term, as it does not occur as a consequence of granulomatous inflammation and does not contain pus material.^[6] Hence the name pyogenic granuloma coined by Hartzell is a misnomer. In this article, Pyogenic granuloma presented itself in its most common location, i.e., maxillary posterior teeth in a female patient in the third decade of her life. Intraorally, Gingiva is the most predominant site followed by Lips, Tongue, Buccal Mucosa, Hard palate, Muccobuccal Fold and Frenum for Pyogenic Granuloma. The prevalence of the Pyogenic Granuloma is equal in both of the jaw. But within the jaw, the premolar–molar region used to be considered as compared to the anterior one, particularly the labiobuccal aspect of the marginal gingiva^[12]. This is because the posterior portion is subjected more to occlusal trauma and difficult to clean during toothbrushing.

The postulated male to female ratio is about 1:1.15.^[1] The high-level estrogen and progesterone during puberty and pregnancy deteriorate the already established gingival inflammation by increasing dilatation and proliferation of blood vessels and releasing vasoactive mediators from the damaged mast cells. It is thought that the expression of angiogenic factors such as basic fibroblast growth factor and vascular endothelial growth factor can be enhanced by trauma and female sex hormones which cause the development of pyogenic granuloma.^[11] Pyogenic granuloma thought to arise from Hormonal Imbalance, Tooth Brush trauma, exfoliation of primary teeth, eruption of permanent teeth, defective fillings in the region of tumor, food impaction, certain medications like Cyclosporine etc.^[13] However, in the present case, trauma from tooth brush has been implicated in etiopathogenesis of oral pyogenic granuloma. As etiology in our case includes calculus and trauma, Kerr and Ainamo studies discovered that recurrent trauma causes release of various endogenous and angiogenic which contributes and increases vascularity of the lesion.^[2,9]

The differential diagnosis of reactive lesions of the gingiva should include: pyogenic granuloma, fibrous hyperplasia (fibrous epulis), peripheral giant cell granuloma, and peripheral odontogenic fibroma. Various treatment modalities like Scalpel, Laser, Cryotherapy and electrocauterization are present in literature for the treatment of Pyogenic Granuloma. In spite of the success of the treatment modalities, it conveys certain advantages and disadvantages of its own. From the bountiful treatments, the Laser and Electrosurgery have reported injury to the neighboring tissues and delayed wound healing, although bloodless surgical field has shown patient comfort, less pain, and healing without scar formation. ^[10] In this case scalpel method was chosen over the other mentioned techniques. Our

case was followed up for a period of 1 year with subsequent intervals and no recurrence was observed.

Conclusion

This work case report highlighted the etiology, clinical and histological characteristics and treatment modalities of pyogenic granuloma of the gingiva. The article point out that pyogenic granuloma histologically resembles Angiomatous lesion rather than granulomatous lesion indicating that this term is a misnomer.

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Case Presentation:

Fig A - Pre - Op Bluish red gingival enlargement of gingiva around upper premolar and molar ,
Fig B - Gross specimen (Size), Fig C - Histological Image Photomicrograph histological pictures showing connective tissue stroma with numerous engorged blood vessels and budding endothelial cells (4X), few inflammatory infiltrate are also seen., Fig D - Post - Op after removal of Suture.