

Pyogenic Granuloma of the Gingiva: A Case Report

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ABSTRACT

Introduction: pyogenic granuloma is a benign vascular tumor of the oral mucosa that follows chronic irritation such as trauma, microorganisms, plaque, calculus...etc. It involves the gingival most frequently.

Case report: We report a case of pyogenic granuloma of the gingiva. The patient received initial therapy and then a cold-blade resection, followed by an anatomopathological examination of the excised tissue to confirm the diagnosis.

Conclusion: this work reviews the clinical and histological characteristics and therapeutic modalities of pyogenic granuloma of the gingiva.

Keywords: Pyogenic Granuloma, Gingiva, Benign Lesion, Therapeutic Modalities.

INTRODUCTION

Pyogenic granuloma (PG) is a benign lesion of vascular origin.¹ PG is also known as: eruptive haemangioma, granulation tissue-type haemangioma, granuloma gravidarum, lobular capillary haemangioma, pregnancy tumour or tumour of pregnancy.¹⁻⁴ The term "pyogenic granuloma" is considered unsuitable because the tumour is not associated with pus and does not histologically resemble a granuloma.^{2,3,4} This pathology can be found at any age but is more common in the second and third decades of life.¹⁻⁴ It is located on the skin and mucous membranes, especially on the lips, gums, cheeks and tongue. Often singular but sometimes multiple, PG develops most frequently from an ulceration, trauma, small wound, chronic irritation or rough patches following dental care.¹⁻⁴ The development of a gingival PG may also be related to hormonal changes (puberty, menstruation or pregnancy).^{1,4} The treatment of choice for these lesions is wide surgical resection to reduce the risk of recurrence preferably with a cold blade to ensure a reliable anatomopathological examination.⁵

This work reports on a clinical observation treated in the Periodontology Department at Consultation Center of Dental Treatments of Rabat, Morocco. For this clinical observation, the diagnosis of pyogenic granuloma was confirmed by the histology, and with an emphasis on the clinical and histological features and therapeutic modalities.

CASE REPORT

A 39-year-old woman with no medical history consulted for anterior superior gingival tumefaction that had developed over several months. The patient had no deterioration in general health, and she described the tumefaction as a simple discomfort. Oral examination revealed sessile gingival tumefaction in relation to medium-sized 23 and 24 (Figure 1). The patient had poor oral hygiene, with large plaque

deposits on the buccal surfaces. A retro-alveolar X-ray, performed with regard to tumefaction, showed the absence of bone lysis (Figure 2). The diagnoses mentioned were fibroma and inflammatory epulis.

The patient first underwent to oral hygiene instructions and motivated to ensure optimal plaque control. Following mechanical debridement and an antiseptic prescription, a marked improvement in gingival health was noted during the reassessment (Figure 3). The surgical phase involved the removal of the tumour, while maintaining a thin band of healthy keratinised gum at the base. Subsequently, an intrasulcular incision, with two releasing incisions, was made to reflect a double-thick flap that was displaced coronally to cover the exposed part of the root after the tumefaction was removed (Figure 4 and 5). Anatomopathological examination of the excised tissue revealed a connective tissue rich in granulation tissue and vessels, and an inflammatory invasion rich in polymorphonuclear neutrophils, which tends to indicate a diagnosis of pyogenic granuloma.

Check-ups at 1 week, 1 month and 3 months showed good



Figure-1: Intra-oral view of initial state; **Figure-2:** Preoperative radiography

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Figure-3: Intra-oral view after initial therapy



Figure-4: Excised tissue; **Figure-5:** Coronal repositioning of the flap to cover the exposed part of the root after the tumefaction exeresis

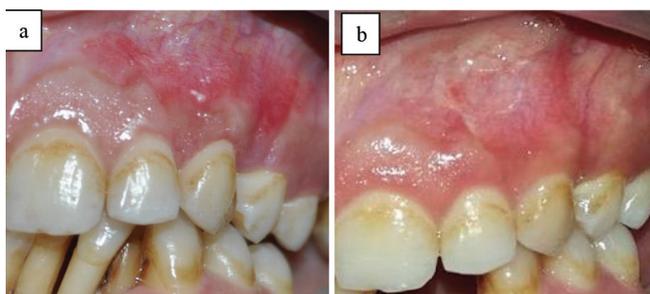


Figure-6: Cicatrization (a) after 1 month (b) after 18 month

healing (Figures 6). The progression was favourable, with no recurrence after 18 months (Figure 6).

DISCUSSION

Pyogenic granuloma is an inflammatory response that follows chronic irritation (poor oral hygiene, calculus / plaque, excessive restorations, etc.), trauma or a hormonal change in pregnant women.^{1,6} Certain medications, such as cyclosporine, may also be involved in the genesis of PG.^{1,2} It is rarely located on the hard palate. The gingival location represents more than 75% of reported cases, with a predilection to the interdental papilla region.^{1,2,4} This pathology is more common in the second and third decades of life.^{1,3,4} It affects more women than men, with an average age of 52 years old.⁴ The prevalence of PG in pregnant women varies between 5% and 8%. It is most commonly seen after the first trimester of pregnancy, and is considered a hormone-dependent lesion. Indeed, the high level of sexual hormones (oestrogen and progesterone) stimulates the expression of angiogenic factors in inflammatory tissues. These factors,

which play an important role in vascular morphogenesis, are found in large quantities in pyogenic granulomas during pregnancy and in small amounts after delivery.^{2,5} This would explain the improvement in tumefaction after delivery, as is the case in the second observation.

Clinically, PG often presents as a painless, pedunculated or sessile asymptomatic mass with a smooth or lobulated surface, soft in consistency, red to purple in colour, that bleeds at the slightest touch. The lesion may ulcerate and be covered with a fibrinopurulent layer. The size varies from a few millimetres to a few centimetres. The growth of the PG is slow but it can have episodes of rapid growth.^{1,6,7}

Histologically, PG appears in two forms: lobular and non-lobular. The lobular form is characterised by the presence of a larger number of proliferating blood vessels with little or no specific changes. The non-lobular form is characterised by the presence of dilated capillary channels and aligns with the endothelial cells.⁴

The connective tissue is fibrous and often oedematous. Inflammatory cells are present and may include polymorphonuclear neutrophils, lymphocytes and plasma cells. There may be an underlying epithelial cuff.^{1,8-10} The histological appearance of PG is variable because of its inflammatory nature. It can become more mature, less vascularised and rich in collagen, gradually converting to a fibrous epulis.^{1,4} Histologically, the tumour is more like a granulomatous lesion and not a pyogenic lesion. However, this term is universally accepted and used, and any attempt to change it may lead to confusion.^{2,3,8-10}

With regard to the differential diagnosis, mention should be made of peripheral giant cell granuloma, peripheral ossifying fibroma, peripheral fibroma and haemangioma.^{1,7-10} It can also resemble a primary or metastatic malignant lesion (squamous cell carcinoma, fibrosarcoma, angiosarcoma, leukaemia or non-Hodgkin's lymphoma).¹ Thus, there is a need for a precise medical examination and in-depth clinical examination including, among other things, the examination of ganglionic areas.

The treatment of choice for these lesions is wide surgical resection with margins of 2 mm from its periphery. Aetiological factors are eliminated in order to reduce the risk of recurrence.^{1,5,7}

Most pyogenic granulomas occurring during pregnancy will decrease after delivery.^{1,7} When the lesion is large and/or associated with bleeding episodes, treatment during pregnancy is recommended in the second trimester, with ongoing checks after delivery.³

Several other treatments may be considered: diode or CO₂ laser resection, nitrogen cryosurgery, intralesional injection of corticosteroids or sclerosing agents.¹⁻³

In this case, the patient received initial therapy and then a cold-blade resection, followed by an anatomopathological examination of the resection to confirm the diagnosis.

Recurrences after a resection of an extra-gingival pyogenic granuloma are rare, unlike those on the gum where the rate can be up to 16%.^{1,2} This recurrence can be explained by incomplete resection or failing to eliminate the aetiological

factors. Angiogenic factors may also play an important role in PG recurrence. Progression was favourable in the reported case. No recurrence was noted during the maintenance sessions.

CONCLUSION

PG is a benign lesion of the skin and mucous membranes. This work reviews the clinical and histological characteristics and therapeutic modalities of pyogenic granuloma of the gingiva. The article also points out that even if the term *pyogenic granuloma* is frequently used, it is unsuitable. The lesion is not associated with pus and histologically, the lesion is angiomatous rather than granulomatous.

REFERENCES

1. Gomes Sr, Shakir Q. J. Thaker P. V., Tavadia J. K. Pyogenic granuloma of the gingiva: amisnomer? a case report and review of literature. *Journal of Indian Society of Periodontology*, 2013; 17:514–19.
2. Aghbali A.A., Hosseini S.V., Harasi B., Janani M., Mahmoudi S.M. Reactive Hyperplasia of the Oral Cavity: A Survey of 197 Cases in Tabriz, Northwest Iran. *J Dent Res Dent Clin Dent Prospect* 2010;4:87-89.
3. Al-Rawi N. Localized Reactive Hyperplastic Lesions of the gingiva: clinicopathological study of 636 lesions from Iraq. *The Internet Journal of Dental Science* 2009;7: 213-18.
4. Marla V, Shrestha A, Goel K, Shrestha S. The Histopathological spectrum of pyogenic granuloma: A Case Series. *Case Rep Dent*. 2016; 2016:ID1323798, 6p.
5. Wauters O, Sabatiello M, Nikkels-Tassoudji N, Choffray A, Richert B, Piérard GE, Nikkels AF. [Pyogenic granuloma]. *Ann Dermatol Venereol*. 2010; 137: 238-42.
6. Dave B., Sodani V., Shah H.G., Bahuguna R. Extra gingival pyogenic granuloma. A case report. *J Adv Dent Res*. 2010;2:1-3.
7. Sachdeva Sk. Extra gingival pyogenic granuloma: an unusual clinical presentation, *J Dent (Shiraz)*. 2015; 16: 282–5.
8. Asnaashari M, Zadsirjan S. Application of Laser in Oral Surgery. *J Lasers Med Sci* 2014;5:97-107.
9. Gonçalves ES, Damante JH, Fischer Rubira CM. Pyogenic granuloma on the upper lip: an unusual. *J Appl Oral Sci* 2010;18:538-41.
10. Mubeen K, Vijayalakshmi Kr, Abhishek Rp. Oral pyogenic granuloma with mandible involvement: an unusual presentation. *J Dent Oral Hyg* 2011;3:6-9

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