

Recurrent oral pyogenic granuloma with alveolar bone loss and tooth mobility: report of an unusual case

Granuloma piógeno oral recurrente con pérdida ósea alveolar y movilidad dentaria: Reporte de un caso inusual

Granuloma piogênico oral recorrente com perda óssea alveolar e mobilidade dental: Relato de um caso incomum

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Abstract

Oral pyogenic granuloma is a benign multifactorial lesion that appears as a highly vascular gingival enlargement. It can be located anywhere in the oral cavity, most often in the vestibular marginal gingiva. It occurs most frequently in adult women and male children. It does not usually compromise bone tissue or teeth; its safest treatment is surgical excision, with a high recurrence risk. This study aims to report the case of a 9-year-old female patient who underwent oral pyogenic granuloma excision in the maxilla. The following year, she presented a possible lesion recurrence with alveolar bone loss and the mobility of an adjacent tooth. A biopsy and thorough curettage were performed, confirming the diagnosis of oral pyogenic granuloma.

Keywords: pyogenic granuloma, giant-cell granuloma, diagnosis.

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Resumen

El granuloma piógeno oral es una lesión benigna multifactorial, caracterizada por presentarse como un agrandamiento gingival muy vascularizado. Se puede localizar en cualquier área de la cavidad oral, con más frecuencia en la encía marginal vestibular. Se presenta con mayor incidencia en mujeres adultas y en niños varones. No suele comprometer tejido óseo ni dientes y su tratamiento más seguro es la exéresis quirúrgica, siendo el riesgo de recurrencia alto. El objetivo del presente estudio es reportar el caso de una paciente de 9 años de edad, que fue sometida a la exéresis de un granuloma piogénico oral en el hueso maxilar y al año siguiente presentó una recurrencia de la lesión con pérdida ósea alveolar y movilidad de un diente adyacente. Se le realizó una biopsia y un curetaje minucioso, confirmando el diagnóstico de granuloma piogénico oral.

Palabras clave: granuloma piogénico, granuloma de células gigantes, diagnóstico.

Resumo

O granuloma piogênico oral é uma lesão multifatorial benigna, caracterizada por apresentarse como um aumento gengival altamente vascularizado. Pode estar localizado em qualquer área da cavidade oral, mais frequentemente na gengiva marginal vestibular. Ocorre com maior incidência em mulheres adultas e em crianças do sexo masculino. Geralmente não compromete o tecido ósseo ou os dentes e seu tratamento mais seguro é a escisão cirúrgica, sendo alto o risco de recorrência. O objetivo do presente estudo é relatar o caso de uma paciente de 9 anos de idade, submetida a escisão de granuloma piogênico oral no maxilar e no ano seguinte apresentou uma recorrência da lesão com perda óssea alveolar e a mobilidade de um de seus dentes adjacentes. Uma biópsia e uma curetagem completa foram realizadas, confirmando o diagnóstico de granuloma piogênico oral.

Palavras-chave: granuloma piogênico, granuloma de células gigantes, diagnóstico.

Introduction

Pyogenic granuloma is a benign neoplastic vascular proliferation that occurs on the skin and in the oral cavity. It is wrongly called *pyogenic* because it is not an infectious process and does not produce purulent drainage. It has also been called a benign pedunculated granuloma, lobular capillary hemangioma, vascular epulis, or gravid granuloma and pregnancy tumor when it occurs in pregnant patients⁽¹⁻³⁾.

Background

Pyogenic granuloma can grow anywhere in the head and neck, torso, and limbs. When it oc-

urs in the oral cavity, it is called *oral pyogenic granuloma* (OPG). The gingival area is the main site of onset, but it can also occur in the oral mucosa, cheeks, palate, lips, and, less frequently, the tongue⁽⁴⁻⁶⁾. Its etiology is still unknown, but it is believed to be associated with chronic trauma, local irritants, tartar irritation due to poor oral hygiene, medications such as cyclosporine, and hormonal changes⁽⁷⁻⁸⁾.

Clinically it is usually a reddish lesion, which can show ulcerations and bleed easily, with a soft and lobular surface, and a pedunculated base⁽⁹⁾. It is usually a small lesion (<2 cm) and does not alter the alveolar bone⁽¹⁰⁾. It has no age or sex predilection but appears more frequently in the second decade of life and in

women⁽¹¹⁻¹³⁾. Histologically, it can be classified as lobular and non-lobular capillary hemangioma. However, the lobular type has an endothelial lining and a layer of smooth muscle that is characteristic of venules and not of capillaries. Therefore, the best name would be *lobular hemangioma*⁽¹⁴⁾.

Its characteristics lead to a diversity of differential diagnoses such as peripheral odontogenic fibroma, hemangioma, inflammatory gingival hyperplasia, peripheral giantcell granuloma, non-Hodgkin's lymphoma, angiosarcoma, peripheral ossifying fibroma, Kaposi sarcoma^(3,5). The treatment of choice is surgical excision; some authors report no recurrence with this method⁽¹⁵⁻¹⁶⁾. However, recurrence is between 5.8% and 16%^(1,17). Conversely, followup studies after one year have shown no lesion recurrence when a modified excision with deep curettage is performed⁽¹⁸⁾.

This study aims to report the case of a 9yearold female patient who underwent oral pyogenic granuloma excision in the maxilla. The following year, she presented a possible lesion recurrence with alveolar bone loss and the mobility of an adjacent tooth. An excisional biopsy was taken, and thorough curettage was performed, confirming the diagnosis of oral pyogenic granuloma.

Clinical case

A 9yearold female patient with no systemic history sought care at the Oral and Maxillofacial Surgery Service of the Teaching Dental Center of Universidad Peruana Cayetano Heredia for an apparent lesion recurrence at the posterior maxilla. The patient reported seeking care a year before and undergoing an excisional biopsy. The pathology report described a pyogenic

granuloma. Clinical check-ups were carried out until she was discharged.

The intraoral clinical examination showed a tumor-like lesion that was painful to palpation and chewing at the marginal and alveolar gingiva level of teeth 1.4 and 1.5 (Fig. 1), approximately 3x3x3 cm in diameter, covering the buccal and palatal areas, and part of the clinical crown. Its consistency was firm, lobular, and pedunculated. It had a rough and bleeding texture when stimulated, with grade II mobility in tooth 1.4 (Fig. 2). The radiographic examination showed the alveolar crest's effacement between teeth 1.5 and 1.4, with mesioangular and widened periodontal space 1.4 (Fig. 3). The presumptive diagnosis was pyogenic granuloma or peripheral giant-cell granuloma based on the evolution and clinical characteristics.

A rotation flap, excisional biopsy, and thorough curettage of healthy tissue were performed by removing 2 to 3 mm of the adjacent periosteum, and then the wound was sutured.

Clinical checkups were performed after seven days (Fig. 4) and then after a week. The surgical wound had no dehiscence or secretions; it underwent a good healing process with stable sutures. The pathology report described a pyogenic granuloma, which confirmed its recurrence.

Figure 1: Front view of mouth in occlusion showing lesion in quadrant I



Figure 2: A: Front view of the lesion covering the buccal faces of teeth 1.4 and 1.5. B: Occlusal view of the lesion covering the palatal faces and part of the clinical crown of teeth 1.4 and 1.5

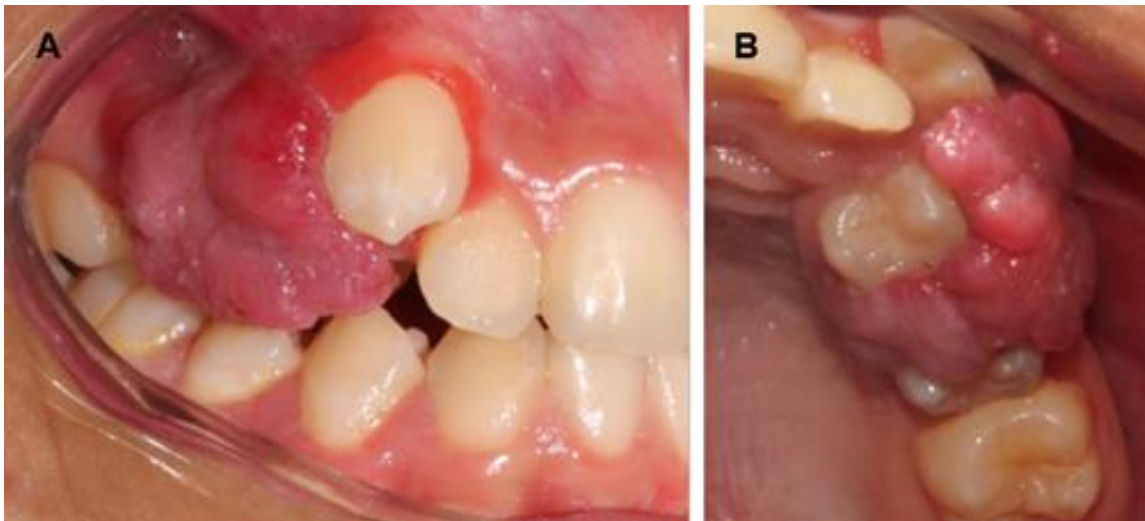


Figure 3: Periapical radiography of the lesion-affected region showing clear horizontal alveolar bone loss between teeth 1.4 and 1.5. In addition, the mesioangular position of tooth 1.4 is clear



Figure 4: The clinical check-up after seven days of evolution shows no dehiscence or secretions and a normal and favorable healing process



Discussion

The diameter of the recurrent OPG (3 cm) was greater than that published in the literature. However, Rebolledo et al. ⁽¹⁹⁾ report that it can measure up to 4.5 cm in diameter.

Depending on the age, the oral pyogenic granuloma is more common in adult women than in men. However, OPG develops in boys more frequently than in girls ⁽²⁰⁾, so this case does not fit the epidemiological age and sex characteristics.

Root resorption caused by oral pyogenic granuloma is a rare condition, which usually occurs in cases with long evolution ⁽²¹⁾. Extensive alveolar bone loss and tooth mobility are observed in 3% of patients ⁽²²⁾. Shenoy et al. ⁽²³⁾ reported the case of an 8-year-old boy with oral pyogenic granuloma associated with bone resorption. Goodman-Topper et al. ⁽²⁴⁾ also reported a case of oral pyogenic granuloma with alveolar bone loss in a 12-year-old boy. In addition, Ababneh et al. ⁽²⁵⁾ reported the case of a 28-year-old pregnant woman with the same lesion and alveolar bone loss. In this case, we observe alveolar bone loss in a recurrent lesion, a rare feature of OPG. Such resorption is likely to have occurred at the time of recurrence.

Differential diagnosis of OPG includes peripheral odontogenic fibroma, hemangioma, inflammatory gingival hyperplasia, peripheral giant cell granuloma, non-Hodgkin lymphoma, angiosarcoma, peripheral ossifying fibroma, Kaposi sarcoma, lymphangioma, syphilis, tuberculous ulcer, and traumatic ulcer ^(3,5,26). In this case, the OPG clinically simulated most of the above pathologies as differential diagnoses.

Added to bone loss and tooth mobility, this makes diagnosis a real challenge. Therefore, pathological analysis was essential to reach an accurate diagnosis and treatment.

Recurrence occurs at intervals of 10 months to 1 year ⁽¹⁸⁾, which coincides with this case. It is also known that recurrence would be associated with multiple factors, most prominently poor oral hygiene rather than systemic compromise. Our patient had good oral hygiene habits, so that factor was not decisive. However, emphasis was placed on improving oral hygiene also to prevent other oral diseases. Removing 2 mm of normal tissue and deep curettage help prevent lesion recurrence ⁽¹⁸⁾. Therefore, we performed thorough curettage by removing 2 to 3 mm of adjacent periosteum.

Conclusions

Oral pyogenic granuloma is a well-known benign lesion. However, when it does not present its most common characteristics, such as average size, evolution, and radiographic features, it becomes a challenge for diagnosis because a malignant lesion must be ruled out.

The safe diagnosis and treatment of oral pyogenic granuloma include excisional biopsy and thorough curettage, eliminating 2 to 3 mm of adjacent periosteum, thus preventing potential recurrence.

Recurrence of oral pyogenic granuloma may result in alveolar bone loss with tooth mobility. Therefore, the clinician should provide the proper treatment early to prevent lesion progression.

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Declaration of interests:

The authors certify that they have no commercial interests that represents a conflict of interests in connection with the manuscript.

Authors' contribution note:

1. Conception and design of the study
2. Acquisition of data
3. Data analysis
4. Discussion of results
5. Drafting of the manuscript
6. Approval of the final version of the manuscript

S.A.L.L has contributed in: 1, 2, 3, 4, 5, 6

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