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Pyogenic Granuloma Mimicking Oral Malignancy in a Midline Diastema: A Case Report

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ABSTRACT

Pyogenic granuloma is a benign reactive vascular lesion commonly affecting the oral cavity, particularly the gingiva. Although the diagnosis is usually straightforward, certain clinical presentations may closely resemble malignant lesions and pose a diagnostic challenge. This report describes a 58-year-old female who presented with a rapidly enlarging, ulcerated, bleeding gingival growth located in the midline diastema region. The lesion exhibited aggressive clinical features, raising suspicion of oral malignancy. The patient had a history of prolonged amlodipine use for hypertension. Histopathological evaluation confirmed the diagnosis of lobular capillary hemangioma type of pyogenic granuloma. The lesion was managed by complete surgical excision with curettage, followed by reinforcement of oral hygiene measures and medical consultation. Healing was satisfactory, and no recurrence was observed during a 6-month follow-up period. This case highlights the importance of careful clinical assessment and histopathological confirmation when managing gingival lesions with malignant-like features.

Keywords: Pyogenic granuloma; Midline diastema; Amlodipine; Oral malignancy mimic; Drug-induced gingival lesion

INTRODUCTION

Pyogenic granuloma is a benign, reactive, non-neoplastic vascular lesion characterized by an exaggerated proliferation of granulation tissue [1]. Despite its terminology, it neither produces pus nor represents a true granuloma [5,7]. The gingiva is the most frequently affected intraoral site, accounting for approximately 75% of cases, with a predilection for females and the anterior maxillary region [8,14].

Histopathologically, pyogenic granuloma is recognized as a form of lobular capillary hemangioma, which explains its rapid growth and tendency for profuse bleeding [9,10]. Although many cases are diagnosed clinically, atypical features such as rapid enlargement, ulceration, unusual location, and occurrence in elderly patients may mimic oral malignancies, particularly oral squamous cell carcinoma [2,3,11].

Systemic factors and certain medications, especially calcium channel blockers such as amlodipine, have been implicated in gingival and vascular alterations that predispose to reactive lesions like pyogenic granuloma [4,12]. The present case report describes an unusual presentation of pyogenic granuloma in the midline diastema region, clinically simulating oral malignancy, and emphasizes the importance of histopathological confirmation and detailed drug history.

CASE REPORT

Patient Information

A 58-year-old female presented with a painless swelling in the upper anterior region involving the midline diastema for a duration of three months. The lesion showed gradual enlargement and was associated with spontaneous bleeding during brushing and mastication [6].

Medical History

The patient had a 10-year history of hypertension and was on long-term amlodipine therapy (5 mg/day). There was no history of diabetes mellitus, tobacco use, or alcohol consumption [12].

Clinical Findings

Intraoral examination revealed a solitary, erythematous, exophytic gingival mass located between the maxillary central incisors. The lesion measured approximately 7 × 9 mm, was sessile and lobulated, with surface ulceration. On palpation, the lesion was soft to firm in consistency and bled profusely. No regional lymphadenopathy was detected (Figure 1) [3,14].

Provisional Diagnosis and Differential Diagnosis

Based on the aggressive clinical appearance, a provisional diagnosis of malignant gingival neoplasm was considered. Differential diagnoses included pyogenic granuloma, peripheral giant cell granuloma, Kaposi's sarcoma, and oral squamous cell carcinoma [7,11].

Investigations

Routine hematological investigations were within normal limits. An excisional biopsy was planned to establish a definitive diagnosis [9].

Histopathological Findings

Microscopic examination revealed stratified squamous epithelium with focal ulceration. The underlying connective tissue showed numerous proliferating capillaries arranged in lobular patterns, lined by plump endothelial cells, with extravasated red blood cells and dense inflammatory cell infiltrate. These features were consistent with lobular capillary hemangioma type of pyogenic granuloma (Figure 4) [9,10,13].

TREATMENT AND FOLLOW-UP

Complete surgical excision of the lesion along with curettage of the underlying tissue was performed (Figure 2). The patient was advised meticulous oral hygiene measures and was referred to her physician for evaluation and possible modification of antihypertensive therapy. Post-operative healing was uneventful, and no recurrence was observed at 3-month and 6-month follow-up visits (Figure 3) [15].

Fig.1 – Pre-operative intraoral photograph

Figure 1: Pre-operative intraoral photograph showing an erythematous, lobulated, exophytic gingival mass in the midline diastema region.

Fig.2 – Intra-operative photograph

Figure 2: Intra-operative photograph showing complete surgical excision of the lesion.

Fig.3 – Post-operative intraoral photograph

Figure 3: Post-operative intraoral photograph showing satisfactory healing of the surgical site.

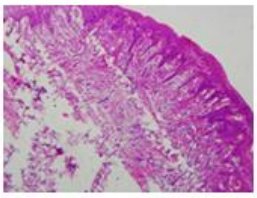

Fig.4 – Hematoxylin and Eosin

Figure 4: Photomicrograph showing stratified squamous epithelium with lobular proliferation of capillaries lined by plump endothelial cells and extravasated red blood cells (Hematoxylin and Eosin stain, ×10).

DISCUSSION

Pyogenic granuloma represents an exaggerated localized tissue response to chronic irritation or altered vascular homeostasis [1]. Retrospective studies have confirmed the gingiva as the most common site of occurrence; however, lesions at unusual intraoral locations such as the midline anterior maxilla may complicate clinical diagnosis [8,11,16].

Clinically aggressive features including rapid growth, ulceration, and spontaneous bleeding are well-documented causes for misdiagnosis of pyogenic granuloma as oral malignancy, particularly in elderly patients [3,6,14]. Although the absence of regional lymphadenopathy may provide a clinical clue, histopathological examination remains mandatory for definitive diagnosis [9,10].

Calcium channel blockers like amlodipine are known to induce gingival overgrowth and vascular changes. Regression of gingival lesions following modification or withdrawal of amlodipine therapy has been reported, supporting its etiological role [4,12]. In the present case, prolonged amlodipine use likely contributed to lesion development.

Surgical excision with elimination of local irritants remains the treatment of choice, with low recurrence rates when etiological factors are adequately addressed [1,15].

CONCLUSION

Pyogenic granuloma should always be considered in the differential diagnosis of rapidly growing gingival lesions that clinically resemble malignancy. Comprehensive clinical evaluation, detailed drug history, and histopathological confirmation are essential to avoid misdiagnosis and unnecessary aggressive treatment [11].

Declaration by Authors
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