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Lobular Capillary Hemangioma of the Mandibular Gingiva: A Clinicopathological Report of an Unusual Buccolingual Presentation

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ABSTRACT: Lobular capillary hemangioma (LCH), commonly known as pyogenic granuloma (PG), is a benign reactive vascular proliferation frequently affecting the oral cavity, particularly the gingiva. A 36-year-old female presented with a painless, bleeding gingival growth in the mandibular premolar region of 2 months' duration. Intraoral examination revealed a 10 × 8 mm exophytic lesion involving the buccal and lingual gingiva in relation to mandibular first and second premolars (34 and 35), extending up to the occlusal third. A provisional diagnosis of pyogenic granuloma was made, with peripheral giant cell granuloma, peripheral ossifying fibroma, irritation fibroma, and other reactive vascular lesions considered in the differential diagnosis. Complete surgical excision was performed under local anesthesia, and the specimen was submitted for histopathological examination. Microscopy revealed stratified squamous epithelium overlying fibrovascular connective tissue with numerous proliferating capillary-sized vascular channels lined by plump endothelial cells, inflammatory cell infiltration, and areas of surface ulceration and granulation tissue. These findings confirmed LCH. At 1-month follow-up, complete clinical healing was observed without residual or recurrent lesion. This case highlights the buccolingual presentation of LCH in the mandibular premolar region and emphasizes histopathological examination for definitive diagnosis.

1. INTRODUCTION

Lobular capillary hemangioma (LCH), traditionally known as pyogenic granuloma (PG), is a benign vascular lesion characterized by a reactive proliferation of capillary blood vessels. The term “pyogenic granuloma” is considered a misnomer because the lesion is neither associated with pus formation nor a true granulomatous process. The term LCH more accurately reflects its characteristic vascular architecture and histopathological appearance [1,2].

Oral LCH is relatively common and demonstrates a predilection for the gingiva. Local irritation, trauma, plaque-associated inflammation, hormonal influences, and other unidentified factors have been proposed as potential contributors to its development [1,3,4]. Clinically, the lesion generally presents as a solitary exophytic growth that may be sessile or pedunculated

and varies in color from pink to red or purple depending on its stage and degree of vascularity. Because of its friable vascular nature, bleeding is a frequent clinical feature [1,3].

Large clinicopathological series have demonstrated a female predominance and frequent involvement of the gingiva [4-6]. However, LCH can occur at different intraoral sites and may present with variable clinical characteristics, making differentiation from other reactive gingival lesions important. Peripheral giant cell granuloma, peripheral ossifying fibroma, irritation fibroma, and other vascular lesions may have overlapping clinical appearances [3,5].

Histopathological examination remains important for definitive diagnosis. The characteristic microscopic appearance consists of proliferating capillary-sized vascular channels, often arranged in a lobular pattern, within a fibrovascular connective tissue stroma. Endothelial proliferation, inflammatory infiltrates, stromal edema, and surface ulceration may also be present [2,7,8].

Complete surgical excision remains a commonly used treatment for localized oral LCH. Recurrence may occur, particularly when the lesion is incompletely removed or when contributing local factors persist [6,9,10]. The present case describes a 36-year-old woman with a 10 × 8 mm LCH involving both the buccal and lingual gingiva in relation to mandibular premolars 34 and 35, with successful surgical management and complete healing at 1-month follow-up.

2. CASE PRESENTATION

A 36-year-old female patient reported with a chief complaint of a growth in the mandibular premolar region associated with bleeding. According to the patient, the growth had been present for approximately 2 months.

Intraoral examination revealed a solitary, exophytic gingival growth measuring approximately 10 × 8 mm in relation to the mandibular first and second premolars (34 and 35). The lesion involved both the buccal and lingual gingival aspects and extended over the involved region up to approximately the occlusal third of the premolars. The lesion appeared reddish and clinically vascular, with a tendency to bleed. No pain was associated with the lesion (Figure 1a,b).

Based on the clinical presentation, a provisional diagnosis of lobular capillary hemangioma (pyogenic granuloma) was considered. The differential diagnosis included peripheral giant cell granuloma, peripheral ossifying fibroma, irritation fibroma, and other reactive vascular lesions.



Figure 1. Clinical presentation and surgical excision of the gingival lesion.

(a) Preoperative view showing the gingival exophytic growth. (b) Buccolingual extension of the lesion in relation to the mandibular premolars. (c) Intraoperative view during surgical excision of the lesion. (d) Gross appearance of the excised lesion.

2.1 Treatment

Following clinical evaluation, an intraoral radiograph was obtained, which revealed no evidence of underlying bony pathology or osseous involvement. Complete surgical excision of the lesion was subsequently performed under local anaesthesia. The lesion was excised in toto (Figure 1c,d), following which the surgical site was sutured and a periodontal Coe-Pak dressing was applied (Figure 2a,b). The excised specimen was preserved in 10% neutral buffered formalin and submitted for histopathological examination.



Figure 2. Postoperative management, histopathological examination, and follow-up.

(a) Surgical site following closure with 3-0 black silk sutures. (b) Application of periodontal Coe-Pak dressing over the surgical site. (c) Histopathological examination of the excised lesion showing features consistent with lobular capillary hemangioma. (d) Complete clinical healing at postoperative follow-up

2.2 Histopathological Examination

Histopathological examination revealed stratified squamous epithelium overlying a fibrovascular connective tissue stroma. The connective tissue demonstrated prominent proliferation of numerous small capillary-sized vascular channels lined by plump endothelial cells, with areas of capillary budding and vascular proliferation. A mixed inflammatory cell infiltrate, predominantly composed of lymphocytes and plasma cells, was present within the fibrovascular stroma. Areas of surface epithelial ulceration with underlying granulation tissue were also identified. The overall microscopic features were consistent with a lobular capillary hemangioma (pyogenic granuloma) (Figure 2c).

2.3 Follow-up

The postoperative course was uneventful. The patient was recalled after 7 days for suture removal, and the surgical site showed satisfactory healing without any postoperative complications. At the 1-month follow-up, clinical examination demonstrated complete healing of the surgical site, with no evidence of residual lesion or clinical recurrence (Figure 2d).

3. DISCUSSION

Lobular capillary hemangioma is a benign reactive vascular proliferation that occurs frequently in the oral cavity. Although the term pyogenic granuloma remains widely used, the designation LCH is considered more histologically appropriate because the lesion does not represent either a pyogenic infection or a true granuloma [1,2].

The present case involved a 36-year-old female, which is consistent with the reported tendency of oral PG/LCH to occur commonly in females and across a broad age range. In a retrospective study of 215 oral PG cases, Krishnapillai et al. reported a mean age of 34.27 years and a female predominance, with gingiva being the most frequently affected site [4]. Similarly, Saravana reported gingival involvement in 83% of 137 oral PG cases, with a female-to-male ratio of approximately 2.6:1 [5]. The age and sex of the present patient therefore fall within the commonly reported demographic profile.

The clinical presentation in this case was characteristic of a vascular reactive lesion. The patient presented with an exophytic reddish gingival growth with bleeding and no pain. The tendency of LCH to bleed is attributable to its prominent vascular component and frequently friable surface [1,2]. The relatively short history of approximately 2 months and exophytic growth are also compatible with the clinical behavior commonly described for oral PG [1,3].

An interesting feature of the present case was the buccolingual involvement of the mandibular premolar gingiva in relation to 34 and 35. Most oral PGs occur on the gingiva, although lesions may occur at other oral sites [5,6]. The lesion in the present case measured only 10 × 8 mm, but its extension across both buccal and lingual gingival aspects gave it a clinically conspicuous appearance. The location and morphology emphasize that clinical appearance alone may not always be sufficient to establish a definitive diagnosis.

The differential diagnosis of a localized gingival exophytic lesion includes peripheral giant cell granuloma, peripheral ossifying fibroma, irritation fibroma, and other reactive or vascular lesions. Kfir et al. demonstrated that several reactive gingival lesions may show overlapping clinical characteristics and that age, sex, site, and lesion size can assist in differentiation [3]. Histopathological examination is therefore essential for confirmation.

The microscopic findings in the present case demonstrated numerous proliferating capillary-sized vascular channels lined by plump endothelial cells, capillary budding, fibrovascular connective tissue, and chronic inflammatory cells, with surface ulceration and granulation tissue. These features are consistent with the recognized histopathological spectrum of oral PG/LCH [2,4,7]. Mills et al. described the characteristic lobular arrangement of capillaries and proposed the term “lobular capillary hemangioma” to more accurately describe the underlying lesion [2].

Ribeiro et al., in an 18-year retrospective clinicopathological and immunohistochemical study, demonstrated that oral PG comprises distinct lobular and non-lobular capillary hemangioma patterns, with differences in clinical and microscopic characteristics [7]. This supports the importance of correlating the clinical presentation with histopathological findings rather than relying solely on the traditional clinical terminology.

Surgical excision was selected in the present case because the lesion was localized and clinically accessible. Surgical excision is widely described as an effective treatment for oral PG/LCH and permits simultaneous histopathological confirmation [1,5,8]. Recurrence has nevertheless been reported, particularly when excision is incomplete or local etiological factors remain [6,9,10]. Al-Noaman reported recurrence in 14.8% of patients and emphasized the importance of adequate surgical management [8]. In the present case, the lesion was completely excised and the patient demonstrated complete clinical healing at 1 month, with no evidence of residual or recurrent growth.

The present case is clinically relevant because it demonstrates a buccolingual gingival presentation of LCH in the mandibular premolar region, confirmed histopathologically and successfully managed by surgical excision. Although LCH is a common oral lesion, its variable clinical presentation warrants careful differential diagnosis and histopathological confirmation.

4. CONCLUSION

Lobular capillary hemangioma is a common benign reactive vascular lesion of the oral cavity that may present as a rapidly developing, exophytic and bleeding gingival growth. In the present case, the lesion involved the buccal and lingual gingiva in relation to mandibular premolars 34 and 35 in a 36-year-old female. Clinical examination suggested a pyogenic granuloma, while histopathological examination confirmed the diagnosis of lobular capillary hemangioma. Complete surgical excision

resulted in satisfactory healing, with complete clinical healing at 1-month follow-up. Histopathological examination remains essential for definitive diagnosis and exclusion of clinically similar reactive lesions.

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None

AUTHOR CONTRIBUTIONS

Disha Gupta: Conceptualization, clinical management, investigation, literature review, manuscript preparation, and writing—original draft.

Akash Bhatnagar: Histopathological evaluation, investigation, and interpretation of pathological findings.

Sonal Rastogi: Supervision, critical review, and writing—review and editing.

All authors reviewed and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

ETHICS STATEMENT

Ethical approval was not required for this single-patient case report in accordance with the institutional requirements applicable to case reports. The case was conducted in accordance with accepted ethical principles for the protection of patient privacy.

INFORMED CONSENT

Written informed consent was obtained from the patient for publication of this case report and the accompanying clinical photographs. The patient was informed that the clinical information and images would be used for publication for scientific and educational purposes.

DATA AVAILABILITY STATEMENT

The clinical information supporting the findings of this case report is contained within the manuscript. Additional information, where appropriate and subject to patient confidentiality, may be obtained from the corresponding author upon reasonable request.

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