Case Report
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Capillary Hemangioma - A Diagnostic Dilemma

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Abstract

Rapid endothelial cell proliferation of blood vessels is microscopic feature of hemangiomas. These lesions usually occur during first month of life and become apparent as the age increases. Hemangiomas are non-neoplastic and developmental in origin. Although they are found on head and neck region they may involve skin, lips, and masticatory and perioral mucosa of oral cavity and rarely may be found on interdental and attached gingiva. They are more commonly seen three times in female as compared to males. These lesions have frequent tendency to bleed and are of utmost importance to dental professional hence it requires proper diagnosis and treatment. Hence, we are presenting a rare case report of female diagnosed with capillary hemangioma of interdental gingiva.

Keywords: Benign Tumors, Hemangiomas, Vasoformative Tumors

1. Introduction

Rapid endothelial cell proliferation of blood vessels is microscopic feature of hemangiomas which usually occur during first month of life and become apparent as the age increases[1]. These lesions exhibits no neoplastic tendency, and slowly involute to non-existent.

Mulliken and Glowacki in 1982 classified the vasoformative tumors into two groups: hemangiomas and vascular malformations. Further hemangiomas are classified based on histopathological appearances as: 1) capillary lesions; 2) cavernous lesions, 3) Arterio-Venous (AV) lesions[2]. These are also associated with the following syndromes: Rendu-Osler-Weber syndrome, Struge-Weber-Dimitri syndrome, Kasbach-Merritt syndrome, Maffucci syndrome, Klippel-Trenaunay-Weber syndrome.[2]

Hemangiomas are about three times more common in females (65%) than in males (35%)[3]. Clinically these are soft, smooth, sessile/pedunculated or irregular bulbous tissue mass with varied size. Color of the lesion varies from deep red to purple and blanches on application of pressure.

Periodontally, the most common site of occurrence for these lesions is interdental papilla which spreads laterally to invade hard and soft tissues of oral cavity[2]. So, presenting a rare case report of female diagnosed with capillary hemangioma of interdental gingiva as overgrowth in the mandibular right posterior region.

2. Case Report

A 54-year-old female patient reported to the department of Periodontology with a chief complaint of intraoral swelling in the lower right back teeth region since 2-3 months (Figure 1). On careful history recording patient revealed that there was frequent bleeding from the lesion and discomfort during mastication.

On extraoral examination the lymph nodes were non palpable and non-tender. Intraoral the lesion was present in between mandibular right first molar and second molar. The involved teeth were Grade II mobile

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Figure 1. Intraoral swelling in lower right posterior teeth region.

and orthopantomogram showed horizontal bone loss with widening of the periodontal ligament as patient's oral hygiene status was poor (Figure 2). Lesion had its origin from interdental papilla extending onto attached gingiva which was sessile and painless. It was bright red with bluish hue and slightly pale. The overgrowth was soft in consistency with irregular surfaces measuring approximately 1.5x1.7 cm which was bi-lobular.

Carotid CT angiogram was carried out to confirm if there was involvement of a major blood vessel supplying the lesion. A provisional diagnosis of hemangioma was led by doing histopathological test by taking 0.5 ml of blood aspirate from the lesion which showed presence of numerous RBC's, few of the neutrophils and plasma cells which were hyperchromatic. Hence in order to achieve better hemostasis and need for patient co-operation, surgery was carried out under General Anesthesia (GA) following all investigations necessary.

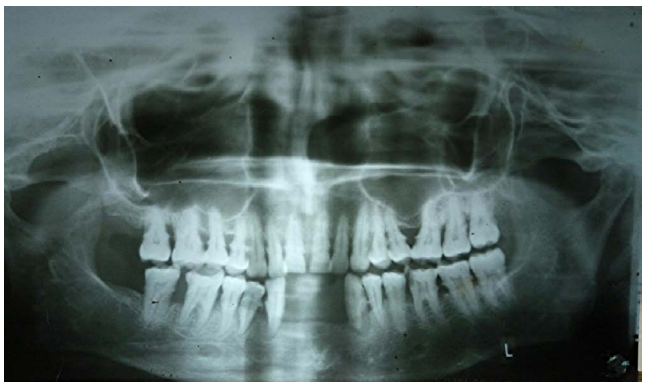


Figure 2. Orthopantomogram showing horizontal bone loss with widening of periodontal ligament with 46 and 47.

2.1 Management

The involved teeth were extracted, and socket was thoroughly curetted, the overgrowth was excised along with stalk using electrocautery and hemostasis was achieved using commercially available absorbable collagen gel sponges and sutures were given (Figure 3). The specimen was sent to laboratory in bottle containing 10% formalin solution for histopathological examination. Patient was discharged after 2 days with proper oral hygiene instructions and was recalled after 15 days and subsequently for 3 months follows up (Figure 4).

2.2 Histopathological Report

Histopathological examination revealed superficial epithelium was parakeratinised stratified squamous type showing pseudoepitheliomatous hyperplasia. H and E

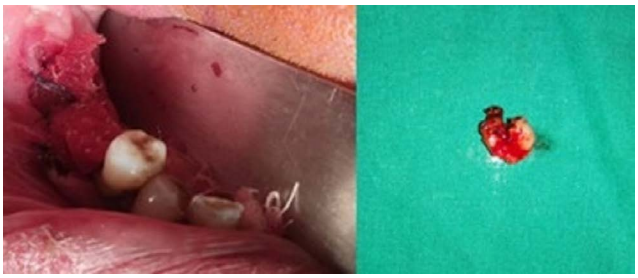


Figure 3 . Clinical photograph showing collagen sponge in place and lesion after excision.



Figure 4 . Clinical photograph showing postoperative healing after 3 months.

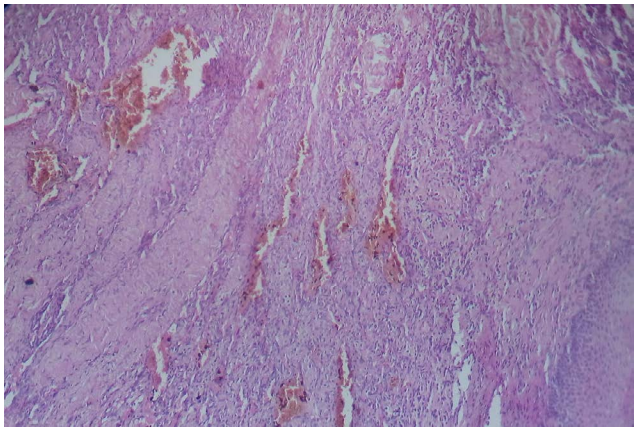


Figure 5. Histopathologic section showing fibro-cellular stroma with irregularly dilated blood vessel.

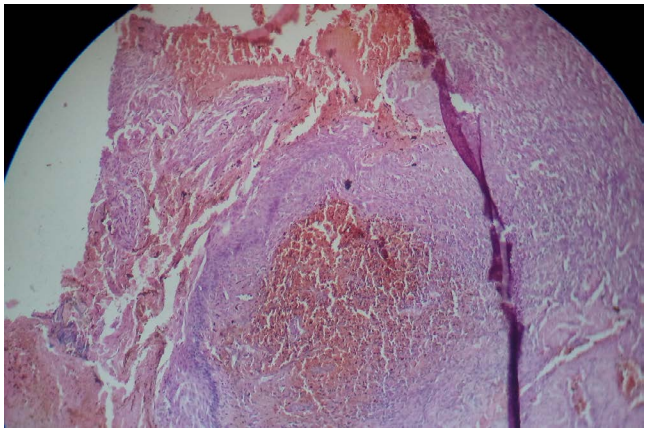


Figure 6. Histopathologic section in high magnification showing flat endothelial cells with engorged RBCs.

stained section showed vascular fibro-cellular stroma underlying superficial epithelium (Figure 5). The connective tissue showed poorly circumscribed, irregularly dilated blood vessels lined by flat endothelial cells with walls of varying thickness and engorged with RBC's (Figure 6). Endothelial cell proliferation was seen in few areas of connective tissue stroma. Thus, it was diagnosed as capillary hemangioma.

3. Discussion

Vascular lesions are the most common congenital abnormality left poorly understood. The etiology of vasoformative tumors is yet not known; but it has been hypothesized that the cells of placenta, such as trophoblast, may act as precursor for hemangiomas. Therefore, some events in utero may play a secondary role in etiopathogenesis of hemangiomas[4]. It has been stated that the endothelial cells of hemangiomas are derived from a distant population of endothelial precursors carried by existing vascular pathways to a receptive environment[5]. However, literature review suggests that there is a need for further investigations to prove this hypothesis.

Hemangiomas are characterized by benign escalation of capillaries, arteries and veins commonly affecting head and neck region in children occurring in 80% as a single lesion[3]. It has female to male predilection ratio of 3:1 and commonly occurs among Caucasians than other racial groups.[3,6] Its distributions in oral cavity is as, on lip (63.2%), buccal mucosa (14.3%), tongue (13.5%), floor of the mouth (6.0%) and is rarely seen on attached or interdental gingiva.

Hemangiomas are further classified as capillary hemangioma, cavernous hemangioma and Artero-Venous (AV) hemangioma.[2] The pathogenesis of capillary hemangioma commonly involve three stages of development similar to development of any other vasoformative tumors. The first stage is that of undifferentiated capillary network stage which represents an arrest in the development of mesenchymal primordia which is being nourished by an interlacing system of blood spaces without distinguishable arterial and venous channels[4]. The second stage is that of a retiform developmental stage which begins at about 48 days of embryonic development. Here the primitive vessels penetrate deeper into the subcutaneous layers and gives rise to capillary hemangiomas[4]. The final development stage where gradual replacement of the immature plexiform network of vessels by mature vascular channels takes place[1,4].

Since capillary hemangioma is not a true lesion but a developmental anomaly, Takahashi et al. (1994) hypothesized that angiogenesis likely plays a role in the vascular excess present[4]. Cytokines, such as Basic Fibroblast Growth Factor (bFGF) and Vascular Endothelial Growth Factor (VEGF) are known to stimulate angiogenesis[4]. Hence, excess of these angiogenic factors or decrease of angiogenesis inhibitors e.g. gamma-interferon, tumor necrosis factor-beta and interleukin-6 (IL-6) have been implicated in development of hemangioma[1,2]. Although Clinically both the lesions appear similar but histologically they differ in the type of cell affected.

Hence, the choice of treatment for such lesions depends on the degree of ectasia (diameter) of the vessels. Only 10-20% of the patient requires treatment as at early stages of the lesion spontaneous regression takes place. Different treatment modalities in treating hemangiomas include

are microembolization, radiation, cryotherapy, sclerosing agents, use of Erbium lasers, pulsed dyed laser with a wavelength of 577 nm and 585 nm and surgical excision.

In the present case report the lesion was surgically excised with its base under GA in order to achieve better hemostasis and patient compliance. Further, the periodic recalls were done and patient was under regular follow up for 3 months and no signs of recurrence of the lesion were observed.

4. Conclusion

Capillary haemangioma is a benign tumor of the oral cavity of utmost important for the periodontist because of associated gingival vascular features and its complications such as impaired nutrition, increased risk of plaque accumulation and growth of the microorganism, which can systemically alter the health of the patient. Taking into consideration, the nature of the lesion to bleed profusely care should be taken during its surgical management. Hence, there is a need for the early detection of these vasoformative tumors to reduce potential dentoalveolar complications.

5. References

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