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Oral Capillary Hemangioma in Pediatric Male - A Case Report

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Abstract

Hemangioma is a relatively common benign proliferation of blood vessels that primarily develops during childhood. Two main forms of hemangioma recognized: capillary and cavernous. The capillary form presents as a flat area consisting of numerous small capillaries. Cavernous hemangioma appears as an elevated lesion of a deep red color, and consists of large dilated sinuses filled with blood. The purpose of the study was to report the case of a capillary hemangiomain a patient and to describe the successful treatment of this case.

Keywords: Capillary Hemangioma, Lower Lip, Pediatric Child.

Introduction

A number of terms have been used to describe vascular lesions, which are classified either as hemangiomas or vascular malformations [1-3]. Hemangioma is a term that encompasses a heterogeneous group of clinical benign vascular lesions that have similar histologic features [2]. It is benign lesion, which is a proliferating mass of blood vessels and do not undergo malignant transformation. There is a higher incidence in females than males.

Although a few cases are congenital, mostly develop in childhood [2]. Occasionally, older individuals are affected [2,3]. The congenital hemangioma is often

present at birth and may become more apparent throughout the life [2].

Althought hemangioma is considered one of the most common soft tissue tumors in the head and neck region [2], it is relatively rare in the oral cavity and uncommonly encountered by the clinicians. They may be cutaneous, involving skin, lips and deeper structures; mucosal, involving the lining of the oral cavity; intramuscular, involving masticator and perioral muscles; or intra-osseous, involving mandible and/or maxilla [4,5].

Hemangiomas are also classified on the basis of their histological appearance. Capillary and cavernous hemangiomas are defined according to the size of vascular spaces [2,6]. Capillary hemangioma are composed of small thin-walled vessels of capillary size that are lined by a single layer of flattened or plump endothelial cells and surrounded by a discontinuous layer of pericytes and reticular fibres [6]. To our knowledge, it was first described in the literature by Sznajder et al. [7], in 1973 under the term “Hemorrhagic hemangioma”. Cavernous hemangiomas consist of deep, irregular, dermal blood-filled channels [2].

They are composed of tangles of thin-walled cavernous vessels or sinusoids that are separated by a scanty connective tissue stroma [6]. Mixed hemangiomas contain both components and may be more common than the pure cavernous lesions [6].Clinically hemangiomas are characterized as a soft mass, smooth or lobulated, sessile or pedunculated and may be seen in any size from a few millimetres to several centimetres [6]. The color of the lesion ranges from pink to red purple and tumor blanches on the application of pressure, and hemorrhage may occur either spontaneously or after minor trauma. They are generally painless. These tumors are mostly seen on the face, fingers and occasion- ally seen on oral mucosa. Oral hemangiomas are usually seen on the gingiva and less frequently at other sites where it occurs as a capillary or cavernous type, more commonly the former [6]. Periodontally, these lesions often appear to arise from the inter dental gingival papilla and to spread laterally to involve adjacent teeth [8]

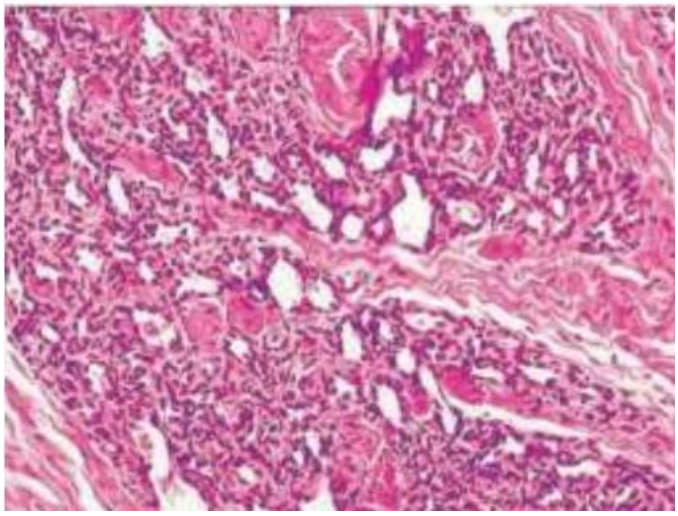
Management of hemangiomas and the treatment of choice depend on several factors including the age of the patient and the size and extent of the lesions, as well as their clinical characteristics. Some congenital lesions may undergo spontaneous regression at an early age [9]. If superficial lesions are not an esthetic problem and are not subject to masticatory trauma, they may be left untreated [3]. Small and superficial lesions may be completely excised with relative ease. However, excision of more deeply seated lesions usually involves a wider surgical approach, which may result in a disfigurement that is difficult to accept for the treatment of these lesions. In addition, emergency surgery may become mandatory when arterial bleeding arises from intraosseous hemangiomas of the jaw following simple tooth extraction [4].

Various treatments have been used in the management of hemangiomas, including oral corticosteroids, intralesional injection of fibro sing agents, interferon a-2b, radiation, electro coagulation, cryosurgery, laser therapy, embolization and surgical excision [11-13]. Recurrence has been reported [1,2]. The purpose of the study was to report the case of a capillary hemangioma in a patient and to describe the successful treatment of this case.

Case Report

In November 2022, a 8-year-old male has come to the Department of Dentistry of Burdwan Medical college and Hospital, for evaluation and treatment of overgrowth

in the lower lip and occasional bleeding. According to the patient's party, he has lower lip bleeding during meals that had started four months ago, which was accompanied by gradual increase in size. A short time later, he discovered a dark red swelling on his inner aspect of lower lip. The swelling in the associated region had been increasing gradually since that time. He did not give any relevant past dental history. The patient's medical history was non-contributory and he did not take any medications. During physical examination (Figure1), there was a presence of a medium to large erythematouslobulated pedunculated swelling over the lower lip. No other similar lesions were clinically visible in the head and neck region. The swelling was non tender, pulsatile, fluctuant on palpation. Lymph nodes were palpable on palpation.



Histopathologic examination of the excised tissue revealed non keratinized stratified squamous epithelium overlying on unencapsulated tumor composed of many thin-walled capillary channels. The capillaries were lined by a single layer of endothelial cells. Some areas showed marked endothelial cells proliferation. Sparse plasma cells and lymphocytes were seen scattered throughout stroma.

Clinical evaluation revealed a mass on the lower lip(Figure 2)which was pedunculated and red. Periodontal pocket (approximately 10 mm) was detected in the associated region. Periodontal examination revealed a moderate and generalized gingivitis due to bacterial plaque. There was a mild accumulation of dental plaque and the gingival tissues were swollen. Other findings included a mild supragingival calculus around his teeth, absence of carious lesions and tooth mal positioning. It was provisionally diagnosed as a pyogenic granuloma. An excisional biopsy was taken from the lower lip after tying the base of the tumor proper, inhibiting profusehemorrhage controlled by pressure with gauze. The biopsy tissue was kept in formalin (10%) solution, and sent for Histopathologic examination. Histopathologic examination of the excised tissue revealed non keratinized stratified squamous epithelium overlying on unencapsulated tumor composed of many thin-walled capillary channels. The capillaries were lined by a single layer of endothelial cells. Some areas showed marked endothelial cells proliferation. Sparse plasma cells and lymphocytes were seen scattered throughout stroma.

Fig.1. (A) Extra-oral photograph of the patient showing presence of a medium to large lobulated pedunculated swelling over the lower lip (black arrow).

(B) Intra-oral photograph revealed the presence of medium to large, non tender, pulsatile, fluctuating swelling on the inner aspect of the lower lip (black arrow).

Discussion

Hemangiomas are a common soft tissue tumor that often Congenital or develop in the neonatal period and grow rapidly. They usually cover a large site, may be macularor raised and usually resolve progressively in childhood [2,3]. They may occur in the oral and maxillofacial region including gingiva, palatal mucosa, lips, jawbone, and salivary glands [1,5,7,10,15,16]. Apart from the oral cavity, capillary hemangioma developed at other sites such as eyelid, cheek and cauda equine were reported [1,17]. The patient in this case report had a vascular lesion of lower lip, was diagnosed capillaryhemangioma, but there were no similar lesions of the other sites on the body.

Hemangiomas may mimic other lesions clinically, radiographically and histopathologically. The differential diagnosis of hemangiomas includes pyogenicgranuloma, chronic inflammatory gingival hyperplasia (epulis), epulisgranulomatosa, varicocele, telangiectasia, and even with squamous cell carcinoma. The most common vascular proliferation of the oral mucosa is the pyogenicgranuloma. This is a reactive lesion that develops rapidly, bleeds easily and is usually associated with inflammation and ulceration. Clinically, it is often lobulated, pedunculated and red to purple and it may be hormone sensitive [6]. There are two histological types of pyogenic granuloma of the oral cavity: the LCH and non-LCH type. LCH is characterized by proliferating blood vessels that are organized in lobular aggregates although superficially the lesion frequently undergoes no specific change, including edema, capillaries dilation or inflammatory granulation tissue reaction, whereas the second type consists of highly vascular proliferation that resembles granulation tissue [6,18].

Histopathologically, the capillary hemangiomaexhibits a progression from a densely cellular proliferation of endothelial cells in the early stages to a lobular mass of well-formed capillaries in the mature phase, often resembling the pyogenicgranuloma without the inflammatory features [2]. The present case has clinical features of a pyogenic granuloma, but has not microscopic features of pyogenic granuloma. Therefore, biopsy of tissue specimens is often hemangiomas. In the case reported here, histopathologically evaluation was made after surgical removed, and the findings correlated. In addition, hemangiomas may be confused with the vascular-appearing lesions of the face or oral cavity, which may also represent the Sturge-Weber syndrome [19]. They are often located in the territory of the branches of the trigeminal nerve. Usually, they do not undergo spontaneous involution like hemangiomas do. Ocular and cerebral vascular lesions may be found in such cases. These lesions may be further classified into flat, telangiectatic, stellar and senile variants [6].

Precise diagnosis of the type of vascular lesion is important because it may influence treatment considerably. Angiographic studies are not strictly demonstrated for diagnosis of hemangiomas, and are utilized only to define the size and the extent of the lesion [1, 16]. These are more complicated procedures

than histopathologically evaluation has a higher morbidity, and may cause undesirable side-effects. For these reasons, no attempt to use angiography was made in this case. CT and MRI of these lesions have more recently been demonstrated, and have been successfully utilized for the diagnosis of hemangiomas, as for other lesions of soft tissues [19,20]

In the case presented here, treatment of the capillary hemangioma was done surgical excision after placing a knot over the base of the lesion to control profuse bleeding. The treatment of capillary hemangiomasvaries considerably depending on the clinical features and the anatomic considerations. Surgical excision is generally the treatment of choice for capillary hemangioma [1,4,15,16]. For those lesions not amenable to surgery, other therapy such as intralesional injection of fibrosing agents, interferon a-2b, radiation, electro coagulation, cryosurgery, laser therapy, embolization may be used [1,11,12]

Attempts to remove hemangiomas using surgical excision may lead to serious medical problems such as heavy bleeding. In addition, postoperative recurrence may encounter [1,4,7]. The case described here demonstrates that there has been no subsequent hemorrhage or other evidence of recurrence.

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