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Benign Vascular Tumor of the Lower Lip: A Case Report

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Abstract

Vascular lesions are tumors or malformations of the blood vessels. Vascular tumors are a large and complex group of lesions. They are differentiated from vascular malformation by the fact that they are not clinically present at birth. Hemangioma is one of the most common benign vascular tumors often occurring in infancy and childhood and rarely develops in adults. Most of these lesions are frequently seen in relation to tongue, lips and palate.

Keywords: Vascular Lesions, Vascular Tumors, Vascular Malformation, Hemagioma.

Introduction

Vascular anomaly, the term represents a wide spectrum of vascular pathology. [1] Understanding the classifications and terminologies used for various vascular anomalies has been very confusing. Vascular anomalies are broadly classified into vascular tumors and vascular malformations by the International Society for the Study of Vascular Anomalies (ISSVA). [Figure1] [2,3,4,5]. Hemangioma, a benign vascular tumor is one of the most common vascular tumors ofently occurring in infancy and childhood; few may be present from birth or even develop in adults.[6] These are vascular lesions with different clinic-pathological subtypes.[7] Here we present a case report of a rare case of capillary hemangioma on the lower lip in a young adult. We have also discussed the classification of hemangiom along with various treatment modalities.

Case report

A female patient aged 21 years old reported with a painless swelling in lower lip since 3 months. The swelling was sudden in onset which gradually increased to the present size of 2mm*3mm. The general health of the patient was normal. Medical history revealed that the patient gives a history of hypothyroidism and is under medication. Patient also gives a history of lip biting habit since 3 months . Patient gives no history of pain. The swelling was well lobulated, had well-defined margins and present at the left corner of the lower lip. The skin over the swelling appeared normal and demonstrated a red hue [Figure 2]. Palpation revealed a soft and nontender swelling. Surgical excision of the mass was performed and the mass was sent for biopsy. [Figure 3] The histological evaluation of the specimen shows a overlying normal stratified squamous epithelium and an underlying connective tissue which shows proliferating endothelial cells around small blood filled spaces. The proliferating cells are non-invasive and do not show any atypia which was suggestive of a benign vascular tumor [Figure 4] Patient was recalled after 10 days for suture removal. Then hirudoid cream was given following which the patient was recalled after one month and recovery was satisfactory. [Figure 5]

Discussion

Hemangioma is the most common benign vasoformativetumors commonly occurring in infancy and childhood; few may be present from birth or even develop in adults, exhibiting a rapid proliferative phase and slowly involute to near complete resolution. It results from endothelial cell hyperplasia. [2,8]. Hemangiomas are found more oftenly in females than males and frequently occur in the head and neck region with lip, tongue, and palate being the most preferred site[9,10,].

Classifictaion

Clinically, heamgioma is classified as infantile hemangioma and congenital hemangioma .[2,11]Infantile (juvenile or strawberry) hemangioma develops during the first 2 months of life, exhibits rapid proliferation till around 12 years of age and followed by a period of involution.[2,12] On the other hand congenital hemangioma are present at birth and further divided into rapidly involuting (RICH)and non-involuting congenital hemangioma (NICH). Rapid involuting congenital hemangioma undergo a rapid regression phase and completely disappear by 12-18 months of age whereas, non-involuting congenital hemangiomas (NICH) are also present at birth, and do not show a regression phase and grows proportionately with the growth of the child.[2,13] Haemangiomas are also classified on the basis of their histological appearance as capillary, mixed, cavernous or a sclerosing variety that tends to undergo fibrosis.[14] Capillary hemangioma as its name suggests are composed of small thin walled vessels of capillary size which is lined by a single layer of flattened or plump endothelial cells and surrounded by a discontinuous layer of pericytes and reticular fibres. Cavernous hemangiomas comprises of deep, irregular, dermal blood-filled channels with tangles of thinwalled cavernous vessels or sinusoids that are separated by a scanty connective tissue stroma. Whereas mixed hemangiomas contain both components. The classification has been summarized below. [15] [Figure 6]

Etiology/pathogenesis

The pathogenesis of hemangioma is still not clear. Growth factors, hormonal and mechanical influences have been attributed to affect the abnormal proliferation of endothelial cells in hemangioma [16]. One theory states that hemangioma results from entry of embolic placental endothelial cells into the fetal circulation following

trauma or some other cellular stressor and serve as stem cells.[16,17] Another hypothesis suggests that spontaneous, or inherited, loss-of-function mutations on chromosome 5q lead leads to constitutive activation of angiogenesis, resulting in hemangioma formation. A third theory supports the notion hemangioma occurs due to the upregulation of vascular endothelial growth factor (VEGF) and glucose transporter 1 (GLUT1) production by the adjacent cells in response to hypoxic stressors.[16,18] Hemangiomas develops by three distinct developmental phases: 1)endothelial cell proliferation, 2) quiescence(rapid growth) and 3) involution [Table 1] .[18,19]

Clinical features

Hemangiomas are charactrised clinically as soft, compressible masses that can be present with significant variation depending on location and depth. Superficial lesions present with a prominent red hue and may be lobulated, sessile or pedunculated. Deep lesions appear as a soft blue or violent discoloration distinct from surrounding mucosa and are difficult to visualize. Hemangiomas usually measure from few millimeters to several centimeters in size and blanch on application of pressure. It occurs either spontaneously or after a trauma. [20]

Complications

associated with hemangioma depend on the size and location of the lesion and includes lesional ulceration, bleeding, pain, infection, postural and functional difficulties, airway obstruction, severe scarring, eating difficulty, auditory canal occlusion, ophthalmologic problems including astigmatism and amblyopia.[18,21]

Management

Majority of hemagioma can be managed by observation alone and requires no treatment owing to its benign nature and high rate of involution**.** Those hemangiomas requires intervention that becomes symptomatic during the growth stage with bleeding, ulceration, visual disturbances, functional limitaions (breathing difficulties) and esthetic limitations. The various treatment modalities include medical therapy, surgical resection, laser therapy and direct intralesional steroid injection. Combination of the above treatment methods are preferred in large and resisitant lesions [3, 18, 22]

Medical therapy:

- Propranolol, is the drug of choice for the treatment of hemangioma. The mechanism is suggested to include vasoconstriction and initiating apoptosis of endothelial cells. Patient is put on a dosage of propranolol 2-3 milligrams per kilogram per day divided into three doses. Improvement is noticed within 1 to 2 days of start of the therapy. During the course, that may be 6 months, the patient is monitored for side effects such as bradycardia, hypotension, hypoglycemia, and bronchospasm. [3,18]
- Corticosteroids are another option for the treatment of hemangioma. However, not preferred over Propranolol due to the side effects. Steriods are indicated in those patients that are allergic to propranolol or not responsive to propranolol therapy. Dosage is prednisone at 2–3 mg/kg daily and monitoring for side effects like adrenal axis suppression, cushingoid facies, irritability, and stomach irritation is manditory.

Laser therapy

Laser therapy is indicated in persistent telangiectasia or residual lesions during or after hemangioma involution. Pulse dye laser is recommended due to absorption by hemoglobin; Nd: YAG is also used in lesions with significant venous drainage. During growth phase of hemangioma laser therapy is not ideally conducted because of the possibility of blistering, ulceration and long term pigmentation changes. [3, 23]

Surgical resection

Surgical resection is treatment method preferred for small hemangioma lesions located on the lips and buccal mucosa. This can be performed alone or in combination with other treatment modalities. Delaying the surgical resection of the lesion until after involution allows excision of a smaller and less vascular lesion.[3,18]

Sclerotherapy

Sclerotherapy is an evolving treatment modality for these lesions. In this a method a foreign agent such as 3% sodium tetradecyl sulfate or ethanolamine oleate is injected into one of the major vessels of a hemangioma, leading to endothelial damage and obliteration of the lumen. But the risk of thrombosis and embolization remains. [24]

Conclusion

Hemangioma is one of the most common benign vascular tumors which is at times misinterpreted as a vascular malformation. This dilemma is best tackled by histopathological assessment which remains the most accurate and satisfactory. Hemangioma is mainly grouped into infantile and congenital hemangioma. Multimodal therapy may be required in some cases which includes a combination of medical therapy, laser and surgical intervention.

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Legend Figures

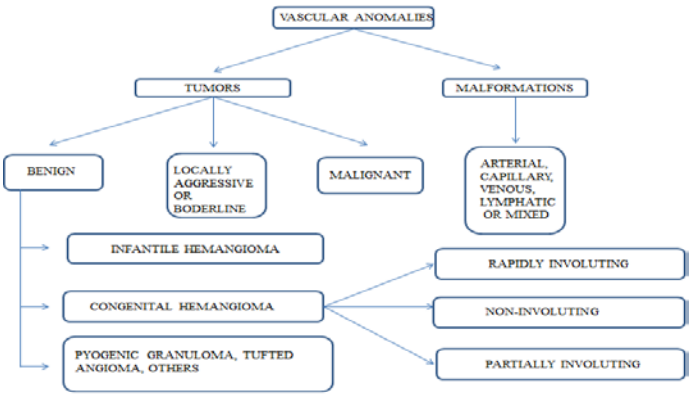

Figure 1: Showing the classification of Vascular anomalies

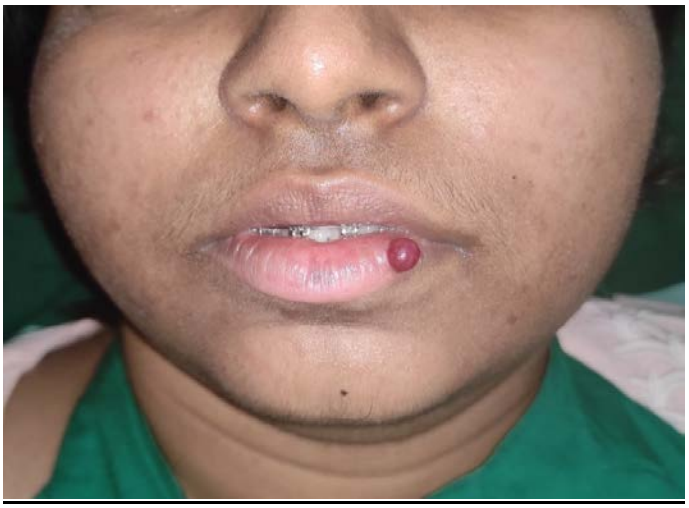

Figure 2: Facial view of the patient

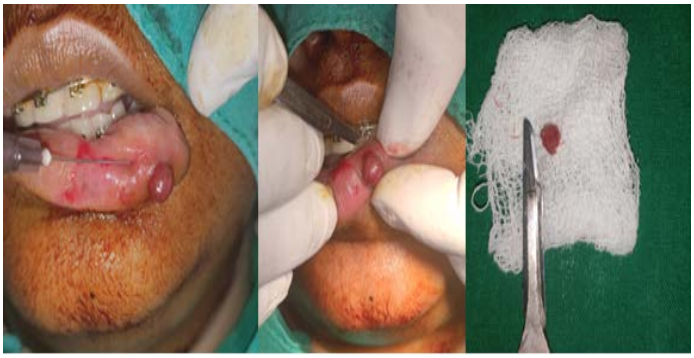

Figure 3: Intraoperative images

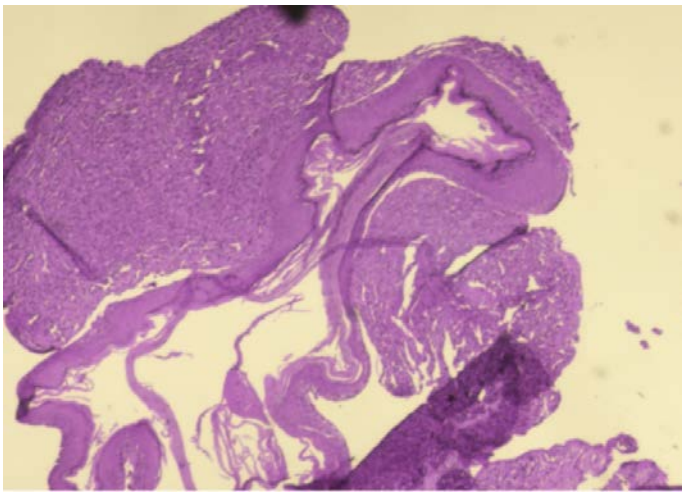

Figure 4: Histopathological image

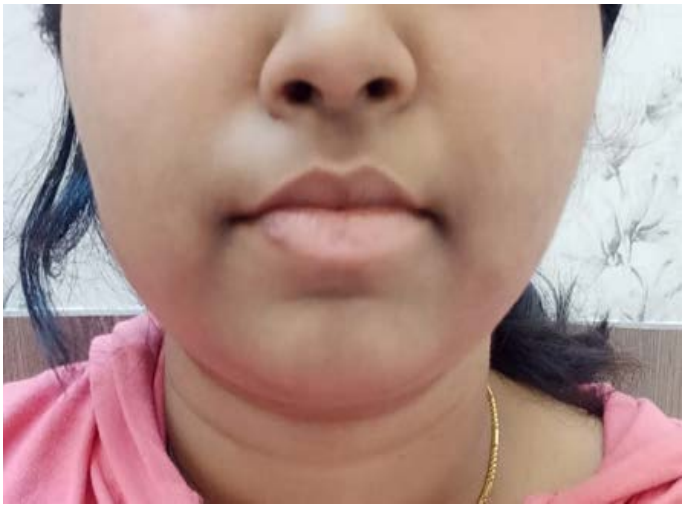

Figure 5: Post-operative image

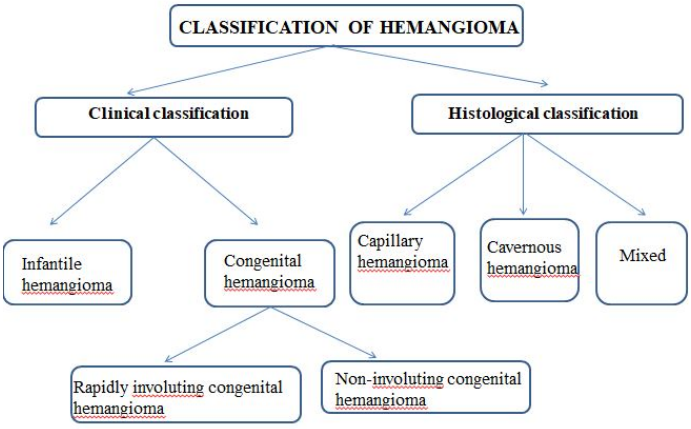

Figure 6: Showing the classification of Hemangioma

Table 1: Hemangioma development stages

Stages	Features
Stage 1: endothelial proliferation	• Growth begins after the progenitor cells migrate (possibly from the placenta) through the circulation and implant on distant regions of the body. • Endothelila cells rapidly multiply after stimulation by factors such as VEGF, basic fibroblast growth factor (bFGF), and transforming growth factor-beta (TGF-beta).
Stage 2: Quiescence(rapid growth)	• The number of endothelial cells stabilizes, and the cells will enlarge, leading to an overall increase in structure size.
Stage 3: Involution	• In this stage, the vessels mature, enlarge and reduced in number. • Vascular tissue replaced by fat, fibroblasts and connective tissue. • Few large feeding and draining vessels evident.