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CAVERNOUS HEMANGIOMA OF THE TONGUE: A CASE REPORT OUTLINING RADIOLOGICAL FACET

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ABSTRACT
Vascular anomalies are the most common congenital and neonatal dysmorphogenesis, which are separated into hemangiomas and vascular malformations. Among various sites of involvement 60% cases are located in the head and neck, rarely in the oral cavity where lips, tongue, buccal mucosa, and palate most commonly involved. It is a benign proliferation of endothelial cells and considered as most common neoplasm of the infancy. The true mechanism of pathogenesis is still unclear. Imaging resources such as Computed tomography (CT) and magnetic resonance imaging (MRI) may be useful in both diagnostic differentiation and analysis of lesion with regard to its size, extension and location, aswell as for follow up of lesions treated under systemic therapy. The Color Doppler ultrasound may be used to identify the feeding vessel, which willhelp to ligate the same during surgical procedure. Factors such as patient's age, size and site of lesion and the proximity of lesion to vital structures are paramount in the determination of the therapeutic approach and surgical excision. Here we report a case of 19 year old male patient with hemangioma involving the tongue. Also highlighting the radiological diagnostic aspects with different imaging resources.

KEYWORDS: Vascular malformation, hemangioma, tongue hemangioma.

INTRODUCTION
Vascular anomalies also referred to as vascular birthmarks are congenital lesions of abnormal vascular development. Considering histology, biological behaviour, and clinical presentation of these entities, they are classified based on a system developed in 1982 by Mulliken and Glowacki. A prime division is made between a vascular tumor growing by cellular hyperplasia, and a vascular malformation representing a localized defect in vascular morphogenesis.[1,2] Hemangioma is a benign vascular tumor that frequently occurs on skin, 80% of these lesions are single, while 20% are bilateral lesions. Suggested Male / female ratio is 1/3.[3]

These lesions can also be encountered intraorally on lips, tongue, anterior gingival, and buccal mucosa.[4] Tongue being a mobile prying organ is more prone for trauma and ensuing complications.[5] Hemangiomas follow an inevitable course with three distinct developmental phases: proliferation, quiescence, and involution.[6] Based on histology these tumors are further classified into capillary and cavernous forms.[7] The diagnosis of a hemangioma is primarily based on clinical history and physical examination. Ambiguous diagnosis is best evaluated by the radiographic modalities such as Doppler ultrasound or MRI.[3] Treatment of hemangiomas includes corticosteroids, sclerosing agents, radiation therapy, diathermy, electrocauterization, Surgery, cryosurgery, embolization, laser, radiofrequency, and interferon.[3]

CASE REPORT
- A 19 year old male patient reported to the Department of Oral Medicine and Radiology with a chief complaint of swelling on the tongue since 1 month after birth and also complains of difficulty in speech and swallowing. Swelling is asymptomatic in nature and in early age it was not associated with any discomfort. As the time progressed due to increase in size of the swelling, it has been causing difficulty in speech and swallowing. Clinically insignificant Medical and family history. On extra oral examination a diffuse scar noted below the lower lip measuring approximately 2 cm × 2cm in its greatest dimension. Lips appear to be potentially competent (Figure 1). Intraoral examination revealed a diffuse swelling present on the anterior 2/3 of the tongue, measuring around 4cm×4 cm in the greatest dimension. Swelling involving dorsal, ventral, lateral aspects. Multiple lobules with bluish hue noted on the ventral aspect of the tongue. Surface of the swelling appears smooth and granular. (Figure 2 and 3). On palpation swelling is Soft to firm in

consistency, non tender, afebrile and no pulsation noted. Positive diascopy test with significant blanching when performed on lateral surface of tongue (Figure-4).

Figure: 1

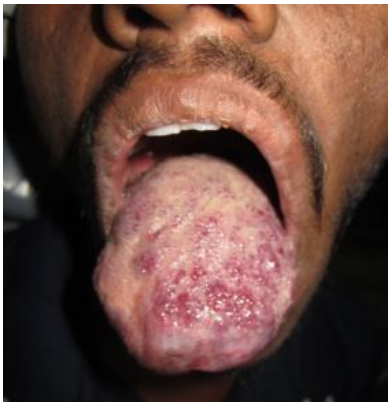

Figure: 2

Figure: 3

Figure: 4

Based on the history and clinical examination, provisional diagnosis of Vascular lesion was given. Differential diagnosis was considered as Lymphangioma.

Radiographic investigations

- Ultrasonography – Homogeneouslyhypoechoic areas noted (Figure–5).
- Magnetic resonance imaging (MRI) - Lobulated areas of T2 hyperintensity noted predominantly on the anterior 2/3 of the tongue with the extensioninto the lower lip (Figure – 6,7). The prominent vasculature is seen as flow voids. A well-rounded homogeneously enhancing cervical mass associated with high-flow vessels (signal voids) in and around the mass.

- Computed tomography (CT) Angiogram - no evidence of any vascular malformation. The neck vessels were normal in course and caliber. (Figure–8,9).

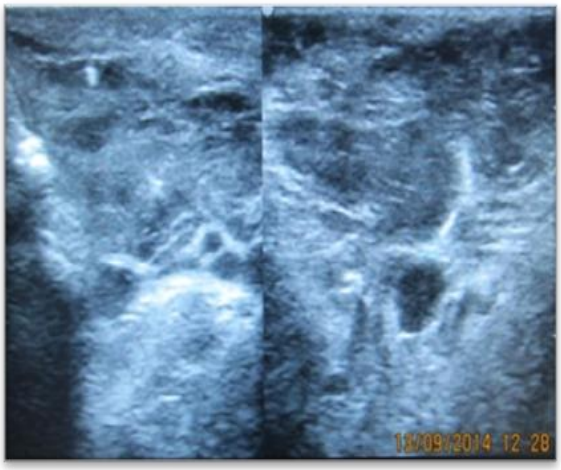

Figure -5

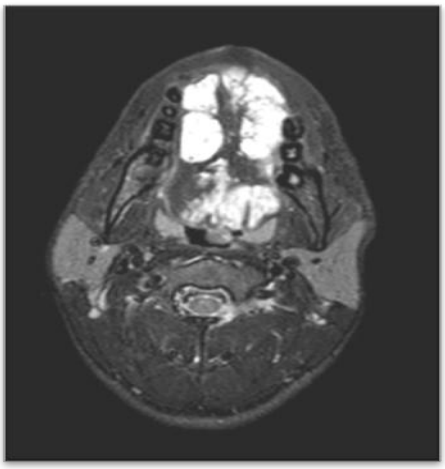

Figure -6

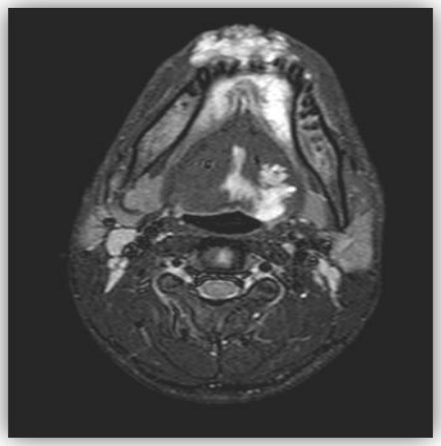

Figure -7

Figure -8

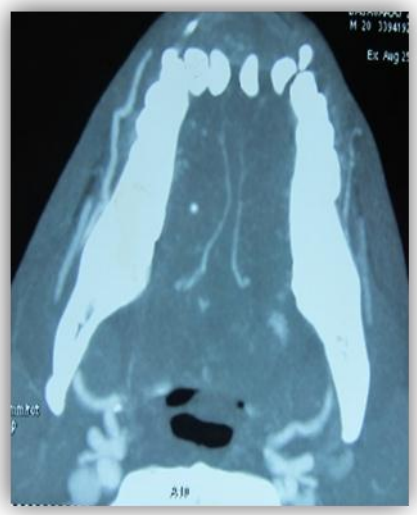

Figure -9

DISCUSSION

Vascular anomalies represent a myriad of blood vessels abnormalitiesthat are thought to occur perinatally. The most frequent vascular anomalies in order of presentation include hemangiomas, lymphatic malformations, capillary malformations venous malformations, and arteriovenous malformations.[1] Hemangiomas are the vascular-origin tumors that grow with cellular proliferation. They are 7% of all benign tumors and most common tumors of childhood. They usually occur sporadically, but they have also been reported in autosomal dominant familial transmission.[3]

It is predominantly seen on the skin surface though it can also affect internal organs. In the oral cavity they may occur onbuccal mucosa, tongue, lips, alveolar ridge, salivary gland, and jaw bones. Tongue hemangiomas pose distressing problems to the patients, producing recurrent hemorrhage, cosmetic distortion and functional problems with speaking, deglutition, and mastication.[5,8]

In most hemangiomas, 75-80% of proliferation occurs by first three months of life but may last longer. During proliferation, rapid growth can lead to exhaustion of blood supply causing ischemia, necrosis, ulceration, and bleeding. Following proliferation, hemangiomas enter a no growth phase, known as quiescence. This phase characteristically lasts from 9 to 12 months of age. The final phase of the hemangioma lifecycle is involution which is marked by graying of the overlying skin and shrinking of the deeper components[1]

History and physical examination plays the major role in the diagnosis of a hemangioma.[3] Radiographic imaging is indicated preoperatively in the cases where large lesions may impose on the vital anatomical structure such as orbit and facial nerve. Due to superficial location of tongue, easy accessand presentation of mucosal changes most lingual tumors can be diagnosed without imaging analysis. However, the nature and extent of lesions situated at deep portion of tongue, such as its base or submucosal lesions can be recognized only on crosssectional CT scan or MRI. CT, MRI can be useful

in volumetric assessment of the lesion.[9] Color Doppler differentiates between vascular and nonvascular lesions and can help to localize the feeding vessel.[10]

Hemangiomas usually appear as a well-demarcated enhancing mass often containing phlebolith on CT scan. MRI shows the lesion as a solid mass with isointense or slightly high signal intensity to muscle on T1-weighted images and heterogeneous signal intensity on T2-weighted images.[5] In our case Magnetic resonance imaging (MRI)showed lobulated areas of T2 hyper intensity predominantly on the anterior 2/3 of the tongue with the extension into the lower lip. However, contrast-enhanced MRI or angiography may be required to understand the depth of mass and to be informed about vascularization of large hemangiomas. In the present case there is no evidence of any vascular malformation and the neck vessels are normal in course and calibre on computed tomography (CT) Angiogram.

Treatment of vascular anomalies is complex and often involves multiple disciplines and therapeutic options. Medical management includes one or more systemic therapies. Corticosteroids, interferon, and vincristine have been successful for massive and life-threatening disease. Surgical management involves excision, laser treatment or both. Intralesional steroid treatment is also an option for focal hemangiomas of the parotid, nasal tip, subglottis, and eyelid.[1] Cryotherapy is beneficial in superficial lesions. Radiotherapy regresses hemangiomas, but it causes severe atrophy on tissues of the treated area especially on skin. It can also cause cancer in later years.[9]

CONCLUSION

Cavernous hemangioma has rare occurrence on the tongue. Early detection and biopsy are essentials in determining the clinical behaviour of the tumor and impending complications. In this case, if the size of the lesion was regressed during childhood, atleast the severe speech defect associated with the swelling could have been avoided. Therefore the treatment modality should be planned according to the diagnosis and prognosis of particular vascular malformation.

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