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## **CASE REPORT**

### **CAVERNOUS HEMANGIOMA OF THE BUCCINATOR MUSCLE- MRI FEATURES**

\*Tashika Kushraj, \*Laxmikanth Chatra, \*Prashanth Shenai, \*Prasanna K. Rao & \*\*Shishir R. Shetty

\*Department of Oral Medicine and Radiology, Yenepoya Dental College, Yenepoya University, Mangalore, Karnataka, India. \*\*Department of Oral Medicine and Radiology, AB Shetty Memorial Institute of Dental Sciences, Nitte University, Mangalore, Karnataka, India.

**Correspondence Author:** Tashika Kushraj; Email: [drtashika@gmail.com](mailto:drtashika@gmail.com)

Running Title: Cavernous Hemangioma

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#### **ABSTRACT:**

Intramuscular cavernous hemangiomas represent less than 1% of all hemangiomas and consist of benign proliferations of blood vessels. Typical presentation is an enlarging painful soft-tissue mass without cutaneous changes. We report a case of cavernous hemangioma of the buccinator muscle presenting as an asymptomatic unilateral swelling. The rarity of a cavernous hemangioma in such a location and its presentation as a unilateral swelling without cutaneous changes made the case unique. In addition we highlight the MRI features that guided us to arrive at a diagnosis.

**Key words:** Cavernous hemangioma, hamartomas, intramuscular, MR imaging.

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#### **INTRODUCTION:**

Hemangiomas are benign tumours that are characterized by a rapid growth phase with endothelial cell proliferations followed by gradual involution [1]. Cavernous hemangiomas occur at a deeper plane and have been described in most of the head and

neck locations in a variety of presentation [2]. Very few cases of Cavernous haemangioma of the buccinator muscle has been reported. A case of cavernous hemangioma is described because of its uncommon location and its confusing clinical presentation as a unilateral soft tissue swelling of the buccal mucosa. The

importance of MRI in the diagnosis of such a lesion cannot be overemphasized. The ethical clearance for the publication of the case report was obtained from the university ethics committee.

**CASE REPORT:** A 15 year old male patient presented to our institute with a complaint of swelling on the left side of the face since childhood. The patient's father revealed that the swelling was noticed since childhood which gradually increased in size and reached the present form. Esthetic was the prime concern of the patient, the swelling was otherwise asymptomatic. Medical and family histories were noncontributory. Patient appeared to be in overall good health other than the presence of the swelling. Extra oral examination revealed a diffuse swelling in the left middle third region of the face [Figure 1]. The swelling was smooth surfaced and measured 4.0cm X 5.0cm X 5.5cm extending from 1.0cm below the infra orbital margin to 1.0cm below the ala tragus line superior-inferiorly and medio-laterally 1.0cm from ala of nose to 1.0cm anterior to the tragus. Color over the skin of the swelling was normal. On palpation there was no rise in temperature. The swelling was nontender, non fluctuant, non pulsatile and did not blanch. Intraoral examination revealed no soft tissue abnormalities on the left side on inspection but

on bimanual palpation there was an increase in soft tissue mass on the same side when compared to the contralateral side. Based on the long standing history and clinical presentation, the swelling was provisionally diagnosed as myohypertrophy of the buccinator . On investigation, MRI study revealed diffuse soft tissue thickening over the left buccal mucosa region with ill defined lesion in the soft tissue plane [figure2]. The lesion displayed hypointense signal intensity on T1 weighted images with adjacent hyperintense areas. T2 weighted images shows inhomogenously hyperintense images [figure3]. Finally Short Tau Internal Recovery [STIR] sequence with fat suppression was performed and the lesion appeared bright [figure 4]. There was no obvious extension into masseter and underlying bones. Rest of the visualized soft tissues of the face was normal. The MRI features were highly suggestive of cavernous hemangioma.

In the management of this case the factors considered was age, site and size of the lesion. Since the patient was 15 years old and considering the possibility of regression of growth after puberty in these hemangiomas we decided to wait and watch. The patient was kept on 6 month recall basis. The patient reported after a year for a checkup and no complaint was reported by the patient.



Figure 1: Diffuse swelling of the left middle third region of the face.

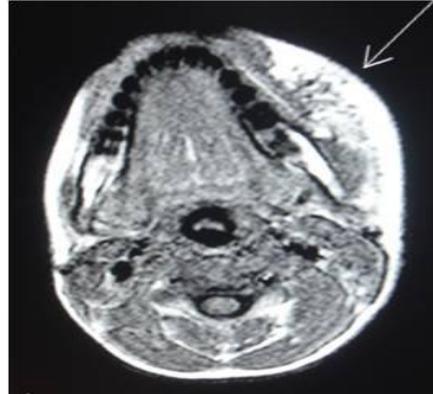


Figure 2: Diffuse soft tissue thickening with hypointense signal intensity on T1 weighted images with adjacent hyperintense areas.



Figure 3: T2 weighted images shows in homogeneously hyperintense images

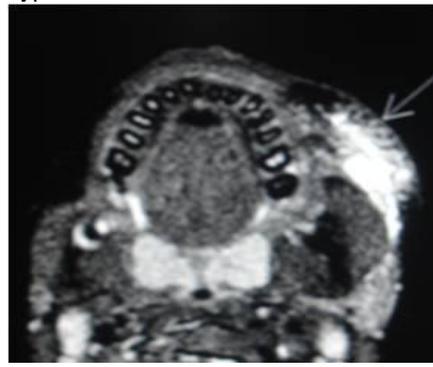


Figure 4: STIR sequence with bright images.

**DISCUSSION:**

In 1843, Liston was the first to report a case of intramuscular cavernous hemangioma naming it as an "erectile tumor".[3] Skeletal muscle hemangiomas accounts for less than 1.0% of all the tumors out of which hemangiomas in the masseter muscle are most common and next being in the trapezius muscle. [3,4] In the present case the tumor appeared to be arising from the buccinator muscle. Intra muscular hemangiomas are considered hamartomatous lesions and thought to arise from abnormal embryonic rests [5]. Based on the vessel size intramuscular hemangiomas can be classified into capillary, cavernous and mixed with capillary form being the most common. Cavernous hemangioma is a histological variant with numerous dilated venous channels. Vascular features such as visible pulsations, audible bruit, discoloration of overlying skin is usually not present in cavernous hemangioma. These features were also observed in the present case. Phleboliths are characteristically seen in cavernous hemangiomas [6,7]. However it was not seen in the present case. Diagnosis of hemangiomas in the head and neck regions is usually not complicated due to its classic presentation with discoloration. However in the present case, because of the uncommon location and nonspecific clinical presentation, diagnosis was challenging.

Aspiration is not very useful because it yields only blood [8]. Radiographs are useful to

evaluate phleboliths [8]. Ultrasound and Color Doppler flow studies are useful in studying the vascular nature of the lesion [9]. MRI is the ideal tool for diagnosis of soft tissue tumors, especially hemangiomas because they are able to delineate the vascular lesion from fatty tissue & muscle [7]. Characteristically hemangiomas in MRI shows a light bulb pattern which was seen in the present case. Angiography provides information about the feeding artery in larger hemangioma that can be embolised, however they are associated with complications [9].

Management of intramuscular hemangiomas depends on factors like age of the patient, extent, accessibility, rate of growth, size of the lesion after puberty and cosmetic considerations. Various treatment methods are discussed in literature of which surgery being the main modality [10]. Corticosteroids, sclerosing agents, radiotherapy have been adopted as adjunctive modalities of treatment [10].

In conclusion, cavernous hemangioma of the buccinator muscle although rare, should be considered in the differential diagnosis of soft tissue tumors of the orofacial region. The role of advanced imaging modality such as MR imaging in the accurate diagnosis is a highlight in our present case.

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