CASE REPORT

Intramuscular Massetric Hemangioma Resembling Parotid Swelling - A Rare Case Report

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ABSTRACT

Intramuscular hemangiomas (IMHs) are very rare and constitute approximately 1% of all hemangiomas. 0.8% of all hemangiomas and 10–20% of all intramuscular hemangiomas are located in the head and neck muscles, arising most frequently from the masseter and trapezius muscles. Due to its location it is often mistaken for a parotid swelling and rarely is an accurate pre-operative diagnosis achieved clinically. Currently, MRI is the standard imaging technique for diagnosing soft-tissue hemangioma.

The optimal management is surgical resection. Here is the case of 16 year old male patient presented with right side cheek swelling since three years. Presumptive diagnosis of massetric intramuscular hemangioma was made on the basis of CT and MRI findings. Surgical resection was done and histopathological findings confirmed the diagnosis. Intramuscular hemagiomas are rare in the head and neck region, and it should be considered in the differential diagnosis of masses in these regions. The knowledge of the nature and recurrence rate of an intramuscular hemangioma is useful for appropriate management.

Keywords-Intramuscular massetric hemangioma; rare case; MRI

INTRODUCTION

A hemangioma is a benign vascular tumor derived from blood vessel cell types. Intramuscular hemangiomas (IMHs) are very rare and constitute approximately 1% of all hemangiomas[1]. They occur most frequently in the large muscles of the upper and lower extremities and trunk[2]. 0.8% of all hemangiomas and 10–20% of all intramuscular hemangiomas are located in the head and neck muscles, arising most frequently from the masseter and trapezius muscles[3]. Intramuscular hemangiomas [IMH] generally occur in the first three decades of life[4]. Although intramuscular hemangiomas have shown an equal sex distribution, involvement of the masseter has a definite male predominance[5].

Intramuscular hemangiomas generally present as progressively enlarging and often painful lesions. Thrills, bruits, compressibility, and pulsation are usually absent[6-8]. Preoperative diagnosis of IMH of the masseter muscle is problematic because they may be confused with parotid tumor or other muscular lesions. In a patient with a soft-tissue mass suspected of to be a hemangioma, MRIs may provide more specific information regarding the characteristics, origin, and extent of the lesion[9].

CASE REPORT

A 16 year old male presented to ENT department with chief complaint of right side cheek swelling since three years. Patient had significant past history of trauma at the same at six months of age.

The swelling was firm, oval situated over right side parotid region measuring approximately 3x4cm and was non-pulsatile, non-transilluminant and non-compressible. No audible bruit and thrill was present. Facial movements, intraoral examinations and overlying skin were normal. Patient had undergone biopsy of the same 3 months back at other institute which revealed chronic parotitis on histology.

Fine needle aspiration cytology and ultrasound examination were inconclusive.

The contrast enhanced computerized tomography was done to know the relationship of lesion with respect to bony landmarks which showed a well-defined heterogeneous mass lesion involving the right masseter muscle which was highly vascular.[Figure 1]

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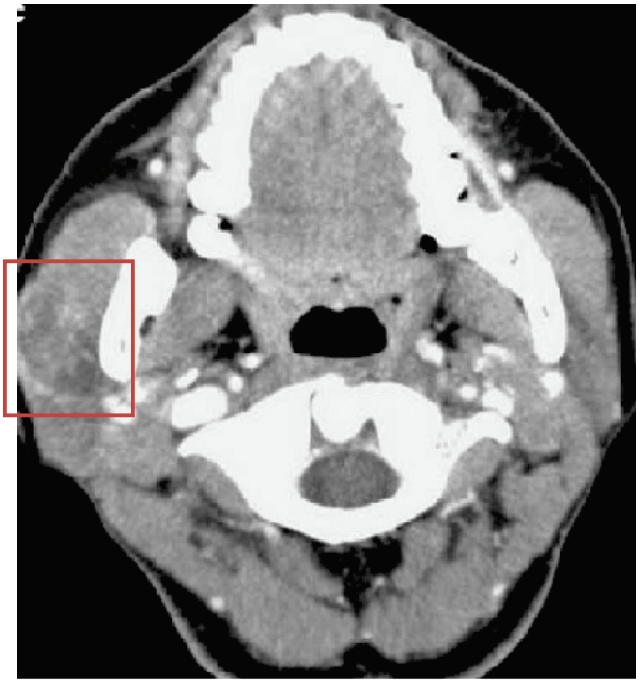
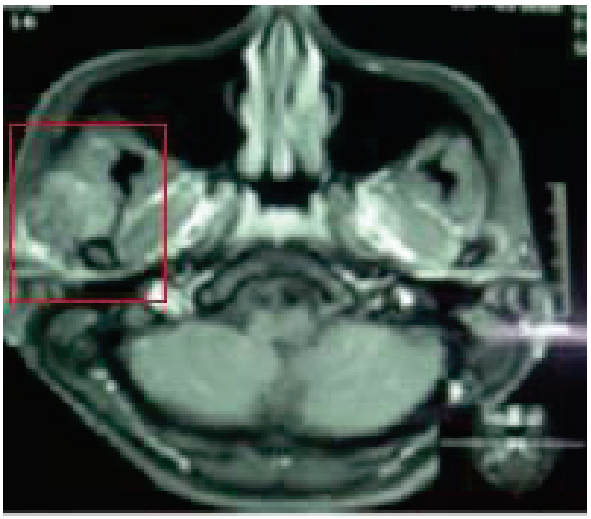


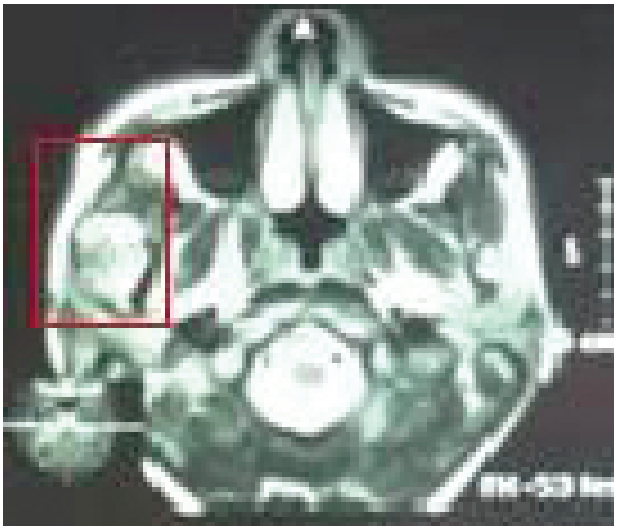
Figure 1: Contrast enhanced computerized tomography showing well defined heterogeneous mass lesion involving the right masseter muscle which was highly vascular (red marked area)

Gadolinium enhanced MRI revealed a well-defined, well-marginated mildly enhancing mass lesion of size 33*23 mm, slightly hyperintense to the masseter muscle and hypointense to the parotid gland on T1-weighted images [Figure 2 (a)] , markedly hyperintense to both the masseter muscle and parotid gland on T2-weighted images [Figure 2 (b)].

These findings were highly suggestive of the intramuscular hemangioma of the masseter muscle.



(a)



(b)

Figure 2 : (a) Gadolinium enhanced MRI revealed a well - defined, well -marginated mildly enhancing mass lesion slightly hyperintense to the masseter muscle and hypointense to the parotid gland on T1-weighted image. (b) Gadolinium enhanced MRI revealed a well - defined, well - marginated mildly enhancing mass lesion markedly hyperintense to both the masseter muscle and parotid gland on T2-weighted image

Transparotid excision of swelling was planned. Modified Blair's incision was given including the old incision, fibrosis was found of previous biopsy, the superficial parotidectomy was done to identify facial nerve trunk and its all terminal branches. The facial nerve fibres lying over massetric bed [Figure 3], were separated from masseter and gently uplifted with hook and the lesion was approached between the zygomatic and temporal branches. Dissection was done through massetric muscle to expose the lesion. Then with harmonic scalpel the tumor was removed en-toto [Figure 4]. Post-surgically, the patient had grade 3 facial weakness which improved to grade 1 over 3 weeks.

Histopathology revealed that the given soft tissue section showed skeletal muscle infiltrated by fibrovascular connective tissue exhibiting numerous large dilated thin walled as well as smaller thick walled vascular spaces filled with RBCs. There was also proliferation of small and capillary sized of blood vessels in between. These blood vessels were lined by the single layer of endothelial cells. There was no evidence of malignancy. These findings suggested intramuscular mixed hemangioma [Figure 5]

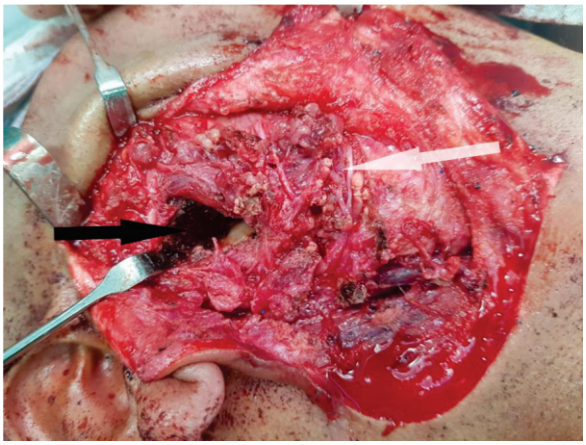


Figure 3: (White arrow –branches of facial nerve) (Black arrow- area from where hemangioma was excised within massetric muscle)

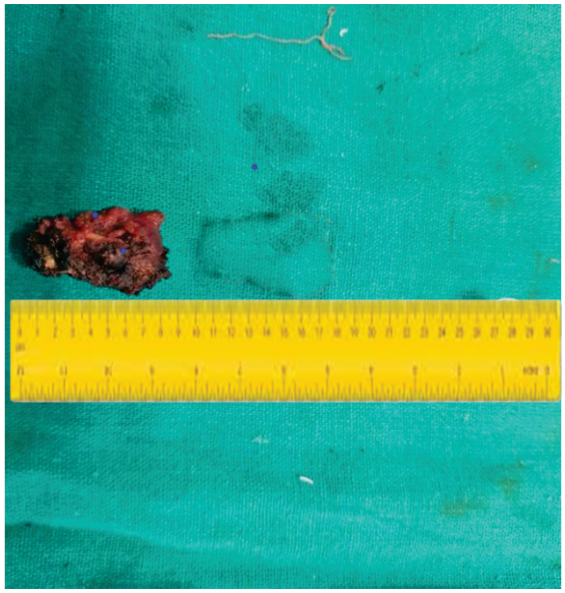


Figure 4 : excised specimen

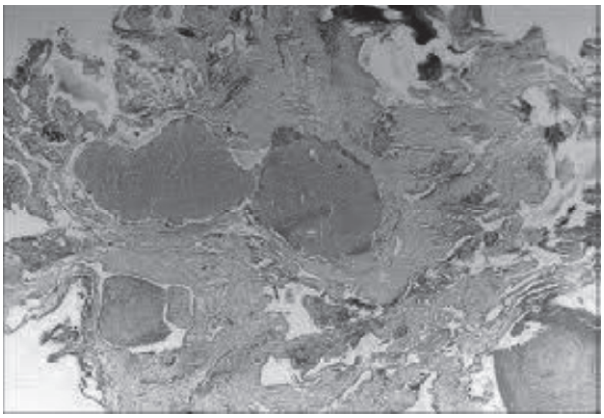


Figure 5: Microscopic examination - Numerous dilated blood vessels containing blood with some small capillary-sized blood vessel

DISCUSSION

Vascular lesions involving the skeletal musculature are uncommon tumors characterized by the proliferation of blood vessels, occurring most frequently in the large muscles of the upper and lower extremities and trunk[2], first described by Liston[10]. Numerous classifications of vascular lesions exist in the English literature. Mulliken and Glowacki classified vascular lesions as vascular malformations and hemangiomas, based on their clinical appearance, histopathologic features and biologic behavior[11]. Allen & Enzinger[12] classified them histologically as (1) capillary (vessels smaller than 140 micrometer in diameter), (2) cavernous (vessels larger than 140 micrometer in diameter) or (3) mixed (consisting of both small and large vessels). In our case, the tumor can be classified as hemangioma of mixed type. Etiopathogenesis remains unclear although various theories have been proposed to explain its etiology. The most likely explanation is that the intramuscular hemangioma is a congenital mass, arising by abnormal embryonic sequestrations, similar to congenital arteriovenous malformations[13]. Traumatic etiologies have also been suggested[14]. We feel that the most probable cause in our case could be direct trauma to the cheek in childhood. As in intramuscular hemangiomas the classical sings of thrills, bruits, compressibility, and pulsation are usually absent so these tumors can be confused clinically with a large number of entities like salivary neoplasm's, cysts, lymphangiomas, rhabdomyosarcomas, masseteric hypertrophy, and schwannomas[12]. Diagnosis of such vascular lesions is often challenging. FNAC is inconclusive in arriving at a diagnosis as it yields only a bloody aspirate[4]. Superselective arteriography with subtraction clearly defines the altered vascular pattern and flow dynamics including feeder vessels and also opens up therapeutic modalities. However it may fail to demonstrate low flow lesions adding to the diagnostic difficulty. Though contrast CT may demonstrate the vascular nature of the tumor MRI has shown superiority in the exquisite delineation and contrast of the lesion from its surroundings due to its multiplanar capability. As in our case, MRI findings were identical with the literature and our case had characteristic sign for hemangioma- like high signal intensity on T2-weighted MRI images, with marked enhancement after gadolinium administration. Management of intramuscular haemangioma should be

individualized according to the tumor location and extent, tumor growth rate, anatomical accessibility, patient age and cosmetic considerations[15]. Many treatment modalities like cryotherapy, radiation therapy, steroid administration, embolization, sclerosing agents, carbon dioxide snow and blood vessel ligation have been advocated[16]. But the treatment of choice at present remains surgical excision, the indications for surgery being symptomatic but stable tumors, sudden rapid acceleration of tumor growth, gross functional impairment, local skin necrosis, thrombocytopenia, cosmetic deformity and suspicious of malignancy[17]. In this case we choose surgery as treatment of choice because the tumor was growing in size and causing disfigurement of the face. Local recurrences occur in approximately 18% due to incomplete surgical resection[16]. Spontaneous regression does not occur. Regional and distant metastasis has not been reported. In this case also, no recurrence has been noted upto 1 year of follow up.

CONCLUSION

Intramuscular hemangiomas are rare in the head and neck region, and it should be considered in the differential diagnosis of masses in these regions. Its diagnosis is difficult because of its rarity and non-specific signs .The knowledge of the nature and recurrence rate of an intramuscular hemangioma is useful for appropriate management.

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