

Intramuscular Haemangioma in the Head and Neck

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SUMMARY

Intramuscular haemangioma is a rare tumour of the head and neck region. This patient presented with progressive painless swelling in the parotid region since she was three years old. Intramuscular haemangioma of the masseter was diagnosed at the age of 34 and she was successfully treated with surgical excision.

KEY WORDS:

Haemangioma, Painless swelling, Surgical excision

INTRODUCTION

Intramuscular haemangioma (IMH) in the head and neck region is rare and frequently involve the masseter muscle. It tends to be relatively well circumscribed, and insidiously infiltrate the muscle resulting in a mass with deceptive gross margins. The tumour has a tendency to recur following attempts at surgical extirpation. Inaccurate preoperative diagnosis and treatment planning may lead to incomplete excision and unnecessary risk to facial nerve injury.

CASE REPORT

A 34 year-old lady presented with a gradually enlarging painless swelling over her left parotid region since she was three years old. She was otherwise asymptomatic. Previously she had had three previous surgeries performed. The earliest procedure was to stop a spontaneous bleed from the mass at the angle of the mandible at the age of 13. Subsequently, 17 years later, she underwent a left superficial parotidectomy. Despite of the apparent success, the swelling recurred within a few months. She had another failed surgical attempt six months following the second surgery.

Physical examination revealed a swelling (4x4cm) over the left parotid region, firm in its consistency with multilobulated surface. It was mobile but fixed with the contraction of the masseter. Her facial movement was normal. There was no palpable thrill and the overlying skin was normal. Intraoral examination was unremarkable.

MRI scan revealed a mass within the masseter muscle measuring 6x4x3cm with multiple circular structures within it. There was a mixture of signal void and slightly hyperintense signal on T2-weighted images which represent dilated vessels within the muscle mass. The adjacent mandible was normal. These findings were highly suggestive of intramuscular haemangioma (Figure 1 and 2).

External carotid angiogram showed a tumour blush in the selective left facial artery run. A gelfoam embolization on the left facial artery was successfully performed following the confirmation of the feeding vessel.

Surgical exploration of the tumour via Modified Bailey incision was performed three days post-embolization. A Facial nerve stimulator was used during the surgery. The intraoperative findings were that of a very vascular tumour involving the whole masseter and a normal parotid gland superficial to it. The tumour and the masseter muscle were removed in toto with preservation of the facial nerve.

Histopathological report on macroscopic sections showed multiple irregular spaces, some of which contained hard round whitish beads (calcification). Microscopically, the tissues composed of muscle bundles, fibrovascular tissue, mature adipocytes and some trabeculae. There were multiple dilated vascular channels lined by endothelial cells within the muscles. Some of these channels contained thrombus, consistent with cavernous type of haemangioma.

She had an uneventful recovery following the surgery. There was no evidence of recurrence at one year follow-up.

DISCUSSION

Haemangioma usually occurs in the skin, subcutaneous tissue or muscle. Haemangioma of soft tissue can be divided into intramuscular and extramuscular. The most common sites for intramuscular haemangioma are the trunk and lower limbs. Only 10 to 20% of all intramuscular haemangioma present in the head and neck, and 60% are in the masseter and trapezius¹. Other possible sites are periorbital muscle, sternomastoid, temporalis muscle, geniohyoid and medial pterygoid.

Intramuscular haemangioma mostly present before the age of 30. It is believed to be benign, hamartomatous, congenital neoplasms that go undetected for long period of time until sudden growth gives rise to pain or cosmetic deformity. Traumatic and hormonal influences have been suggested and may contribute to the aetiology or growth spurts². It presents as a slowly enlarging mass with generally normal overlying skin but may have a reddish blue discolouration or even hyperthermic.

The swelling is normally diffuse in nature, compressible and characteristically deep within the muscle. However, softness

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Fig. 1: T1 weighted MRI (coronal view) showing a mass within the left masseter muscle. The right masseter is normal.

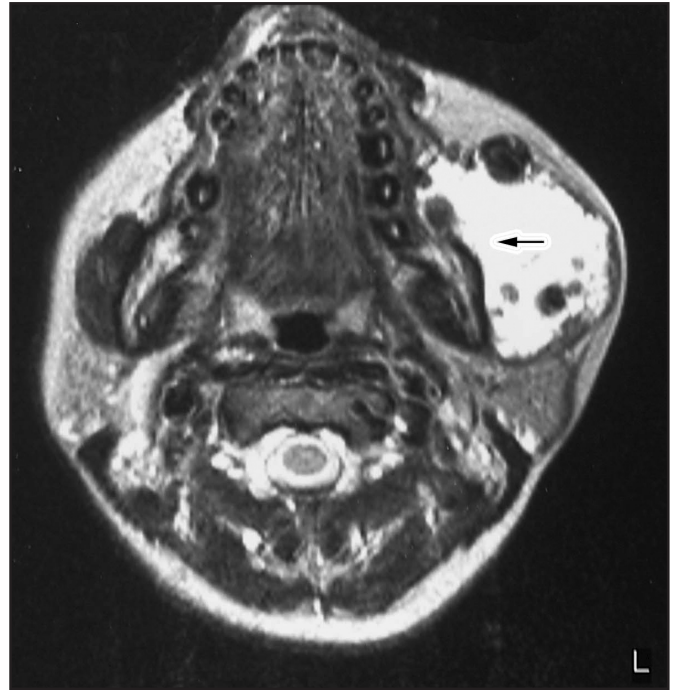


Fig. 2: T2 weighted MRI (axial view) showing mixture of signal void and slightly hyperintense signal which represent dilated vessel within the mass.

and compressibility may be absent due to local fibrosis and overlying musculature or to the prominent cellularity of capillary type tumours. Pulsations, bruits or thrills are uncommon but when present, arteriography is indicated as to identify large vessel communications.

These neoplasms appear to grow as nonencapsulated masses characterized by a multicentric proliferation of cords of endothelial cells that subsequently canalize. The characteristic of locally invasive tumour involved growth along planes of least resistance. It is confined to one muscle in 80% of cases². Histologically, the lesions are classified as (1) capillary (vessels smaller than 140 micrometer in diameter), (2) cavernous (vessels larger than 140 micrometer in diameter) or (3) mixed. Capillary haemangioma usually presents with a short history. They are highly cellular thus explain the firmness and lack of clinical signs to suggest its vascular nature².

Cavernous haemangioma generally present with longer history of symptoms, tend to be larger in size and painful. They are most common in the lower extremity with only 19% occurring in the head and neck³. Mixed type is histologically similar to cavernous type so does its clinical presentations. CT-scanning will reveal enhancing well circumscribed intramuscular mass but unable to define tissue planes and the vascularity of the lesion.

MRI shows good tissue delineation. Intramuscular haemangiomas are characteristically much brighter on T2 than on T1 weighted images. Arteriography with pre-op embolization of feeding vessels enhances haemostasis and can facilitate excision. Fine needle aspiration biopsy is non-diagnostic.

Management of intramuscular haemangioma should be individualized according to the tumour location and extent, tumour growth rate, anatomical accessibility, patient age and cosmetic considerations. Some of the patients can be observed with the accuracy of the MRI especially in young children¹. The optimal management is wide surgical excision² that include normal muscle beyond the gross limits of the tumour. Cosmetic and functional disabilities after excision have been minimal even after significant removal of surrounding normal muscle⁴.

The indication for surgery include symptomatic but stable tumours in older children, sudden rapid acceleration of tumour growth, gross functional impairment, local skin necrosis, thrombocytopenia, cosmetic deformity and suspicious of malignancy⁴. Local recurrences occur in approximately 18% due to incomplete surgical resection. Spontaneous regression does not occur. Regional and distant metastasis has not been reported.

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