

Temporalis muscle's cavernous hemangioma: a new case report and review of the literature

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ABSTRACT

Hemangiomas are vascular tumors. They represent about 7% of all benign tumors. Intramuscular location is unusual. Head and neck hemangiomas represent less than 15% of these intramuscular hemangiomas. Still rarer is the temporalis muscle location. Surgery is the treatment of choice allowing, in particular, to rule out a malignancy.

A forty-two years old patient was admitted for a painless, slow growing mass of the left temple. This lesion was, surgically, excised and the final pathology confirmed the diagnosis of cavernous hemangioma.

Diagnosis and treatment of temporalis muscle hemangioma are, in fact, controversial.

Key words: Hemangioma, intramuscular, temporalis muscle.

INTRODUCTION

Intramuscular hemangiomas represent less than 1% of hemangiomas, all locations combined; Limbs and trunk are the main locations.

Three types of hemangioma have been described according to the pattern of their vascularization: capillary, cavernous and mixed. We report the case of a patient operated of a temporalis muscle's cavernous hemangioma. Furthermore, we review the literature regarding the diagnosis and treatment of this disease.

CASE STUDY

A 42 years old female patient was hospitalized for a painless mass of the left temple. Our patient had noticed it nearly three years before her admission. It had a progressive size increase. Clinically, it was a 3 cm mass, which seemed to be fixed to deeper layers even during chewing movements (fig 1).



Figure 1 : Clinical aspect of the left temporal tumor.

It was hard at palpation but not pulsatile. The remaining physical and neurological exams were normal.

The CT scan showed a left temporal tumor of 45x35 mm, which was iso-dense and well defined. This tumor kept a security edging with the underlying muscle (fig 2).



Figure 2 : CT scan; axial section: left temporal mass, iso-dense compared to the temporal muscle.

The lesion was removed under general anesthesia and the surgical procedure could be summarized as follows:

- The incision followed the hair implantation basis and circumvented the tumor.
- The mass was located in the left temporal muscle and under the superficial temporal fascia. It was firm, reddish and did not infiltrate the muscle (Fig 3, 4).
- It was easily "peelable" using fingers without capsular breaking.
- The closure was done without using a suction drain.

The postoperative course was uneventful. Definitive pathological examination showed large cavernous vascular



structures divided by hyaline fibrous septas confirming the diagnosis of cavernous hemangioma.



Figure 3 : Intraoperative view of the lesion, before incision of the superficial temporalis fascia.



Figure 4 : Tumor's macroscopic appearance.

DISCUSSION

Intramuscular hemangiomas are rare tumors representing 0.8% of all hemangiomas and about 14% of them are located within head and neck muscles (1, 2). The masseter muscle (36%), followed by the trapezius (24%) are the most commonly affected muscles, while intramuscular hemangiomas of the temporal muscle are extremely rare, with only some twenty cases reported in the literature¹.

Intramuscular hemangiomas have been described by Liston in 1843 (3), and classified in 1972, by Allen and Enzinger according to the type of vascularization. Capillary variant is the most common variant representing 68% of intramuscular hemangiomas. Cavernous hemangiomas come in second position followed by mixed type ones with an incidence of 26% and 6%, respectively (4). Cavernous

type affects mainly lower limbs (42%) and the cervical region (19%). Both capillary and mixed type occur rarely in head and neck region (5).

Etiology of these lesions remains unknown, although trauma or hormonal disturbances were considered important factors in the proliferation of embryonic vascular remnants (1).

Capillary and cavernous intramuscular hemangiomas occur mainly during the second and third decades of life. A slight female predominance was reported (6).

Usually, these intramuscular hemangiomas present clinically as a slow growing mass. They are, often, well limited, mobile and with no signs of vascular aspect such as discoloration of the overlying skin or a pulsatile character (1, 10). Clinical sensitive troubles of fifth cranial nerve are an important feature to seek. This may indicate other the possibility of an invasive process, a possible intracranial associated location (10). Several differential diagnoses could be discussed. They include, as well, neurofibromas, lipomas, dermoid cysts, lymph nodes and soft tissue sarcomas (1). Hemangiomas are easily distinguished from other soft tissue tumors by modern imaging techniques including CT scan and MRI (1, 2). CT scan, often first requested examination, is useful to define the shape, size and anatomical relations of the tumor, particularly the underlying temporal bone. MRI is, however, the preferred method to identify the vascular nature of the tumor. In T1 sequence, hemangiomas appear iso-intense or hypo-intense to muscle. In T2 sequence, they are hyper-intense because of stagnant blood volume, which help to distinguish the lesion from normal muscle and other neoplasms (2, 8). Moreover, the presence of phleboliths (calcifications) can be considered as specific of hemangioma (5). Nevertheless, over 90% of intramuscular hemangiomas may be under diagnosed given the potential excessive infiltration by fatty or fibrous tissue (4).

Finally, arteriography is useful in determining tumor's feeding vessels for possible preoperative embolization (1, 2, 8).

Surgical removal constitutes the main treatment modality allowing tumor's histological verification and reducing the rate of local recurrence (1,9). Indications of this surgical treatment depends, however, of patient's age and his functional complaints, pain and esthetic prejudice included (1, 2). Heckl et al recommend, instead, a simple clinical and radiological follow-up for at least 2 years. Surgical treatment, according to these authors, is limited to capillary hemangiomas because of their aggressive behavior, to cases of progression of the neoplasm and in case of functional impact (refractory pain and/ or esthetic prejudice) (7).

Local recurrence, mainly due to incomplete resection, is different for the three histological types. These recurrence rates range, in literature, between 28%, 20% and 9% for mixed, capillary and cavernous types respectively (1,2). Use of steroids, radiotherapy and sclerosing agents have been proposed either as alternatives or as complement to surgery (1, 9).

Clinical and, if necessary, radiologic follow-up is highly recommended in order to ensure the diagnosis of an eventual relapse.



CONCLUSION

Haemangiomas are benign vascular tumors and are rarely seen in the temporalis muscle. Although this is a report of a single case, we emphasize that radiological investigations are generally insufficient for a correct diagnosis of intramuscular hemangiomas. Surgery is, then, the treatment

of choice to confirm this diagnosis and exclude malignancy.

Conflicts of interest: Authors have declared that no competing interests exist.

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