Intramuscular hemangioma of the neck

Clinical History:

A 30-year-old patient presented to his physician with a single, asymptomatic, palpable mass of the right neck, referring that it had gradually increased in size over a 6 months period. CT, MRI and DSA examinations were performed and the findings are presented.

Imaging Findings:

The patient's history was uneventful, also for local neck trauma. Examination revealed a well-defined, painless, rubbery, deep seated mass in the right part of the neck. The skin over the mass was normal, non-pulsatile and with no discoloration. There was no thrill or bruit. Signs of regional lymphadenopathy or associated neurological deficit were not depicted. The patient did not refer restriction in the head and superior limb movement.

CT examination identified a large, clearly defined mass situated among the muscles of the right part of the neck (within the scalenus medius muscle). After the intravenous injection of contrast material the mass revealed heterogeneous, strong enhancement with presentation of large vessels (Fig. 1, arrows).

On MRI the mass was hyperintense when compared with signal intensity of normal muscle, on both T1- and T2-weighted images (Fig. 2, 3). Contrast MRI demonstrated a diffusely enhancing well-defined soft tissue lesion, situated within the scalenus medius muscle (Fig. 4).

DSA examination demonstrated the hypervascular nature of the lesion and the feeding vessels originating from the thyrocervical and costocervical trunks (Fig. 5).

The patient underwent complete surgical excision of the lesion along with the surrounding muscle fibres. The histopathological examination revealed mixed type hemangioma (Fig. 6).

Discussion:

Hemangiomas are benign congenital neoplasms. Intramuscular hemangioma is a distinctive type representing about 1% of all hemangiomas. It occurs within the skeletal muscle and more frequently in the trunk and extremities because of the larger muscle mass in those areas. Intramuscular hemangioma of head and neck represent 15% of all intramuscular hemangiomas. They most often are presented in the masseter muscle (36%), the trapezius (12%), the sternocleidomastoid (10%) and the temporalis (8%). Hemangiomas of the buccinator and periorbital muscles have also been described.

Intramuscular hemangiomas usually present in the second or third decade of life with a slight male preponderance. It is considered to be a congenital tumor arising from embryonic rests. There is also the theory that traumatic and hormonal influences may contribute to the cause or growth of these lesions.

Histologically they are subdivided into small vessel or capillary hemangiomas, large vessel or cavernous hemangiomas and a mixed type, which contains both small and large vessels. Capillary hemangiomas are the
commonest type while cavernous and mixed types account for only 19 and 5%, respectively. The mixed type hemangiomas have the same characteristics as cavernous type hemangiomas but a high recurrence rate (28%). In addition to the vascular component, adipose tissue is quite common but intravascular thrombi, fibrous tissue, lymphoid follicles, and calcification are less commonly found. Plain radiography is non-diagnostic but reveals a mass lesion, with calcification in about 15% of cases. CT examination shows the tumor as an enhanced, well-circumscribed mass and is useful in differentiating it from other soft-tissue tumors such as lipomas, which displays low-density attenuation. CT examination may underestimate the extent of the mass. Magnetic resonance imaging (MRI) detects better the extension and delineation of these masses. The MRI findings consist of an intermediate signal mass on T1 weighted images and an intense signal mass with well-defined margins, clearly differentiated from the surrounding normal muscles, on T2 weighted images. Heterogeneous signals corresponding to blood flow in dilated tortuous vessels are noted on both T1 and T2 weighted images. Other focal inhomogeneities may represent fibrous tissue, smooth muscle components or calcification, all of which are quite frequent in hemangiomas. Angiography may help before surgical intervention giving more information about the nature of the tumor or detecting a large feeder vessel connected to the tumor. Preoperative embolization can also be performed angiography to minimise blood loss. Complete surgical excision of the lesion along with the surrounding muscle fibres is the best way of treatment. Ligation of the feeding vessel is also necessary. Minor feeder vessels left in place may be responsible for recurrence which has been reported up to 18%.

**Differential Diagnosis List:** Intramuscular hemangioma

**Final Diagnosis:** Intramuscular hemangioma

**References:**


Figure 1

**Description:** The mass demonstrates a strong, heterogeneous enhancement with the presence of tortuous vascular structures (arrows) **Origin:**

Description: Hyperintensity of the lesion compared to the adjacent muscle

Origin:
Figure 3

Description: Hyperintensity of the mass compared to the muscle

Origin:
Description: Demonstration of a diffusely enhancing well-defined soft tissue lesion, situated within the scalenus medius muscle。

Origin:
Description: Hypervascularity of the mass of the right neck. Demonstration of the feeding vessels arising from the thyrocervical and costocervical trunks. Origin:
Figure 6

**Description:** Histopathologic image demonstrating a mixture of cavernous-like vascular spaces, capillaries and large thick-walled veins dissecting and separating muscle fibers (H&E X 200)

**Origin:**