Open Access Case Report

Intramuscular hemangioma

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Abstract:

Intramuscular hemangiomas are rare asymptomatic angiomatous tumors , showing a slow growing pattern . We reported a rare case of biceps muscle hemangioma in a 22-years-old man who presented with progressive swelling following a simple trauma four years ago , after examining the patient with ultrasound (US) ,computed tomography(CT) scan and magnetic resonance imaging (MRI), which was confirmed by histopathology later on .

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Introduction:

Hemangiomas are abnormal proliferations of blood vessels, making up 7% of all benign soft tissue tumors. Their true incidence and prevalence are difficult to calculate, as the majority of lesions are small and asymptomatic. (1-3) Although hemangiomas are common benign angiomatous soft tissue tumors , intramuscular hemangiomas are rare, reaching about 0.8% of all hemangiomas with approximately half of all cases localized in the lower extremities, particularly the thighs. (4) Causes of intramuscular hemangiomas are usually either congenital or traumatic, generally present as a slow growing swellings which can be painful. Pain is often accentuated during exercise of the diseased muscle due to vascular dilation and increased blood flow, leading to swelling and pain. Clinically,hemangiomas can be diagnosed by isolated pulsations, positional change in the limb size (enlarged when dependent and regressed when elevated), compressible ,hot , contracted muscle, tender during palpation, and weak muscle.(5) The absence of the tell-tale signs of a vascular tumor such as bruit and thrill can cause misdiagnosis. (4)

Case report

A 22-years old man presented with a swelling over the left arm for over four years . The swelling was painless and gradually increased in size . As the man was a boxer man ,there was history of trivial trauma to the site before four years. On examination, there was an ill-defined swelling in the anteromedial aspect of the left arm (on the biceps muscle) , oval in shape , with ill-defined borders, measuring about 20 x10 centimetersand was compressible . The lesion did not change in size during flexion or extension ,with a bluish discoloration of the skin over the lesion .

On ultrasound ,by Phillips HD11XE ultrasound machine using the linear probe (3-12 Hz) superficial preset ,we found a large hypoechoic mass 20 x 10 cm at the anteromedial aspect of the left arm in the biceps muscle (figure1).It showed few tubular internal hypoechoic areas that demonstrated flow on color Doppler study suggesting a vascular lesion.

CT scan was done on the same day , using Siemens 64 slices CT scan device (using Slice thickness 1 mm ,axial , sagittal and coronal views with multiplanar reformatting . Then intravenous contrast was given by injector (dynamic scan) (contrast amount 70 ml ,at the rate of 1.5 ml per second). On unenhanced CT, it appeared as an ill-defined isodense mass (of similar attenuation to the muscle) .Contrast-enhanced CT scan was done in dynamic multiphasic study (early arterial phase 25 seconds , venous phase 40-50 seconds , late phase after 5 minutes) , showed an enhancing mass in the left arm with centripetal pattern (Figures 2 and 3)through which the lesion began to enhance peripherally in a nodular pattern then the contrast started to fill all the lesion towards the inside till it got enhanced totally.

MRI was also done using Seimens1.5 T ; the sequences were T1-weighted image ,T2-weighted image ,T2 STIR (short Tau inversion recovery) , and T1 fat suppression in both pre and post intravenous contrast , The mass appeared as hyperintense in T2-weighted

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and mixed (both hypo and hyper intense) in T1-weighted images , and showed intense enhancement after intravenous contrast injection , and partially suppressed in T1 fat saturated (consistent with fatty component) .All features were in keeping with the diagnosis of an intramuscular hemangioma(figure 4). Unfortunately angiographic study was not done.

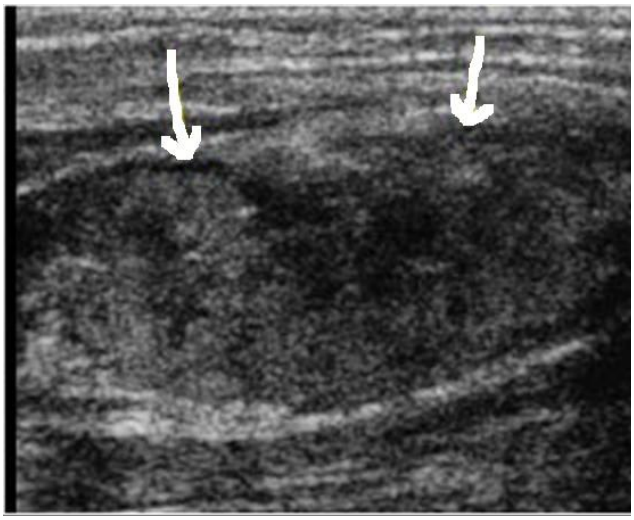


Figure 1: ultrasound image showing a hypoechoic mass in the biceps muscle

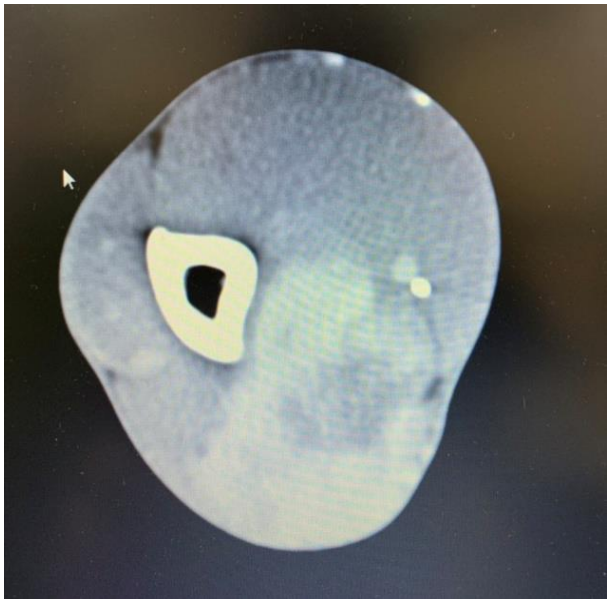
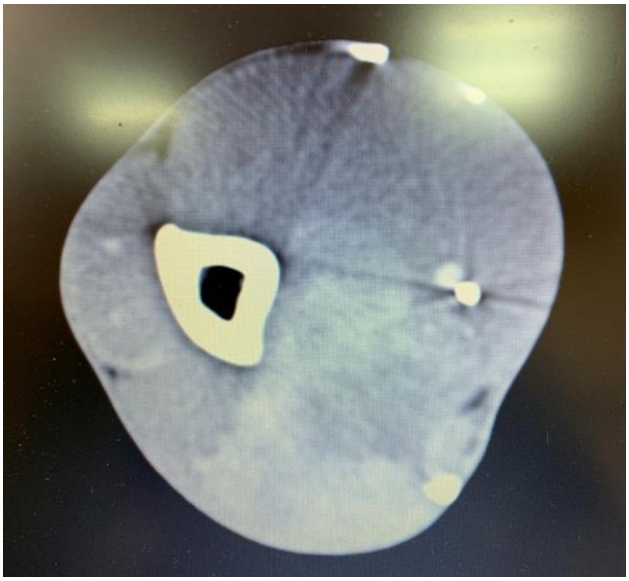


Fig 2: CECT scan with centripetal enhancement



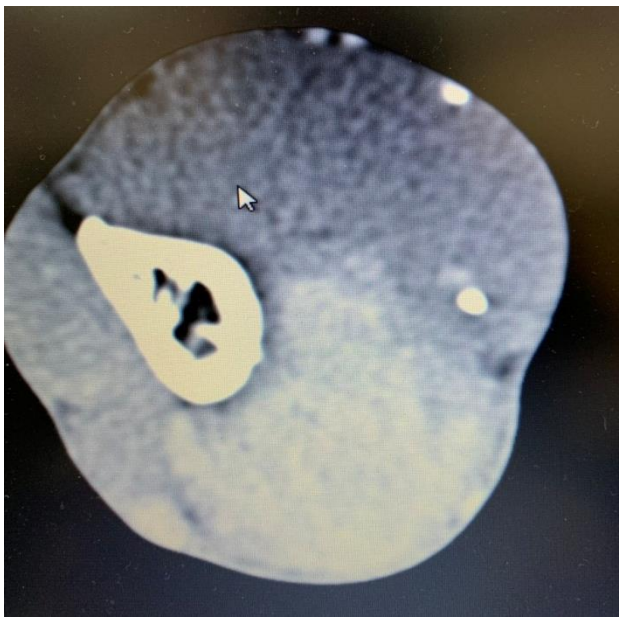
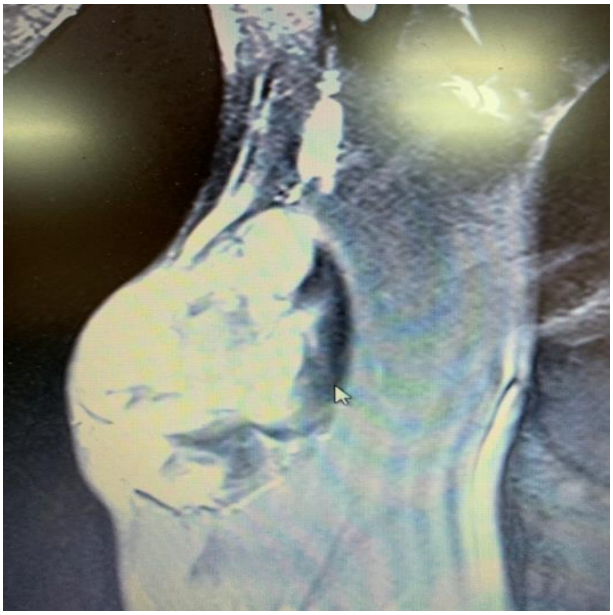
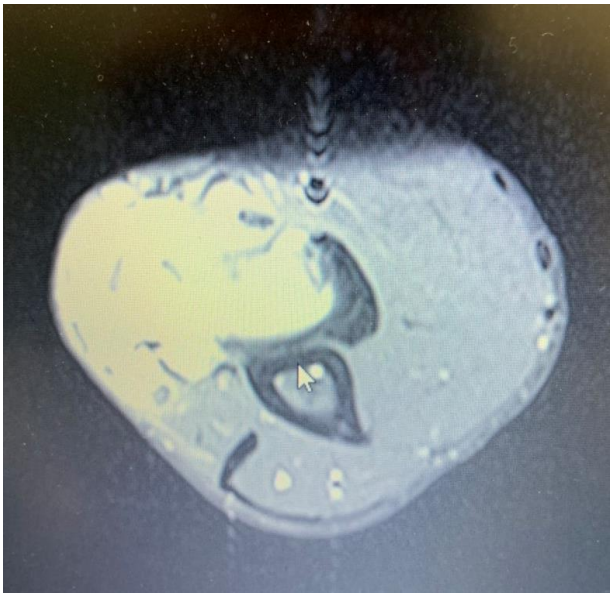
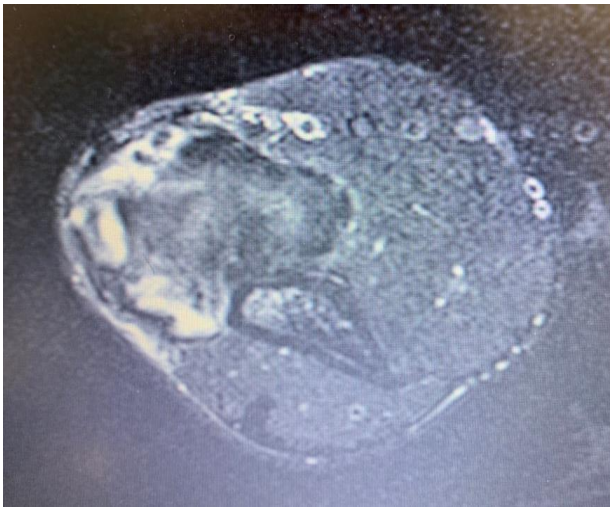


Figure 3: CECT scan with complete enhancement of the lesion







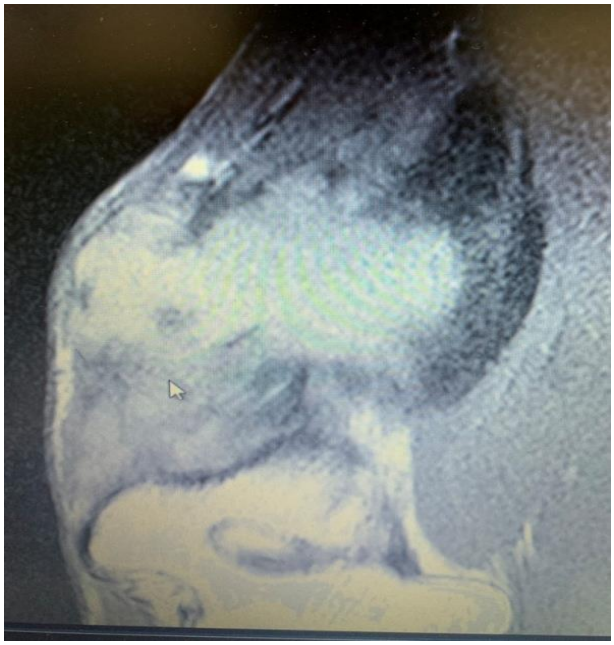


Figure 4: contrast enhanced MRI sagittal and axial sections

Surgical excision of the lesion was done and the specimen was sent for histopathology which confirmed the diagnosis. Rescanning of the patient by MRI after three months was done to search for recurrence and it was clear.

Ethical approval was taken from the Oncology Teaching Hospital,and a verbal consent was taken from the patient.

Discussion

Hemangiomas are the most common angiomatous lesions and represent up to 7% of all benign soft tissue tumors (7,8) seen in women more than in men.Our patient was a 22-years old man. Although we found the intramuscular hemangioma in the upper extremity, the most common localization of intramuscular hemangiomas is the lower extremities, followed by the upper extremities. These soft tumors are often located subcutaneously. Intramuscular extension is rare (8)

The intra-muscular hemangioma was first documented by Liston in 1843 (10). They are rare tumors amounting to 0.8% of all hemangiomas (11, 12). History of trauma is present in a large number of patients, but it is usually considered a congenital problem (10). Age presentation of this condition is between 2 months - 66 years, but 80–90% of cases are under 30 years (6).

Imaging diagnosis of these lesions is usually made by MRI and angiography. X-ray can reveal a nonspecific mass with calcification and bone changes if the tumor is located adjacent to the osseous structures (13, 15). The CT may identify a soft tissue mass with densities similar to muscles and also the phleboliths, even the small ones. The tumors enhance after contrast media administration, with depiction of serpentine vascular

areas (14, 15) .In our case we did not see phleboliths and the mass enhanced in a centripetal pattern.

Intramuscular hemangioma is a slow growing mass and may be missed for a long time until a sudden growth leads to pain or movement disability. (16)

Vascular anomalies and mapping may be demonstrated by using CT angiography with multiplanar reconstructions (MPR), maximum intensity projections (MIP) and volume-rendered reconstructions (VR). CT angiography is a useful imaging technique in preoperative and postoperative evaluation of soft-tissue hemangiomas and also when MRI is contraindicated (17).

MRI findings of intramuscular hemangioma include high-signal intensity findings on both T1- and T2-weighted images. In T2-weighted images. The tumor can be clearly distinguished from the normal surrounding muscle structures. Characteristic findings within the tumor include the presence of heterogeneous signal intensity as a result of an increased blood flow in the dilated tortuous vessels; this finding is quite important in the diagnosis process (18).

Dynamic multiphasic CT study was very helpful in our diagnosis.

Unfamiliarity with this lesion may lead to misdiagnosis, inappropriate action and unnecessary referrals, because it's clinical diagnosis is challenging, we should consider this disease in our differential diagnosis when we face a case of muscular lesion.

Conclusion:

Despite its rarity, hemangioma should be considered in a tumor involving the muscle in a young patient. A high index of suspicion based on clinical examination, CT scan and MRI study may contribute collectively to earlier diagnosis of these tumors as they have non-specific clinical findings.

Authors' contributions:

Tara Farooq: examine the case with US and MRI
Rasha Thameen: examine the case with CT scan
Ahmed Murad: examine the case with MRI

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(ورم وعائي عضلي) تقرير حالة

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د. احمد مراد محي

الخلاصة: الورم الوعائي العضلي هو ورم نادر بطيء النمو عادة بدون اعراض وقليل ما تحدث معه عقابيل . لدينا تقرير حالة عن ورم وعائي في العضلة ذات الرأسين في مريض عمره اثنان وعشرون عاما بعد ضربة خفيفة حدثت له قبل اربع سنوات مع تورم تدريجي
الكلمات المفتاحية : ورم وعائي ,عضلي , عضلة ذات الرأسين , دائري .