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Chronic Diseases and Translational Medicine 1 (2015) 187−190

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Multiple glomus tumor on the anteromedial side of leg

Keywords: Multiple glomus tumor; MR images

To the editor,

Multiple glomus tumor is a rare benign neoplasm that arises from the glomus body in the stratum reticularis of the dermis, the highly specialized arteriovenous anastomosis for thermoregulation.[1−4] Although several cases of multiple glomus tumor involving the anterior thigh,[5] submandibular and parotid regions,[6] the torso,[7] have been reported, radiological characteristics on MRI images for multiple glomus tumor have not been described. We reported here both pre-operative and post-operative MR images from a case of 16 years old girl with multiple glomus tumor that partially coalesced on the anterior side of the leg.

A 16-year-old patient was referred to our radiological department from the local clinic. The patient complained of the enlarging multiple masses on the anteromedial side of the leg that was found inadvertently 6 years ago. The pain was exacerbated during exercise. Clinical examination revealed 2 masses (3 cm × 3 cm, 1.5 cm × 1.5 cm) on the anteromedial side of the leg with mild tenderness and no ulceration. Routine laboratory tests showed normal results and no past medical or family history were informative. The patient underwent a 1.5T MR scan preoperatively and exhibited two well-defined lesions that partially coalesced (2.27 cm × 0.90 cm and 2.23 cm × 1.04 cm) on the anteromedial side of leg with an intermediate to low signal on T1 weighted spin-echo images, high signal intensity on T2 weighted spin-echo images, and homogeneously avid enhancement after administration of the contrast agent (Gadolinium) (Fig. 1). Initially, a radiological diagnosis of venous malformation was made. The patient was referred to the cosmetic surgery department for an operation. The histological examination showed tumor cells that were uniform with a round nucleus surrounding an irregularly-shaped vascular space (Fig. 2). The immunohistochemistry results showed HCK(−), P63(−), P40(−), Ki-67 (partially +), CD44 (partially +), CK5/6(−), SMA(+/−), S-100(−), Calponin (partially+), Des (−), CD34 (−), Vim (++), EMA (−), and CD117 (−). A diagnosis of a glomus tumor was made. According to the proportion of the glomus tumor, the vasculature structure, and the smooth muscle tissue, the glomus tumor can be designated as a glomangioma. Three months and six months after surgery, the patients underwent 1.5T MRI scan as postoperative follow-up and showed no signs of recurrence (Fig. 3).

Multiple glomus tumors account for 10−20% of all glomus tumors, and are a rare benign neoplasm that arises from the glomus body in the stratum reticularis of the dermis, the highly specialized arteriovenous anastomosis for thermoregulation.[1−4] In comparison with solitary glomus tumor, with a predilection for occurring in adult women around the 3rd to 5th decades of life,[4] multiple glomus tumor has a male predominance around 4:1, with early onset in childhood.[8] Clinically, glomangiomas appears as red to blue compressible

Peer review under responsibility of Chinese Medical Association.

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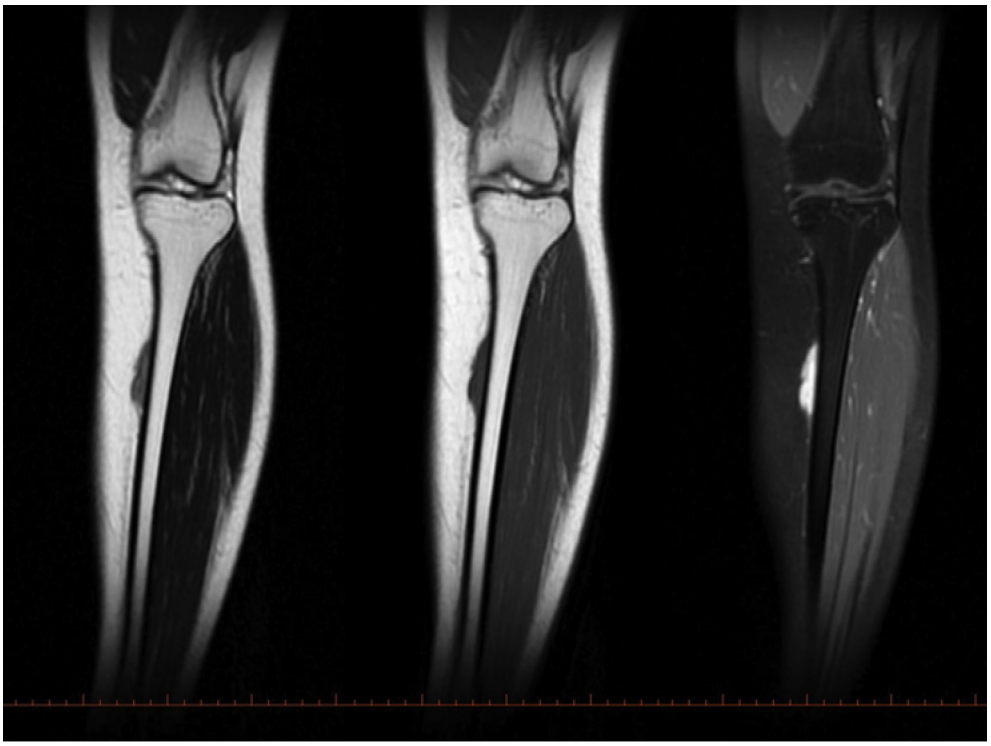
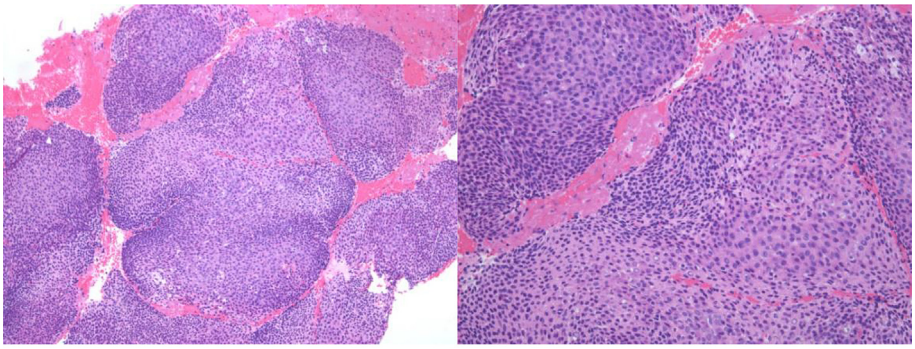
http://dx.doi.org/10.1016/j.cdtm.2015.09.003



a b c

Fig. 1. Two well-defined lesions partially coalesce (2.27 cm × 0.90 cm, 2.23 cm × 1.04 cm) on the anteromedial side of leg with an intermediate to low signal on T1 weighted spin-echo images (a), high signal intensity on T2 weighted spin-echo images (b), and homogeneously avid enhancement after administration of Gadolinium (c).



a b

Fig. 2. (a and b) Tumor cells are uniform with a round nucleus surrounding an irregularly-shaped vascular space. No nucleus atypia or mitotic phase are shown. (a: HE, original magnification ×100, b: HE, original magnification ×400).

papulonodules. The classic triad of symptoms of solitary glomus tumor, consisting of paroxysmal severe pain, point tenderness and cold hypersensitivity, is often absent from multiple glomus tumors. A glomus tumor is usually located in the subungal area because the glomus body is highly concentrated at the tips of digits, especially under the nails.[1] As an extra-digital glomus tumor is very rare and clinical symptoms are less specific or even absent, a diagnosis is often delayed or even mistaken.