Extradigital Painful Glomus Tumor in Heel Pad - A Rare Case Report

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Abstract
Glomus tumour is a rare benign neoplasm arising from glomus body. Glomus tumour are often highly vascular tumor of small uniform specialised smooth muscle cells resembling smooth muscle component of a vascular glomus body. We report a case of 16 year old female with a painful purple coloured swelling underneath left heel in subcutaneous plane. MRI showed a well defined swelling in the left heel. Excision biopsy was done and sent for histopathology examination. Finally diagnosed as glomus tumor.

Key words: Glomus tumor, MRI, Excision biopsy.

Introduction
Glomus tumors are benign neoplasms that arise from neuromyoarterial glomus bodies [1]. Glomus tumour is a very rare tumour accounting for only 2% of all soft tissue tumours [2]. Commonest site is subungual region of digits. Extra digital site commonly seen are hand, wrist, forearm, coccyx, colon, mediastinum, eyelids, and stomach, where there are well defined glomus bodies [1,2,3]. Glomustumor of heel producing heel pain is rare. Only 3 cases are reported in the English literature. We are presenting fourth case reported in our institute.

Case Report
16 yr old boy presented with one year history of pain left heel and limping of left leg. At time of examination he assigned antalgic gait with a purple coloured swelling underneath left heel in subcutaneous plane. There were no constitutional symptoms like fever, no history of previous trauma or infection in that region. There was severe tenderness on palpation. Haemogram and other laboratory investigations were within normal limits. Radiological investigations like X-ray and CT scan were within normal limits. MRI of foot showed relatively well defined T2 hyper intense lesion noted in subcutaneous tissue in left heel. Lesion was about 15×15 mm in size (Fig -2). An excision biopsy of swelling was done. Intraoperatively there was a purple coloured well defined swelling of 15×15 mm size in left heel (Fig -1). Excision biopsy was done and sent for histopathology examination. Gross examination showed a well circumscribed soft grey white lesion measuring 4×3×2 cm. Histopathology showed highly vascular tumor with smaller number of glomus cells in between blood vessels. Glomus cells are arranged in sheets and nested pattern. These are monotonous cells with pale cytoplasm and round nucleus (Fig-3). Post operatively wound healed without any complications. Patient got full symptomatic relief and there was no recurrence of lesion even after 2 yrs of follow-up.

Discussion
Glomus tumour is a rare benign neoplasm arising from glomus body [1]. Glomustumour are often highly vascular tumor of small uniform specialised smooth muscle cells resembling smooth muscle component of a vascular glomus body [3]. It affects ages between 16 to 70yrs but most common in 4th to 5th decades. Commonly females are affected 3 times more common than males. Glomus tumour is characterised by a triad of
* Localised point tenderness
* Severe intermittent pain described as burning or bursting pain
* Cold sensitivity [4].

These tumors usually present as painful, firm, purplish, solitary subcutaneous nodule. Tumors in lower extremity can have size more than 2 cm [5]. There are many causes for heel pain recorded in orthopaedic conditions which is usually misdiagnosed as plantar...
The imaging features of glomus tumors are similar to those of hemangioma in subungual region and are often not recognized preoperatively. The high-velocity flow in intratumoral shunt vessels causes this lesion to be hypervascular at color Doppler imaging; a finding that is specific for the diagnosis [6]. MR imaging features that are considered diagnostic for glomus tumor include intermediate or low signal intensity on T1-weighted images, marked hyperintensity on T2-weighted images, and strong enhancement after the injection of gadolinium-based contrast material [7]. MR angiography is a useful noninvasive adjunct to conventional MR imaging for establishing the diagnosis of glomus tumor. Typical MR angiographic findings include areas of strong enhancement in the arterial phase and tumor blush, which increase in size in the delayed phase [6,7,9].

It is not possible to diagnose extremity glomus tumors with fine needle biopsy. Histopathology is the gold standard investigation to diagnose glomus tumors. H & E shows the lesion composed of sheets of uniform cells with small amount of eosinophilic cytoplasm, well defined cell margins, and round or ovoid pushed-out central nuclei. There are dilated, cavernous-like, thin walled vascular spaces surrounded by glomus cells [9]. Differential diagnosis includes a neural tumor such as a neurofibroma, vascular tumor including hemangioma, angiomia, or hemangiopericytoma, as well as a plantar fascitis, leiomyoma or metastasis [10]. A glomus tumor should be considered in the differential diagnosis of any painful soft tissue mass [11].

Treatment of choice for glomus tumor is complete surgical excision. There are also reports of alternative treatment such as sclerotherapy with sodium tetradecyl sulfate, polidocanol, and hypertonic saline and ablative therapy with argon and carbon dioxide and ethanol [8].

Conclusions

The diagnosis of extradigital glomus tumors remains a challenge. Their unusual location and nonspecific clinical findings, except for pain, make the diagnosis difficult. Therefore; history, clinical examination and proper radiologic examination are essential.

References

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