

Case Report

Unusual location of a glomangioma: a case report

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ABSTRACT

Glomangioma or glomus tumors are rare neoplasms of the glomus body, which are located in the stratum reticularis of the dermis throughout the body. With a female preponderance, 75% of them occur in the subungual region and present with non-specific pain as the main complaint. Extradigital glomus tumours are rare and present a diagnostic challenge, seen most commonly in males. We present a case of a 47-year-old male who presented with a painful swelling in the forearm. MRI showed a hypodense lesion in the subcutaneous plane. After a wide local excision, histopathology revealed sheets of round cells with intervening vascular channels, characteristic of a glomus tumor.

Keywords: Extradigital, Forearm, Glomus tumour

INTRODUCTION

Glomus bodies are neuromyoarterial structures, composed of an arteriovenous shunt surrounded by a sheath of connective tissue. They are believed to be involved in temperature regulation and can occur all over the body. 75% of them occur in the digits, typically in the subungual regions. They present with a classical triad of symptoms of high temperature, sensitivity, and pain and localized tenderness.¹ With an incidence of 1.6%, glomus tumors are rare, benign neoplasms arising from the smooth muscle cells of the glomus bodies.²

CASE REPORT

A 47-year-old male presented to the out-patient department with complaints of a painful swelling, measuring 1 × 1 cm, over the lateral aspect of the right elbow for the past 6 years. The pain was non-radiating and was only present on lifting objects. He did not complain of numbness or tingling sensation in the distal limb. There was also no history of other swellings in the body. He gives a previous history of trauma to the elbow

with no features suggestive of fractures or restricted mobility. Despite treatment in the form of physiotherapy, steroid injections and multiple pain killers, his symptoms persisted. Family history was non-contributory.



Figure 1: MRI-T1 weighted image showing heterogeneously hypointense lesion in the forearm.

On examination, he was afebrile with a pulse rate of 78 beats/min, BP of 120/80 mm of Hg and respiratory rate of 22 breaths/min. Local examination revealed a tender, 1 × 1 cm, soft, smooth surfaced swelling on the lateral aspect of the right elbow. The swelling was in the subcutaneous plane and the distal limb was normal. Joint movements were normal, and the distal pulses were well felt. No bruit was heard on auscultation. Routine investigations showed haemoglobin of 16.1 gm%, total leukocyte count of 9.8 µg/l and platelet count of 2.15 lakhs/mm.³ PT and INR was 12.9 and 1.15 respectively. RBS, serum creatinine and electrolytes were within normal limits. USG revealed a round, well-defined, hypoechoic lesion measuring 4 × 4 mm in the subcutaneous plane with vascularity at the periphery. Doppler showed arterial flow pattern. Subsequently, MRI was done which showed 0.5 × 0.5 × 0.6 cm heterogeneously hypointense lesion in the subcutaneous plane in the T1 weighted image (Figure 1). He was then taken up for a wide local excision under general anaesthesia. After an elliptical incision, with a margin of 2.5 cm, the swelling was excised.

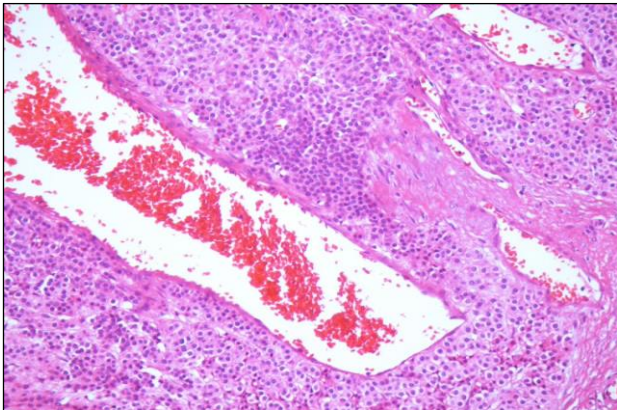


Figure 2: Histopathology showing small round cells with intervening thin- and thick-walled vascular channels.

Histopathology revealed sheets of monotonous small round cells with intervening thin- and thick-walled vascular channels, characteristic of a glomus tumor. There was no evidence of nuclear pleomorphism or mitotic activity with negative margins (Figure 2).

DISCUSSION

Described by Wood in 1812 as ‘painful subcutaneous nodules’, a glomus tumor or glomangioma is a rare neoplasm of the glomus body.¹ Glomus bodies are present in the stratum reticularis of the dermis throughout the body but are highly concentrated in the skin of the digits, palms, and soles of the feet. Although glomus tumors may occur throughout the body, majority: 75% occur in the hand with 50%-65% of these occurring in the fingertips and/or subungual location.³ It was assumed that extra digital localization is rarer, though Beaton et al suggested that 11-65% of glomus tumors were extra digital.⁴ In a study by Schiefer et al, 61% of the glomus

tumor cases were extradigital. Glomus tumors localized in the forearm accounted for around 20% of all extradigital cases.⁵ Review of literature has shown that there is a female preponderance, 2:1 for glomus tumors.^{6,7} Conversely, males have a greater predisposition for extradigital glomus tumors, as was in the present case.⁵ A solitary glomus tumor shows dermatological changes: the skin becomes pink or purple, with a classic triad of pain, tenderness and cold hypersensitivity. Skin discoloration and cold hypersensitivity are less reliable in extradigital locations, being variable with the depth of the location. The etiology for this pain requires further clarification, although forearm tumors have been shown to cause pain by compressing the forearm nerves.^{8,9}

Although these are well recognized sources of pain, particularly in the subungual regions of the digits, their diagnosis in extradigital locations is often delayed. This is since it is objectively difficult to detect glomus tumor through clinical palpation because of the subcutaneous or deeper layer location, and the small size. Patients with extradigital glomus tumors may present to a diverse group of physicians, including dermatologists, orthopedists, neurosurgeons and pain specialists. Clinical Suspicion is required to avoid misdiagnoses of psychosomatic disorders, neuralgia or arthritis of extradigital glomus tumors. Our patient presented with a painful swelling, which was in contrast to the usual clinical presentation. In most case reports, the patients complained of pain for an average of more than 7 years, similar to that of our patient.¹⁰

Imaging studies such as MRI or ultrasonography are useful for diagnosis, with the MRI considered the most accurate.^{7,11,12} MRI findings of extradigital glomus tumors appears similar to the more established subungual MRI appearance: relatively homogenous T1 iso-to-hypointensity and T2 hyperintensity and strong postcontrast enhancement, as was in our case. Main stay of treatment is surgical excision, due to their small size. Recurrence is infrequent and is usually due to incomplete excision or due to the presence of multiple other tumors.

However, some studies have shown recurrence rates of 2% to 33%.^{4,5,13-15} Glomus tumors are typically benign. There may be locally aggressive features and very rarely, malignant and metastatic potential have been reported in the literature. Malignancy is diagnosed based on histopathological features, rather than clinical findings.¹⁶

CONCLUSION

Although classically associated with a subungual location, less common extradigital glomus tumors present a diagnostic challenge because of their rarity and nonspecific presentation.

A high index of suspicion, followed by appropriate diagnostic tools helps clinch diagnosis. MRI findings are characteristic and remain consistent. Complete surgical

excision with negative margins and pathologic evaluation provides a definitive diagnosis.

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REFERENCES

1. Sandoval M, Carrasco-Zuber J, Gonzalez S. Extradigital symplastic glomus tumor of the hand: report of 2 cases and literature review. *Am J Dermatopathol.* 2015;37(7):560-2.
2. Lee W, Kwon SB, Cho SH, Eo SR, Kwon C. Glomus tumor of the hand. *Arch Plastic Surg.* 2015;42(3):295-301.
3. Baek H, Lee S, Cho K, Choo J, Lee S, Lee H. Subungual tumors: clinicopathologic correlation with US and MR imaging findings. *Radiograph.* 2010;30:1621-36.
4. Beaton LI, Davis L. Glomus tumor: report of three cases: analysis of 271 recorded cases. *Q Bull Northwest Univ Med Sch.* 1941;15:245-54.
5. Schiefer TK, Parker WL, Anakwenze OA, Amadio PC, Inwards CY, Spinner RJ. Extradigital glomus tumors: a 20-year experience. *In Mayo Clinic Proceedings.* 2006;81(10):1337-44.
6. Lee DW, Yang JH, Chang S, Won CH, Lee MW, Choi JH, et al. Clinical and pathological characteristics of extradigital and digital glomus tumors: a retrospective comparative study. *J Eur Acad Dermatol Venereol.* 2011;25:1392-7.
7. Maxwell GP, Curtis RM, Wilgis EF. Multiple digital glomus tumors. *J Hand Surg.* 1979;4:363-7.
8. Jiga LP, Rata A, Ignatiadis I, Geishauser M, Ionac M. Atypical venous glomangioma causing chronic compression of the radial sensory nerve in the forearm. A case report and review of the literature. *Microsurg.* 2012;32(3):231-4.
9. van der Lei B, Damen A, Valkenburg EVAN. Compression of the lateral cutaneous nerve of the forearm by a glomus tumour. *J Hand Surg.* 1997;22(1):71-2.
10. Lee SK, Song DG, Choy WS. Intravascular glomus tumor of the forearm causing chronic pain and focal tenderness. *Case Rep Orthopedics.* 2014:619490.
11. Drape JL, Idy-Peretti I, Goettmann S, Guerin-Surville H, Bittoun J. Standard and high resolution magnetic resonance imaging of glomus tumors of toes and fingertips. *J Am Acad Dermatol.* 1996;35:550-5.
12. Al-Qattan MM, Al-Namla A, Al-Thunayan A, Al-Subhi F, El-Shayeb AF. Magnetic resonance imaging in the diagnosis of glomus tumours of the hand. *J Hand Surg.* 2005;30:535-40.
13. Rettig AC, Strickland JW. Glomus tumor of the digits. *J Hand Surg.* 1977;2:261-5.
14. Strahan J, Bailie HW. Glomus tumour: a review of 15 clinical cases. *Br J Surg.* 1972;59:91-3.
15. Varian JP, Cleak DK. Glomus tumours in the hand. *Hand.* 1980;12:293-9.
16. Folpe AL, Fanburg-Smith JC, Miettinen M, Weiss SW. Atypical and malignant glomus tumors: analysis of 52 cases, with a proposal for the reclassification of glomus tumors. *Am J Surg Pathol.* 2001;25:1-12.

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