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Case Report

Glomus tumor of right forearm with surgical excision: a rare case report

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ABSTRACT

Glomus tumors are rare, benign, and vascular neoplasm of the glomus body, accounting <2% of all soft tissue tumors. The most common site is the subungual region of the fingers and toes. Extradigital sites, including the forearm, are uncommon and usually misdiagnosed because of their rarity and nonspecific presentation. Diagnosis is often delayed due to low level of suspicion. A strong clinical suspicion, magnetic resonance imaging, and a properly planned surgery remain the treatment. We report a 42 year old male presented with painful right forearm swelling for the last 1 years who had undergone surgical excision.

Keywords: Cephalic vein, Radial artery, Extradigital, Forearm, Glomus tumor

INTRODUCTION

Glomus tumors are benign neoplasms containing cells from the glomus apparatus.[1] It is responsible for thermoregulatory control, accounting 1-2% of all soft tissue tumors. Painful subcutaneous nodule formation located on the subungual area of the digits is the usual presentation of glomus tumor.[2] Histologically, glomus tumors and their variants are benign neoplasms requiring only a simple excision.[3] Extradigital glomus tumors are rare lesions, and their diagnosis is often delayed due to low level of suspicion.[4] We present a case of extradigital glomus tumor of the right forearm suffering for the last 1 years, treated with surgical excision.

CASE REPORT

A patient is an otherwise healthy 42 year old male presented with chief compliant of swelling over right forearm since 1 year which was painful and grown in size over time. Tenderness in the area was present for 4-5 months but had grown progressively worse in the 3-4 months. No history of any comorbidities. On physical examination elongated well defined swelling was present over the lateral aspect of distal right forearm, which was 2×3 cm nodular firm and tender without neurological manifestations (Figure 2).

Further radiological investigation MRI revealed well defined elongated oval heterogeneous signal intensity lesion of size 2.4×2.3 cm confined to subcutaneous plane in lateral aspect of distal forearm which is hypointense on t1 heterogeneously hyperintense on t2 and fat suppressed image with hypointense rim with multiple tortuous flow voids seen around lesion. Possibility of benign neoplastic etiology possibility of vascular malformation (Figure 1 A-C).

Lesion was excised surgically under regional anaesthesia. A pneumatic tourniquet was applied over forearm. Approximately 6 cm incision taken around the palpable mass. Intraoperatively lesion of around 3×3 cm was identified which closely related to FCR tendon, radial nerve, radial artery and cephalic vein.

Haemostasis confirmed and incision closed with simple suture. Excised tumor was sent for histopathological examination (Figure 3 and 4).

Gross pathology revealed soft oval mass bluish grey colour in subcutaneous plane with negative gross margin (Figure 5).

Histopathological examination demonstrated benign vascular neoplasm in subcutaneous tissue suggestive of glomus tumor (Figure 7).

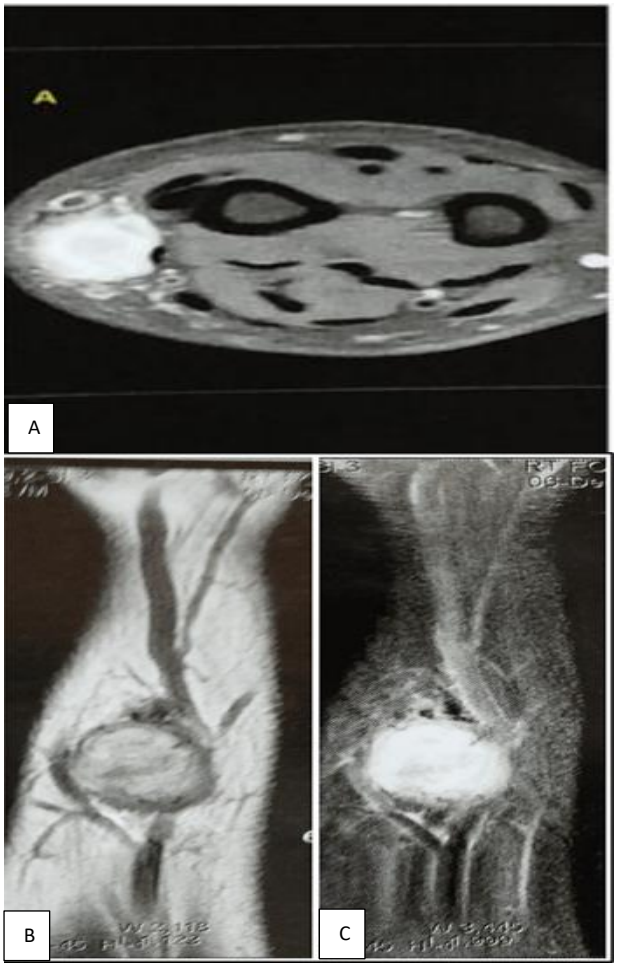

Figure 1 (A-C): Axial and coronal section of MRI demonstrating subcutaneous lesion.

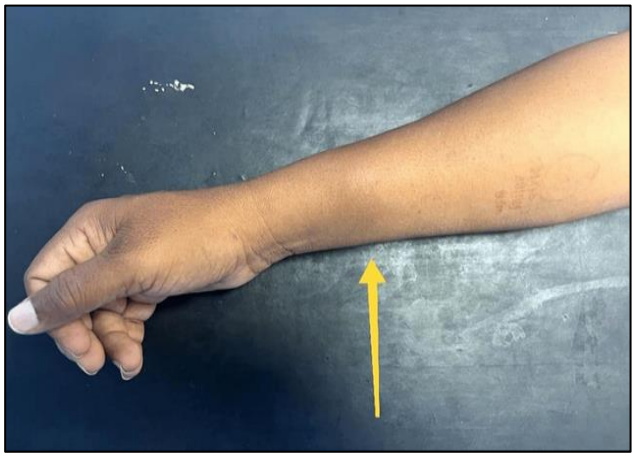

Figure 2: Glomus tumor of right forearm.

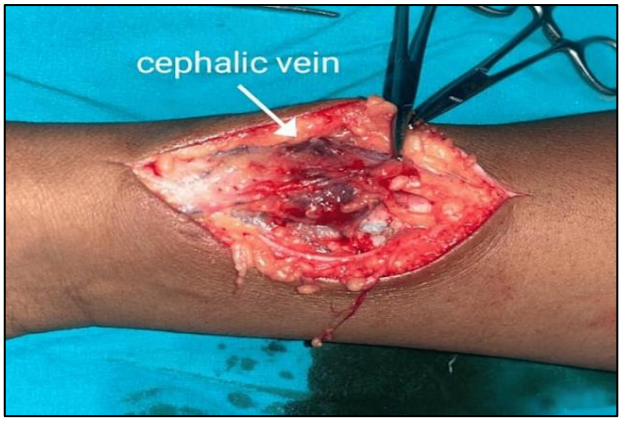

Figure 3: Glomus tumor with cephalic vein.

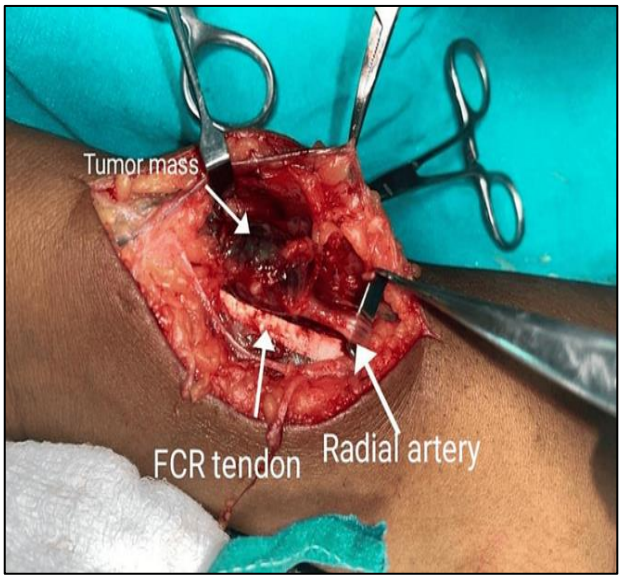

Figure 4: Perioperative picture showing glomus tumor.

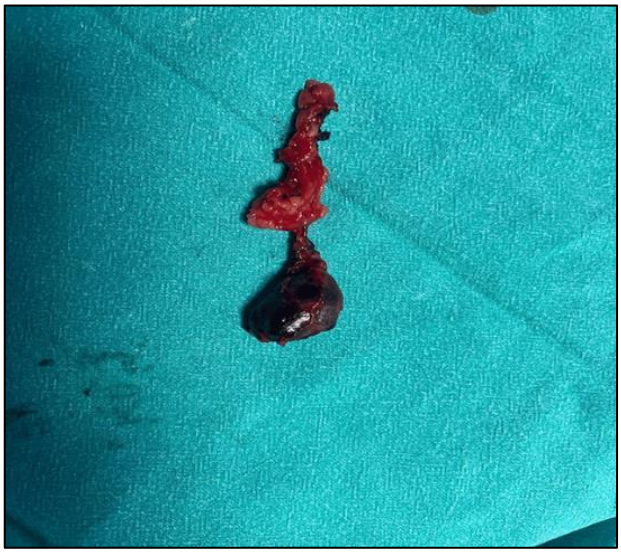

Figure 5: Specimen of glomus tumor with cephalic vein pedicle.

Figure 6: Post operative scar of patient.

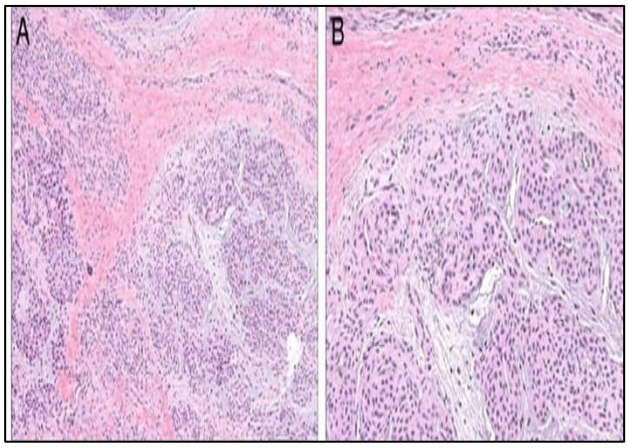

Figure 7 (A and B): Routine haematoxylin and eosin (H and E staining demonstrate a perivascular, proliferation of hompgenous round cells with round to ovoid nuclei arranged in multicellular layers around blood vessles. (department of pathology PCMC'S PGI YCMH, Pimpri, Pune.)

DISCUSSION

The extradigital glomus tumor is an uncommon condition rarely coming into consideration in routine practice, and therefore, it commonly creates a confusion in diagnosis.[5] Careful history and clinical examination are the important tools in the diagnosis.[6] Extradigital glomus tumors may be encountered in the hand and in the forearm.[7]

The normal glomus body is involved in thermal regulation through control of the skin circulation.[8,9] It is composed of an afferent arteriole, which is derived from the small arterioles supplying the dermis.[10]

Glomus tumors are considered to be a hamartomatous proliferation of modified smooth muscle cells originating from normal glomus cell populations.[9] Glomus tumors account for 1-2% of the soft tissue tumors of the hand and are well recognized by surgeons as a painful subcutaneous nodule in a subungual or digital pulp location.

Forearm is the most common extradigital location.[8] The lesions most commonly occur in the subcutaneous layer, with very infrequent occurrence in extracutaneous locations such as muscle, bone, and blood vessels.[9,11-13]

It is difficult to objectively detect a glomus tumor through clinical palpation because of the subcutaneous or deeper layer location and the small size (within a few millimeters). Imaging studies such as MRI or ultrasonography are useful for diagnosis.[14,15] MRI in particular can verify the presence of small soft tissue tumors such as extradigital glomus tumors, epidermal cysts, fibromas, synovial cysts, and venous malformations. A review of the literature on mri findings of extradigital glomus tumors showed that these lesions are oval-shaped and well defined and demonstrate hypo or isointensity on T1-weighted images and hyperintensity on T2 weighted images.[14]

The only treatment for a glomus tumor is surgical excision. Recurrence is infrequent and is usually due to incomplete excision. Cutaneous and extracutaneous glomus tumors are biologically benign, and metastasis or malignant changes are extremely rare.[9,11,14]

Surgeons should be aware of this possibility, and they should consider it in the differential diagnoses of such vascular lesions of the upper extremity.

Compared to the well-known subungual glomus tumor, extradigital glomus tumors may have atypical features, and the absence of objective findings often leads to a delay in diagnosis. A careful and comprehensive approach, including a thorough physical examination, comprehensive medical history, surveillance of the disease progress, and imaging studies, is essential upon clinical suspicion.

CONCLUSION

In conclusion, we reported the case of a glomus tumor arising in the subcutaneous tissue of the right forearm. Unusual tumor sites and differing clinical symptoms occasionally interfere with the diagnosis and treatment of patients with extradigital tumors. Therefore, it is important to include the glomus tumor in the differential diagnosis of patients with painful lesions of forearm. Complete surgical excision is the only satisfactory treatment of the glomus tumor.

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REFERENCES

1. Enzinger SW, Weiss FM. Perivascular tumors. In: Soft Tissue Tumors. St. Louis: Mosby Elsevier. 2008;751:65.
2. Veros K, Markou K, Filitatzi C, Kyrmizakis DE.

Glomus tumor of the cheek: A case report. Case Rep Med. 2012;2012:307294.
3. Nigam JS, Misra V, Singh A, Karuna V, Chauhan S. A glomus tumour arising from the flexor aspect of the forearm: A case report with review of the literature. J Clin Diagn Res. 2012;6(9):1559-61.
4. Frumuseanu B, Balanescu R, Ulici A, Golumbeanu M, Barbu M, Orita V, et al. A new case of lower extremity glomus tumor up-to date review and case report. J Med Life. 2012;5(2):211-4.
5. Anagnostou GD, Papademetriou DG, Toumazani MN. Subcutaneous glomus tumors. Surg Gynecol Obstet. 1973;136(6):945.
6. 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):1-2.
7. Nigam JS, Misra V, Singh A, Karuna V, Chauhan S. A glomus tumour arising from the flexor aspect of the forearm: a case report with review of the literature. J Clin Diagnost Res. 2012;6(9):1559-61.
8. Takei TR, Nalebuff EA. Extradigital glomus tumour. J Hand Surg. 1995;20:409-12.
9. Kogure H, Shirakura K, Arisawa N, Aramaki T, Shimegi A: 3 deep-seated glomus tumors in the lower arm. Acta Orthopaedica Scandinavica. 1996;67(2):194-5.
10. Weiss SW, Goldblum JR. Enzinger and Weiss's Soft Tissue Tumours. Philadelpia, Pa, USA: Mosby. 2008.
11. Lee S, Le H, Munk P, Malfair D, Lee CH, Clarkson P: Glomus tumour in the forearm: a case report and review of MRI findings. J Belge Radiol. 2010;93(6):292-5.
12. Acebo E, Val-Bernal JF, Arce F. Giant intravenous glomus tumor. J Cutaneous Pathol. 1997;24(6):384-9.
13. Gautam VK, Agarwal PK, Maini L, Prakash A. Intraosseous glomus tumor in acromion process of scapula. Orthopedics. 2008;31(4):406.
14. Googe PB, Griffin WC. Intravenous glomus tumor of the forearm. J Cutaneous Pathol. 1993;20(4):359-63.

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