

Case report:

Glomus Tumour On The Hypothenar Eminence Of Hand: A Case Report

Khyrun Nahar Shaila¹, Rehnuma Nasim², Farhana Wahab³, MST Zinat Amin⁴, Nasima Akter⁵, Tarana Tabashum⁵

1. Ship International Hospital, Dhaka, Bangladesh
2. National Institute of Cancer Research and Hospital, Dhaka, Bangladesh
3. Government Employee Hospital, Dhaka, Bangladesh
4. Shaheed Ahsanullah Master General Hospital, Dhaka, Bangladesh
5. East West Medical College, Dhaka, Bangladesh

Abstract

Glomus tumour is an uncommon vascular tumours, usually presenting with painful bluish-red lesions with localized point tenderness and hypersensitivity to cold. Glomus tumours are located mostly in the subungual region of the digit, but involvement in other sites has also been reported. We here describe a 21-year-old male presenting with a painful plaque on the hypothenar eminence of the left hand, diagnosed as glomus tumour. It is a treatable condition, and proper diagnosis & treatment can significantly improve a patient's quality of life.

Keywords: Glomus tumour, hypothenar eminence, glomus body, extradigital

Introduction

Glomus tumours are mostly benign vascular tumours that develop from a neuromyoarterial structure named a glomus body.¹ Glomus body is a particular form of arteriovenous anastomosis commonly located in the reticular layer of the dermis, which carries glomus cells that are modified vascular smooth muscle cells and under normal circumstances regulate temperature and blood flow to the skin.² Common clinical presentation of glomus tumour includes a triad of paroxysmal intense pain, localized point tenderness, and marked sensitivity to cold.³ Glomus tumours represent only 1%-5% of all hand tumours.⁴ Though some Studies have described that glomus tumours may located in different sites of the hand and body, the most frequent site is a subungual area of the digit.⁵ As the prevalence of glomus tumours is low, an uncommon presentation of glomus tumours may cause a delayed diagnosis,

especially for extradigital glomus tumours.³ This case report describes a glomus tumour presented on the hypothenar eminence of the hand.

Case Presentation

A 21-year-old male patient presented to the dermatology outpatient department with a painful plaque on the palmer aspect of his left hand. He first noticed the lesion about two years back. Initially, it was small in size and associated with mild pain. Recently his pain became more intense. Though he could not remember any incident of injury at that site, he thought that it might be due to a throne entry. His pain was persistent, aggravated by touching. On asking patient mentioned that the severity of pain increased during winter. Cutaneous examination revealed a well-defined, rounded erythematous

Corresponding author

Khyrun Nahar Shaila, Consultant Dermatologist, Ship International Hospital, Dhaka, Bangladesh. dr.shaila@shiphospitalbd.com/naharshaila@gmail.com

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plaque on the hypothenar eminences of the left hand. It was measuring about 1.5 cm x 1.5 cm.

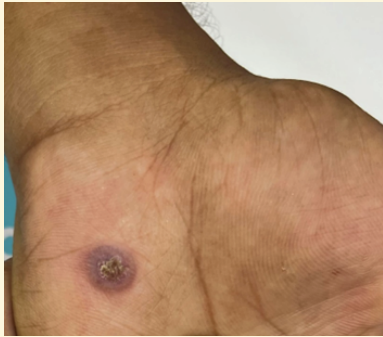


Fig 1: Shows an erythematous plaque on the hypothenar eminence of the left hand

The plaque had a thickened- scaly center, with a blanchable peripheral erythema. On touching the lesion, it felt firm, and remarkable tenderness was found by applying pressure to the lesion. With these clinical findings, we considered the following differential diagnoses: foreign body reaction, glomus tumour, viral wart, and neuroma. As the patient had complained of intense pain, excision of the lesion followed by histopathological examination was planned. The patient was not suffering from any other medical illness and his all vitals were normal. An excisional biopsy was performed.

Microscopic examination of the specimen revealed a benign tumour composed of glomus cells arranged in nests associated with vascular channels with connective tissue stroma.

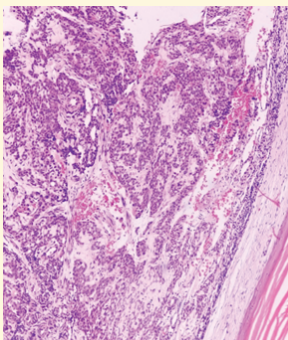


Fig 2: Shows clusters of glomus cells with varying sizes of blood vessels in a hyalinized stroma.

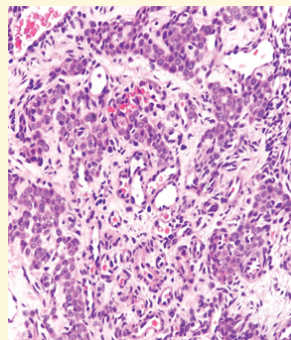


Fig 3: Shows rounded uniform tumour cells with scanty cytoplasm.

With these clinical and histopathological findings, he was diagnosed with a case of extra digital glomus tumour. The patient was advised to have a follow-up visit 2 weeks following the procedure, at that time his pain was completely disappeared.

Discussion

Glomus tumour was first reported by Wood in 1812 as a subcutaneous tubercle that was painful, and its common location as a subungual region was described by Kolaczek in 1878. Later on, Barre and Masson defined that it originated from the glomus body.⁶

Glomus tumours are uncommon, subcutaneous benign neoplasms.³ Glomus bodies play an important role in thermoregulation.⁷ Though glomus bodies are located in the fingers, palms, and soles, higher densities of glomus bodies are found in the nail bed.⁸ The exact cause of pain in glomus tumour is not known yet, although various hypothesis exists: various substances such as heparin, histamine, 5-hydroxytryptamine, etc. are released from mast cells present in the glomus body in response to pressure and cold, producing severe pain even with minimal stimulus.⁹ Glomus tumour is penetrated by several non-myelinated nerve fibres that also contribute to the pathogenesis of pain.¹⁰ Besides, the contraction of myofilaments due to temperature changes increases intracapsular pressure that produces pain.⁹ Glomus tumours are usually benign tumours. In the recent past, The World Health Organization has described the presence of malignant glomus tumour and classified the tumour as benign glomus tumour, intermediate glomangiomas, and malignant glomus tumour.¹¹ A benign glomus tumour commonly presents with a single lesion. But in the case of hereditary glomus tumours, which come into the autosomal dominant way, multiple tumours may present.⁶ Glomangiomas is a diffuse glomus tumour.¹¹ Glomangiosarcoma is another name for malignant glomus tumours, they can appear as individual cancerous tumours or less frequently from a pre-existing benign glomus tumour.¹²

Sites of involvement of these vascular tumours can be extensively diverse and even have been found in mucosa or viscera.^{5,7} Although glomus tumours are commonly seen in the skin, also found in other sites of the body, such as in the trachea, lungs, stomach, bones, mucous membrane, etc.⁷ In the case of hand glomus tumours, they usually appear in the subungual region, the pulp and lateral aspects of fingers, and the palm.⁸ Based on location, glomus tumours are categorized into- digital and extradigital, where sub unguial digital tumours are more common.⁷ Regarding age and sex distribution, digital glomus tumours, particularly subungual tumours occur very often in women of younger age, whereas extra digital

tumours are common in elderly men.^{7,13} Classic clinical findings of glomus tumours that comprise painful bluish-red lesions with localized pinpoint tenderness, and cold hypersensitivity are more frequently seen in digital subungual glomus tumours. Hence, in the case of extra digital tumours, there is often a long lag period before diagnosis as a glomus tumour.³ In our study, an extradigital glomus tumour was noted in a young male patient.

Several studies were analyzed to outline the clinical presentation of a glomus tumour in the hand.⁵ A case series by Saaiq et al. shows that in all patients with glomus tumours on hand, only digits were involved. 82.35% of patients had subungual glomus tumours and 17.64% had glomus tumours on the volar pulp of the finger.⁴ Another study conducted by Hamdi et al also revealed the localization of glomus tumours on digits.¹⁴ In this case report, the location of the glomus tumour was the hypothenar eminence of the hand.³ Although in literature a small number of cases with glomus tumours in the wrists have been described.^{12,15-16} There was a report of a case with a glomus tumour that happened in the hypothenar area of the palm. Typically, clinical characteristics of glomus tumours include a triad of paroxysmal pain, marked pinpoint tenderness, and cold hypersensitivity, mostly appearing as a red or blue-red colored, painful nodule localized in the subungual area of the digits.¹⁶⁻¹⁷ In this case, the patient was presented with a painful erythematous plaque with a thickened-hyperkeratotic centre on the hypothenar eminence of his left hand and severe tenderness was present on touching. To aid the diagnosis of glomus tumours some physical examinations can be performed that include Love's pin test, Hildreth's test, and the cold sensitivity test.¹⁷ In Love's pin test, a pin is used to apply pressure to the tumour, and that causes severe pain in patients with glomus tumours.⁵ Hildreth's test is positive if pain and tenderness suddenly disappear when the affected areas become ischemic by applying a proximal tourniquet.³ Cold sensitivity test reveals severe pain is felt in the affected area, in response to submerging the area in ice-cold water.³

To diagnose glomus tumours imaging modalities may help, such as plain X-ray, Doppler ultrasound, magnetic resonance imaging, etc.⁵ Although with these clinical and radiographic findings, a possibility of glomus tumours can be considered, a microscopic analysis of lesions is needed to confirm the diagnosis of glomus tumour.⁶ Histologically, glomus tumours are composed of a varying proportion of glomus or

tumour cells, blood vessels of varying sizes, and smooth muscle cells.³ Depending on these findings, histologically glomus tumours are categorized into three subtypes- solid tumour, glomangioma, and glomangiomyoma.⁶ The common variant is solid glomus tumour, where glomus cells are numerous, with a few blood vessels and smooth muscle cells. In the case of glomangioma blood vessels are predominant, while in glomangiomyoma, there are few glomus cells, but the proportion of blood vessels and smooth muscle cells both are high.⁶ Immunohistochemical evaluation of glomus tumours reveals, that tumour cells are usually positive for SMA, calponin, vimentin, and H-caldesmon.¹⁸ Our patient's histopathology report shows, a benign tumour composed of glomus cells arranged in nests associated with vascular channels with connective tissue stroma. The tumour cell was small, round, and uniform with scanty cytoplasm. No malignancy was seen.

Glomus tumours are commonly painful tumours.⁶ As a result of suspicion of other painful conditions, such as neuroma, etc., there may be a recurrent misdiagnosis.¹⁹ Diagnosis of glomus tumour is often delayed, especially for atypical locations. The case report shows the presence of a glomus tumour on the hypothenar eminence, which is not a common site. From the reviewed literature, it was seen that a delay in diagnosis of glomus tumour ranged from 3 months to 15 years.¹⁹ For our patient, the duration was 2 years. No medical therapy exists for glomus tumours, the only treatment option is surgical excision.²⁰ In this case, the pain was completely relieved following surgery and at follow-up, the patient did not complain of any pain.

Conclusion

Diagnosis of glomus tumour can be delayed significantly especially when located outside a typical subungual region. So high index of suspicion is needed for early diagnosis of this potentially curable tumour.

Conflict of Interest

None

Funding source

None

Patient Consent

Taken

IRB approval status

Not applicable

References

- Shin DK, Kim MS, Kim SW, et al. A painful glomus tumour on the pulp of the distal phalanx. *J Korean Neurosurg Soc* 2010;48:185-7.
- T.K. Schiefer, W.L. Parker, O.A. Anakwenze, P.C. Amadio, C.Y. Inwards, R. J. Spinner, Extradigital glomus tumours: a 20-year experience, *Mayo Clin. Proc.* 81 (10) (2006) 1337–1344, <https://doi.org/10.4065/81.10.1337>.
- Sanchez IM, Ilkovitch D. A case of a glomus tumour presenting as an atypical hyperkeratotic papule of the hypothenar palm. *JAAD Case Reports*. 2018 Jan 1;4(1):38-40.
- Saaq M. Presentation and management outcome of glomus tumours of the hand. *Archives of Bone and Joint Surgery*. 2021 May;9(3):312.
- Mortada H, AlRabah R, Kattan AE. Unusual location of pulp glomus tumour: A case study and literature review. *Plastic and Reconstructive Surgery Global Open*. 2022 Mar;10(3).
- Cohen PR. Glomus Extradigital Tumour: A Case Report of an Extradigital Glomus Tumour on the Wrist and Comprehensive Review of Glomus Tumours. *Cureus*. 2023 May 8;15(5).
- Lee W, Kwon SB, Cho SH, Eo SR, Kwon C. Glomus tumour of the hand. *Archives of plastic surgery*. 2015 May;42(03):295-301.
- Lee DW, Yang JH, Chang S, Won CH, Lee MW, Choi JH, Moon KC. Clinical and pathological characteristics of extradigital and digital glomus tumours: a retrospective comparative study. *Journal of the European Academy of Dermatology and Venereology*. 2011 Dec;25(12):1392-7.
- Lee CH, Byeon JH, Rhie JW, et al. Clinical analysis of twenty cases of glomus tumour in the digits. *J Korean Soc Plast Reconstr Surg* 1995;22:169-78.
- Rodriguez JM, Idoate MA, Pardo-Mindan FJ. The role of mast cells in glomus tumours: report of a case of an intramuscular glomus tumour with a prominent mastocytic component. *Histopathology* 2003;42:307
- Wu RC, Gao YH, Sun WW, Zhang XY, Zhang SP. Glomangiomas-immunohistochemical study: A case report. *World Journal of Clinical Cases*. 2022 Jun 6;10(16):5406.
- Chou T, Pan SC, Shieh SJ, Lee JW, Chiu HY, Ho CL. Glomus tumour: twenty-year experience and literature review. *Annals of plastic surgery*. 2016 Mar 1;76:S35-40.
- Samaniego E, Crespo A, Sanz A. Key diagnostic features and treatment of subungual glomus tumour. *Actas Dermosifiliogr* 2009;100:875-82.
- Hamdi MF. Glomus tumour of fingertip: report of eight cases and literature review. *Musculoskeletal surgery*. 2011 Dec;95:237-40.
- Morey VM, Garg B, Kotwal PP. Glomus tumours of the hand: review of literature. *Journal of clinical orthopaedics and trauma*. 2016 Oct 1;7(4):286-91.
- Carroll RE, Berman AT. Glomus tumours of the hand: review of the literature and report on twenty-eight cases. *JBJS*. 1972 Jun 1;54(4):691-703.
- Netscher DT, Aburto J, Koepflinger M. Subungual glomus tumour. *J Hand Surg Am* 2012;37:821-3.
- Lin J, Shen J, Yue H, Li Q, Cheng Y, Zhou M. Gastric glomus tumour: a clinicopathologic and immunohistochemical study of 21 cases. *BioMed Research International*. 2020 Apr 3;2020:1-6.
- Tang CY, Tipoe T, Fung B. Where is the lesion? Glomus tumours of the hand. *Archives of plastic surgery*. 2013 Sep;40(05):492-5.
- Hazani R, Houle JM, Kasdan ML, Wilhelmi BJ. Glomus tumours of the hand. *Eplasty*. 2008;8.