



E-ISSN: 2395-1958
P-ISSN: 2706-6630
IJOS 2021; 7(3): 597-599
© 2021 IJOS
www.orthopaper.com
Received: 16-05-2021
Accepted: 18-06-2021

Madhusudan S Khompi
Department of Orthopaedics,
HOSMAT Hospital, Magrath
Road, Bengaluru, Karnataka,
India

Prathap US
Department of Orthopaedics,
HOSMAT Hospital, Magrath
Road, Bengaluru, Karnataka,
India

Kannan Karupaiah Kumar
Department of Orthopaedics,
HOSMAT Hospital, Magrath
Road, Bengaluru, Karnataka,
India

Punith N
Department of Orthopaedics,
HOSMAT Hospital, Magrath
Road, Bengaluru, Karnataka,
India

Corresponding Author:
Prathap US
Department of Orthopaedics,
HOSMAT Hospital, Magrath
Road, Bengaluru, Karnataka,
India

Management and outcome of subungual glomus tumours: A series of 21 cases

Madhusudan S Khompi, Prathap US, Kannan Karupaiah Kumar and Punith N

DOI: <https://doi.org/10.22271/ortho.2021.v7.i3i.2808>

Abstract

Introduction: Glomus Tumour are vascular neoplasm that arise from glomus body. They are benign hamartomas most commonly occurring at subungual region of digits. They can cause recurrent episodes of intense lancinating pain and disability. Patients often undergo undiagnosed or misdiagnosed for many years because the tumours are small. The purpose of our study was to assess pain relief and recurrence rate after complete excision of tumour.

Material and Methods: Twenty one patients were included in the study. All cases were assessed clinically and on MRI. Glomus tumour excision was done under microscope and the diagnosis was confirmed post-operatively by HPE. Pre- and Post-operative VAS scores were compared to evaluate the symptomatic outcome. Recurrence was assessed by recurrence of pain and MRI changes.

Results: Out of 21 patients 18 were females and 3 were males. The mean age was 35 years. All patients showed dramatic relief of pain after surgical excision. Early diagnosis and surgical excision decreases patient's sufferings from severe pain and disability. The average improvement in VAS score was from 7.952 (pre-op) to 1.048 (post-op). No recurrence observed at 24 months follow-up.

Conclusion: Glomus tumour is a rare disease, one should have a high index of suspicion for Glomus tumour in intractable chronic fingertip pain. Excision of Glomus tumour under microscope allows better tissue clearance and hence low recurrence rate.

Keywords: glomus tumour, subungual

Introduction

Glomus tumours are rare benign hamartoma of vascular origin, arising from Glomus body [1]. Glomus body is a contractile neuromyoarterial receptor which is innervated, coiled, arterio-venous dermal shunt that normally regulates skin temperature by regulating blood flow in the cutaneous microvasculature. They are highly concentrated in the tips of the digits, particularly in the subungual area [2]. Glomus tumours account for 1% to 5% of all soft tissue tumours of the hand [4]. Histologically, glomus is a specialized vascular anastomotic complex surrounded by nerve elements [5]. A glomus body is composed of an afferent arteriole, an anastomotic Suquet-Hoyer canal, an efferent venule, actin containing glomus cells surrounding the canals, the intraglomerular reticulum, and a capsular portion⁶. The common clinical presentation is a painful, tender nodule.

Some diagnostic tests for glomus tumour include the Love's pin test, Hildreth's test and the cold sensitivity test [4].

Pain at the fingertip was the common complaint in all reported cases [7]. Because of the rarity and small size of the tumour, the diagnosis is often missed [8]. The Love's test described in 1944 by Love [9], which consist of applying pressure over the painful area with the head of a straight pin, is very useful for precisely locating the site of the lesion. Hildreth (1970) described an ischaemia for the diagnosis of glomus tumours [10]. It is positive if there is a reduction in pain and tenderness on exsanguination and ischaemia of the affected part. Hildreth's test is sensitive (92%) and specific (91%) for glomus tumour [10]. The dorsal bone erosion of distal phalanx in the case of subungual tumours is reported only in 22% of cases [11]. Magnetic resonance imaging (MRI) is used in some cases to support clinical diagnosis.



Fig 1: Glomus tumour of thumb.



Fig 2: MRI showing the location of the tumour.

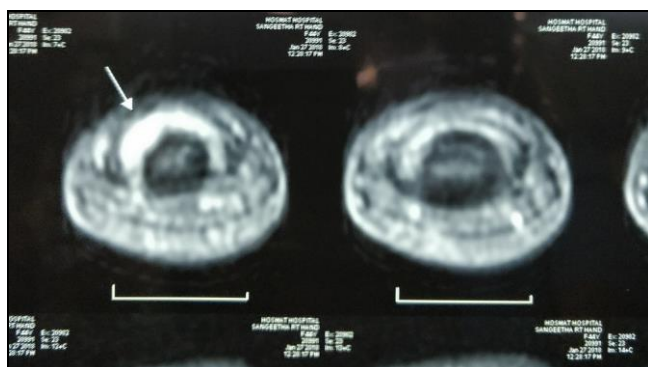


Fig 3: MRI showing the location of the tumour.

Surgical excision is the only known treatment option for subungual glomus tumor¹². The objective of the study was to assess pain relief and recurrence rate after complete excision of the tumour.

Materials and Methods

21 patients who underwent glomus tumour excision under microscope were assessed retrospectively between 2015 and 2019. All cases were assessed clinically and on MRI. The diagnosis was confirmed post-operatively by HPE. Pre- and Post-operative VAS scores were compared to evaluate the symptomatic outcome. Recurrence was assessed by recurrence of pain and MRI changes. All patients were followed-up for a period of 2 years.

Surgical Technique

Surgery is performed under tourniquet control. Rubber band of surgical gloves is used as tourniquet placed at base of finger with local anaesthetic digital block. The standard approach is direct trans-ungual excision, in which the nail plate is removed and nail bed is incised longitudinally with a number 15 blade directly over the area of the tumour. The tumour is then excised completely under microscope.



Fig 4: Intraoperative view of glomus tumour excision.



Fig 5: Nailbed after excision of the tumour.

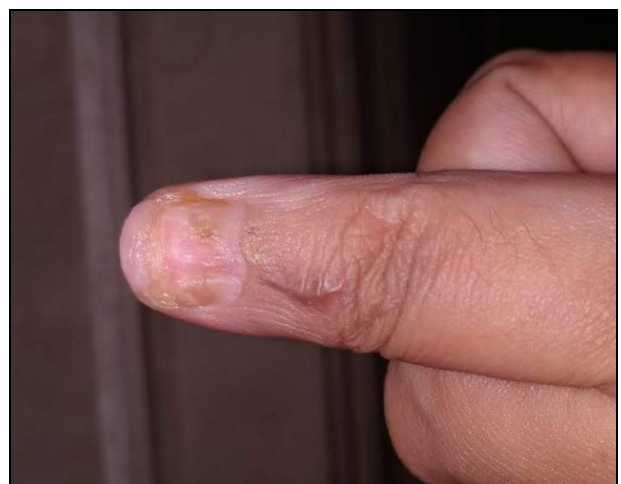


Fig 6: Postop followup after 3 months.

Results

The study included 21 patients with glomus tumours of which 18 were females and 3 were males. The average age of the patients was 35.5 years. All the tumours were less than 4mm

in diameter except for one patient who had an 8 mm lesion. All patients had complete relief of pain after surgical excision. None of the patients had recurrence of tumour or complications including postoperative nail deformity in follow up period. All of them returned to their preoperative occupation and regained full function of the hand.

Table 1: Distribution of the patient by sex

Sex	Numbers
Male	3
Female	18

Table 2: Distribution of the patient by location of the tumour

Location	Number
Thumb	7
Ring Finger	6
Index Finger	5
Middle Finger	3
Total	21

Table 3: Improvement in VAS Score.

VAS Score	Average
Preop	7.952
Postop	1.048

Discussion

Glomus tumour are rare benign hamartoma arising from glomus body. It accounts for 1 to 5% of soft tissue tumours of the hand and 75% are subungual. They are more common in women particularly in middle age. In our study mean age of the patients was 35.5 years and 85% of the patients were female.

Table 4: Comparison of sex ratio in similar studies.

Study	Sex Ratio (M:F)	Total
Current study	3:18	21
Hamdi ^[12]	3:5	8
Jawalkar ^[3]	3:9	12

All of the glomus tumours were found on the distal part of the finger, beneath the nail plate. Thumb was affected more.

Table 5: Comparison of location of tumour in similar studies.

Study	Thumb finger	Index finger	Middle finger	Ring finger	Little finger	Total
Current study	7	5	3	6	0	21
Hamdi ^[12]	3	1	2	1	1	8
Jawalkar ^[3]	3	5	3	1	0	12

A patient of glomus tumour presents with classical triad of excruciating pain, point tenderness and increased sensitivity to cold. Clinical tests, such as Love's test, Hildreth's test, cold sensitivity test may aid diagnosis. Magnetic resonance imaging (MRI) is used in some cases to support clinical diagnosis. Conventionally the glomus tumours show increased signal intensity on T2 weighed images, especially after gadolinium injection. The value of MRI is in the diagnosis of recurrent glomus tumours, with the persistence of postoperative pain^[13]. Total surgical excision is the cure for glomus tumour. All excisions were done under microscope which allowed better clearance of tumour. It results in dramatic pain relief in immediate postop period. One patient operated in another institute presented to us with recurrence, after excision there was no recurrence at 2 year follow-up.

Conclusion

Glomus tumours are rare accounting for only 1-5% of all soft tissue tumours of hand. Most commonly presents in females in subungual region. One should have a high index of suspicion for glomus tumour in intractable chronic fingertip pain. The only treatment of glomus tumour is surgical excision. Excision of Glomus tumour under microscope allows better tissue clearance and hence low recurrence rate.

References

1. Mc Dermott EM, Weiss AP. Glomus tumour. *J Hand Surg Am* 2006;31:1397-400.
2. Tomak Y, Akcay Y, Dabak N, Eroglu L. Subungual glomus tumours of the hand: diagnosis and treatment of 14 cases. *Scand J Plast Reconstr Surg Hand Surg* 2003;37:121-4.
3. Jawalkar H, Maryada VR, Brahmajoshiyula V, Kotha GKV. Subungual glomus tumour of hand: Treated by transungual excision. *Indian J Orthop* 2015;49(4):403-407.
4. Tuncali D, Yilmaz AC, Terzioglu A, *et al.* Multiple occurrences of different histologic types of the glomus tumor. *J Hand Surg* 2005;30A:161-164.
5. Gombos Z, Zhang PJ. Glomus tumor. *Arch Pathol Lab Med* 2008;132:1448-1452.
6. Drape JL, Idy-Peretti I, Goettmann S, *et al.* Subungual glomus tumors: evaluation with MR imaging. *Radiology* 1995;195:507-515.
7. Nazerani S, Motamedi MH, Keramati MR. Diagnosis management of glomus tumors of the hand. *Tech Hand Up Extrem Surg* 2010;14(1):8-13
8. Sun BG, Yun-tao W, Jia-zhen L. Glomus tumours of the hand and foot. *Int Orthop* 1996;20(6):339-341
9. Love JG. Glomus tumors: diagnosis and treatment. *Proc Staff Meet Mayo Clin* 1944;19:113-116.
10. Giele H. Hildreth's test is a reliable clinical sign for the diagnosis of glomus tumor. *J Hand Surg [Br]* 2002;27:157-158.
11. Vandenberghe L, De Smet L. Subungual glomus tumours: a technical tip towards diagnosis on plain radiographs. *Acta Orthop Belg* 2010;76(3):396-397.
12. Mohamed Faouzi Hamdi. Glomus tumour of fingertip: report of eight cases and literature review: *Musculoskeletal Surg* 2011;95:237-240.
13. Theumann NH, Goettmann S, Le Viet D, Resnick D, Chung CB, Bittoun J, *et al.* Recurrent glomus tumors of fingertips: MR imaging evaluation. *Radiology* 2002;223(1):143-151