

Management of a Case of Subungual Glomus Tumor by Periungual Surgical Excision: A Case Report

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Abstract

Glomus tumors of the subungual region are a group of benign hamartomas due to proliferation of glomus cells. The lesion presents as a brownish purple lesion in the nail bed. Classical triad suggestive of the disease consists of severe pain, local tenderness, and sensitivity to cold. Diagnostic tests include Love's pin test, Hildreth's test, and transillumination test. Complete surgical excision by either the transungual or periungual approach usually provides symptomatic relief with little chance of recurrence. Periungual approach is associated with less complications.

Key words: Glomus Tumour, Subungual region, Periungual approach

INTRODUCTION

Glomus tumor of the subungual region is a rare vascular neoplasm, which usually presents with severe pain and occasionally with nail deformity. This case report is of a 35-year-old female with subungual glomus tumor of her right little finger which was managed by surgical excision of the tumor by the periungual approach.

CASE REPORT

A 35-year-old female presented with a history of pain in tip of right little finger for the past 7 years. Pain increased on contact with cold water. On examination, there was a brownish blue discolored area on the nail bed [Figure 1]. Love's pin test was positive [Figure 2]. Preoperative radiograph and magnetic resonance imaging (MRI) were done. Radiograph showed scalloping of the distal phalanx of the right fifth finger [Figure 3]. MRI showed a high-signal intensity lesion on T2-weighted images [Figure 4].

Treatment – Surgery through periungual approach tumor excision was done [Figure 5].

Histopathological report was suggestive of glomus tumor [Figure 6].

Three months post surgery the patient had remarkable decrease in symptoms without any complications [Figure 7].

DISCUSSION

Glomus tumor of the subungual region is an uncommon benign neoplasm of vascular origin. It occurs due to the proliferation of glomus cells in the glomus body, which is present in abundance under the nail bed. Glomus body is a specialized neuromyoarterial structure which acts as an arteriovenous anastomosis responsible for cutaneous circulation and temperature regulation. Nonmyelinated nerve fibers present adjacent to the perivascular glomus cells are responsible for the excruciating pain and cold sensitivity seen in patients with glomus tumor.^[1]

This uncommon hamartoma usually presents with severe pain and occasionally with nail deformity, more commonly in women (four times more than in men) in the age group of 30–50 years. The etiology is not clearly known. A variety of mutations are known to occur, with the glomulin gene in chromosome 1 commonly involved.^[2] There is an autosomal dominant pattern of inheritance. When multiple digits are involved, it is usually associated with neurofibromatosis Type 1.

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Figure 1: Brownish blue discolored area on the nail bed



Figure 4: Magnetic resonance imaging showing a high-signal intensity lesion on T2-weighted images



Figure 2: Love's pin test



Figure 5: Tumor excision was done through periungual approach



Figure 3: Radiograph showing scalloping of the distal phalanx of the right fifth finger

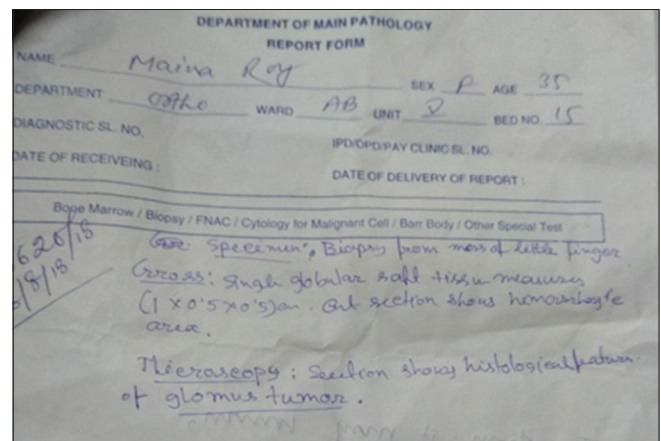


Figure 6: Microscopic examination report shows histological features of glomus tumor

A meticulous history and careful physical examination are needed for diagnosing this condition. Glomus tumor usually presents as a solitary lesion <1 cm in size. It has a brownish purple discoloration on the nail bed. In 50% of the cases,

an associated nail deformity may be present. There is a characteristic classical triad which is highly suggestive of



Figure 7: Three months post-surgery patient had remarkable decrease in symptoms with no complications

the diagnosis – severe pain, local tenderness, and sensitivity to cold.^[3] Common tests performed are the Love's pin test, Hildreth's test, and transillumination test. In Love's pin test, pressure is applied to the suspected area with a pinhead, and elicitation of severe pain is a positive result. In Hildreth's test, a tourniquet is applied to the arm on the affected side, and a positive test is suggested by the following – on removal of the tourniquet, there is a sudden return of severe pain in the affected nail bed (as transient ischemia in the limb reduces the pain in the affected nail bed, checked by Love's pin test). A cold sensitivity test can also be performed where application of ice to the suspected nail bed results in increased pain at the nail bed. According to Netscher *et al.*, Love's pin test had 100% sensitivity and 78% specificity, while Hildreth's test had 100% specificity and 71% sensitivity.^[4]

Diagnostic imaging studies include radiographs, MRI, and ultrasound. Radiograph of the affected digit shows scalloping of the phalanx. A MRI is useful to know the size and extent of tumor so as to avoid any excessive excision of the nail bed. A MRI can detect lesions 2 mm or more in size. The lesion is seen as low-signal intensity on T1-weighted images, with enhancement on gadolinium injection and as high-signal intensity on T2-weighted images.

Differential diagnoses of subungual glomus tumor include paronychia, neuroma, Raynaud phenomenon, gouty arthritis, and subungual exostosis.

Treatment of subungual glomus tumor is by surgical excision. Surgery is done under tourniquet application, and regional anesthesia is preferred. There is remarkable symptomatic relief and decreased chances of recurrence with complete

excision of the tumor. Two approaches are used – transungual and periungual. Post-operative complications such as nail deformity are more common with the transungual approach.^[5] Persistence of symptoms after surgical excision is usually due to inadequate excision rather than new tumor growth.

Prognosis of subungual tumors is excellent. Adequate surgical excision of tumor usually results in complete symptomatic relief.^[6]

CONCLUSION

Subungual glomus tumors are uncommon benign hamartomas usually presenting with severe pain and occasional nail deformity. The pain is aggravated by cold and touch. As such, excision of the tumor is expected to provide symptomatic relief. Tumor excision through periungual approach is an effective modality of treatment as it completely removes the lesion and thereby decreasing the chances of recurrence. This approach also has less complication rate and provides complete symptomatic relief.

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REFERENCES

1. Honsawek S, Kitidumrongsook P, Luangjarmekorn P, Pataradool K, Thanakit V, Patradul A, *et al.* Glomus tumors of the fingers: Expression of vascular endothelial growth factor. *World J Orthop* 2016;7:843-6.
2. Boon LM, Brouillard P, Irrthum A, Karttunen L, Warman ML, Rudolph R, *et al.* A gene for inherited cutaneous venous anomalies ("glomangiomas") localizes to chromosome 1p21-22. *Am J Hum Genet* 1999;65:125-33.
3. Stewart DR, Sloan JL, Yao L, Mannes AJ, Moshlyedi A, Lee CC, *et al.* Diagnosis, management, and complications of glomus tumours of the digits in neurofibromatosis type 1. *J Med Genet* 2010;47:525-32.
4. Netscher DT, Aburto J, Koeplinger M. Subungual glomus tumor. *J Hand Surg Am* 2012;37:821-3.
5. Jawalkar H, Maryada VR, Brahmajoshiyula V, Kotha GK. Subungual glomus tumors of the hand: Treated by transungual excision. *Indian J Orthop* 2015;49:403-7.
6. Grover C, Khurana A, Jain R, Rath V. Transungual surgical excision of subungual glomus tumour. *J Cutan Aesthet Surg* 2013;6:196-203.

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