

# Glomus Tumor of the Fingertip: A Case Report

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## Abstract

A 34-year-old female with progressing and disturbing pain at right ring finger, exacerbated by touching things with it. We performed marginal excision of the tumor and sent the biopsy sample for pathology examination with the result was suggestive of Glomus tumor. One month after operation, the patient was relieved of pain and could actively work with her fingers.

**Keywords:** Glomus Tumor; Subungual.

## 1. Introduction

The glomus tumors are rare, benign neoplasm that is raised from neuromyoarterial glomus, which is an arteriovenous anastomosis functioning without an intermediary capillary bed. They account for 1-5% of all soft tissue tumors of the upper extremity, occurring in the hand in 75% and in the nail bed in 50-90% of cases [1,2,3,4].

## 2. Case Presentation

We reported a 34-year-old Female as a housewife. Since 2014, she complained of pain at right ring finger and exacerbated by touching things with it. Occasionally, the pain is worsen either in cold weather or holding cold things. The patient's preoperative examination is shown in Figure 1-2.

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Progressive and disturbing pain caused her to seek medical attention. Previous treatment was by neurologist and given local injection. Treatment relieved temporary symptoms but never complete.

In 2015, the patient consulted to Orthopaedic surgeon and was diagnosed with Glomus Tumor.



**Figure 1:** Preoperative clinical findings



**Figure 2:** Preoperative radiographic examination

### 3. Method

We performed marginal excision of the tumor and sent the biopsy sample for pathology examination as shown in Figure 3-4.



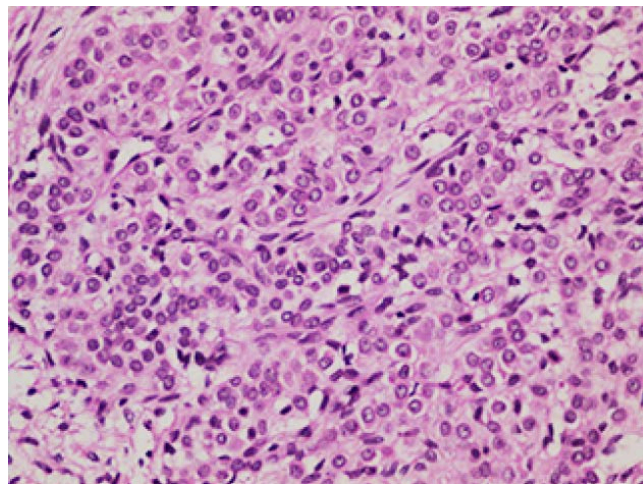
**Figure 3:** Intraoperative findings



**Figure 4:** Postoperative result

#### **4. Result**

The patient's histopathologic examination was suggestive of Glomus tumor as shown in Figure 5. One month after operation, the patient was relieved of pain and could actively work with her fingers.



**Figure 5:** Pathological findings

#### **5. Discussion**

Glomus tumor is a rare, benign tumor derived from structures known as glomus bodies [1,2,3,4]. These tumors

account for 1% to 5% of tumors of the hand [4,5]. Of these cases, 25% to 75% occur in the subungual region. This has been known as the most frequent site in women, while the tumor occurs more commonly at other sites in men [3,4].

These tumors commonly affects patients in middle age but cases have been described in all age groups. The glomus bodies that made up these tumors are composed of an afferent arteriole, a vascular anastomosis (the Sucquet-Hoyer canal), a collecting vein, an intraglomerular reticulum (containing glomus cells, nerve fibers, and interstitial cells), and a capsule. The glomus cells are specialized smooth muscle cells derived from Zimmerman pericytes, and they are particularly concentrated around the dilated vascular spaces [3].

Temperature change leads to contraction of myofilaments in the glomus cells, resulting in an increase in intracapsular pressure that is transmitted by the unmyelinated nerve fibers, leading to the perception of pain [3].

The triad of intense paroxysmal pain, exquisite point tenderness and sensitivity to cold are the characteristic features of the tumor. Clinically, the tumor can present as a visible or palpable mass in the subungual region, a pinkish-red or bluish macule or spot, or an increase in curvature or deformity of the nail palte. Occasionally, this dystrophy may be the only sign [3,4,5].

Glomus tumors can be divided into 2 variants: solitary and multiple. Solitary glomus tumors are more common, usually occur in adults, and are predominantly found in the extremities, particularly the nail bed. Multiple glomus tumors, also known as glomangiomas or glomovenous malformations due to their angiomatous appearance, account for less than 10% of cases. Unlike the solitary forms of the tumor, these appear in younger patients and usually exhibit autosomal dominant inheritance with variable expression and incomplete penetrance [3,4].

We have found a case of a patient presenting with intense pain at her right ring finger and point tenderness which is further exacerbated by cold temperature. There was also a noticable bluish discoloration of the involved subungual region. The treatment of choice is complete surgical excision of the tumor leading to cure although recurrence is described in 5% to 15% of cases in some patient series [3]. We have chosen the transungual surgical approach to completely excise this tumor. The entire nail plate is removed followed by marginal excision of the tumor. During the one month follow up period, the patient was completely relieved of pain and could resume daily activities without and hindrance.

## **6. Conclusion**

The Glomus tumor can be misdiagnosed or difficult to be diagnosed. Most of these tumors arise in subcutaneous or subungual tissue of the phalanges of hands and clinical suspicion must be made in cases of intense subungual pain of unknown cause to avoid further delay in the treatment.

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