A Painful Glomus Tumor on the Pulp of the Distal Phalanx

Dong-Keun Shin, M.D., Min-Su Kim, M.D. Sang-Woo Kim, M.D., Seong-Ho Kim, M.D., Ph.D.
Department of Neurosurgery, College of Medicine, Yeungnam University, Daegu, Korea

A 52-year-old female patient presented with an 8-year history of progressively intense pain, cold sensitivity, and severe tenderness to palpation of the ulnar side of the tip of her right little finger. Subsequent diagnostic evaluation with ultrasonographic imaging revealed the presence of a glomus tumor in the tender area. Glomus tumors are benign, occurring in the vascular hamartomatous tubercles of the glomus body, which is a myoarterial apparatus typically found in the reticular dermis of the skin. Distal glomus tumors are relatively uncommon, and account for approximately 1% of all hand tumors. Most of them are located in the subungual area because of its high concentration of glomus bodies. We report a case of a glomus tumor with a typical triad of symptoms, yet with a rare location: on the pulp of the ulnar aspect of the distal phalanx of the right little finger.

KEY WORDS: Glomus tumor • Finger • Pain.

INTRODUCTION

Wood first described glomus tumors in 1812 as painful subcutaneous tubercles, and Masson described its histological appearance in 1924. These are benign tumors that arise from one of the subcutaneous glomus bodies. These myoarterial apparatus structures normally regulate skin temperature. Digital glomus tumors are relatively uncommon. They account for approximately 1% of all hand tumors and occur more commonly in women. Their most common location is the subungual region of the digits. About 10% of these tumors occur on the pulp of the distal phalanx. We report the rare case of a glomus tumor located in an uncommon location, with the patient presenting a typical triad of symptoms.

CASE REPORT

A 52-year-old female patient presented with an 8-year history of progressively intense pain, cold sensitivity, and severe tenderness to palpation of the ulnar side of the tip of her right little finger. She had no gross abnormalities of her fingers, and no previous trauma history. We performed Love's pin test, Hildreth's test, and a cold sensitivity test. The point tenderness was localized on her right little finger, which was determined by pressing the head of a pin against the tender lesion. After a tourniquet was applied to the base of the digit, the pin test was repeated at which localized tender point. And then, she presented no pain at the point. The pain increased when her digit was exposed to cold. Ultrasonographic imaging showed a mass in the tender area (Fig. 1). At surgery, a blue-red 3 mm diameter tumor was exposed through a paramedian volar incision of the pulp of the distal phalanx of the right little finger (Fig. 2). It was removed completely, and histological examination confirmed a glomus tumor (Fig. 3). Her symptoms terminated immediately after the operation.

DISCUSSION

Glomus tumors are benign hamartomas that arise from the normal glomus apparatus, located in subcutaneous tissue. The normal glomus body is a contractile neuromyoarterial receptor that controls blood pressure and temperature by regulating flow in the cutaneous microvasculature. Glomus
bodies are highly concentrated in the tips of digits, especially under the nail. So, the tumors are usually in the subungual area\(^9\). The glomus tumor being located in the volar pulp of the distal phalanx is very rare.

Many articles about this tumor have noted that the long duration of symptoms before correct diagnosis and treatment is caused by the tumors being small and usually not palpable, and varying in presentation\(^2,6-8\). Importantly, the diagnosis of the glomus tumor must be made through the history and clinical examination of the patients. One of the distinguishing features of the glomus tumor is the classic triad of symptoms: hypersensitivity to cold, paroxysmal severe pain, and point tenderness in the finger. There are three main clinical diagnostic tests. The first is Love’s pin test, in which the head of a pin is pressed gently against the tender lesion to localize the pain. The second is Hildreth’s test. After the patient feels severe pain, a tourniquet is applied to the base of the digit and Love’s pin test is repeated. For a positive result, the patient should not experience any pain. The last test is a cold sensitivity test that produces increased pain when the finger is exposed to cold. In addition to these clinical tests, ultrasonographic imaging and magnetic resonance imaging (MRI) can be a valuable method of imaging glomus tumors\(^3,6\).

The treatment for glomus tumors is surgical total excision. Complete excision is curative and necessary to avoid recurrence. The incidence of recurrence after surgery has been reported in the range of 5-50%\(^2,5,8,9\). The standard approach is direct transungual excision: the nail plate is removed and the incision is made on the nail bed. It can afford a better exposure for completely subungual lesions\(^5,8\). An alternate approach is through a lateral incision. The incision allows exposure to the dorsal distal phalanx without violating the nail matrix, so reducing the risk of postoperative nail deformity\(^9\). However, the lateral approach affords a more narrow view of the tumor bed, with a higher chance of incomplete excision, compared to the transungual approach\(^4\). In our case, the lateral approach was enough for complete excision because the lesion was located in volar pulp.

**CONCLUSION**

We report a rare case of a glomus tumor at an unusual site, the pulp of the finger, with long-term severe pain, cold sensitivity, and point tenderness. Glomus tumors are difficult to diagnose, particularly since they are often small and situated deep in the fingertip. Yet, awareness of the diagnosis is emphasized to prevent unnecessary delay in treatment. If a patient presents with a typical triad of symptoms on the fingertip, the glomus tumor should be considered for the differential diagnosis. In addition, ultrasonography or an MRI scan should be performed to ensure proper diagnosis and treatment. Finally, complete surgical excision should be consi-
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dered as the curative treatment of choice for glomus tumors.

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