



## Glomus Tumor of the Great Toe

Tun Hing Lui, MBBS (HK), FRCS (Edin), FHKAM, FHKCOS<sup>1</sup>,  
Siu Ming Mak, MBChB, FHKCPATH, FHKAM (Pathology), FRCPA<sup>2</sup>

<sup>1</sup> Consultant, Department of Orthopaedics and Traumatology, North District Hospital, Sheung Shui, New Territory, Hong Kong Special Administrative Region, China

<sup>2</sup> Associate Consultant, Department of Pathology, North District Hospital, Sheung Shui, New Territory, Hong Kong Special Administrative Region, China

### ARTICLE INFO

Level of Clinical Evidence: 4

**Keywords:**

hallux  
Love's sign  
neoplasm  
papilloma  
temperature regulation

### ABSTRACT

Glomus tumor is a rare mesenchymal neoplasm composed of cells that resemble the modified perivascular smooth muscle cells (glomus cells) of the normal glomus body. A glomus tumor can appear in any part of the body, although it mostly appears in the extremities, especially in the subungual area of the hand. It has been less commonly reported in the foot. A case of glomus tumor of the pulp of the hallux is described in the present report.

© 2014 by the American College of Foot and Ankle Surgeons. All rights reserved.

The normal glomus is a myoarterial apparatus located on the surface of the body at the reticular stratum level in the deepest layer of the corium. These cells play a role in regulating physiologic processes, such as temperature, through changes in the blood flow. They are most prevalent in the subungual area of the extremities and in the precoccygeal soft tissue (coccygeal glomus) (1–3). Glomus tumors are benign tumors composed of cells that resemble the modified perivascular smooth muscle cells (glomus cells) of the normal glomus body (1–3). The age of patients with glomus tumors have ranged from 30 to 50 years (4). A glomus tumor can appear in any part of the body, although it mostly appears in the extremities, accounting for just 1.5% of all the neoplasms in the extremities, especially in the hand at the subungual level in women in a 75% of the cases. When it is located in other areas, it is more common in men, including the subungual area of the toes, the plantar surface of the heel, the arch, and the instep (3). We report the case of a patient with glomus tumor of the toe pulp of the hallux.

### Case Report

A 41-year-old female had noted a tiny lump at her left great toe pulp for 3 years. The lump had occurred spontaneously, and she had had no preceding injury to the toe. Walking, especially in high-heel shoes, exacerbated the pain. She also experienced rest pain. Initially, the pain was tolerable, but it had been increasing in severity. She

consulted her family doctor and was referred to our clinic for additional treatment. However, the pain was not exacerbated by exposure to cold. Clinically, a 1- to 2-mm skin lump was found at her left great toe pulp with severe pain on light touch (Fig. 1). Magnetic resonance imaging revealed a 3.4-mm × 2.4-mm × 2.1-mm nodule in the plantar aspect of the distal phalanx of the great toe. The lesion was predominantly lying in the subcutaneous fat layer and did not appear to involve the underlying tendon or bone. The lesion was hyperintense on T<sub>2</sub>-weighted short T<sub>1</sub> inversion recovery (STIR) images, was hypointense on T<sub>1</sub>-weighted images, and was mildly hyperintense on the fat-saturated sequence. The postcontrast-enhanced scan showed mild enhancement of the lesion, and no definite other enhancing foci were identified (Fig. 2). The radiologist reported that the features were nonspecific and the differential diagnosis would include neuroma and hemangioma. Excision of the lump, together with the overlying skin, was performed. A 2- to 3-mm whitish fleshy tumor was found attached to the skin (Fig. 3). Histologic examination showed a piece of skin with a tumor in the dermis (Fig. 4). The tumor was composed of a solid proliferation of polygonal cells. The tumor cells were mitotically inactive. Myxoid stromal changes were readily seen. The histologic diagnosis was a glomus tumor (Fig. 5). The surgical wound healed uneventfully. However, the patient complained of persistent pain over the toe pulp, although no definite tenderness was present. The pain subsided 3 weeks after the operation. No local recurrence had developed at the latest follow-up examination 24 months postoperatively.

**Financial Disclosure:** None reported.

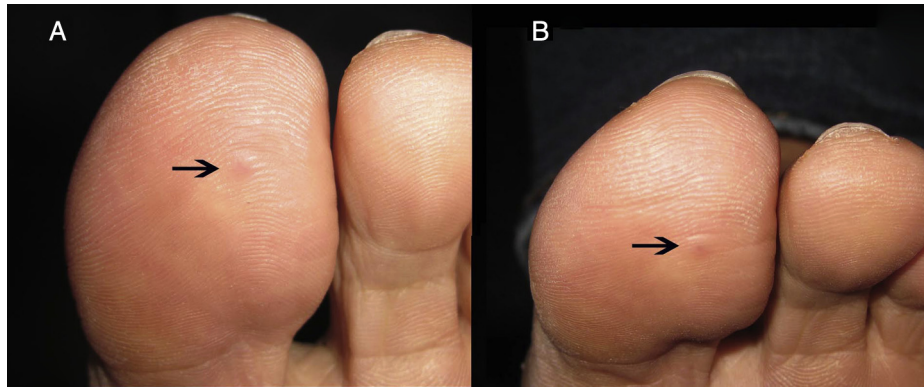
**Conflict of Interest:** None reported.

Address correspondence to: Tun Hing Lui, MBBS (HK), FRCS (Edin), FHKAM, FHKCOS, Department of Orthopaedics and Traumatology, North District Hospital, 9 Po Kin Road, Sheung Shui, New Territory, Hong Kong Special Administrative Region, China.

E-mail address: [luithderek@yahoo.co.uk](mailto:luithderek@yahoo.co.uk) (T.H. Lui).

### Discussion

Glomus tumor is a rare mesenchymal neoplasm composed of cells that resemble the modified perivascular smooth muscle cells (glomus

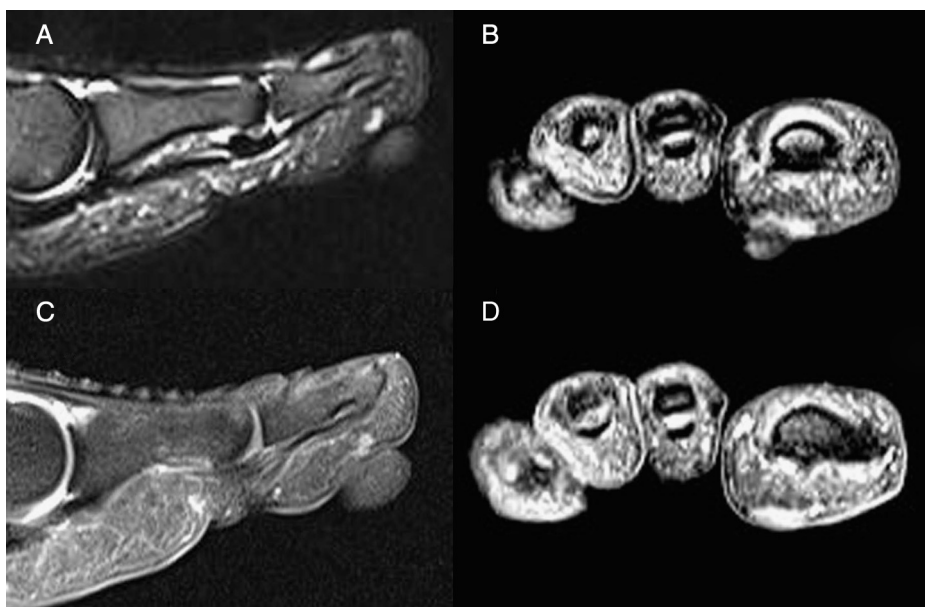


**Fig. 1.** (A and B) Clinical photographs showed a tiny skin lump of the great toe pulp (arrows).

cells) of the normal glomus body (4,5). Although glomus tumors are thought to arise from glomus cells, these tumors have been observed in extracutaneous locations not known to contain glomus cells (5). One possible explanation for this finding is that these tumors might arise from perivascular cells that can differentiate into glomus cells. The initiating, or causative, event associated with glomus cell proliferation and eventual glomus tumor formation is unknown. Once established, glomus tumors are typically composed of 3 components: glomus cells, vessels, and smooth muscle cells (3). According to the proportion of these 3 components, glomus tumors can be subcategorized as solid glomus tumor, glomangioma, or glomangiomyoma. Solid glomus tumor is the most common variant (75%), followed by glomangioma (20%) and glomangiomyoma (5%) (5). Two clinical variations have been reported—solitary and multiple lesions. Only 10% of all cases of glomus tumors have been of the multiple type. Multiple glomus tumors can be localized or generalized in distribution. When localized, they are often limited to just 1 area of the body and tend not to involve the trunk or face. Although solitary glomus tumors are usually painful, the percentage of painful multiple glomus tumors has been reported to be only 42% (6). Almost all glomus tumors are benign; rarely, they are malignant (4). Around 1%

of all glomus tumors have been considered malignant. The malignant histopathologic characteristics have included size greater than 2 cm (benign glomus tumors do not generally exceed 1 cm in diameter), a deep location, and the presence of atypical mitotic figures. If the histologic criteria are established for malignancy, the risk of metastasis is greater than 25%. To not miss any malignancy, a routine histologic study is recommended in all cases of glomus tumor (3).

Glomus tumors have been widely reported at a number of anatomic locations, including the knee, liver, trachea, auricle, lung, bowel, stomach, and the digits of the hand. Glomus tumors account for 1% to 5% of all hand tumors. Approximately 75% of reported glomus tumors have localized to the hand, and approximately 65% of these have occurred in the subungual tissues because of the high concentration of glomus bodies in the subungual area (1–4,7). Also, intraosseous areas (interosseous glomus tumor) with glomus tumors have been reported such as in the ankle, proximal ulna, distal phalanx of the toes or fingers, and the fibula. This type of lesion has had its highest incidence rate in 20- to 40-year-old patients and has only rarely been seen at the extreme ends of the age spectrum. They will be solitary lesions in 90% of the cases. Multiple glomus tumors appear at early ages, with a light



**Fig. 2.** (A and B) Magnetic resonance imaging scans of patient showing hyperintense signal on T<sub>2</sub>-weighted images. (C and D) Postcontrast-enhanced scan showing mild enhancement of lesion.

Download English Version:

<https://daneshyari.com/en/article/2719587>

Download Persian Version:

<https://daneshyari.com/article/2719587>

[Daneshyari.com](https://daneshyari.com)