Diffuse Type Tenosynovial Giant Cell Tumor of the Ankle

Jing-Jing Zhao, Ming Xie, Ruo-Kun Huang, Kai Xiao

Department of Orthopedics, Wuhan Pu'ai Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei 430033, China

To the Editor: Tenosynovial giant cell tumor (TSGCT) has a localized and a diffuse form. Localized form, in 80–90% of cases, occurs in the hand joints, and infrequently in the knee and foot joints. The diffuse form is less well-defined, growing in a multinodular pattern that is more irregular than that of localized TSGCT. Less than 10 cases of TSGCT of the ankle have been published.[1] We presented a case of a 29-year-old man with diffuse type TSGCT on his left ankle. The patient developed persistent swelling of the ankle more than 3 years before presentation. On physical examination upon the admission, there were several immobile, multinodular, and firm masses at the ventral part of the ankle and around the lateral malleolus, without adhesion to the skin [Figure 1a], moreover, the patient's gait pattern and mobility of the ankle showed no abnormalities. X-ray images of

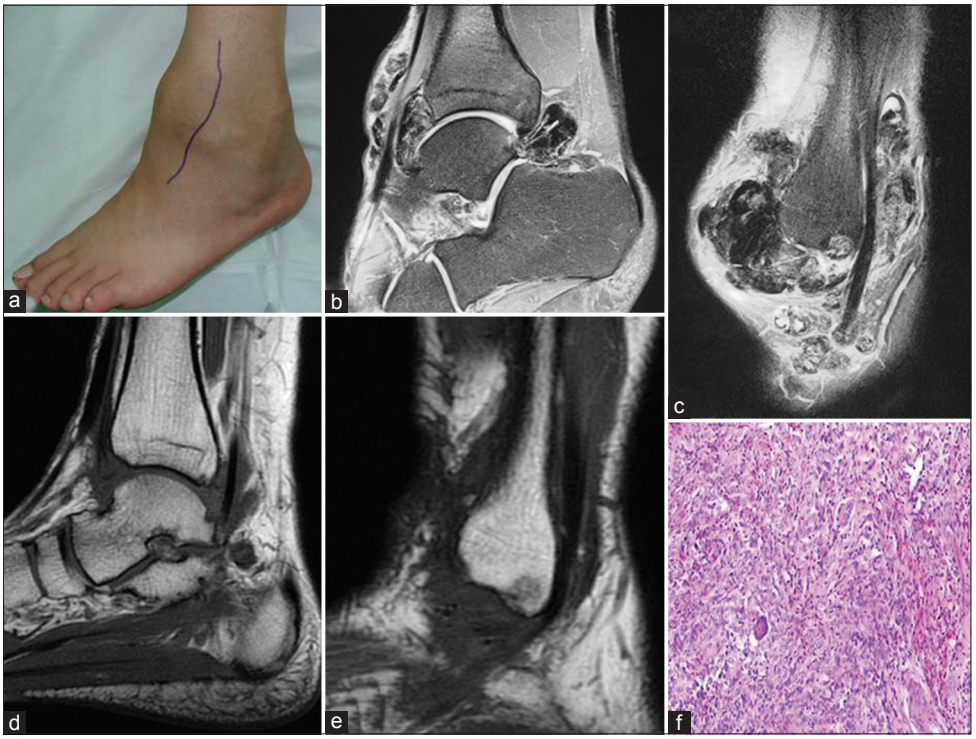

Figure 1: Clinical appearance and magnetic resonance images of the left ankle. (a) The soft tissue mass was evident around the ankle. (b) Sagittal magnetic resonance images show multinodular masses involving both anterior and posterior of the left ankle, and (c) along the peroneus longus and brevis tendons, with erosion of the distal fibula. (d and e) Magnetic resonance imaging results 12 months after the operation showed no new tumor growth. (f) Histopathological findings exhibiting a variable number of multinucleated giant cells and sheets of round mononuclear cells (H and E, original magnification, ×100).

Access this article online

Quick Response Code:

Website: www.cmj.org

DOI: 10.4103/0366-6999.178973

Address for correspondence: Dr. Jing-Jing Zhao, Department of Orthopedics, Wuhan Pu'ai Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei 430033, China
E-Mail: zhaojingjing017@163.com

Received: 31-12-2015 **Edited by:** Qiang Shi
How to cite this article: Zhao JJ, Xie M, Huang RK, Xiao K. Diffuse Type Tenosynovial Giant Cell Tumor of the Ankle. Chin Med J 2016;129:881-2.

the patient's left ankle showed no pathological findings. Magnetic resonance imaging (MRI) scan disclosed several heterogeneous signal masses differ in size, with a maximum of 3 cm × 2.5 cm at the dorsolateral surface of the lateral malleolus, and smaller well-circumscribed masses adjacent to the peroneus longus and brevis tendons [Figure 1b and 1c].

After the institutional review board approved the study protocol and consent forms, the risks, and benefits of the operation were then discussed and the patient consented. Both anterior and posterolateral incisions were adopted, then blunt dissection was performed carefully to avoid injury to the superficial peroneal nerve and sural nerve. The exposed masses were not clear all round, coupled with the erosion of the fibular collateral ligament and the bone of the fibula. The neoplasm was completely resected, and the bony erosion of the fibula was also removed, the anterior talofibular ligaments were damaged, thereafter reconstructed with modified Brostrom technique. The American Orthopaedic Foot and Ankle Society Ankle-Hindfoot Score was 98 at 6-month follow-up. There was no recurrent mass and the patient reported no pain and no activity limitations in the 12-month following up, as well as MRI scan conducted 12 months after surgery, showed no recurrence of the TSGCT [Figure 1d and 1e]. Macroscopic examination revealed lobulated brownish masses growing in a multinodular pattern, mainly attached to the peritendineum of the tendons. Microscopically, the masses showed classic features of TSGCT and composed of multinucleated giant cells, xanthoma cells, mononuclear cells, and stromal cells [Figure 1f]. There was no sign of malignancy.

Clinical diagnosis of TSGCT is difficult. Differential diagnosis has to take a number of other tumors into account, including lipoma ganglia or fibromas.[2] MRI is preferred to define the characteristics of the mass although definite diagnosis can only be made by pathologic examination.[3] Diffuse type TSGCT is defined by invasive, extra-articular disease. Because of its diffusely invasive growth, it is often impossible to define the origin, most cases are believed to represent extra-articular extensions of primary intra-articular disease. However, unlike localized TSGCT, diffuse type TSGCT widely infiltrates adjacent soft tissue and frequently erodes bone.[4] Diffuse type TSGCT is locally aggressive and recurs in 33–50% of cases, often with multiple recurrences. Histopathologic confirmation and definite classification of these tumors have important clinical implications. Highly cellular tumors with increased mitotic activity and diffuse forms have high recurrence rates.[4,5]

In conclusion, we present an unusual occurrence of diffuse-type giant cell tumor of the ankle, which has not been previously reported.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Lucas DR. Tenosynovial giant cell tumor: Case report and review. Arch Pathol Lab Med 2012;136:901-6. doi: 10.5858/arpa.2012-0165-CR.
2. Somerhausen NS, Fletcher CD. Diffuse-type giant cell tumor: Clinicopathologic and immunohistochemical analysis of 50 cases with extraarticular disease. Am J Surg Pathol 2000;24:479-92. doi: 10.1097/00000478-200004000-00002.
3. Gibbons CL, Khwaja HA, Cole AS, Cooke PH, Athanasou NA. Giant-cell tumour of the tendon sheath in the foot and ankle. J Bone Joint Surg Br 2002;84:1000-3. doi: org/10.1302/0301-620X.84B7.13115.
4. Al-Qattan MM. Giant cell tumours of tendon sheath: Classification and recurrence rate. J Hand Surg Br 2001;26:72-5. doi: org/10.1054/jhsb.2000.0522.
5. Martin RC 2nd, Osborne DL, Edwards MJ, Wrightson W, McMasters KM. Giant cell tumor of tendon sheath, tenosynovial giant cell tumor, and pigmented villonodular synovitis: Defining the presentation, surgical therapy and recurrence. Oncol Rep 2000;7:413-9. doi: org/10.3892/or.7.2.413.