

**GIANT CELL TUMOR OF THE TENDON SHEATH IN THE FOOT: A CASE REPORT  
AND REVIEW OF THE LITERATURE****Mouktabis Soufiane\*, T. Ahuary, A. Negrachi, M. Akanou, J. Mekkaoui, M. Boufettal, RA. Bassir,  
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**ABSTRACT**

Giant Cell Tumor of the Tendinous Sheaths (TCGGT) remains a rare tumor in our practice. It occurs mostly in young adults with a female predominance. It essentially affects the fingers of the hand, its location at the foot is less frequent. Clinically, it has a local expression that is a swelling characterized by slow growth and may be accompanied by signs of compression at a late stage. Histological examination remains the key element of diagnosis and prognosis. The treatment is based on surgery with complete tumor resection. We report a case of a giant cell tumor of the flexors sheaths of the big toe.

**KEYWORDS:** Tumor, giant cells, foot.**INTRODUCTION**

Giant cell tumors of the tendon sheaths or tenosynovial giant cell tumors (TCGGT) are benign soft tissue tumors that usually occur in the limbs, most commonly in the hand. Their location in the foot is rare.

We report in this work a case of TCG of the tendon sheaths in the foot, collected in the department of traumatological and orthopedic surgery of the Hospital Centre of Rabat. The objective of this work is to compare our case with those in the literature on the clinical, radiological, histological, therapeutic and prognostic levels.

**CLINICAL OBSERVATION**

This is a 22-year-old patient who consulted for a tumefaction of the plantar surface of the left big toe that had been evolving for two years and had progressively increased in volume. Examination of the left foot revealed an oblong plantar mass along the flexor tendon of the big toe with no inflammatory signs, measuring 7cm/3cm, with little pain, firm consistency, and immobile in relation to the superficial plane. Upstream vascular and nerve examination was normal. There were no inguinal or distant adenopathies. The rest of the general examination was normal. The frontal radiograph of the left foot was normal, but the oblique incidence showed notches in the first phalanx of the big toe in favor of bone erosion. (fig1, 2)

The ultrasound scan showed a tissue mass without any particularities. The CT scan in our patient was in favor of either a synovial tumor (benign synovioma, synovial sarcoma), or a giant cell tumor of the tendon sheaths; the possibility of a histiocytic or neurogenic tumor was not ruled out. MRI was performed and showed an appearance suggestive of a tumor lesion: giant cell tumor of the flexor tendons. (Fig 3)

The patient underwent surgery and was found to have an oblong, greyish-yellow tumour along the flexor tendon of the great toe. The intraoperative appearance was in favour of a TCG (Fig 4), and a histological study led to the diagnosis of a diffuse tenosynovial giant cell tumor. (Fig 5)

**DISCUSSION**

Giant cell tumors are a benign proliferative disorder of the synovium with a poorly understood mechanism. They may involve the articular synovium, bursa and tendon sheaths. Typically, these tumors occur along the palmar aspect of the hand and fingers<sup>[1]</sup> and are most often adjacent to the distal interphalangeal joint (DIP).<sup>[2-4]</sup> TCGGTs predominate in women (sex ratio = 2:1) and can occur at any age.<sup>[3,5]</sup> Localization to the flexor tendon sheaths of the foot is rare and the most common site has been described as the big toe.<sup>[6]</sup> Wang et al, in a series of 30 patients presented on ultrasound, reported seven cases located in the foot (23.3%). In a recent series, out of 28 cases, only 4 were located in the foot.<sup>[7]</sup>

Clinically, TCGGS presents as a painless mass that slowly increases in size slowly growing mass on the palmoplantar surfaces.

The differential diagnosis is often with foreign body granulomas, tendon sheath fibroids, fibrous tumors, lipoma or desmoid tumor.<sup>[8,9]</sup> The imaging workup includes standard radiographs that may show erosion of the bone cortex in 10-15% of cases. MRI shows a T1 iso signal and T2 hypersignal tumor invading the soft tissue. Histologically, TCCGS is a proliferation of multinucleated giant cells and histiocytes associated with foamy macrophages and hemosiderin deposits. Treatment consists of wide surgical excision to prevent recurrence, which is not uncommon and can reach 44%.

The operation must be meticulous because the tumor often has extensions that are not clinically suspected, especially on the deep side of the tendon, and which are a source of recurrence.<sup>[10]</sup><sup>[10]</sup> Radiation therapy is an adjuvant treatment recommended to prevent recurrence.<sup>[10,11]</sup>

## CONCLUSION

TCGGT of the foot is rare, and diagnostic delays are often prolonged due to its pauci-symptomatic nature, consisting of a swelling characterized by slow and insidious growth.

## ICONOGRAPHY



Figure 1: Frontal X-ray of the left foot.



Figure 2: Oblique X-ray of the left foot.

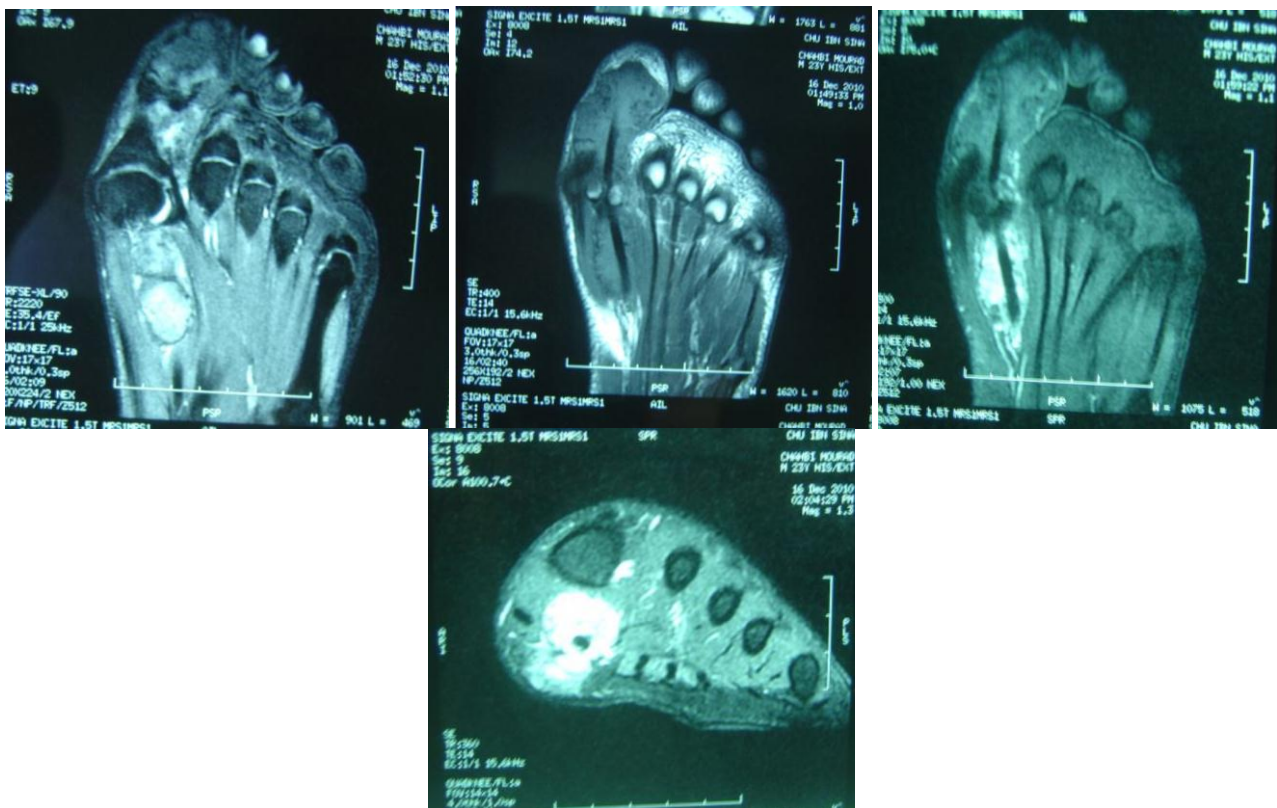


Figure 3: MRI images of the left foot showing a hypersignal TCGG T1, hypersignal T2, heterogeneous.



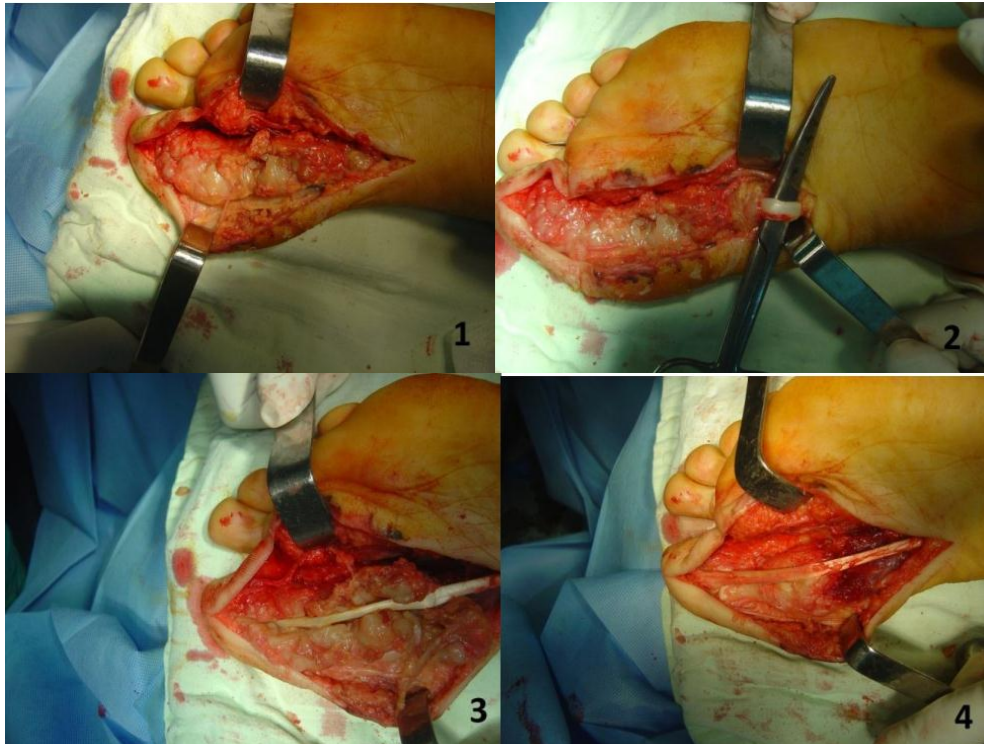


Figure 4: The phases of the intervention.



Figure 5: The macroscopic aspect of the part.

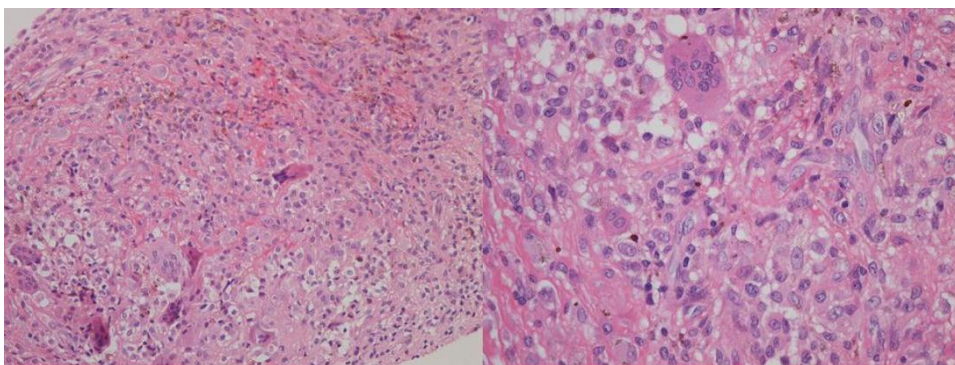


Figure 6: Microscopic appearance of TCGGT in our patient with accumulation of histiocytes, presence of multinucleated giant cells and collagen strands.

#### REFERENCES

1. Briët JP, Becker SJ, Oosterhoff TCh, Ring D. Giant cell tumor of tendon sheath. *Arch Bone, JtSurg*, Jan, 2015; 3(1): 19-21.
2. Suresh SS, Zaki H. Giant cell tumor of tendon sheath: case series and review of literature. *J Hand Microsurg*, Dec, 2010; 2(2): 67-71.
3. Garg B, Kotwal PP. Giant cell tumor of the tendon

- sheath of the hand. *J Orthop Surg (Hong Kong)*, Aug, 2011; 19(2): 218-20.
4. Hamdi MF, Touati B, Zakhama A. Giant celltumor of the flexor tendon sheath of the hand: analysis of 27 cases. *MusculoskeletSurg*, 2011 Jun 15.
  5. Findling J, Lascola NK, Groner TW. Giant celltumor of the flexor hallucis longus tendon sheath: a case study. *J Am Podiatr Med Assoc*, Mar-Apr; 2011; 101(2): 187-9.
  6. <http://www.bonetumor.org/tumors-foot-andankle/giant-celltumor-foot-andankle> Giant celltumor of tendon sheath - foot and ankle.
  7. Kant KS, Manav AK, Kumar R, Abhinav, Sinha VK, Sharma A. Giant celltumor of tendon sheath and synovial membrane: a review of 26 cases. *J Clin Orthop Trauma*, 2017; 8: S96—9.
  8. M. BenHamouda: Tumeur à cellules géantes des gaines des fléchisseurs du pied : à propos d'un cas, *Annales de Dermatologie et de Vénérologie*, May, 2018; 145: A82.
  9. Kotwal PP, Gupta V, Malhotra R. Giantcelltumor of the tendon sheath. *J Bone Joint Surg Br.*, 2000; 82(4): 571-3.
  10. Garg B, Kotwal PP. Giant celltumor of the tendon sheath of the hand. *J OrthopSurg (Hong Kong)*, 2011; 19(2): 218-20.
  11. Williams J, Hodari A, Janevski P, Siddiqui A. Recurrence of giantcell tumors in the hand: a prospective study. *J Hand Surg Am.*, 2010; 35: 451-6.