

GIANT GOUTY TOPHI IN THE HAND: A SURGICAL CHALLENGE

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The prevalence and annual incidence of gout has been on the rise in Western countries for several reasons (e.g., diet, lifestyle, alcohol use, use of diuretics)¹⁻³. Nowadays, the prevalence of gout is 9% in men and 6% in women older than 80 years^{2,4}. In Western countries, up to 2% of the entire male population is affected by this disease⁵. Involvement of the hand and wrist is frequent, especially in women⁶⁻⁸.

Management of tophaceous gout is generally medical⁹⁻¹⁰. However, there are patients who may require surgical intervention. The literature on the surgical management of hand gouty tophi in the past 30 years is largely composed of isolated case reports and relatively small series⁶. Nevertheless, evidence from these reports indicates that if functional disability persists despite aggressive medical management, surgical intervention can be beneficial^{6,11}. Surgical indications generally include restoration of joint and tendon mobility, nerve decompression, prevention of skin breakdown, debride-

ment of septic joints, and debulking of painful or disfiguring tophi^{6,11}. Pain relief is a secondary, important indication^{6,11}.

Regarding surgical treatment, it is usually considered unwise to attempt excision of all tophaceous material when doing so would compromise structures important to hand integrity or function^{6,11}. Tophi that are firmly adherent to skin, tendon, and bone are gently curetted or excised sharply, without compromising the integrity of the surrounding structures^{6,11,12}. The emphasis is on debulking the tophus rather than excise it completely. Interestingly, recurrence of tophi after surgical excision is uncommon^{6,11}.

We describe the clinical case of a 77-year-old man with a 30-year history of gout that was referred to the hand clinic due to massive tophi in most of the finger joints of his two hands (Figures 1 and 2). Some of the tophi exuded a white, chalky material (Figure 1). He had received colchicine and urate-lowering drugs intermittently over the previous several years. Surgery was undertaken to excise the largest tophi in his left hand (Figure 3). However, complete excision was not possible, in order not to compromise important vascular, nervous and tendon structures (Figure 4).



Figure 1. Pre-operative appearance of the dorsum of the hands of a patient with long-standing gout and large gouty tophi, especially in the second and fifth fingers of this left hand. Sinus tracts from the tophi occasionally drained spontaneously a pasty white material mixed with blood (white arrows)



Figure 2. Pre-operative appearance of the palmar aspect of the hands of the patient, showing the large tophi present in the dorsum extended to the medial and lateral borders of the fingers. At the level of the second and fifth fingers of the left hand, the tophi reached the palmar aspect of the fingers

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Figure 3. Intra-operative view of the left hand of the patient. Two large tophi (*) embedded in the extensor tendons of the fifth finger are visible. The tophi were tightly adherent to the surrounding tendons, joint capsules, bones, vessels and nerves. The complete extirpation of these two masses was not possible because the tophi completely surrounded the two main neurovascular bundles of the fifth finger (the palmar radial and ulnar neurovascular bundles)

We believe this case eloquently demonstrates that surgery of large gouty tophi in the hand is frequently difficult, hazardous, and often leads to suboptimal results^{6,11}. Hence, patients and doctors should strive to obtain a good control of uric acid levels, in order to reduce the risk of tophi formation and the need for surgery^{6,11}.

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References

1. Weaver AL. Epidemiology of gout. *Cleve Clin J Med* 2008; 75: 9-12.
2. Arromdee E, Michet CJ, Crowson CS, O'Fallon WM, Gabriel SE. Epidemiology of gout: is the incidence rising? *J Rheumatol* 2002; 29: 2403-2406.



Figure 4. Dorsal view of the dorsum of the hands of the patient two months after surgery, showing the reduction in size of the tophi over the second and fifth fingers of the left hand. However, these masses are still present in the borders of these fingers, that is to say, where the two main neurovascular bundles of the fingers are located

3. Richette P, Bardin T. Gout. *Lancet* 2010; 375:318-28.
4. De Leonardis F, Govoni M, Colina M, Bruschi M, Trotta F. Elderly-onset gout: a review. *Rheumatol Int* 2007; 28: 1-6.
5. Mikuls TR, Farrar JT, Bilker WB, Fernandes S, Schumacher HR Jr., Saag KG. Gout epidemiology: results from the UK General Practice Research Database, 1990-1999. *Ann Rheum Dis* 2005; 64: 267-272.
6. Fitzgerald BT, Setty A, Mudgal CS. Gout affecting the hand and wrist. *J Am Acad Orthop Surg* 2007; 15: 625-635.
7. ter Borg EJ, Rasker JJ. Gout in the elderly, a separate entity? *Ann Rheum Dis* 1987; 46: 72-76.
8. Simkin PA, Campbell PM, Larson EB. Gout in Heberden's nodes. *Arthritis Rheum* 1983; 26: 94-7.
9. Gomes TS, Sequeira G, Simões P. Artropatia Gotosa. *Acta Reumatol Port* 2010; 35:102-104.
10. Ribeiro A, Bogas M, Costa J, Costa L, Araújo D. Rasburicase no tratamento da gota tofácea. *Acta Reumatol Port* 2009; 34: 551-554.
11. Kumar S, Gow P. A survey of indications, results and complications of surgery for tophaceous gout. *N Z Med J* 2002; 115: U109.
12. Straub L, Smith J, Carpenter G, Dietz G. The surgery of gout in the upper extremity. *J Bone Joint Surg Am* 1961;43: 731-752.