

Gouty Stenosing Tenosynovitis: Trigger Finger as a First Presentation of Tophaceous Gout

Véronique Doucet, MEng, MD
Graham J. McLeod, MD
Christian J. Petropolis, MD,
FRCS

Summary: Gout can lead to the deposition of tophi and chronic arthritis, for which surgical management is indicated when tophi interfere with the function of the finger. This case report discusses the management of a 37-year-old man with a past medical history of gout who presented with triggering of his small finger from gouty infiltration of his flexor digitorum profundus (FDP) tendon. An exploratory procedure that included tenolysis and release of the A1 pulley was performed. Gouty infiltration of the FDP tendon was noted intraoperatively and biopsied, which was later confirmed by histopathological analysis as being gouty tophus. The patient regained full function of the affected finger postoperatively and has since had no recurrence. Gouty tenosynovitis is a rare cause of trigger finger and should be considered as part of the differential diagnosis. Treatment for gouty tenosynovitis consists of A1 pulley release and careful excision of gouty tophus to restore tendon glide and hand function. (*Plast Reconstr Surg Glob Open* 2020;8:e3055; doi: [10.1097/GOX.0000000000003055](https://doi.org/10.1097/GOX.0000000000003055); Published online 14 August 2020.)

INTRODUCTION

Gout is defined as a metabolic disorder of uric acid that can lead to tissue deposition of monosodium urate crystal, with an incidence of 1%–2% in adults in developed countries.¹ The pathophysiologic process begins with asymptomatic hyperuricemia, which then progresses to acute intermittent attacks of gout, followed by chronic arthritis and development of tophi.^{1,2} The presence of tophi is usually linked to the duration of disease and the degree of hyperuricemia.³ The diagnosis of gout is often clinical, but definitive diagnosis can be obtained by arthrocentesis and by identification of crystals with negative birefringence under polarized light microscopy.² Treatment of acute episodes of gout is primarily medical. Surgical management is indicated for chronic arthritis secondary to gout when tophi interfere with function; surgical excision can relieve pain and deformity, thereby restoring function.²

CASE REPORT

A 37-year-old man with a history of gout was noted in clinic to have triggering and poor gliding of his small finger flexor digitorum profundus (FDP) and flexor digitorum superficialis (FDS) tendons at a follow-up appointment

for another unrelated hand injury. On examination of his hand, however, his FDS and FDP appeared to have good independent function despite poor tendon glide. Based on his history and physical examination, a provisional diagnosis of stenosis tenosynovitis, or trigger finger, was made. This led to an exploratory procedure that included tenolysis and release of the A1 pulley.

Intraoperatively, a significant amount of synovial tissue was noted surrounding the FDS and FDP tendons following the release of the A1 pulley. Resistance of tendon excursion was also noted. The most proximal segment of the A2 pulley was released, which led to improved tendon glide. A significant amount of swelling was noted in the tendons at Camper's chiasm, as well as fusion of the FDP and FDS tendons at this level. Gouty infiltration was noted along the length of the FDP tendon (*Fig. 1*). A small amount of gouty material was excised, and the 2 tendons were carefully separated to allow for independent glide. No healthy or viable tendon was removed. A sample of this material was sent for pathology. Excessive synovial tissue was also excised. Function of the finger was assessed before skin closure, and a good active range of motion was noted without triggering at the remaining A2 pulley or at Camper's chiasm.

Histopathological analysis of the FDP tendon specimen confirmed the diagnosis of gouty tophus. The patient successfully regained the range of motion of his flexor tendons postoperatively.

DISCUSSION

The main clinical manifestations of gout in the hand and wrist consist of a formation of tophi subcutaneously

From the Department of Plastic Surgery, University of Manitoba, Winnipeg, Manitoba, Canada.

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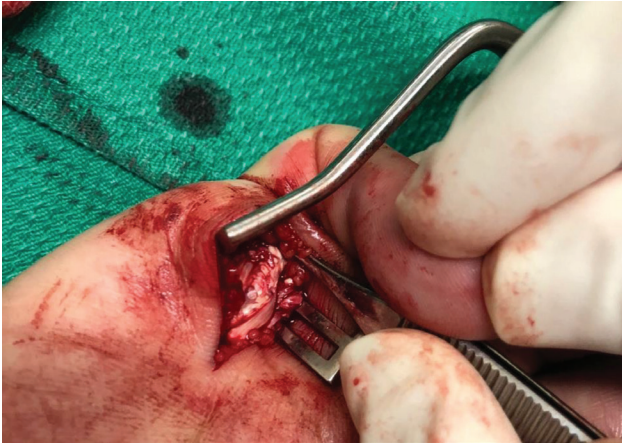


Fig. 1. Image showing gouty infiltration along the length of FDP tendon.

at the finger joints, causing bone erosion or compression of nearby structures.^{1,4} Tophi involving the flexor tendons and tendon sheath are relatively uncommon and not typically included in the differential diagnosis of trigger finger, or stenosing tenosynovitis.

Few case reports were found in the literature describing gouty infiltration of the flexor tendons in the hand and wrist. Chieng et al⁴ have reported a case of gouty infiltration of the FDS tendon at the level of the proximal aspect of the flexor retinaculum, causing flexion deformity of a digit. Kumar et al⁵ described gouty tophi of the flexor tendons stenosing at the proximal flexor retinaculum, presenting clinically as a growing volar wrist mass. Gouty infiltration leading to proximal interphalangeal joint (PIP) joint stiffness has also been described.¹ In 2010, Meyer zu Reckendorf and Lupascu⁶ presented the case of a 57-year-old patient with flexion deformity of the ring finger who was found to have a diffuse gouty infiltration of the flexor tendons, mainly FDS, in the flexor tendon sheath. The authors describe curettage of the gouty deposits at the A2 pulley and arthrolysis of the PIP joint at these areas to restore the full extension of the digit.⁶ In 2017, Bray et al⁷ describe gouty deposits in the flexor tendons extending from the A1 pulley to the A3 pulley, which caused triggering and locking of a digit. Release of the A1 pulley was sufficient in this case to improve hand function.⁷

This case is a unique presentation of gouty deposits involving the FDP tendon, causing a fusion of the FDP

and FDS tendons at the level of Camper's chiasm. This explains the poor tendon glide that was noted preoperatively. Our case report adds to the sparse description of cases of gouty tophus only involving the flexor tendon sheath. Gout should be considered in the differential diagnosis of stenosing tenosynovitis, especially in patients with a history of gout. There have been cases described where this was the first presentation of the disease, supporting that gout should be kept on the differential diagnosis for flexor tendinopathies.^{3,8}

CONCLUSIONS

Gouty tenosynovitis is a rare cause of trigger finger and should be considered as part of the differential diagnosis. Treatment consists of A1 pulley release and careful excision of gouty tophus to restore tendon glide and hand function.

Véronique Doucet, MEng, MD

Department of Plastic Surgery
Room 348 SMD Building
825 Sherbrook Street
University of Manitoba
Winnipeg, MB R3A 1M5, Canada
E-mail: vdoucet@nosm.ca

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