

Double Trigger Wrist Caused by 2 Flexor Tendon Sheath Giant Cell Tumors

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Abstract: Trigger finger is a relatively common condition affecting the smooth gliding of tendons in the hand. When this entity affects the gliding motion of the wrist, it is termed as trigger wrist. In this article, we report the extremely rare case of a double trigger wrist caused by 2 tendon sheath tumors resulting in 2 trigger points in the motion of the wrist and carpal tunnel syndrome. The patient was managed with surgical excision of the tumors and release of the flexor retinaculum with resolution of symptoms.

Key Words: trigger finger, trigger wrist, tendon sheath tumor, giant cell tumor, stenosing flexor tenosynovitis

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Trigger finger, also known as stenosing flexor tenosynovitis, is a hand condition affecting the A1 pulley of the digits, first described by Notta in 1850.¹ The condition causes stenosis of the A1 pulley and hence results in clicking in the motion of the affected digit along with pain and loss of range of motion. A condition with a similar pathology is trigger wrist, where the motion affected is that of the whole wrist rather than a single digit. The equivalent to the A1 pulley that is affected is the flexor retinaculum. Any pathological process hindering the smooth gliding of the carpal tunnel contents may lead to trigger wrist, whether caused by an inflammatory process or tumor; lipomas, giant cell tumors, rheumatoid nodules, degenerative changes of the flexor tendon sheath, and avascular necrosis of carpal bones.^{2–6} The incidence of trigger finger throughout a person's lifetime is estimated to be around 2% to 3%, with a higher incidence associated with some comorbidities, such as diabetes^{7,8}; the incidence of trigger wrist is thought to be much lower with a few cases reported in the literature. Treatment options include conservative management, such as splinting and corticosteroid injections or surgical release of the pulley or retinaculum.⁷ Here, we present the case of a 54-year-old man with the condition of trigger wrist caused by a tendon sheath tumor. To our knowledge, this is only the third reported case of trigger wrist caused by a giant cell tumor of the flexor tendon sheath. The uniqueness of this case stems from the unusual finding of 2 giant cell tumors of the flexor tendon sheath rather than one.

CASE PRESENTATION

A 54-year-old man with hypertension, dyslipidemia, and history of disc disease presented with pain and paresthesias in his right dominant hand of a few months duration. The patient reported clicking

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motion when trying to flex or extend his wrist associated with periodic pain, mainly affecting the third and fourth digits (Supplemental Digital Content 1 <http://links.lww.com/SAP/A615>). On physical examination, the patient was found to have the aforementioned symptoms along with a decreased range of motion of the wrist, especially the third digit. The patient had already done magnetic resonance imaging of the affected hand (Fig. 1). The image showed 2 tumors of the affected hand:

- A 2 × 1 cm lobulated deep synovial cyst along the ventral side of the proximal aspect of the wrist joint indenting the deep edge of the carpal tunnel
- A 2.2 × 0.9 cm oval lesion within the distal segment of the carpal tunnel, particularly along the medial side within the flexor digitorum profundus tendons of the third, fourth, and fifth digits
- Associated edema within the carpal tunnel

Diagnosis was of 2 hand tumors likely causing trigger wrist, resulting in a carpal tunnel syndrome. Decision was made to operate and surgically excise the tendon sheath tumors along with release of the carpal tunnel retinaculum.

Under regional block, the flexor retinaculum was transected and the median nerve released. Further dissection was carried out in the hand proximally until a mass on the flexor tendon sheath was identified. The mass was excised. Dissection was carried out distally until a distal mass was identified (Fig. 2). The second mass was excised, and both masses were sent to pathology (Fig. 3). Pathology of both masses was consistent with tenosynovial giant cell tumor (Fig. 4). On follow-up, patient had good healing of his wound along with resolution of the triggering and the symptoms of carpal tunnel involvement.

DISCUSSION

Trigger wrist is a rare entity caused by multiple etiologies obstructing the smooth gliding of the contents of the carpal tunnel. The causes reported in the literature include intrinsic and flexor muscle masses, degenerative changes of the flexor tendon sheath, and avascular

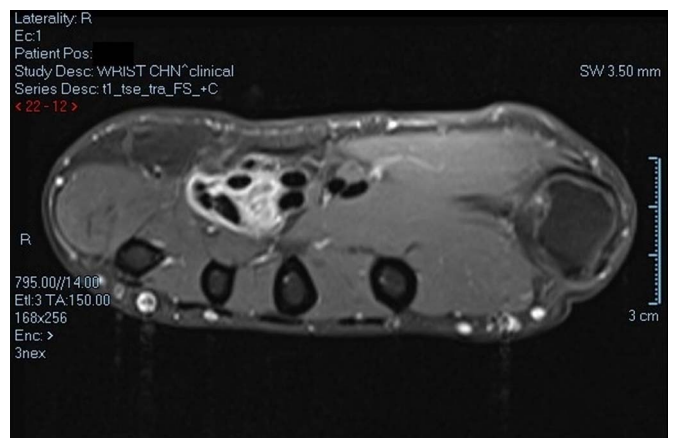


FIGURE 1. MRI image of 2.2 × 0.9 cm mass within the flexor digitorum profundus tendons of the third, fourth, and fifth digits. MRI, magnetic resonance imaging. [full color online](#)

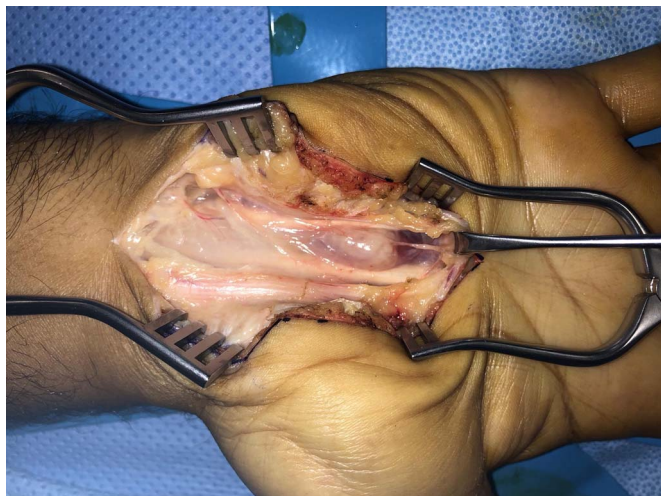


FIGURE 2. Intraoperative picture showing the proximal and distal masses causing the triggering. [full color online](#)

necrosis of carpal bones as mentioned.²⁻⁶ The multiplicity of causes and the need for localizing the etiology may often necessitate preoperative imaging of the hand using magnetic resonance imaging; knowing



FIGURE 3. The two masses excised and sent to pathology. [full color online](#)

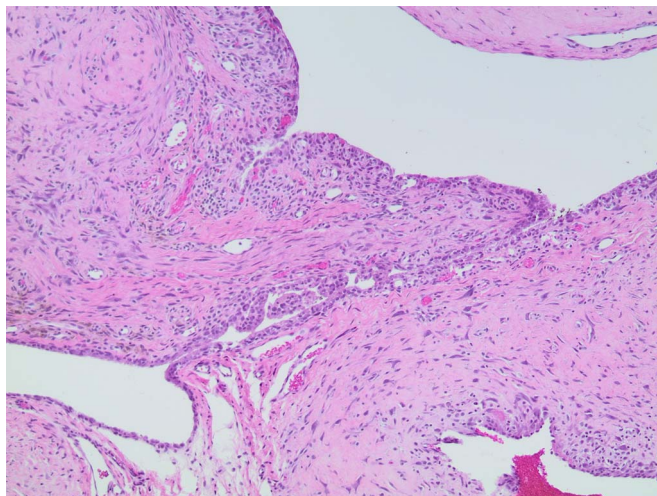


FIGURE 4. Pathological slide of the masses excised showing a pattern consistent with a giant cell tumor. [full color online](#)

the cause and localizing it limits the amount of dissection needed for excisional treatment. The case discussed in this report is the third in the literature in which a giant cell tumor of the flexor tendon sheath causes trigger wrist, with a unique finding of 2 giant cell tumor rather than 1.^{5,9} Once diagnosis is made, prompt surgical excision and release are warranted for relief of symptoms and prevention of further consequences of the carpal tunnel compression.

CONCLUSIONS

Trigger wrist is a rare occurrence that presents with a variety of associated symptoms, such as carpal tunnel syndrome, depending on the cause. A combination of an extensive history and physical examination along with the necessary imaging will often lead to a clear diagnosis. The diagnosis of a flexor tendon sheath mass would require surgical excision for relief of symptoms and prevention of further damage.

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