

# Atypical Presentation of Soft-Tissue Mass With Gonococcal Infection in the Hand

Donald W. Hurst, MD, Michael A. Thompson, MD, and Eric P. Hofmeister, MD

**N**isseria gonorrhoeae infection is a common sexually transmitted disease (STD) that may cause a disseminated infection. Some patients with disseminated gonococcal infection (DGI) have tenosynovitis as its only manifestation, most often involving the extensor tendons of the hand, wrist, or ankle.<sup>1</sup> The typical presentation of DGI is fever, chills, and generalized malaise, but symptomatic genital infection is uncommon in both males and females.<sup>2</sup> DGI occurs in 0.1% to 0.3% of patients infected with *N gonorrhoeae*,<sup>3</sup> and approximately two thirds of patients with DGI develop tenosynovitis.<sup>4</sup> We present an unusual case of gonococcal flexor tenosynovitis presenting as a soft-tissue mass.

## CASE REPORT

A man in his early 30s presented to the orthopedic hand clinic with a painful thenar eminence mass on the right, non-dominant hand. Two weeks before admission, he “jammed” his thumb and was diagnosed by his primary care physician with a “thumb sprain.” On presentation to the clinic, the patient stated that the thumb had improved until 3 days earlier, when the thenar eminence started becoming increasingly swollen and tender, and there was localized pain with thumb motion. He denied a history of fever, skin rashes, systemic illness, urethritis, and sore throat. He later reported that he was sexually active and that he had a history of unprotected sex, but he denied a history of STDs.

Physical examination revealed a 3-cm subcutaneous, erythematous mass in the right thenar eminence with focal tenderness. The thumb was in a semiflexed position with marked tenderness along the flexor pollicis longus tendon.

LT Hurst, MC, USN, is the General Medical Officer, Marine Air Logistics Squadron 39, Camp Pendleton, California.

CAPT Thompson, MC, USNR, is a staff Orthopaedic Hand Surgeon and Director of Orthopaedic Residency Education, and CDR Hofmeister, MC, USN, is Director, Orthopaedic Hand Surgery Division, and Orthopaedic Intern Director, Naval Medical Center San Diego, San Diego, California.

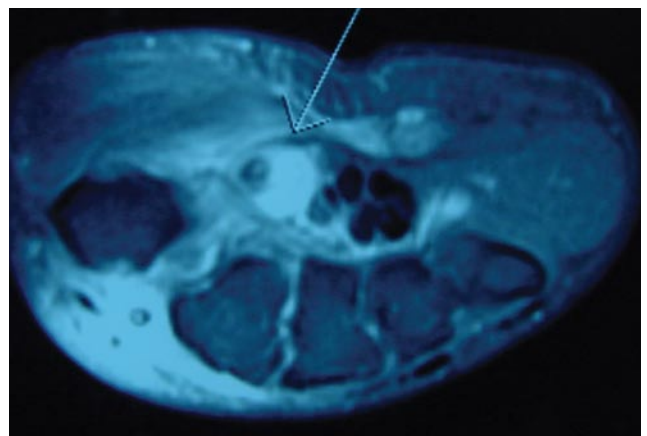
Requests for reprints: Eric P. Hofmeister, MD, c/o Clinical Investigation Department (KCA), Naval Medical Center San Diego, 34800 Bob Wilson Dr, Suite 5, San Diego, CA 92134-1005 (tel, 619-532-8427; fax, 619-532-8467; e-mail, ephofmeister@nmcsd.med.navy.mil).

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There was exacerbation of pain with extension of the thumb. The patient’s temperature was 97.9°F. There were no skin lesions or puncture wounds on the affected hand or anywhere else on the patient’s body. All other physical examination findings—including findings from head, ears, eyes, nose, throat, cardiopulmonary, abdominal, and anogenital examinations—were unremarkable.

White blood cell count was 11,000 per mm<sup>3</sup> with normal differential, and erythrocyte sedimentation rate was 56 mm/h. Hand x-rays showed soft-tissue swelling of the thenar eminence without fracture or periosteal reaction. An urgently ordered magnetic resonance imaging (MRI) scan showed abnormally increased T<sub>2</sub> signal intensity surrounding the flexor pollicis longus tendon from the carpal tunnel and distally into the thenar eminence; increased signal intensity was also visualized within the tendon itself (Figure 1).

A diagnosis of thenar eminence abscess with associated focal flexor tenosynovitis was made, and the abscess was incised and drained (Figure 2). Purulent fluid was obtained and was sent for Gram stain and aerobic and anaerobic cultures. Gram stain showed numerous polymorphonuclear leukocytes but no organisms. Growth in the aerobic culture was identified as *N gonorrhoeae*. The patient’s hand was splinted, and oral ciprofloxacin was begun. A preventive medicine workup (including an HIV test) was negative. At 3.5 weeks, the incisions were well healed, and the patient returned to full activities. Six months after surgery, he demonstrated full range of motion and was pain-free.



**Figure 1.** Magnetic resonance image of the right hand of a 30-year-old man who presented with a thenar mass shows increased T<sub>2</sub> signal intensity surrounding the flexor pollicis longus tendon into the thenar eminence.



**Figure 2.** Intraoperative photograph of the thenar eminence shows marked swelling.

## DISCUSSION

In the United States, *N gonorrhoeae* infection is one of the more common STDs. It may be asymptomatic in both males and females, and asymptomatic mucosal infection is thought to be the predisposing factor for dissemination.<sup>1</sup> Whenever dissemination occurs, it usually follows 1 of 2 distinct patterns: (1) a triad of tenosynovitis, dermatitis with petechial or pustular skin lesions, and polyarthralgia without arthritis or (2) tenosynovitis and polyarthritis.<sup>1</sup>

Patients with the first dissemination pattern typically present during the acute phase with fever, chills, and malaise. However, fever is an unreliable sign and may abate or lessen as disease progresses. The dermal lesions typically last only 3 to 4 days, are painless, and usually appear as pustular or vesicopustular lesions. Gonococcal tenosynovitis typically involves several tendons at once, most commonly extensor tendons of the dorsum of the hand, wrist, and ankle. Both the dermatitis and tenosynovitis described may spontaneously remit without treatment. However, joint involvement generally worsens without treatment.<sup>1</sup>

DGIs are 3 to 5 times more common in women, presumably because of lack of symptomatology precluding early diagnosis and treatment. Furthermore, a history of recent genitourinary symptoms, such as urethritis, is also uncommon in patients (male or female) with DGI.<sup>2</sup> Fortunately, DGI occurs in only approximately 0.1% to 0.3% of all patients with an *N gonorrhoeae* infection.<sup>3</sup> Of the patients in whom it does occur, however, approximately two thirds develop tenosynovitis.<sup>4</sup>

We have found only 3 cases of isolated acute gonococcal flexor tenosynovitis reported in the literature. Balcomb<sup>5</sup> reported a case that developed in a woman who sustained blunt trauma with an intrauterine device; Ogiela and Peimer<sup>6</sup> reported a case in a female without a history of trauma; and Barrick<sup>7</sup> reported a case similar to ours except that it involved an otherwise asymptomatic female with a

history of overuse injury, though Barrick did not report a mass. Our patient had no other DGI manifestations and yet developed a gonococcal abscess with associated flexor tenosynovitis and mass of the thenar eminence.

Early diagnosis of any pyogenic flexor tenosynovitis is critical to prognosis and treatment. Appropriate management includes elevation and splinting in a position of safety, parenteral antibiotics, and frequent reexamination. The traditional treatment of choice for refractory or severe flexor tenosynovitis includes surgical drainage and irrigation, especially in cases of delayed diagnosis. However, intermittent closed-catheter irrigation through limited incisions has proved to be equally efficacious and to cause less soft-tissue trauma.<sup>8</sup> More specific to gonococcal-induced tenosynovitis, all patients found to have any gonococcal infection should be referred to public health services for further screening, to include HIV and syphilis serology, as infection co-occurring with other STDs is common. In addition, sexual partners should be referred for treatment, and all should be educated on and encouraged to practice safer sex.

## CONCLUSIONS

As reported in the literature, in some patients, the only manifestation of DGI is gonococcal tenosynovitis. In this report, we have described a case of DGI presenting as a thenar mass with focal flexor tenosynovitis, after minor trauma, in an otherwise healthy, asymptomatic man. Thus, an appropriate index of suspicion for DGI should be considered in sexually active individuals with acute tenosynovitis, despite the absence of skin lesions or genitourinary complaints.

## AUTHORS' DISCLOSURE STATEMENT AND ACKNOWLEDGMENTS

The authors report no actual or potential conflict of interest in relation to this article.

The views expressed in this article are those of the authors and do not reflect the official policy or position of the US Department of the Navy, US Department of Defense, or US Government.

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