

# INJECTION THERAPY FOR MANAGEMENT OF STENOSING TENOSYNOVITIS (DE QUERVAIN'S DISEASE) OF THE WRIST

Marc E. Rankin, MD, and Edward A. Rankin, MD

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Stenosing tenosynovitis of the first dorsal compartment of the wrist (de Quervain's disease) is a common cause of radial wrist and hand pain and disability. Nonoperative management of the disease has been thought to provide only temporary relief of pain and swelling, while surgical intervention has been viewed as a more definitive treatment. This retrospective study examines the results of 58 patients who presented with de Quervain's disease from January 1993 through December 1995 and were initially treated with a combination steroid/lidocaine injection. After 1 to 3 years of follow-up, 35 patients had complete relief of symptoms with a single injection, 14 had relief of symptoms with two injections, 2 are still under observation, and 7 patients had to undergo operative management. These results indicate that in most patients with de Quervain's disease, treatment with a steroid/lidocaine injection can provide complete relief of symptoms. (*J Natl Med Assoc.* 1998;90:474-476.)

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**Key words:** tenosynovitis ♦ wrist  
♦ de Quervain's disease

Stenosing tenosynovitis of the first dorsal compartment of the wrist, also known as de Quervain's disease, characteristically causes pain along the radial styloid region. First described in 1895 by Fitz de Quervain, a general surgeon, this chronic inflammatory condition involves the abductor pollicis longus and extensor pollicis brevis sheaths at the radial styloid process.

Patients typically present with a complaint of pain localized to the radial side of the wrist that intensifies on movement of the thumb. The diagnosis is aided by the finding of local tenderness and swelling over the first compartment as well as a positive Finkelstein's test. Crepitus or squeaking upon movement of the involved tendons may occur. Confirmation of the

diagnosis necessitates radiographic studies to rule out other entities, such as arthritis, that may have a similar presentation.

The first dorsal compartment, which lies above the styloid process of the radius, contains the abductor pollicis longus and extensor pollicis brevis tendons. These tendons pass through a tunnel created by a small groove in the radial styloid process and the extensor retinaculum above. In 20% to 30% of reported cases, the first compartment is subdivided by a longitudinal ridge and septum into two tunnels, an ulnar one for the extensor pollicis brevis and the other containing one or more slips for the larger abductor pollicis longus.

Operative treatment is viewed by many orthopedists as a definitive measure in the management of this disease. However, surgery does not guarantee complete relief of symptoms, and iatrogenic injury to one or more of the neurovasculature is a likely complication. Others prefer to initially treat a patient with immobilization with a splint and a mixed steroid/lidocaine injection, but some patients may find splint immobilization cumbersome and uncom-

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From Howard University College of Medicine and the Department of Orthopedic Surgery, Providence Hospital, Washington, DC. Requests for reprints should be addressed to Dr Edward A. Rankin, 1160 Varnum St, NE, Ste 312, Washington, DC 20017.

fortable. A third treatment option is to administer an injection of a mixed steroid/lidocaine injection alone. An injection is quick, it can be given in the office, it avoids the invasiveness of surgery and the awkwardness of a splint, and with proper technique it can provide long-lasting relief of symptoms.

This article reports the results of 58 patients who presented with de Quervain's disease from January 1993 through December 1995 and were initially treated with a combination steroid/lidocaine injection.

### MATERIALS AND METHODS

The charts of 58 patients diagnosed with de Quervain's tenosynovitis from January 1993 through December 1995 were reviewed. Diagnosis of the disease was determined by tenderness over the first dorsal compartment, pain distributed over the radial side of the wrist, a positive Finkelstein test, and radiographic studies to rule out similar presenting pathologies. Charts were reviewed for gender, age, and occupation as well as whether the patient presented with unilateral or bilateral or had a history of the disease.

The date of the initial injection, any subsequent injections, and the length of time between injections were noted. A patient who was symptom-free for 1½ years was considered a success. In some instances, the patient presented for a follow-up visit with another problem unrelated to de Quervain's disease or the patient did not return to the office for at least 1½ years since being treated; these patients also were considered as a success. Patients who required three or more injections within 1 year and patients who required surgery were considered to be a failure.

The success of steroid injection therapy is related to the injection technique. The steroid/lidocaine combination should be injected directly into the first dorsal compartment from distal to proximal, usually requiring significant pressure to "distend" the tendon sheath. With this technique, increased prominence of the compartment can be observed as the steroid/lidocaine mixture (0.5 cc each of triamcinolone acetate [5 mg] and 1% plain lidocaine) is injected. Often, a "pop" can be observed or sensed with the injection into the tendon sheath. Because of the painful nature of de Quervain's disease, many patients obtain almost instant relief of symptoms as a result of the lidocaine. Lasting symptom relief often is delayed for 2 to 7 days as the anti-inflam-

Treatment	%
Single injection	60.3
Two injections	24.1
Surgery	12.1
Observation	3.4

matory benefit of the steroid is obtained.

### RESULTS

The average patient age was 52 years (range: 18 to 83 years). All of the patients (49 women and 9 men) had both a history of pain located over the radial side of the wrist and a positive Finkelstein test on physical examination. On radiographic examination, 55 of the patients did not have any associated findings, while 3 had evidence of arthritis at the carpometacarpal joint. Twenty-three patients (40%) had a history of other pathologies in the hand. Carpal tunnel syndrome was seen in 17 cases, carpometacarpal arthritis in 13 cases, and trigger finger in 6 cases.

Thirty-five (60%) patients were treated successfully with one injection, and an additional 14 (24%) patients experienced complete relief of symptoms with two injections (Table). Nine patients had more than two injections; seven of these patients require surgery. Eleven cases demonstrated bilateral de Quervain's diseases; 10 of these cases were treated successfully with injection therapy alone.

Surgery was successful in relieving symptoms for the seven patients who had pain refractory to injection therapy. Reasons for the patients' intractable pain was readily discernible upon exposure of the first dorsal compartment. Four patients had three or more slips of tendon, and one of these individuals had an aberrant muscle along with the extra tendon. One patient had a cyst in the compartment, and another patient had an accessory compartment. In the seventh patient, two larger than normal tendons were found. None of the patients suffered any post-operative complications.

### DISCUSSION

The patient profile in this study parallels what one would expect to find characterizing the average person with de Quervain's disease. The majority (84%) of patients were women >50 years. All complained of a history of wrist pain and had a positive

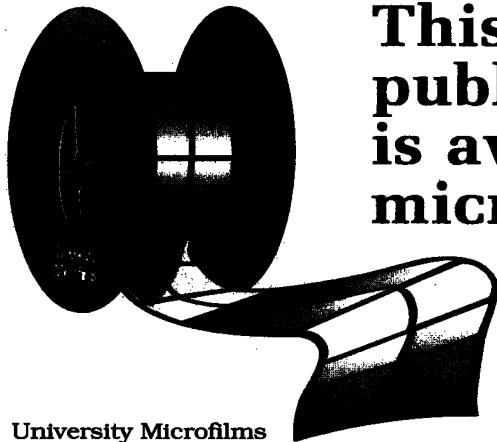
Finklestein test on physical examination. To help confirm the diagnosis, radiographs were taken, and the majority (94%) had negative findings. Of the 3 patients with positive radiographic findings, there was evidence of accompanying arthritic changes; however, the changes were not severe enough to account for the severity of the patients' wrist pain.

The majority of patients (84%) were treated successfully with steroid injection alone. Nine patients had more than two injections; two of these patients are under observation to determine if they require surgery. Of the 7 patients who underwent surgery, obvious deformities responsible for the pain were noted upon exposure of the first dorsal compartment. Such entities as an accessory tendons, accessory compartments, abnormally large tendons, and a cyst were causative factors for the pain that were not detectable by radiographs. This is important because it suggests that when a surgical approach is

indicated, there may be more than one cause for the pain.

### CONCLUSION

These results suggest that it is possible to treat most cases of de Quervain's disease with a combination lidocaine/steroid injection alone. This is important because it allows the patient to avoid the awkwardness of splinting or the invasiveness of surgery. Side effects of steroid injection such as hypopigmentation should be explained to the patient and expected in some cases. While these side effects are a possibility, complications that can arise from surgery are far more damaging. With this steroid/lidocaine injection technique, pain relief can be achieved for the patient while giving the physician the option to delay surgery until he or she feels it is indicated.



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