Nonsurgical Treatment for de Quervain’s Tenosynovitis

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THE PATIENT

A 33-year-old, left-handed woman who is a home-maker reports 2 months of left wrist pain. The pain is worse when lifting her children, opening bottles, or turning doorknobs. She has seen her primary care doctor who diagnosed her with “tendonitis” and prescribed her an unscheduled nonsteroidal anti-inflammatory drug (NSAID) and a wrist splint. Physical exam identifies tenderness and swelling along the first dorsal compartment. Pain is elicited with ulnar deviation of the wrist with the thumb in a clenched-fist position. There is no pain with palpation, movement, or compression of the trapeziometacarpal joint.

THE QUESTION

What is the most appropriate nonsurgical treatment for de Quervain’s tenosynovitis?

CURRENT OPINION

De Quervain’s tenosynovitis is considered a stenosing tenosynovitis of the first dorsal compartment involving the abductor pollicis longus (APL) and extensor pollicis brevis (EPB) tendons as they travel over the radial styloid. It may be more appropriate to consider this as a tendinosis rather than a tendinitis as pathologic specimens demonstrate collagen disorientation and mucoid changes rather than inflammation.1,2 Although the natural history is incompletely understood, de Quervain’s tenosynovitis seems to be self-limited in the majority of patients. Nonsurgical treatments include corticosteroid injections, NSAIDs, thumb-spica splinting, and therapeutic modalities including stretching, strengthening, and iontophoresis.

THE EVIDENCE

Corticosteroid injection

Several case series and clinical trials have studied corticosteroid injections alone and in combination with other modalities including splints and NSAIDs, but none have used a placebo injection control. The success rate with injections of various corticosteroid formulations ranges from 62% to 93% (Table 1).3–9

McKenzie speculated that accurate placement of the corticosteroid within the tendon sheath of the first dorsal compartment, confirmed by flow of the medicine through the syringe and visible filling of the tendon sheath, was important.7 In a prospective study of 19 patients, Zingas et al. studied the accuracy of injections into the first dorsal compartment with x-ray dyes and determined that although the dye was confirmed within the overall compartment in 84% of cases, only 31% of the time was the separate EPB compartment adequately infiltrated.10 The 4 of 5 patients that had adequate dye in both the APL and EPB tendon compartments experienced good symptom relief, whereas the 3 patients that did not have dye in either compartment had no relief of symptoms.

Splinting

In a 3-armed study, Weiss et al. studied use of corticosteroid injections and splinting together and separately to determine their clinical effect. They observed a 67% improvement with injection alone, 57% improvement with both injection and splinting, and 19% improvement with splinting alone.7 Lane et al. separated their study population into minimal, moderate, and severe illness based on clinical symptoms. They identified a success rate of 88% with use of NSAIDs and splints in patients with “minimal” symptoms but only a 32% success rate with “moderate to severe” symptoms.8

Nonsteroidal anti-inflammatory drugs

Determining the efficacy of NSAIDs is difficult because they are often combined with other treatment modalities in most series examining their use for de Quervain’s tenosynovitis.8,9 Jirarattanaphochai et al. found no benefit to adding nimesulide, a selective cyclooxygenase-2 inhibitor, to corticosteroid injection in a randomized, double-blinded prospective study.9
SHORTCOMINGS OF THE EVIDENCE AND DIRECTIONS FOR FUTURE RESEARCH

There are surprisingly few scientific studies of this relatively common condition. Modalities such as iontophoresis and ultrasound are used without evidence for the treatment of de Quervain’s tenosynovitis.

Use of corticosteroids seems to dominate both clinical practice and the scientific literature, but there are very few clinical trials and none with a placebo injection control. Resolution of symptoms seems to be credited to a corticosteroid injection even when symptom resolution occurs as late as 18 months after treatment. This may not be appropriate because clinical experience would suggest that most cases of de Quervain’s tenosynovitis resolve spontaneously over that time period, although better documentation of this resolution is needed.

In the scientific literature on de Quervain’s tenosynovitis, all treatments are considered as potentially disease modifying, but it may be more appropriate to consider splint immobilization and NSAIDs as palliative treatments. This is an important distinction because if de Quervain’s tenosynovitis is indeed self-limited, then splints and NSAIDs may provide sufficient comfort and quality of life for patients to forego surgical treatment and wait out the disease process.

Future scientific studies should distinguish between palliative and potentially curative treatments. To establish the natural history of de Quervain’s tenosynovitis, we need to follow patients treated with palliative measures alone for at least 18 months. To establish the effectiveness of potentially disease-modifying treatments such as corticosteroid treatments (injection, iontophoresis, etc.), we need prospective, randomized, double-blind, placebo-controlled trials, where the placebo precisely mimics the active treatment (eg, placebo injection).

CURRENT CONCEPTS

According to the limited evidence available, injection of corticosteroids is the only available nonsurgical treatment that can potentially modify the course of de Quervain’s tenosynovitis and is therefore my preferred initial treatment. I occasionally advise patients with substantial discomfort to use a splint for palliation. Although the natural history of de Quervain’s tenosynovitis is incompletely defined, if symptoms persist greater than 6 months, I offer surgical treatment.

REFERENCES


### TABLE 1. Success With Corticosteroid Injections for de Quervain’s Tenosynovitis

<table>
<thead>
<tr>
<th>Study</th>
<th>Source</th>
<th>Type</th>
<th>Injection</th>
<th>Patients (N)</th>
<th>Follow-Up Period</th>
<th>Percent Success (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>McKenzie (1972)³</td>
<td>Br Med J 1972</td>
<td>Retrospective</td>
<td>Hydrocortisone</td>
<td>30</td>
<td>18 mo</td>
<td>93</td>
</tr>
<tr>
<td>Harvey et al. (1990)⁴</td>
<td>J Hand Surg [Am]</td>
<td>Retrospective</td>
<td>Methylprednisolone</td>
<td>63</td>
<td></td>
<td>82</td>
</tr>
<tr>
<td>Witt et al. (1991)⁵</td>
<td>J Bone Joint Surg [Am]</td>
<td>Prospective</td>
<td>Methylprednisolone</td>
<td>87 (all splinted)</td>
<td>18 mo</td>
<td>62</td>
</tr>
<tr>
<td>Anderson et al. (1991)⁶</td>
<td>Arthritis Rheum 1991</td>
<td>Prospective</td>
<td>Methylprednisolone</td>
<td>55</td>
<td>48 mo</td>
<td>90</td>
</tr>
<tr>
<td>Weiss et al. (1994)⁷</td>
<td>J Hand Surg [Am]</td>
<td>Prospective</td>
<td>Betamethasone</td>
<td>42</td>
<td>13 mo</td>
<td>67</td>
</tr>
<tr>
<td>Lane et al. (2001)⁸</td>
<td>J Hand Surg [Br]</td>
<td>Retrospective</td>
<td>Celestone</td>
<td>249</td>
<td>NA</td>
<td>76</td>
</tr>
<tr>
<td>Jirarratanaphochai et al. (2004)⁹</td>
<td>J Bone Joint Surg [Am]</td>
<td>Prospective</td>
<td>Triamcinolone</td>
<td>80 (injections only)</td>
<td>12 mo</td>
<td>68</td>
</tr>
</tbody>
</table>

NA, not applicable.