“Doctor, my thumb hurts”

How should you treat these common causes of nontraumatic thumb pain? Use this evidence-based review as a clinical decision-making guide.

Among the many possible causes of nontraumatic thumb pain are 3 conditions that primary care physicians are likely to encounter again and again: de Quervain’s tenosynovitis (dQT), first carpometacarpal osteoarthritis (CMC OA), and trigger thumb (TT). Common as they are, however, there are no consensus guidelines for the treatment of these conditions.

With that in mind, we did a literature search for studies of treatments for common causes of nontraumatic thumb pain. After reviewing the findings, we developed this evidence-based summary—and the “bottom line” treatment guide on page 331—as an aid to clinical decision making.

**de Quervain’s tenosynovitis: An overuse injury**

dQT is characterized by a gradual onset of pain in the first dorsal compartment of the wrist. The pain is reproduced on physical exam with clenched fist ulnar deviation of the wrist (Finkelstein test) (FIGURE). The suspected cause is overuse, leading to thickening of the tendons of the first dorsal compartment and subsequent resisted gliding of the tendons in their fibro-osseous canal.¹

**NSAIDs and injection: No better than injection alone**

Conservative treatment of dQT consists of topical or oral nonsteroidal anti-inflammatory drugs (NSAIDs), splinting, and corticosteroid injection.¹ We identified 2 studies using such conservative modalities. The first was a randomized double-blind, placebo-controlled trial, which found that oral NSAIDs combined with corticosteroid injection provided no statistically significant benefit compared with corticosteroid injection alone ($P=.69$).² The second study was a pooled qualitative analysis and showed that 83% (n=495) of patients were asymptomatic after corticosteroid injection alone.³ Treatment failure in the remaining 17% of patients was attributed to poor technique and anatomic variation within the first dorsal compartment.
Another arm of the study compared the combination of corticosteroid injection and splinting with splinting alone, which yielded 61% and 14% success rates, respectively. Some patients were treated with NSAIDs and rest alone, but this intervention had a 0% success rate.3

**Surgery has a high “cure rate”**
Symptoms of dQT of >9 months’ duration may not respond as well to conservative therapy.4 In such cases—and for patients for whom conservative measures bring only short-term relief—a surgical referral may be the best approach.

Surgery for dQT, a relatively simple procedure in which the sheaths surrounding the inflamed tendons at the base of the thumb are released to relieve the pain and swelling, has uniformly positive results. The “cure rate”—resolution of symptoms without complications—is reported to be >90%.1 One researcher found a positive correlation between a longer duration (>9 months) of preoperative symptoms and increased postoperative satisfaction (P<.4).4

**First carpometacarpal OA: Pain, deformity, functional impairment**
In a study of patients with joint-specific arthritis of the hand, the prevalence of first CMC OA was reported at 21%.5 Symptoms include pain and deformity that may result in significant functional impairment of the thumb. Physical findings may include pain with palpation and swelling and warmth over the dorsal aspect of the CMC joint. The “grind test”—axial compression with internal and external rotation of the CMC joint—should reproduce the pain and may demonstrate crepitus.6 As with osteoarthritis in general, CMC OA radiographic findings do not directly correlate with the physical exam.

**Splinting and physical therapy bring considerable relief**
Conservative treatment options for CMC OA include NSAIDs, physical therapy, splinting, and corticosteroid injection. American College of Rheumatology guidelines support NSAIDs or acetaminophen as a first-line treatment for osteoarthritis pain of the knees and hips, but no guidelines specifically address CMC OA.7 Nor have there been any studies focused on NSAID therapy for CMC OA.

One retrospective study (n=130) evaluated splinting the thumb in abduction, and found that it reduced symptoms of CMC OA by an average of 54% to 61% at 6-month follow-up.8 The researchers studied the re-

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**FIGURE**
**Finkelstein test for de Quervain’s tenosynovitis**

*With elbows flexed to 90°, the forearms parallel to each other and the floor, and the thumb clenched gently inside a fist (A), the patient drops the hand down (adduction) at the wrist (B). Pain over the first dorsal compartment is considered a positive test.*

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PHOTOS COURTESY OF: STEPHANIE K. BUNT, PHD
Nontraumatic thumb pain:
A bottom line treatment guide

1 de Quervain’s tenosynovitis. Initially, corticosteroid injection has been found to be the most appropriate first-line treatment for deQuinflammatory drug (NSAID) does not result in any additional benefit. What’s more, oral NSAIDs and thumb splinting are not effective. Overall, surgical repair has demonstrated the greatest success, but it is invasive and costly.

1 First carpometacarpal osteoarthritis. There are few valid clinical trials for CMC OA. The available evidence, however, suggests starting with NSAIDs and progressing to splinting and physical therapy, as needed. Corticosteroid injections provide no long-term pain relief. As with osteoarthritis in general, surgery for CMC OA is usually reserved for patients who fail to respond to conservative treatments.

1 Trigger thumb. There are various methods and levels of success for trigger digit treatment, but few studies specifically examining treatment of TT. The evidence suggests starting with conservative treatment—corticosteroid injection and splinting—in patients who are opposed to surgery. Both open and percutaneous surgical release of TT have high success rates, however, and can be offered at any time.

Surgical repair of de Quervain’s tenosynovitis has a “cure rate” of >90%.

Consider surgery if conservative measures fail
As with most cases of osteoarthritis, surgery for CMC OA should be considered only after failure of conservative treatment. Surgical treatment options should be individualized, depending on the extent of disease.

1 Resection arthroplasty of the CMC joint is the gold standard for surgical treatment of thumb CMC OA. In one small study (n=24), researchers found that 90% of patients were satisfied with the outcome after 15 years. There are numerous surgical alternatives, however, and research addressing resurfacing, synthetic implants, and spacer materials is ongoing.

Trigger thumb: Swelling, pain, limited motion
TT, also known as stenosing tenosynovitis, is characterized by swelling, limitation of thumb range of motion, and a “catching” sensation when the thumb is flexed. Pain is usually referred to the first dorsal compartment of the hand. The primary pathology is thickening of the A1 pulley, with resultant entrapment of the flexor tendon, thus forming a triggering mechanism.

Early treatment leads to better response
Conservative treatment options for TT include splinting and corticosteroid injection; NSAIDs alone have not been found to provide any benefit. One study found that corticosteroid injection followed by splinting in 10° to 15° flexion for 3 to 12 weeks relieved symptoms for 66% of those with any trigger digit—but only 50% of patients with TT reported an improvement in symptoms.

Overall, patients with TT symptoms for <4 months have been found to respond significantly better to any treatment (P=.01). This finding may be related to repeat injury to the tendon sheath, which leads to chronic inflammation and permanent sheath hyper-
Early diagnosis and treatment of trigger thumb is important, as repeat injury leads to chronic inflammation and permanent hypertrophy and scarring of the tendon sheath.

Surgery for TT: Percutaneous or open release
Surgical treatment options for TT include percutaneous or open release. Complications of surgical intervention for trigger digits include infection, digital nerve injury, scarring, tenderness, and joint contractures. Nimigan et al reported a 99% improvement in symptoms and return to activity with open surgical release for patients with TT (n=72).18

In the study by Maneerit et al cited earlier, percutaneous release combined with corticosteroid injection had a success rate (indicated by decreased pain and triggering) of 91%, vs a 47% response rate for the group who received corticosteroid injection alone (P<.001).17 In another study, 25 patients with TT that had failed to respond to conservative treatment underwent percutaneous release. The result: An 84% success rate, as shown by a decrease in reported pain on a visual analog scale (P<.001), with no digital nerve damage reported.12

Digital nerve damage is more of a concern with percutaneous release than with open release, because of the proximity of the digital nerves to the A1 pulley.13 Success rates for percutaneous release vary from 38% to 100%, with improvement shown after appropriate physician training.13

References

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