

Hand Surgeons Review Evidence for Treatment of Triangular Fibrocartilage Complex Tears

In this case report, hand surgeons from the University of Pittsburgh School of Medicine (Department of Orthopedic Surgery) treated a 45-year-old man with a triangular fibrocartilage complex tear (TFCC) to discuss current concepts of treatment for this condition. The patient had been in pain for 18 months. Conservative (nonoperative) care did not relieve his pain.

Surgery was a consideration but the surgeons had questions whether the surgery would give any better results than the physical therapy he had already tried. They looked to see what evidence current research had to offer in making this treatment decision. They wanted to know what is known about it and see what they decided to do.

Triangular fibrocartilage complex (TFCC) injuries of the wrist affect the ulnar (little finger) side of the wrist. The triangular fibrocartilage complex is located between the distal ends of the two bones of the forearm (radius and ulna) over the wrist.

It is triangular in shape and made up of several ligaments and cartilage. The TFCC makes it possible for the wrist to move in many directions (flexion, extension, straightening, twisting, side-to-side). It stabilizes the distal radioulnar joint while improving the range of motion and grip strength.

This is a simple explanation of a very complex injury. Mild injuries of the TFCC may be referred to as a wrist sprain. More severe injuries are complex. They work together to stabilize the very mobile wrist joint.

Disruption of this area through injury or degeneration can cause more than just a wrist sprain. A TFCC injury can be a complex problem. For a detailed description and understanding of this wrist problem, see *A Patient Guide to Triangular Fibrocartilage Complex Tears*.

TFCC injuries can be difficult to accurately diagnose. X-rays may show a difference in length between the two forearm bones. If one forearm bone is longer (or shorter) than the other, it is considered a risk factor for wrist pain and disruption of the triangular fibrocartilage complex. It is also possible to see something called the sag sign on X-rays. One of the carpal bones has shifted in position (sagged); this is another sign of a TFCC injury.

In addition to X-rays, imaging with magnetic resonance arthrography (MRA) may be needed. A special dye is injected into the joint to help visualize the TFCC, especially disruption of the joint. The most accurate way to diagnose TFCC is with arthroscopic examination.

Even with a complete diagnosis, treatment decisions aren't easy. Each case of TFCC injury must be examined one-by-one. Factors such as the extent of damage are important factors. Whether the injury is the result of trauma or degeneration will also be taken into consideration. Other factors (e.g., torn ligaments, bone fractures) can influence both the treatment and results.

Taking a close look at the current evidence available was a challenge. Most of the studies are based on small series of patients. The evidence for different treatment approaches for similar TFCC injuries just aren't available. That leaves surgeons lacking the evidence they need to make a decision.

The authors of this case report suggest the need for studies to compare nonoperative care with sham treatment and operative care. Different operative approaches must be compared (e.g., debridement, use of open incision versus minimally invasive techniques). Other factors (e.g., age, cause: traumatic or degenerative) must also be investigated.

What did they decide in the end to do for this patient? The patient had not responded to conservative care but the wrist was still painful. The patient wanted to try surgery for healing. With no known trauma, it seemed best to try another round of immobilization for four to six weeks. If the patient did not improve, a surgical evaluation (probably with diagnostic arthroscopy) was planned. Any further treatment decisions would have to wait until after the surgical evaluation.

Reference: Kevin Roenbeck, MD, and Joseph E. Imbriglia, MD. *Peripheral Triangular Fibrocartilage Complex Tears*. *Journal of Hand Surgery*. Vol. 36A. No. 10. Pp. 1687-1690.