

Triquetrum Fracture Treatment Guidelines

What is a triquetrum fracture?

The triquetrum is a wedge-shaped carpal bone in the proximal row of the carpus. It contains three bones in the outer wrist, lying in two rows between the hand and forearm. It is an essential body part for the motion of the wrist in the radiocarpal and midcarpal joints.

A triquetral fracture is a break in the three-sided bone in the outer wrist, it is the second most common carpal fracture.

Most common type of triquetrum fracture

Fractures due to impaction are most common, however, those caused by avulsion are still significant. Below are the most common triquetrum fractures:

- Dorsal cortical fracture (most common)
- Volar cortical fracture
- Triquetral body fractures

Significant soft tissue injuries are also common due to the various ligaments that attach to the triquetrum.

Symptoms of triquetral fracture

- Tenderness
 - Wrist pain
 - Bruising
 - Swelling
 - Finger or hand is hanging at an unusual angle
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Triquetral fracture treatment

No surgical options

Immobilization

The primary treatment for most triquetral fractures is immobilization using a splint, cast, or brace for 4 to 6 weeks. This immobilization helps maintain proper alignment of the bone during the healing process.

First-line treatment is conservative with a week of immobilization in a volar splint with the wrist in slight extension. Once the swelling subsides, the patient can be transitioned to a short arm cast.

Surgical options

Surgical intervention is considered when there is significant displacement of the fracture, evidence of carpal instability, or in cases of fracture-dislocation. These procedures aim to restore anatomical alignment, ensure stability, and facilitate proper healing while minimizing long-term functional impairment.

Common surgical options include the following:

- **Percutaneous pins:** Percutaneous pinning involves the insertion of metal wires or pins through the skin to stabilize the fracture fragments. This is often employed for fractures that do not require extensive realignment or in cases where minimal soft tissue disruption is preferred. This technique is particularly suitable for stable or minimally displaced fractures or as a temporary fixation method in complex injuries.
- **Compression screws:** These are used to achieve stable fixation by compressing the fracture fragments together. These are often used for fractures with clean, well-aligned edges or those requiring stable fixation for load-bearing during healing. This is ideal for simple fractures with minimal comminution or those located in regions that benefit from compression to promote bone healing.
- **Open reduction and internal fixation (ORIF):** ORIF involves surgically exposing the fracture site, realigning the bone fragments, and stabilizing them using metal plates, screws, or other implants. This technique is often necessary for complex or unstable fractures.

Post-injury management

- **Pain relief:** Paracetamol may be used for pain management, following the dosage instructions provided on the packaging. For stronger pain relief or in cases of allergies to paracetamol, individuals are advised to consult a healthcare provider.
- **Splint:** The splint should be worn during activities to provide support and prevent further injury. It is important to remove the splint regularly to perform prescribed exercises (outlined below) and to maintain hygiene by washing the hands. Wearing the splint while sleeping is not necessary.
- **Ice application:** Applying ice to the affected wrist can help reduce swelling and alleviate pain, especially within the first 72 hours of the injury. A cold pack or a bag of frozen peas wrapped in a towel should be applied for 15 minutes three to four times a day. Direct contact between the ice and the skin must be avoided to prevent skin damage.
- **Exercises:** Regular exercises are essential to restore mobility, strength, and functionality to the affected wrist. Individuals should perform recommended exercises as advised by their healthcare provider, ensuring they are done gently and without causing excessive pain.

References

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