

Diagnostic external fixation of two carpal bones

A technical note

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Ulnar midcarpal instability can be treated by ligament repair or by a partial arthrodesis between the triquetrum and the hamate. If a partial arthrodesis is planned, we perform an ultimate diagnostic test to

determine whether or not a subsequent definitive partial arthrodesis would be effective in controlling the feeling of weakness and instability.

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Technique

A 2-mm Kirschner wire is drilled percutaneously into the triquetrum and the hamate under anesthesia. The position of the wires is checked with fluoroscopy. The two wires are linked together with two connecting rods and clamps of the Hoffmann external minifixator.

The patient can move his or her wrist freely without much discomfort from the external fixator, and can now experience whether or not a subsequent definitive partial arthrodesis will be effective (Figure 1). One week postoperatively, the patient is examined for functional performance and complaints. At this time, the external fixator is removed without anesthesia and, if appropriate, an appointment is made for the definitive partial arthrodesis.

Discussion

We performed this diagnostic test four times before planning a partial arthrodesis between the triquetrum and the hamate (Lichtman 1981). In 1 patient, however, the pain persisted without obvious explanation with the external fixator in situ. The external fixator was removed, and a subsequent partial arthrodesis was declined by the patient.

In this small series, no pin-track infections occurred. The subsequent definitive arthrodesis was performed not earlier than 2 weeks after removal of the Kirschner wires and complete healing of the wounds.

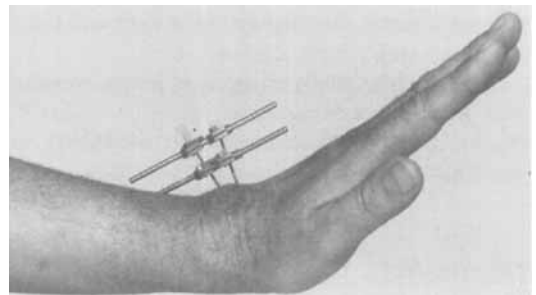


Figure 1. Dorsal flexion after application of the external minifixator between the triquetrum and the hamate.

In 4 other patients, we placed the external fixator during surgery, prior to performing the definitive partial arthrodesis. In these 4 cases, the fixator was used to determine, by passive ulnar deviation, whether or not the typical click was abolished.

We believe that after the traditional diagnostic investigations, such as radiographic examination and arthrography, this ultimate diagnostic test should be considered in the complex pathology of carpal instability.

Reference

Lichtman D M, Schneider J R, Swafford A R, Mack G R. Ulnar midcarpal instability. Clinical and laboratory analysis. *J Hand Surg (Am)* 1981; 6 (5): 515-23.