

Arthroscopically Assisted Reduction of Intra-articular fractures of the Distal Radius

Thesis

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Dedication

I would like to dedicate this work to my wife Marian and my children, Tony and Mark.

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Abstract

Wrist arthroscopy is a new and exciting field of Orthopaedics. In this study wrist arthroscope was used to assist reduction of intra-articular fractures of the distal radius. The advantage of using the arthroscope being the visualization of the articular surface. In this study 40 cases who sustained intra-articular fractures of the distal radius underwent assisted arthroscopic reduction of their fractures. The follow-up showed that the percentage of excellent and good outcome was 37 cases (92,5%)

Aim of Work

The aim of the study is to evaluate the wrist arthroscope to assist in the reduction of intra-articular fractures of the distal radius. By using the arthroscope, the reduction of the fracture can be better assessed.

Anatomy of the wrist

Osteology

The skeletal components of the wrist include the distal radius, the ulna, eight carpal bones and the proximal ends of the five metacarpals. The articular surface of the distal radius is typically tilted with 22 degrees of radial inclination, 11 degrees of volar tilt and 15mm of radial height (Roy Cordoso et al 2007)

The articular surface of the distal radius is composed of two fossae; the ovoid shaped distal lunate fossa and the triangular scaphoid fossa which articulate with the scaphoid and the lunate bone respectively. On the ulnar aspect of the distal radius, the sigmoid notch articulates with the distal ulna to form the distal radio-ulnar joint (DRUJ) (Roy Cordoso et al 2007).

The distal ulna does not typically articulate with the carpus. Its distal surface is covered by the Triangular Fibrocartilage (TFC) which is composed of the head, the styloid and the fovea. The TFC joins the medial edge of the articular surface of the radius to the styloid process of the ulna, thus holding the lower end of the radius and the ulna (Romanes GJ 1986).

The radiocarpal joint consists of the articulation between the convex proximal surface of the carpus (formed by the scaphoid, lunate and the triquetrum bones and their interosseous ligaments) and the concave socket formed by the distal surface of the radius and TFC (Mc Minn RMH 1988).

The radio-carpal joint allows multiple axes of motion including flexion, extension, radial deviation and ulnar deviation, while the DRUJ is a pivot joint permitting pronation and supination. Although the arc of the sigmoid notch varies, it is typically greater than the ulnar head. This incongruity permits both translation dorsally in pronation and volarly in supination (Roy Cordoso et al 2007).