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

Thesis
Submitted in partial fulfilment of the
M.D. Degree in Orthopeadics

By
Yohana Kamal Asaad

Supervisiors

Professor Dr Akram Hassan Azzam
Professor of Orthopeadics
Cairo University

Professor Dr Yasser Al-Ahmady Al-Safory
Professor of Orthopeadics
Cairo University

Professor Dr Ahmed Mahmoud Ateya
Professor of Orthopeadics
Cairo University

Dedication

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

Acknowledgements

First and Foremost thanks be to God the Almighty for His grace and mercy, Who gave us the power and knowledge to be able to finish this work.

I would like to express my deepest gratitude to **Prof Dr Akram Azam** for his continuous guidance, support and patience throughout the different stages of this work.

I would also like to express my very special thanks to **Prof Dr Yaser Al-Safory** for his great effort in this, until it was brought to light. It has been a true honour and privilege to work with him.

I would love to thank **Prof Dr Ahmed Mahmoud** for all the great effort and support he placed in this work with me.

I would like to thank Dr Saweeres for all the reference papers he made available. He has truly been very helpful and sincere.

I would like to thank the staff of unit ٢٠ and unit ١٨ Orthopaedics for helping me in admitting the cases and preparing them for surgery, especially Dr Wesam Abu Senae.

I would like to thank my fellow collegues at Sahel Teaching Hospital for all the effort and support that they offered to me, especially Dr Samir El Sayed, Dr Mohsen El- Sayed and Dr Mohammed Ali Sarhan

Lastly I would like to thank my dear wife and kids for the great burden they had to take while this work was being done.

Contents

Review of literature

List of Figures Page

List of Tables

Abstract

Wrist arthroscopy is a new and exciting field of Orthopaedics. In this study wrist arthoscope 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 ٤٠ 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 ٣٧ cases (٩٢,٥٪)

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 ٢٢ degrees of radial inclination, ١١ degrees of volar tilt and ١٢mm of radial height (Roy Cordoso et al ٢٠٠٧)

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 ٢٠٠٧).

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 ١٩٨٦).

The radiocarpal joint consists of the articulation between the convex proximal surface of the carpus (formed by the scaphoid, lunate and the triquetrium bones and their interosseous ligaments) and the concave socket formed by the distal surface of the radius and TFC (Mc Minn RMH١٩٨٨).

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 volarily in supination (Roy Cordoso et al ٢٠٠٧).