

# WRIST ARTHROSCOPY

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## **INTRODUCTION**

### ***The diagnostical problem of the ulnar disk:***

Many overlapping anatomical areas, leading to difficulties in diagnosis

Concomitant injuries such as fractures of the distal radius may overlay magnetic resonance imaging

Complex anatomy give reason for differential therapy and may lead to difficulties in diagnosis (ulnar disk may be very thin in the center and may be even perforated (Tan ABH et al. J Hand Surg (Br.) 1995), thus it cannot be differentiated if the connection between radio-carpal and DRUG cannot is physiologic or traumatic

Many different pathomechanisms (acute traumatic, chronic overuse and chronic degenerative) of TFCC pathologies leads to further diagnostical difficulties

The above-mentioned features are the reason for diagnostical problems with non-invasive techniques. Moreover, functional problems cannot be elucidated by means of static imaging.

### *Non invasive techniques*

Arthrography had been the gold standard for detecting perforations of the TFCC, but the rate of false negative is high ( Nagle DJ et al, Arthroscopy 1992, hung Kj et al J Hand Surg 1996)

MRI: Special wrist coil for the wrist should be used, high-resolution wrist MRI with 1mm slice thickness had an accuracy of 97% compared with arthroscopy. (Potter HG et al. JBJS, 1997)

Native MRI low sensitivity in detecting TFCC injuries (0.44; Morley J et al J Hand Surg, 2001)

MR Arthrography: Since neither, a specificity or sensitivity of 100% can be reached at the moment, the MR arthrography cannot replace wrist arthroscopy. However it could be a potential additional tool for the diagnosis of wrist pathologies (Meier R et al der Unfallchirurg 1996)

The observer should be well trained and specialized, problems are beside the interpretation of the images, the exact placement of the contrast medium (Blazar Pe et al. (J Hand Surg (Am) 2001) emphasizing that the published accuracy rates for prediction of TFCC lesions may be reproducible only in specialized centers.

Especially partial defects of the TFCC cannot reliably be diagnosed (Braun H et al, RoFo 2003)-

Results of wrist MRI should be interpreted with caution (Johnstone et al., J Hand surg. 1997)

### ***Arthroscopy***

Golden standard in diagnosis

The most frequent therapeutical manoever during wrist arthroscopy is debridement of the ulnar disk leading to satisfactory clinical results (Cooney wrist score)

Suture of the ulnar disk is reserved for special localizations and depends on the vascularization of the disk. The standard technique is challenging, moreover the narrow space of the ulnar compartment of the wrist begrenzt the therapeutical possibilities.

Therapeutically, not all pathologies which are diagnostically apparent, may be arthroscopally treated due to the narrow space and the -at times- challenging techniques and are thus reserved for specialized centers.

In this paper we want to present our experience with wrist arthroscopy and emphasize imaging diagnosis of TFCC lesions and compare the results with clinical investigation.

Furthermore we want to present a new technique of disk suture and present the results for this new procedure.

## **MATERIALS AND METHODS**

### ***Patients***

62 patients which received arthroscopy of the wrist and admitted between january 2001 and december 2004 to the department of hand surgery due to ulnar sided wrist pain, were included in our study. 29 Patients received a native MRI at an external department, 4 received MR arthrography with gadolinium.

In 28 patients, wrist arthroscopy was performed without MRI as already the clinical investigation or the concomitant injury (e.g. radius fracture, with arthroscopical guided repair) made a wrist arthroscopy necessary.

### ***Arthroscopy***

The wrist arthroscopy was performed according to Huracek et al JBJS (Br) 2000

### ***Suture of the ulnar disk***

The ulnar disk is sutured in a machine like manner

### ***Statistics***

Statistcs were performed