## Introduction

- Kaplan's interval:
  - Classic lateral approach of the elbow
  - Neurological risk ++
- Modified lateral surgical approach:
  - Between carpi radialis brevis and longus muscles:
    - radial tunnel surgery
  - Allows:
    - control of the deep branch of the radial nerve
    - wide exposure of the anterior joint
    - preservation of the lateral epicondylar muscles and lateral collateral ligament

## Material and methods

- Anatomic study in 1994: anatomical relationships of this approach:
  - Exposure between the two extensor carpi radialis muscles
- Approach for surgical treatment of radial tunnel with fibrous arcade of Fröhse (deep branch neurolysis):
  - Hagert et al, 1979
  - Raimbeau et al, 1990

## Results

- 43 patients: 30 M and 13 W
- Mean age 40,56 years (17-84)
- Always allowed, in combination with:
  - postero lateral approach, between anconeus and Extensor carpi ulnaris, (Cadenat approach)
  - and/or medial approach
- Recovery of a total or subtotal elbow extension and a subtotal synovectomy
- Without neurologic complication

## Discussion: lateral classic approach

- Goes distally through the lateral epicondylar muscles,
  - approximately between extensor carpi radialis and extensor digitorum communis
- The exposure of anterior aspect of the articulation imposes to cut the anterior part of the lateral epicondylar muscles,
  - in practice the extensor carpi radialis brevis
- Distally limited by the deep branch of the radial nerve
- The absence of visual control of the nerve, despite some tricks (short incision and pronation of the forearm) = important neurologic risk

## Discussion: « modified » lateral approach

- Slightly anterior
- Between extensor carpi radialis brevis and longus
- Identification of the radial nerve and its deep branch
- Excellent exposure of the anterior capsule, better than classic lateral approach: interest +++ for arthrolysis et synovectomy
- Extensor carpi radialis brevis is left in place with the other epicondylar muscles
- Preservation of the insertion of lateral epicondylar muscles (dynamic stabilisator)

## Conclusion

- Surgical approach is more efficient to expose the anterolateral aspect of the elbow
- Reduced neurological risk
- Must be recommended for elbow arthrolysis and synovectomy