FUNCTIONAL RESULTS IN THE SURGICAL TREATMENT OF THE CAPITELLUM FRACTURES – RESECTION VS. OSTEOSYNTHESIS

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Keywords: *distal humerus fractures, ORIF, capitellum*

Abstract: *In order to evaluate the functional results, 32 cases with surgical treatment were pursued, namely 19 in which the open reduction and Herbert screws fixation was attempted and 13 in which the excision of fragments was conducted. All the cases in which the excision was used showed instability, while instability was identified in only 1 case of osteosynthesis. The cases in which excision was used showed a clearly inferior evolution as compared to those in which osteosynthesis was used. The deterioration of the MAYO score for the cases in which the excision was used is due mainly to residual instability.*

Cuvinte cheie: *fractura humerusului distal, tratament chirurgical, capitellum*

Rezumat: *Pentru aprecierea rezultatelor funcţionale, au fost urmărite 32 cazuri care au beneficiat de tratament chrurgical, respectiv 19 la care s-a procedat la reducere sângerândă şi fixare cu şuruburi Herbert şi 13 la care s-a procedat la excizia fragmentelor. Toate cazurile la care s-a practicat excizia au acuzat instabilitate, în timp ce, instabilitatea a fost depistată la un singur caz de osteosinteză. Cazurile la care s-a practicat excizia au o evoluţie net inferioară faţă de cei la care s-a practicat osteosinteza. Deteriorarea scorului MAYO pentru cazurile la care s-a practicat excizia se datorează în special instabilităţii reziduale.*

INTRODUCTION

In order to evaluate the functional results, 32 cases with surgical treatment were followed, namely 19 in which the open reduction and Herbert screws fixation (1) was attempted and 13 in which the excision of fragments was conducted (3,4).

MATERIAL AND METHOD

The treatment followed the protocol bellow:

- 48 after the intervention the functional rehabilitation was started (5)
- Immobilization in antalgic purposes for 2 weeks between the reeducation sessions
- upon discharge, the patients were directed to a kinetotherapy service in order to continue the recuperation started in the hospital (5)
- 14 days after the suture threads were removed
- Evaluations: upon discharge, 2 and 4 weeks, 2, 3, 6 and 12 months – the progress of functional rehabilitation on stages was especially monitored. In the evaluation process the following issues were considered: flexion, extension, pronation, supination, prehension and MAYO score (2).

For all cases in which the osteosynthesis was chosen open surgery was used, with lateral approach.

No passive drainage was used.

RESULTS AND DISCUSSIONS

Functional results for cases in which bleeding reduction and internal fixation was used:

Upon discharge:

- Flexion – extension arc of 60^o on average.
- the pronation – supination arc 70^o on average
- MAYO score between 40 and 55 points
- prehension capacity
  - "+" 15 cases
  - "-" 4 cases.

At 14 days:

- flexion – extension arc between 40^o and 75^o with the average at 60^o
- the pronation – supination arc between 50^o and 90^o with the average at 70^o
- MAYO score between 40 and 55 points
- prehension capacity
  - "+" 16 cases
  - "-" 3 cases

At 4 weeks:

- flexion – extension arc between 70^o and 110^o with the average at 95^o
- the pronation – supination arc between 80^o and 125^o with the average at 125^o
- MAYO score between 55 and 90 points
- prehension capacity
  - "++" 16 cases
  - "+" 3 cases

2 months control:

- flexion – extension arc between 90^o and 140^o with the average at 110^o
- the pronation – supination arc between 110^o and 155^o with the average at 125^o
- MAYO score between 70 and 100 points
- prehension capacity
  - "+++" 5 cases
  - "++" 11 cases
  - "+" 3 cases.

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At 3 months:

- flexion – extension arc between 110° and 155° with the average at 125°
- the pronation – supination arc between 110° and 175° with the average at 140°
- MAYO score between 90 and 100 points
- prehension capacity
  - "+++" 9 cases
  - "++" 9 cases
  - "+" 1 case

At 6 months:

- flexion – extension arc between 110° and 155° with the average at 130°
- the pronation – supination arc between 110° and 175° with the average at 140°
- MAYO score between 90 and 100 points
- prehension capacity
  - "+++"13 cases
  - "++" 5 cases
  - "+" 1 case

One year after the surgery no significant modifications of the monitored parameters were registered. There were no cases of intolerance to the osteosynthesis material during this examination.

Functional results for cases in which the excision was resorted to:

Upon discharge:

- flexion – extension arc on average of 70°
- the pronation – supination arc around the value of 80°
- MAYO score between 40 and 55 points
- prehension capacity
  - "+"9 cases
  - "-" 4 cases

At 14 days:

- flexion – extension arc between 60° and 100° with the average at 70°
- the pronation – supination arc between 65° and 110° with the average at 85°
- MAYO score between 40 and 55 points
- prehension capacity
  - "+" 9 cases
  - "-" 4 cases

At 4 weeks:

- flexion – extension arc between 90° and 130° with the average at 110°
- the pronation – supination arc between 90° and 150° with the average at 115°
- MAYO score between 55 and 85 points
- prehension capacity
  - "++" 2 cases
  - "+" 11 cases

2 months control:

- flexion – extension arc between 100° and 150° with the average at 130°
- the pronation – supination arc between 110° and 165° with the average at 140°
- MAYO score between 75 and 95 points
- prehension capacity
  - "++" 7 cases
  - "+" 6 cases

At 3 months:

- flexion – extension arc between 100° and 160° with the average at 130°
- the pronation – supination arc between 110° and 175° with the average at 140°
- MAYO score between 75 and 95 points
- prehension capacity
  - "+++" 5 cases
  - "++" 6 cases
  - "+" 2 cases

At 6 months:

- flexion – extension arc between 100° and 160° with the average at 130°
- the pronation – supination arc between 110° and 175° with the average at 140°
- MAYO score between 75 and 95 points
- prehension capacity
  - "+++" 8 cases
  - "++" 3 cases
  - "+" 2 cases

One year after the surgery no significant modifications of the monitored parameters were registered as compared to the previous visit.

One year after the surgery no significant modifications of the monitored parameters were registered. The patients did not complain of intolerance to the osteosynthesis material or aseptic necrosis one year's examination.

As a conclusion, after the analysis of the functional results for this lot of patients, we can assert the following:

- All the cases in which the excision was used showed instability, while instability was identified in only 1 case of osteosynthesis.
- The cases in which excision was used showed a clearly inferior evolution as compared to those in which osteosynthesis was used.

The deterioration of the MAYO score for the cases in which excision was used is due mainly to residual instability.

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