

THE ROLE OF MOTIVATIONAL PSYCHOLOGICAL COUNSELLING IN THE TREATMENT OF DISTAL RADIUS FRACTURES

ANAMARIA CIUBARA¹, ROXANA CHIRIȚA², ALEXANDRU BOGDAN CIUBARĂ³, DIANA BULGARU ILIESCU⁴

^{1,2}“Gr. T. POPA” University of Medicine and Pharmacy, Socola Clinical Hospital, ³“Gr. T. POPA” University of Medicine and Pharmacy, Sf. Spiridon Clinical Hospital Iași, ⁴Forensic Medicine Institute Iași

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Abstract: The hereby study aimed at establishing the existence or absence of a clinical effect of psychological/psychiatric support, manifested in motivational psychiatric counselling in the recovery treatment for distal radius fractures. 142 cases with Kapandji 9 distal radius fractures under conservative treatment were observed with a view to assess the functional results. The 142 monitored cases were divided into 2 study batches, according to the patients' availability of participating in psychological counselling sessions. Thus, the 1st batch included 87 cases and the 2nd batch, 55 cases under psychological counselling. The functional results for the 2 study groups were assessed and compared. In conclusion, by analyzing the functional results for this group of patients, we can say that for the cases that have benefited from counselling an evolution net superior to the control group has been registered ($p=0,02$).

Cuvinte cheie: consiliere psihologică motivațională, fractură de radius distal, fractură extremitate inferioară de radius

Rezumat: Prezentul studiu a avut ca obiectiv stabilirea existenței sau nu a unui efect clinic a suportului psihologic/psihiatric concretizat printr-o consiliere psihologică motivațională în tratamentul recuperator pentru fracturile de radius distal. Pentru aprecierea rezultatelor funcționale au fost urmărite 142 cazuri cu fracturi de radius distal tip Kapandji 9 care au beneficiat de tratament conservator, la care s-a procedat la reducere ortopedică și imobilizare gipsată. Cele 142 cazuri monitorizate au fost împărțite în 2 loturi de studiu, incluzând într-un lot sau altul realizându-se în funcție de disponibilitatea pacienților de a participa la ședințele de consiliere psihologică. Astfel, lotul numărul 1 a inclus un număr de 87 cazuri, iar lotul 2 un număr de 55 cazuri care au beneficiat de consiliere psihologică. Au fost apreciate și comparate rezultatele funcționale pentru cele 2 loturi de studiu. În concluzie, analizând rezultatele funcționale pentru acest lot de bolnavi putem afirma că pentru cazurile care au beneficiat de consiliere psihologică s-a înregistrat o evoluție net superioară față de lotul martor ($p=0,02$).

PURPOSE

The hereby study aimed at establishing the existence or absence of a clinical effect of psychological/psychiatric support, manifested in motivational psychiatric counselling in the recovery treatment for distal radius fractures. 142 cases with Kapandji 9 (2) distal radius fractures under conservative treatment were observed with a view to assessing functional results. All these cases were subject to orthopaedic reduction and immobilisation in plaster.

METHODS

The 142 monitored cases were divided into 2 study batches, according to the patients' availability of participating in psychological counselling sessions. Thus, the 1st batch included 87 cases and the 2nd batch, 55 cases under psychological counselling.

The treatment followed the protocol below:

Ü Immobilisation was made by contention in plaster, with an orthopaedic reduction by ligamentotaxis, under local anaesthesia with xylocaine 1% and immobilisation with antebrachial palmary plaster under a palmary flexion position and cubitus deviation, according to the type of fracture and the displacement extent, for 3 weeks. At the 21-day check, the

plaster was converted to an antebrachial palmary plaster with a right position, for 3 more weeks.(1) If a premature secondary displacement was found, reduction manoeuvres were restored.(3)

Ü Radiological evaluation was performed both in the immobilisation period and periodically, in the functional recovery period. The radiological check was performed with radiography after the reduction of the fracture, after 21 days, when immobilisation was suppressed, at the one, three, six and twelve-month check after the suppression of immobilisation. The remaining checks were performed in a fluoroscopy technique, in the presence of a witness radiography performed at the last check. The critical period, i.e. the first 21 days, required radiological evaluations according to the supervision protocols, i.e. after two, four, six, eight, ten and fourteen days. If an unacceptable damage was found in the reduction of the fracture focus in comparison to the previous check or the immediate post-reductional aspect, a witness radiography was performed. Subsequently, immobilisation was suppressed and reduction manoeuvres were restored. If an acceptable reduction was found in control radiography, the conservative treatment protocol continued. Inacceptable reductions were treated with bleeding reduction and internal securing.

¹Corresponding author: Alexandru Bogdan Ciubară, Str. Universității, Nr. 16, Iași, România, E-mail: abciubara@yahoo.com, Tel: +40744 212518
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Ü Functional rehabilitation was only made in the territorial kinetic therapy services, with a view to efficiently controlling the similitude of gymnastics programmes. During the contention period, all the cases followed an intensive programme of finger gymnastics, both free gymnastics and half-load gymnastics (the prehension capacity was exercised using a tennis ball). The use of elastic circles or other force elements in the gymnastics programme was forbidden, with a view to preventing shearing forces at the fracture focus. After immobilisation was suppressed, the cases were evaluated in functional terms, then directed towards balneal physical therapy territorial offices. Functional re-evaluation was performed on a periodic basis, with a view to quantifying progresses after 7, 13, 41 days and one, two, three, six and twelve months. The cases included in the hereby paper were periodically evaluated from a functional point of view after immobilisation was suppressed. The evaluations were performed on a weekly basis in the first month, then after 2, 3, 6 and 12 months. The following parameters were quantified: the perception of pain, the amplitude of the flexion-extension movement, the amplitude of the adduction-abduction movement. Functional evaluation was required with a view to appreciating clinical evolution during the functional enforcement period. Additionally, the *MAYO* (Mayo Elbow Performance Score) score was used for the assessment of cases (5), with a view to appreciating the function of the fist. This score follows four aspects in the evaluation of a fist: *the perception of pain, the functional status, the amplitude of movements regarding the normal contralateral limb or, if this is not possible, the amplitude of movements by measuring arcs, the prehension capacity*. It is highly important to appreciate the functional status of the dominant limb.

Ü Starting immediately after the surgery and until the end of the functional rehabilitation period (consolidation of the result), the cases in the 1st study batch were provided motivational psychological counselling (4), as motivation is one of the most important processes of human activity and the driving force of any action. Counselling was performed in the psychiatry office, in the presence of a psychiatrist and a psychologist. Psycho-therapy sessions aimed at amplifying 2 of the 3 functions of the motive, i.e. the orientation-guidance (vectorial) function and the support (energising) function. The assessment of patients by the psycho-therapy team started from the pre-surgery period, so that every patient may benefit from optimum therapy when beginning functional re-education, i.e. achieving an optimal relationship between the intensity of motivation and the difficulty of the task to accomplish (functional rehabilitation gymnastics in this case). The use of the *MAYO* score for patients' assessment allowed for a better communication with the psycho-therapy team and a better understanding of the goals of the functional rehabilitation programme.

RESULTS AND DISCUSSIONS

Functional results for the 1st batch:

The first assessment was made when immobilisation was suppressed. The following values were obtained:

- Average flexion – extension arc of 15°
- average circle arc for the adduction-abduction movement of 5°
- the *MAYO* score, 20 points, according to the perception of pain, the faulty functional status and the invalidating limitation of movements
- the prehension capacity was evaluated in
 - “+” 26 cases
 - “-” 61 cases

The 7 day check:

- flexion - extension arc between 10° and 30° with a median of 20°
- average circle arc for the adduction-abduction movement between 0° and 20° with a median of 5°
- the *MAYO* score between 20 and 40 points, with a 25 point median
- all the cases referred to the almost full restoration of activities regarding personal hygiene, eating and dressing
- prehension capacity
 - “++” 4 cases
 - “+” 55 cases
 - “-” 28 cases

The 14 day check:

- continued progress in recovering the articulation of the fist.
- flexion - extension arc between 10° and 45° with a median of 20°
- average circle arc for the adduction-abduction movement between 4° and 25° with a median of 7°
- the *MAYO* score kept low values, between 20 and 55 points, with a 30 point median
- prehension capacity:
 - “++” 9 cases
 - “+” 57 cases
 - “-” 21 cases

The 21 day check:

- flexion - extension arc between 10° and 65° with a median of 25°
- average circle arc for the adduction-abduction movement between 4° and 25° with a median of 9°
- the *MAYO* score kept low values, between 20 and 85 points, with a 30 point median
- prehension capacity
 - “+++” 2 cases
 - “++” 12 cases
 - “+” 59 cases
 - “-” 14 cases

The 1 month check:

- flexion - extension arc between 10° and 110° with a median of 35°
- average circle arc for the adduction-abduction movement between 5° and 50° with a median of 10°
- the *MAYO* score between 20 and 100 points, with a 35 point median
- prehension capacity
 - “+++” 6 cases
 - “++” 14 cases
 - “+” 58 cases
 - “-” 9 cases

The 2 month check:

- continued progresses in recovering the articulation of the fist, but without spectacular results and a slowly favourable evolution.
- flexion - extension arc between 15° and 120° with a median of 40°
- average circle arc for the adduction-abduction movement between 5° and 60° with a median of 14°
- the *MAYO* score between 20 and 100 points, with a 50 point median
- prehension capacity:
 - “+++” 8 cases
 - “++” 13 cases

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- “+” 57 cases
- “-” 9 cases

The 3 month check:

- flexion - extension arc between 15° and 130° with a median of 60°
- average circle arc for the adduction-abduction movement between 5° and 60° with a median of 17°
- the MAYO score between 20 and 100 points, with a 60 point median
- prehension capacity:
 - “+++” 9 cases
 - “++” 12 cases
 - “+” 57 cases
 - “-” 9 cases

The 6 month check:

- flexion - extension arc between 15° and 130° with a median of 85°
- average circle arc for the adduction-abduction movement between 5° and 60° with a median of 21°
- the MAYO score between 20 and 100 points, with a 80 point median
- prehension capacity:
 - “+++” 12 cases
 - “++” 12 cases
 - “+” 54 cases
 - “-” 9 cases

The 12 month check:

- flexion - extension arc between 15° and 130° with a median of 85°
- average circle arc for the adduction-abduction movement between 5° and 60° with a median of 25°
- the MAYO score between 20 and 100 points, with a 80 point median
- prehension capacity:
 - “+++” 14 cases
 - “++” 17 cases
 - “+” 48 cases
 - “-” 8 cases

8 cases with complex regional pain syndrome were found in this batch.

Functional results for the 2nd batch:

The first assessment was made when immobilisation was suppressed. The following values were obtained:

- average flexion – extension arc of 15°
- average circle arc for the adduction-abduction movement of 5°
- the MAYO score, 25 points, according to the perception of pain, the faulty functional status and the invalidating limitation of movements
- the prehension capacity was evaluated in
 - “+” 16 cases
 - “-” 39 cases

The 7 day check:

- flexion - extension arc between 15° and 40° with a median of 30°
- average circle arc for the adduction-abduction movement between 0° and 25° with a median of 5°
- the MAYO score between 25 and 40 points, with a 25 point median
- all the cases referred to the almost full restoration of activities regarding personal hygiene, eating and dressing
- prehension capacity
 - “+++” 2 cases
 - “+” 22 cases

- “-” 31 cases

The 14 day check:

- continued progress in recovering the articulation of the fist.
- flexion - extension arc between 25° and 55° with a median of 35°
- average circle arc for the adduction-abduction movement between 5° and 35° with a median of 10°
- the MAYO score between 20 and 65 points, with a 35 point median
- prehension capacity:
 - “+++” 4 cases
 - “+” 27 cases
 - “-” 24 cases

The 21 day check:

- flexion - extension arc between 25° and 65° with a median of 40°
- average circle arc for the adduction-abduction movement between 10° and 45° with a median of 16°
- the MAYO score kept low values, between 25 and 85 points, with a 50 point median
- prehension capacity
 - “+++” 1 case
 - “++” 4 cases
 - “+” 30 cases
 - “-” 20 cases

The 1 month check:

- flexion - extension arc between 25° and 110° with a median of 60°
- average circle arc for the adduction-abduction movement between 14° and 55° with a median of 20°
- the MAYO score between 30 and 100 points, with a 50 point median
- prehension capacity
 - “+++” 2 cases
 - “++” 9 cases
 - “+” 28 cases
 - “-” 16 cases

The 2 month check:

- continued progresses in recovering the articulation of the fist, but without spectacular results and a slowly favourable evolution.
- flexion - extension arc between 35° and 120° with a median of 70°
- average circle arc for the adduction-abduction movement between 20° and 60° with a median of 23°
- the MAYO score between 30 and 100 points, with a 60 point median
- prehension capacity:
 - “+++” 3 cases
 - “++” 10 cases
 - “+” 33 cases
 - “-” 9 cases

The 3 month check:

- flexion - extension arc between 50° and 130° with a median of 80°
- average circle arc for the adduction-abduction movement between 20° and 60° with a median of 27°
- the MAYO score between 40 and 100 points, with a 80 point median
- prehension capacity:
 - “+++” 6 cases
 - “++” 18 cases
 - “+” 28 cases
 - “-” 3 cases

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The 6 month check:

- flexion - extension arc between 50° and 130° with a median of 80°
- average circle arc for the adduction-abduction movement between 20° and 60° with a median of 30°
- the MAYO score between 40 and 100 points, with a 80 point median
- prehension capacity:
 - “+++” 9 cases
 - “++” 22 cases
 - “+” 22 cases
 - “-” 2 cases

The 12 month check:

- flexion - extension arc between 60° and 130° with a median of 90°
- average circle arc for the adduction-abduction movement between 25° and 60° with a median of 35°
- the MAYO score between 60 and 100 points, with a 90 point median
- prehension capacity:
 - “+++” 11 cases
 - “++” 24 cases
 - “+” 18 cases
 - “-” 2 cases

2 cases with complex regional pain syndrome were found in the batch of cases with Kapandji 9 lower extremity radial fracture, under psychological counselling.

CONCLUSIONS

In conclusion, analysing the functional results for this batch of patients, the following may be asserted:

1. Cases that were provided psychological counselling had a strictly better evolution than the witness batch ($p = 0.02$).
2. The deterioration in the MAYO score for the witness batch is a marker for the perception of the personal evaluation of functional recovery by each patient in the study.
3. The percentage of cases with complex regional pain syndrome pleads for the introduction of psychological counselling in the treatment protocol.

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