

POSTTRAUMATIC RECOVERY BY KINETIC METHODS OF THE CUBITUS FRACTURE

Benedek Florian

University “Stefan cel Mare” of Suceava

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Abstract

I chose this theme because the fracture of cubitus is very common today, especially among children with a bone structure not yet fully developed and among people of the third age where the bone has started bone demineralization. Fracture of the forearm is one of the specific conditions and means more than a broken bone, for the elderly represents a major change in life.

In this study I started from several hypotheses, respectively three, and by the steps taken we tried to recover the patient in as short a time as possible.

The study done in the case of the fracture of cubitus with pleasant implantation was done over a period of 3 months, on a single subject, starting from the moment of the patient's discharge.[1,5,6] Under the recovery programme we had five stages.

At the end of the study, I drew conclusions.

Introduction

I chose this theme, The Cubitus Fracture, because they are very common today, especially among children with a bone structure not yet fully developed as well as among people of the third age where the bone has started bone mining. An important part of the body, of the entire upper limb, the forearm is the one that helps to reach out, to grab from below, to lift higher than the shoulders [1,8]. The actuality of the theme is the order of the day - at any moment it happens like on the street, in the house, at work, in winter on the ice you can fall, and the reflex of the falling man is to cushion in the forearm. This causes damage to the radius, cubitus, simple fracture, displacement, tissue breaking, double, triple.[3] These fractures can occur, due to multiple causes, the low calcium content in the bones, a poorly developed muscle, aging of the bone, falling on an obstacle which leads to a lever.[2,7]

Fracture of the forearm is one of the specific conditions and means more than a broken bone, for the elderly represents a major change in life.

Fracture can also occur in younger people, in the context of traffic accidents, sports, domestic, due to external factors such as ice, rain. However, in the case of people of the third age the fracture can be quite fatal if treatment is not available immediately.[3,10] An accident such as a fractured forearm can lead to the immobilization of the person, the state of health gradually deteriorating by bed rest.

The role of the physiotherapist in this condition is of major importance, from directing the patient what is allowed and what is not, to how he can resume his daily activity (ADL- Activity Day Living). Sometimes the mental component suffers from immobilization of the limb in the case of people very physically active, here the role of the physiotherapist is to encourage him and to introduce him back into the social life as much as possible.[4,9]

Materials-methods

In this study I started from the following hypotheses:

Ip.1. Is it possible that by methods of physiotherapy I rehabilitate a cubitus fracture with the implantation of titanium plate?

Ip.2. By applying these methods of physiotherapy can we recover the mobility of the deficient joint?

Ip.3. Through these methods known in physiotherapy can we help restore muscle tonicity on the affected limb?

Purpose and objectives of the research

For the main purpose we have rehabilitation in the case of fracture of the forearm, fracture of the cubitus with implantation of titanium plate, and the secondary purpose is not to progress fracture in complications.

The objectives of the research are arranged in such a way as to fully cover the recovery of the entire forearm:

Restoration of functional outstanding, preservation of function, muscle toning, articular mobility, maintaining harmony between cubitus and radius with their curves

ORGANISATION OF THE STUDY:

The site of the study will take place at the patient's home, and as the material base small and medium weights, elastic band, medicine ball, flexor for the forearm, stick for exercises, chair.

The study in the case of cubitus fracture with titanium plate implantation was done over a period of 3 months, on a single

subject, starting from the moment of discharge of the patient, framing the steps as follows:

Stage 1: assessment of the patient and the start of the kinetic program under the gyps.

Stage 2: getting into rhythm with easy passive mobility exercises.

Stage 3: improvement of the kinetic program as well as increased muscle and joint strength.

Stage 4: progressive preparation for re-entry in competition

Stage 5: assessment of the patient with data obtained from the kinetic program.

ORGANIZATION AND PROGRESS OF THE STUDY ITSELF

In the case of the cubitus fracture, I have prepared in the kinetic program located on 4 stages, in which I will try to verify the hypotheses.

STAGE 1 – within the first 2 weeks, from the time of discharge to the suing of the wires, the fracture is immobilized in the gypsum apparatus.

In the first stage we will gently approach the affected limb, so that the operation can be scarred.

- From sitting will begin with breathing exercises, deep breath-exhale: 6 inhale/exhale x 5 reps.
- From sitting, a breathing technique borrowed from Yoga, alternative breathing, in which with the thumb of the right hand we press on (the nose) on the same side, reaching the maximum breathing capacity, where you will press the left side of the nose with the thumb of the left hand, the air from the lungs being removed through the right side, which will be released. The process will be repeated in the same case for the left side of the nose.

STAGE 2 - between weeks 2 to 4, where the suppression of postoperative suture threads will also take place.

As exercises at this stage it will work easily, so as not to give way to the threads of the operation.

- As a start, a stimulating massage will be done, for the heating of the muscles that will be used, so as not to break the muscle fiber due to prolonged immobilization.
- Breathing exercises will run the same as in the first stage.
- isometric contractions of the forearm, at the same time as the healthy limb.

10 Contractions/member x 3-4 Seconds x 4 Series.

- Shoulder circumductions in both directions

5 circumductions x 5 reps.

- Circumductions of the upper limbs in both directions.

5 circumductions x 5 reps.

- Flexion/extension of passive fingers, elbow placed on the table, with a reduced amplitude, grip on the distal phalanx

5 flexes/extensions x 5 reps.

STAGE 3 – between weeks 4 to 7, an important stage which is based on muscle toning and strengthening of the joints, as well as their mobility, are based.

- The main breathing exercises are the same as in the first and second stages, which require being done every day throughout the program, even after its conclusion.
- From sitting, with the elbow resting on the table, the joint of the fist outside the table, cubital deviation and radial deviation with the help of a weight of 2kg. 10 x 6 reps

STAGE 4 – includes from week 7 to week 9, where strength will be worked, in order to re-enter the sports activity as soon as possible.

- Breathing exercises
- Muscle heating mobilizations
- From sitting, bringing hands to the iliac ridges, to force the cubital musculature to strengthen.

STAGE 5– includes the last day of the program, in which the development of muscle tonicity, joint mobility, is observed, compared to the first day of the kinetic program.

- Exercises performed throughout the kinetic program will be continued at home, alone, without the help of the physiotherapist.

Results and discussions

In the table below are presented the initial and final goniometric measurements on the fist joint.

TABLE 1. Interpretation of initial and final data by kinetic program.

Movement executed	Initial goniometric measurements	Final goniometric measurements
Flexion	32°	66°
Extension	35°	72°
Radial deviation	13°	20°
Cubital deviation	19°	50°
Pronation	35°	75°
Supination	42°	80°

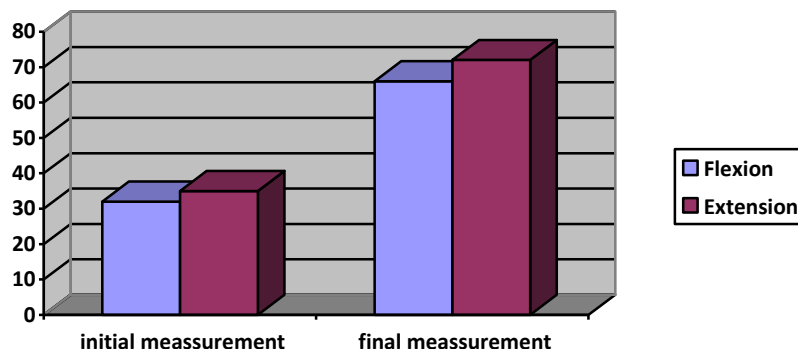


Chart 1. Goniometric measurements performed on the initial and final fist joint

In chart 1. it can be observed that at the initial assessment of the flexion of the fist articulation we have a value of 32° and at the final evaluation 66° which means an increase in 34°. In the initial evaluation we have an assessment of 35° increasing to 72° at the final assessment, therefore an increase of 37°.

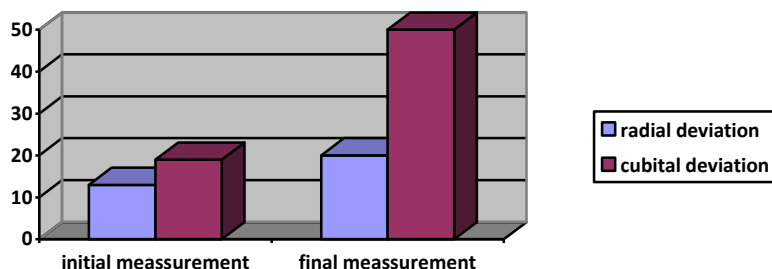


Chart 2. Goniometric measurements on radial and cubital deviation

In the graph no.2. it can be observed that at the initial assessment of the radial deviation in the fist joint we have a value of 13° and at the final evaluation 20° resulting in an increase in 7°. In the case of cubital deviation at the initial assessment we have a value of 19° and at the final evaluation 50° resulting in an increase of 31°.

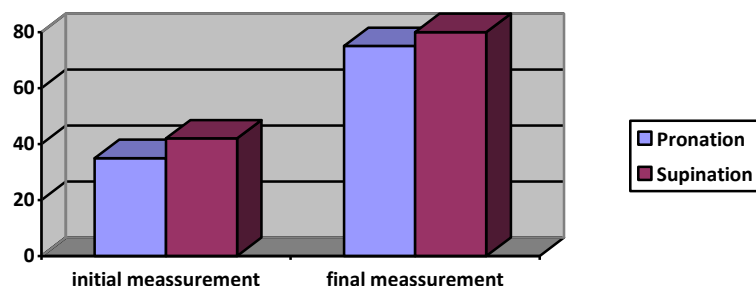


Chart 3. Goniometric measurements in pronation and supination.

In chart No 3. it can be observed that at the initial assessment in the case of the pronation we have a value of 35° and in the final evaluation we have a value of 75° , which means an increase of 40° . In the case of supination at the initial assessment we have a value of 42° and at the final evaluation 80° , which means an increase of 38° .

TABLE 2. Initial and final anthropometric measurements by kinetic program.

Measured segment	Initial measurements		Final measurements	
	left	right	left	right
Arm circumference	37 cm	41 cm	43 cm	44 cm
Proximal forearm circumference	29 cm	32 cm	34 cm	34 cm
Distal forearm circumference	14 cm	17 cm	19 cm	19 cm

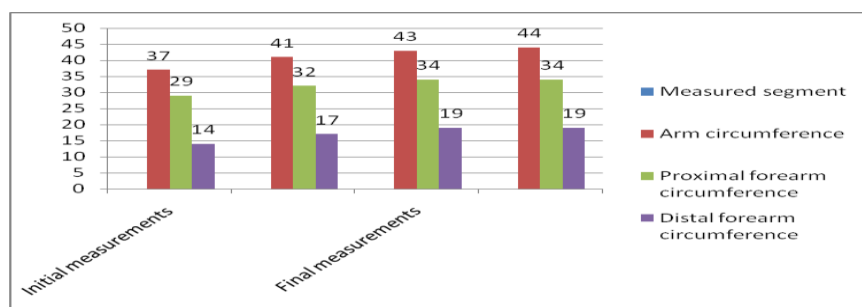


Chart 4. Representing measurements from the initial assessment for the upper left limb and the upper right-hand member.

In chart No.4 can be observed at the initial assessment of the circumference of the left arm a value of 37 cm and at the final assessment a value of 43 cm, which means an increase of 6 cm. In the circumference of the right proximal forearm at the initial assessment we have a value of 29 cm, and at the final assessment a value of 34 cm, which means an increase of 5 cm. At the circumference of the distal forearm we have a value of 14 cm and at the final evaluation a value of 19 cm, which means an increase of 5 cm.

In chart No 4. can be observed at the initial assessment of the circumference of the arm as a value of 41 cm and at the final evaluation a value of 44 cm, which means an increase of 3 cm. In the circumference of the proximal forearm at the initial evaluation we have a value of 32 cm and at the final evaluation a value of 34 cm, which means an increase of 2 cm. At the circumference of the distal forearm we have a value of 17 cm and at the final evaluation a value of 19 cm, which means an increase of 2 cm.

CONCLUSIONS

As a final conclusion, this study on the cubitus fracture also fulfilled its goal of rehabilitating, confirming the hypotheses created at the beginning of the study.

I can say that by means of physiotherapy, I have managed to rehabilitate a cubitus fracture with a plate implant, to restore the tonicity of the muscles, even to develop it above normal, as well as to regain mobility, not entirely, but the patient has a duty to continue the program at home, alone, given that he is an athlete and the need for mobility is essential.

The patient was left with a smile on his face when he discovered that the condition of the muscles was improved than he had before the operation, remaining confident and in regaining complete mobility in the near future.

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