

RECOVERY OF SCAPULOHUMERAL PERIARTHRITIS AT A HANDBALL PLAYER

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Abstract: *Kinesiology is a science that deals with the study of the movement of living organisms and structures that participate in these movements [4]. This research aims to demonstrate the utility of kinetotherapeutic means by methods and programs with individualized, standardized and rationalized elements depending on the subject's particularities and the gravity of the case, bring benefits and a rapid and efficient recovery of the patient with scapulothoracic periarthritis.*

The clinical trial was performed on a 30-year-old practitioner of the handball game and was run for six months. The interpretation of the results obtained from the recovery program is based on the patient's evolution, both physically and psychologically. The recovery programs have been developed and used structured in four phases, depending on the patient's evolution. The athlete presented scapulothoracic periarthritis (simple painful shoulder), accusing persistent pain in the shoulder, located in the upper muscle area.

Key words: *scapulothoracic periarthritis, recovery, kinetotherapy*

1. Introduction

Kinetotherapy studies the neuromuscular and joint mechanisms that provide normal movements to man, while studying and elaborating the principles of structuring programs that address the human body, both prophylactically and therapeutically. It is a well-defined scientific discipline with an object of study: the maintenance and development of normal morphological and functional indices, by specific means (exercise as a basic element), to persons in special biological situations [10].

The painful simple shoulder is a particular clinical form, also known as

simple non-ankylosing painful periarthritis. This form of PSH is the consequence of the degenerative (sometimes calcified) lesions of the second joint tendons, especially the tendons of the supraspin and the biceps.

Knowing the factors that promote sports trauma, as well as understanding the mechanisms underlying their production, is of particular importance, not only for the correct diagnosis but also for identifying measures to prevent the possibility of their occurrence [1].

However, the simple identification of these internal and external factors in sports traumatology is not sufficient, because sports injuries result from a

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complex interaction of multiple risk factors and situations, of which only a small part has been identified [3].

The kinesiology of sport, taking into account the fact that each sport carries unique kinesiological and biomechanical stresses on the kinetic chain, involved in the realization of specific movements, observing the methods of optimizing the mechanisms of the respective sport leads to the prevention of the injuries [6].

It is important to identify specific lesions for a certain sporting activity and to enhance the kinetic chain function related to the parts of the body at risk of being traumatized [2].

Handball is a complex intermittent sport that requires players to develop aerobic and anaerobic capabilities [5], [7]. Motor abilities such as sprints, jumping, flexibility, speed and throw are considered as important aspects of the game, which contribute to the team's high performance [8, 9].

2. Objectives

The present paper aims to demonstrate whether the proposed operational model helps to improve functional capacity and quality of life in athletes with scapulo-humeral periarthritis.

General objectives of the kinetotherapeutic program

- Reducing inflammation and tendency to fibrosis;
- Improving pain;
- Recovery of joint mobility;
- Restoring tissue trophicity;
- Recovering shoulder functionality;
- Reduced affected muscles;
- Maintaining the force and kinetics of the upper limb;

3. Material and Methods

The clinical trial was performed on a 30-year-old practitioner of the handball game and took place between October 2016 and April 2017.

The interpretation of the results obtained from the recovery program is based on the patient's evolution, both physically and psychologically.

Kinetic-therapeutic recovery programs have been developed and used, these being structured in four phases, depending on the patient's evolution. The athlete presented scapulohumeral periarthritis (simple painful shoulder), accusing persistent pain in the shoulder. Shoulder pain was characterized as being located in the upper muscle area.

The clinical evaluation included some of the classic tests: Hawkins, Neer, Jerk, painful bow, the patient's assessment of the affected shoulder's functionality was compared to the unaffected shoulder.

In the elaboration of the recovery program the following aspects were respected:

- General methods of analytical recovery of the fundamental movements of the shoulder;
- Particular methods of PSH recovery;
- Completing the analytical program with a shoulder rehabilitation program for current and professional gestures.

In the kinetotherapeutic program of the patient we started to work immediately after the diagnosis. The program was run for 6 months.

It contains:

- Immobilizing the affected member in the scarf;
- Exercises for cervical column, fist and fingers;
- Shoulder massage;

- Passive and active exercises of the affected member.

4. Results and Discussions

From a functional point of view, interpretation of the results is based on the initial and final evaluations, highlighting all the positive changes that have occurred since these recovery programs were applied.

Table 1
Results of the joint testing

Movement	Initial evaluation	Final evaluation
<i>Flexion</i>	110°	160°
<i>Extension</i>	30°	50°
<i>Abduction</i>	30°	170°
<i>Adduction</i>	130°	180°

Table 1 shows the results obtained by the subject after the joint testing. The values obtained by the subject under investigation have improved significantly in all movements of the scapular-humeral joint.

In the case of the flexion movement, the values increased from 110° in the initial assessment to 160° in the final assessment. As for the extension movement, the patient improved mobility in the scapular-humeral joint, resulting in a 20° increase. The abduction movement recorded a significant increase, from 30° in the initial assessment to 170° in the final one.

In the case of adduction movement, joint mobility increased by 50°, from 130° to baseline, to 180° at final assessment.

Table 2
Results of the muscular testing

Muscle	Initial evaluation	Final evaluation
<i>Flexors of the arm</i>	F3	F5
<i>Extension of the arm</i>	F2	F4
<i>Abductor of the arm</i>	F3	F5
<i>Adductors of the arm</i>	F1	F4
<i>Lifters of the scapula</i>	F2	F4
<i>Lowering of the scapula</i>	F3	F5
<i>Abductors of the scapula</i>	F2	F4
<i>Adductors of the scapula</i>	F2	F4

There is a good evolution in muscle strength, especially in flexor muscles, arm abductors and scapula descenders, which shows that exercises used in kinesitherapeutic programs aimed at increasing muscle strength have been well-selected and properly executed.

Also, the force of the entire superior member has increased, this being evidenced by the perimeters that have become equal to those of the unaffected member. After comparing the initial and final values, it was found that the recovery was 70%.

5. Conclusions

The recovery program has a positive influence on the results, as it is structured and applied in the most efficient way.

It is noted that a good selection of instruments and methods, which fit the particularities of the case, and their

adaptation according to the patient's needs, positively influences the evolution of the patient.

The observed goals were achieved, so in the patient with scapular-humeral peri-arthritis, an improvement was observed both in the articulation amplitude and in the increase of the muscular force from the shoulder.

A good recovery is delayed even by the discontinuation of the program with one session of kinetotherapy.

Following kinetic treatment, the values obtained by the subject under investigation improved significantly in all movements from the scapular-humeral joint.

Physical therapy is important in the recovery process right after the onset of the disorder, because as we move away from the time it occurs, kinesiotherapy becomes unavailable and can't be applied successfully.

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