# Patient Scapulohumeral Periarthritis Recovery Using Kinetic Methods - Case Study

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**Abstract**

The focuses on the case study of a patient suffering from scapulohumeral periarthritis, namely a simple painful right shoulder, common for both athletes and people who do not practise sports. This condition mainly affects people over 40 years when wear processes are common, although the disease can remain latent clinically, distribution by sex is equal. Scapulohumeral periarthritis is a abarticular rheumatic disease, characterized by the syndrome of painful shoulder accompanied by limitation of movement in the joints, affecting the "false" joint of the shoulder (by the subacromio-deltoid slide) by degenerative lesions of the tendons, in particular of the supraspinatus and biceps, characterized by calcification or necrosis that will lead to rupture. This study aims to discover in detail the causes of this disease (scapulohumeral periarthritis), a useful step for the development and implementation of programs and methods of patient recovery.

*Keywords: recovery, patient, periarthritis*

## Introduction

In the last decades, important progress was made in the knowledge of rheumatic diseases, regarding higher possibilities of prevention and effective treatment.

Professor Del. Suteanu claims that abarticular rheumatism includes a large group of rheumatic diseases that are integrated in other structures affecting them. The tissues in the vicinity of the joints, such as the joint capsule, fascia, ligaments, nerves (neuralgia), tendons, muscles (myalgia), stock, undergo a degenerative inflammatory process.

Factors that may cause scapulohumeral periarthritis are: serious injury to the shoulder (fractures, sprains, contusions, violent muscular efforts); cervical spondylosis (scapulohumeral periarthritis favoring the radicular irritation); trophic disorders (caused by paralysis of the upper limb).

As noted by D.D Donskoy, only by "knowing the laws of motion can predict the outcome of their different conditions , can uncover the sources of errors in movement, it can be estimated correctly efficacy of the movements, they can find ways to improve them and ultimately can create movements that correspond to the highest level of proposed motricity tasks".

According to T. Sbenghe: "Today physiotherapy and movement therapy cannot cover, strictly the sense, only a part of the role of kinesis in health care. -therapy- the term became too restrictive even in its general meaning."

The fact that medical assistance has to be different in conception, methods and means by objective, it has come down to the difference in prophylactic, therapeutic and rehabilitation.

According to the literature, the treatment is differentiated from patient to patient due to diseases, conditions, reactions of each illness or convalescent person. Age, gender, living conditions, environment, level of education etc. will also be taken into account.

It was found that women's mobility recovering is more effective, at men the recovery of force and at children the recovery results are faster.

Generally, the therapist must inform the patient about recovery programs meant to restore some confidence and to continue to be active because some have conditions requiring prolonged treatment course and have a depressive state of mind.

## Materials and Methods

### Research hypothesis

It is assumed that using a kinetic program will relieve pain, inflammation, and the patient will be cleared at a level as close as possible to the above condition.

**Purpose**

The aim is to verify the effectiveness of the proposed method of recovery and rehabilitation program. This will be achieved through the implementation and monitoring of experimental variables depending on which the evolution of the patient will be observed.

**Case study organization**

The place where the recovery program was run and researched was the Swimming and Kinetotherapy Complex in Suceava, the physical therapy lab and the patient's home.

The case study was conducted over a period of three months (November 2016 - January 2017) regarding the recovery program of the simple painful shoulder; it had to be made so that the patient could continue the exercises at home.

Recovery by means of the kinetic program was conducted over a period of 12 weeks, held each week in three sessions of one hour.

In the first recovery session, specifically in the first month, we made the following measures: the goniometer; range of motion; muscle balance; specific tests deficiency.

**Table 1 Recovery program**

| | **Methods** | **Dosage** | Main muscles |
|---|---|---|---|
| **Shoulder flexion** | Position: the patient in heterolateral decubitus, with the arm test supported,it's being realized at scapulohumeral level.<br>F1: Prior to scanning the deltoid on the front of the shoulder, the coracobrachialis is a deep muscle and it's palpated internally in the face of the third upper arm, medial to the brachial biceps, the brachial biceps is palpated in the middle of the arm, the front previous.<br>F2: From heterolateral decubitus with the arm supported by the examiner, the subject is flexing the arm.<br>F3: From anti-gravity position, arm flexion without resistance, up to 900.<br>F4: Following the same position, a slight resistance opposes the distal arm halfway motion. The Stabilization is from the shoulder level.<br>F5: Resistance is greater or eccentric. | **3x**<br>**3x**<br>**2x**<br>**2x** | anterior deltoid, coracobrahial, brachial biceps (long head) |
| **Shoulder extension** | Position without gravity. Heterolateral decubitus with the arm sustained and the elbow extended.<br>F1: The posterior deltoid is palpated on the back of the shoulder; 1/3 The brachial -triceps is palpated on the upper arm, on the rear face; The big round is palpated under the axilla, on the margin of the scapula.<br>F2: Patient executes arm extension.<br>F3: Patient executes extension active, without resistance.<br>F4: A resistence is put on 1/3 of the distal mid-execution arm movement.<br>F5: Resistance could be higher. | **3x**<br>**3x**<br>**3x**<br>**2x**<br>**2x** | deltoid (posterior fascicule), the great round, the great dorsal, brachial triceps (long head) |
| **Shoulder adduction** | Without gravity position: dorsal decubitus.<br>F1: The medium deltoid is palpated on the side of the shoulder and the supraspinatus is palpated over the spleen.<br>F2: The patient practises arm abduction.<br>Anti-gravity position: sitting with the arm in anatomical position<br>F3: anti-gravity position, the subject is actively executing the abduction of the arm without resistance, up to 900.<br>F4: the same position but with a slight resistance in the distal third of the arm.<br>F5: resistance is greater than or eccentric. | **3x**<br>**3x**<br>**3x**<br>**2x**<br>**2x** | deltoid (middle fascicle), supraspinatus |

| | | | |
|---|---|---|---|
| Arm adduction | Without gravity position: The arm outside the table with dorsal decubitus, in abduction of 900<br>F1: The subspinatus is palpated in the infraspinatus pit, the tendon of the great pectoral is palpated on the anterior face of the thorax.<br>F2: position without gravity, subject is running arm adduction. Anti-gravity position: note that this is not an achievable anti-gravity position movement<br>(that would be positioned upside down), so the final position of shoulder abduction is adopting sitting.<br>F3: in this position, the subject executes arm adduction against a slight resistance in the distal third of the arm.<br>F4: observing the position subject to the same adducted arm runs against a distal 1/3 of the mean resistances Abrat.<br>F5: resistance is more or less. | **3x**<br>**3x**<br>**3x**<br>**2x**<br>**2x** | subspinatus, the great pectoral, the great dorsal, the great round |
| External shoulder rotation | F1: without gravity position: The patient, in ventral decubitus, with the arm clinged on the torso, the elbow flexed in 900, the forearm is in prono-supination<br>F2: without gravity position, the patient performs shoulder external rotation.<br>Anti-gravity position: The patient, in prone with the arm abducted to 900, the forearm hanging outside table in Pronotia-supination<br>F3: the patient executes an external rotation of the shoulder without resistance.<br>F4: respecting the same position but putting a slight resistance.<br>F5: resistance is greater or eccentric. | **3x**<br>**3x**<br>**3x**<br>**2x**<br>**2x** | subspinatus, posterior deltoid, the small round |
| Internal shoulder rotation | F1: The great round is palpated on the axillary border of the scapula.<br>F2: the patient runs the rotary motion without gravity in internal position.<br>F3: patient performs the same movement, the anti-gravity position without resistance.<br>F4: the same motion, but opposes a resistance.<br>F5: resistance is higher. | **3x**<br>**3x**<br>**3x**<br>**2x**<br>**2x** | the great round, the great dorsal, the great pectoral |
| Scapula rising | The raising of the scapula with and without resistance.<br>From prone, hands at his sides, the patient lifts the scapula without gravity position and then, in anti-gravity position, with eccentric resistance applied on the shoulder | | the angular, the superior trapezius |

**Posture methods**

1. Patient in flexion, placed in dorsal decubitus position with the upper member extended in the extension of the torso affected by the extended elbow, the knees are bent in the lower third of the arm is put sand bag which is then held 12 minutes.
2. Patient in extension seated in the dorsal decubitus position on a massage table edge with the affected upper limb, which is arranged outside the plane of the support with a sand bag disposed in the lower third of the arm. It is kept about 10 minutes.
3. Patient stands on the edge of a table, supports himself on table with the unaffected upper limb and the affected upper limb is having a dumbbell with a average weight, in pronation and supination motion of running.
4. Pacient seated, the rotational movement of the internal running, resulting in the lumbar region forearms.

**Active and auto-active mobilisation**

1. Patient in an upright position with the stick positioned in the pelvis, elbows straight, stick to the carrying runs clavicles, elbows bent stick incontinuare then goes overhead with elbows straight and bent shoulders 180.
2. Patient standing with feet and palms stick, positioned in the pelvis with extended elbows. Tilting movement is performed by arms, left and right.
3. Seating position with Bobath ball in hands, elbows are bent and elbows extension runs.
4. Patient in upright torso tilted 900 arm flexed at the elbow extended in 1800, and his good hand resting on the chair. Run circles upper limb patient having an average weight of a dumbbell.

5. Patient standing against the wall, his hand holding a ball wall sick and healthy hands at his sides, running the ball with his hand on the wall to reach sick to the point where pain occurs.
6. Patient standing with feet apart using an elastic band, comes back healthy hand lane and the other end to catch the gang hand sick. Pull the tape by hand sick.

**Discussions and Results**

1. Subject analysis

Personal data
Patient: V.A., sex F, age 30 y.o, sedentary

**Table 2 Pain scale representation**

| Evaluation | Pain intensity | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Values | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Initial evaluation | | | | | | | X | | | | |
| Intermediate evaluation | | | | X | | | | | | | |
| Final Evaluation | **x** | | | | | | | | | | |

**Table.3 Articular balance sheet**

| Movement | Initial evalutaion | | Intermediate evaluation | | Final evaluation | |
|---|---|---|---|---|---|---|
| | Activ | Pasiv | Activ | Pasiv | Activ | Pasiv |
| Flexion | 140° | 150° | 155° | 160° | 170° | 175° |
| Extension | 25° | 30° | 40° | 45° | 55° | 70° |

As can be seen, the initial assessment of range of motion, flexion patient actively carried out in 1400 and passive 1500, reaching the final assessment of range of motion to perform the same movement but with results of flexion, active and passive 1700 1750.

With regard to the movement of extension of the range of motion in the initial and the active 250 and passive 300 in the final assessment of range of motion in extension movement of the notes 550 and 700 active.

**Table 4 Muscular balance sheet**

| **Evaluation** | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| | F0 | F2 | +F2 | F3 | F3+ | F4 | F4+ | F5 |
| Initial evaluation | | | | | | | | x |
| Intermediate evaluation | | | | x | | | | |
| Final evalutaion | x | | | | | | | |

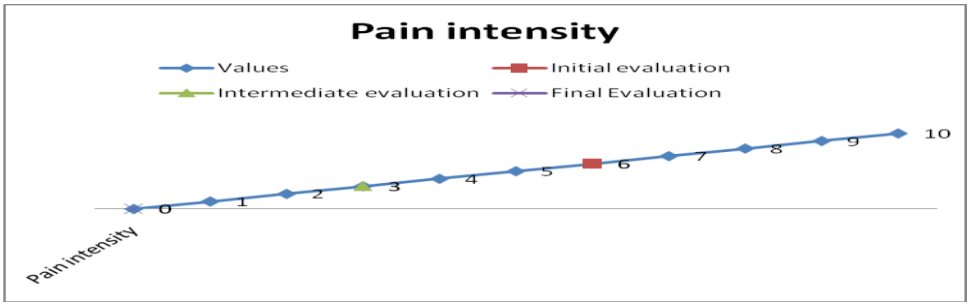


**Figure 1 Pain scale**

For a concrete assessment of the patient, we chose a numbered scale from 0-10. If the patient experiences pain, the examiner stops the evaluation.

As shown in the graph, the initial assessment of the patient to experience pain scale from 6 that, in the assessment and final evaluation Intermediate 4 0.

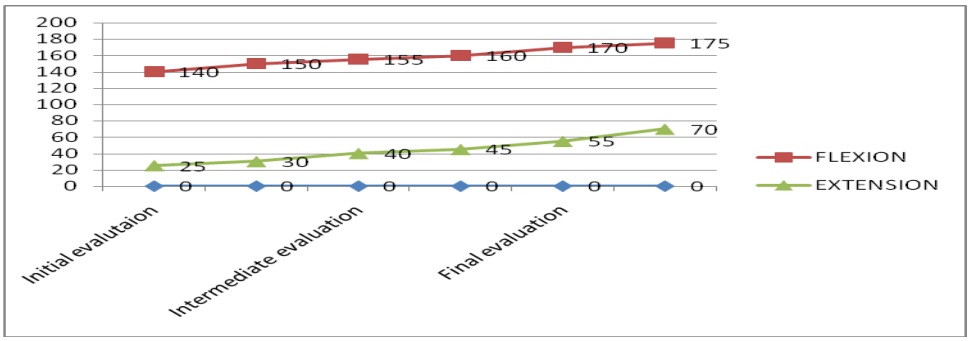


**Figure 2 Articular balance sheet**

Diagram 2 shows results in progress: if in the initial assessment, the active movement was in 1400, the final evaluation showed the active move in 1750, the amplitude of the movement being up to 350.

At the same time, there is a gradual difference and the evaluation of passive movement, the initial assessment in 1500 have outward movement, and the final evaluation 1750 passive movement, so we observe an increase of 250.

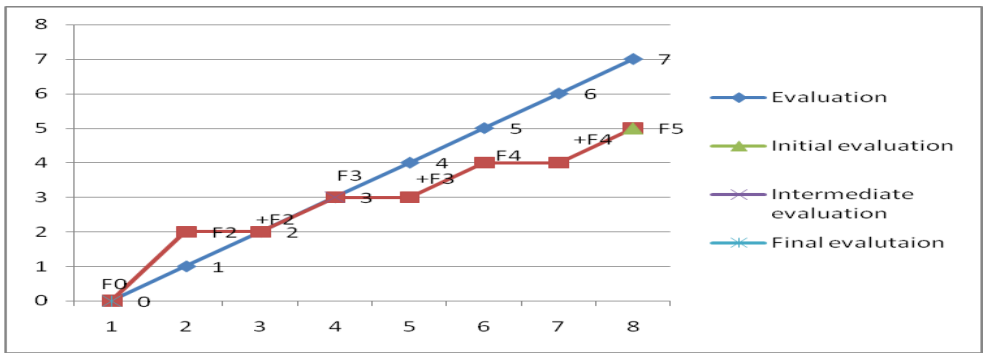


**Figure 3 Muscular balance sheet**

In the graphical representation, we started from a scale of 0-7 in which the initial measurement is the maximum value, the intermediate and final evaluation drops to 3 to 0.

## Conclusions

1. The hypothesis that was left was verified.
2. Carrying out a physical therapy program in early disease leads to better results than follow to be hospitalized.
3. Patients with painful shoulder PSH- simply have progressed rapidly recovering its shape, but also because of simple PSH, the average age was somehow motivating.
4. PSH- simple painful shoulder is a simple and most common form of PSH, which does not require hospitalization; recovery or physical therapy can be done at home.

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