

Physical & Medical Rehabilitation in Scapulohumeral Periarthritis

TRĂILĂ, LIVIU .ALEXANDRU.

University of Craiova, University Centre Drobeta Tr. Severin, ROMANIA

Published online: March 25, 2013

(Accepted for publication March 10, 2013)

DOI:10.7752/jpes.2013.01017;

Abstract

Problem Statement. Scapulohumeral periarthritis is one of the most frequent ailments for which a patient visits a doctor. It is a clinical syndrome characterised by pain and functional impotence of the shoulder.

Approach. I primarily intended as a means to gain and preserve joint mobility, secondly to gain strength, skill and stability, and for pain relief. The study was conducted during the period 01.07.2012 – 31.12.2012 in the Balneology section of the Physiotherapy and Medical Recovery Unit of the County Hospital in Drobeta Turnu Severin on a group of 18 adults patients (10 men and 8 women) ranging in age from 31 to 60 years old. Methods used: massage, immobilization, postures, passive and active movements.

Purpose. Assess the application of systematic methods and physiotherapeutic procedures to restore the functional capacity reduced or lost by patients diagnosed with scapulohumeral periarthritis.

Results. Kinetotherapy treatment to complement traditional medical treatment visibly improves outcomes in scapulohumeral periarthritis. A large proportion (66,67%) of the study patients obtained very good results. They had a very smooth recovery; symptoms disappeared and the patients were able to return to their previous activity or sport. While 22,22% of patients made a good recovery, but with relapses which required a greater number of days of temporary incapacity for work and a repeat of the medical treatment and kinetotherapy, 11,11% patients had a poor prognostic due to their age being over 61 years.

Conclusions. Scapulohumeral periarthritis is an important medico-sanitary issue, found in approximately 80% of shoulder disorders. Morbidity is concentrated between the ages of 41-50 years. An early diagnosis and the immediate start of treatment visibly influences the prognosis for the disease. The incidence of the scapulohumeral periarthritis disease in the two sexes is of about equal proportion, with a slightly higher incidence in men. Unfavourable progress can be caused by: the affection of many anatomical elements of the joint, simultaneous affection of both joints, older age, and/or late administration of treatment. A recovery programme should be individually tailored for each patient. Diagnosing scapulohumeral periarthritis should be made after the exclusion of other joint and bone disorders for the same location.

Key words: scapulohumeral, periarthritis, treatment, patients, movements.

Introduction

The shoulder girdle connects the upper limb bones to the torso skeleton and consists of the clavicle and scapula (Trașcă, 2007). Scapulohumeral periarthritis (PSH) is a clinical syndrome characterised by pain, lack of suppleness of the hip joint and functional impotence of the shoulder, associated in various degrees determined by pathological processes, which affect periarticular tissues (tendons, joints) and, in some cases, the articular capsule (Păun, 1999).

Scapulohumeral periarthritis is one of the most frequent ailments for which a sick person visits a doctor. It is encountered in both sexes, to subjects of active age, with maximum incidence in those over 40 years.

The term periarthritis, which implies that it is related to the periarticular structures, is, in certain instances, not entirely accurate as it does not concern an inflammatory process (Păun, 1999).

Symptomatology can manifest in the case of all muscles of the shoulder area, but it affects specifically the rotating tendons of the muscles of the arm and the articular joint. The inflammation causes pain and limitation of movement in the shoulder area and its surroundings; often the pain radiates along the exterior side of the arm down to the elbow or even to the palm or fingers, or up towards the neck or the thoracic musculature. The ill person cannot lift, move or rotate the arm, get dressed, brush their hair, or even in severe cases the pain appears even in repose.

The bursitis cause around the shoulder's articulation usually represents cold, drift which affects the shoulder, the repeated effort, unilateral. The symptomatology can also be caused by a smaller mechanical trauma, effort, an unsuitable movement or position abnormalities. The fallen shoulder onwards, for example, presses and straitens the space of the superspined muscle. The muscle and the tendon are affected as a result of continuous mechanical application, begin to ache, and calcification itself, in extreme cases, causes it to break up.

It can lead to the appearance of humeroscapular peri-arthritis, the trauma in the musculature and tendons around the shoulder, inflammation attended by calcification processes caused by cold, or due to unknown origin. The illness can also be caused by the irrigation of blood disorder due to the lack of reflex excitation, for example after a heart attack. The pain appears suddenly or gradually, often capriciously (Popescu, 2002).

Scapulohumeral peri-arthritis treatment works to relieve pain, fight inflammation and fibrosis development, improving joint mobility (Kiss, 2004; Pâncotan, 1999).

The intensity and the complexity of the treatment depends on the clinical form of the disease. Hygienic treatment consists of resting the affected shoulder (Avramescu, 2007).

Treatment with physical agents plays an important role in all stages of the disease. This treatment includes electrotherapy, hydrotherapy and massage (Trăilă, 2012). In order to apply the complimentary technique of massage effectively it is necessary to not only have very good control of the technique, but also the knowledge of the anatomy of the affected segment from the point of view of the orientation of muscular fibers, or tendons, because the application of manoeuvres is made in a strict, well-defined way (Trăilă, 2012).

To combat the pain, drug treatment or treatment of physical development processes were used, and most procedures used were included and postures. This does not work with dynamic exercises on a painful shoulder (Trăilă, 2010).

Evaluation of patients with scapulohumeral peri-arthritis has been pursued in a complex programme of individualized recovery, depending on the stage of progress of the disease, age and sex.

Materials and Methods

In the period 01.07.2012 – 31.12.2012, this study was undertaken on a group of 18 adult patients, chosen at random, who had been diagnosed with scapulohumeral peri-arthritis and were being treated in the Balneology section of the Physiotherapy and Medical Recovery Unit of the County Hospital in Drobeta Turnu Severin.

The group was treated with a classical approach of medicinal and physical therapy. The study took into account the age and gender of the patients, as well as their environment and the stage of evolution of the illness.

- The participants were grouped by age as portrayed in the Table 1 and Figure 1.

Table 1 Studied cases by age group

Age Group (Years)	Number of cases	%
31 – 40	1	5,55
41 – 50	11	61,11
51 – 60	4	22,23
>60	2	11,11
TOTAL	18	100

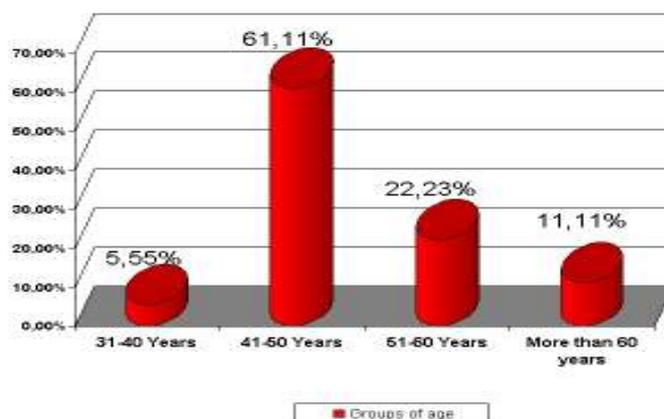


Figure 1 Representation of study group by age

Based on Figure 1 and Table 1, it appears that the morbidity of scapulohumeral peri-arthritis is focused between 41 – 50 years of age, 61,11% of cases, because the neuro-musculoskeletal artro-chinetic apparatus begins to suffer degenerative changes after the age of 30.

- Distribution by gender of the studied cases indicate a prevalence of the male sex.

Table 2 Distribution by gender

Gender	Number of cases	%
Male	10	55,56
Female	8	44,44
Total	18	100%

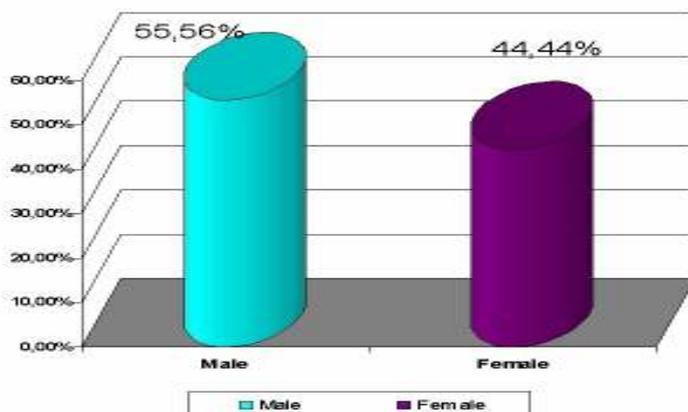


Figure 2 Distribution by gender of the studied lot

The data in Table 2 and Figure 2 highlight the fact that morbidity from scapulohumeral periarthritis appears more often in men (55,56%) than in women (44,44%).

- The environment of the patients in the study group.

It is observed in Figure 3 and Table 3 that in the study group the incidence of patients is dominated by those in the urban environment (66,67%) compared to those in rural environments (33,33%) due to a professional overload.

Table 3 The environment of patients in the study group

Environment	Number of cases	%
Urban	12	66,67
Rural	6	33,33
Total	18	100

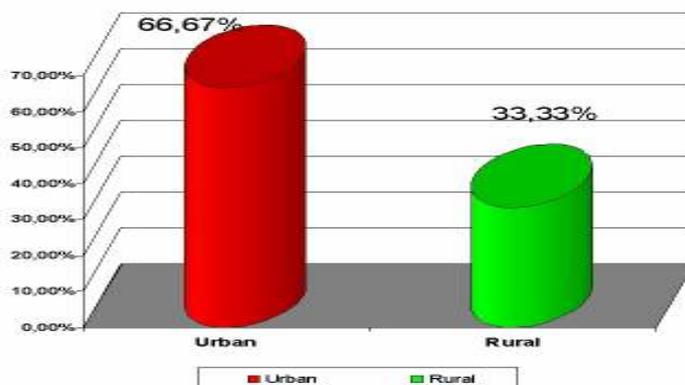


Figure 3 Percentage distribution of patients depending on origin

The following principles and objectives were studied in the recovery of the patients in the study group:

As a general principle, applicable to the whole upper limb, initially the gaining and maintaining of joint mobility was observed and supported by increasing the force, skills and stability of the joint.

No dynamic exercise work was done on any of the cases in the acute painful stages. Physical therapy was preceded, where appropriate, by heat or electrotherapy, massage and other physical procedures suitable for combating pain, activating blood circulation and increasing muscle elasticity.

Pain control was effectively provided through medication or physical means, but from the point of view of kinetotherapy it was done in particular through immobilization and postures.

The following mobility position was adopted; the opening of the banded angle between the torso and arm, and the arm and forearm, from 30° to 90°, and the elbow between 30° to 120°.

The transition from a lower aperture posture to another larger aperture was made with slow, passive movements or active autopassive movements, and posture change took time, from a few minutes to 1-2 hours a day and 2-3 hours a night, changing the opening angle.

Postures with the scapulohumeral articulation closed under 30° were not made in order to prevent blockage of the shoulder due to the tendency of supraspinous. In general, postures in functional positions corresponded to acute and subacute periods.

To overcome the period subacute to chronic, or clinical remission, corresponds with the period in which intervention can be made with therapeutic gymnastics programmes and recovery refers to restoring mobility, strength and stability.

The massage was followed by selective physical therapy, which was initially performed by passive movements of the shoulder:

- antepulsion – grip on the shoulder and elbow contrepriza grabbing the slight vibration in patient antepulsion up at an angle that the patient was able to endure;
- retropulsion – grip on the shoulder and the elbow through contrapriză on elbow patient, moving the patient's hand to their back.

Antepulsion and retropulsion movements were executed around a transverse axis sagittal plane rotation:

- internal rotation (around a vertical shaft)
- external rotation (around a vertical shaft)
- abduction and adduction in the foreground around a sagittal axis.

In addition to these basic movements, combined movements of the shoulder were also executed:

- hand, the opposite shoulder;
- slap, cervical region;
- circumduction.

After these passive movements followed the movements that the sufferer has executed single, and after this they proceeded with active resistance movements in which the massage therapist provided resistance while the patient tried to execute the movements.

Evaluation of hip joint and joint mobility exam is based on a very good knowledge of functional anatomy and biomechanics of the shoulder.

The following exercises were used for toning the scapular musculature:

1. The tilting of the shoulder is the movement of antepulsion which employs the slight lift of the shoulder, the chest which tracks down the coracoid, and a tilting of the scapula around a horizontal axis arranged in the foreground. The minor pectoral is the only muscle which executes this movement.

Exercise – lying sideways on the unaffected side, with elongated arm and elbow flexed: the assistant holds the patient's shoulder (antero-posterior) between their arms, applying pressure towards the posterior, which is opposed by the patient by pushing the shoulder forward.

2. The tilting back of the shoulder is the movement of retroduction, down the shoulder of the main lower trapezoid.

Exercise – the patient lies flat on their abdomen with the upper limb next to the body, lifting the dumbbell.

3. Scapular adduction is the movement that moves the scapula back towards the spinal column, the axial posterior interpretation, in order for the trapezius, angular and rhomboids to act in a simultaneous contraction.

Exercise – the patient lies flat on their abdomen, with their shoulder on the edge of the table and the upper limb hangs down vertically holding a dumbbell and performing a horizontal abduction, which is associated with the scapular adduction; or in flexing the elbow, the dumbbell is moved vertically through horizontal abduction. IS THIS WHAT YOU MEAN?

4. Scapular abduction is the correct movement accompanied by rotation of the scapula, which points glena forward and outside. The movement is carried out by the minor and major pectoral muscles.

Exercise – exercise with pulley and counterweight: the subject executes a more complete horizontal abduction.

Results

The following results were obtained in the study group, as seen in Figure 4:

- 12 patients (66,67%) made very good progress, symptoms disappeared, and the patients were able to return to their previous activity or sport;
- 4 patients (22,22%) made good progress, but with relapses which required a greater number of days of temporary incapacity for work and a repeat of the medical treatment and kinetotherapy;
- 2 patients (11,11%) have a poor prognostic due to their age, over 61 years.

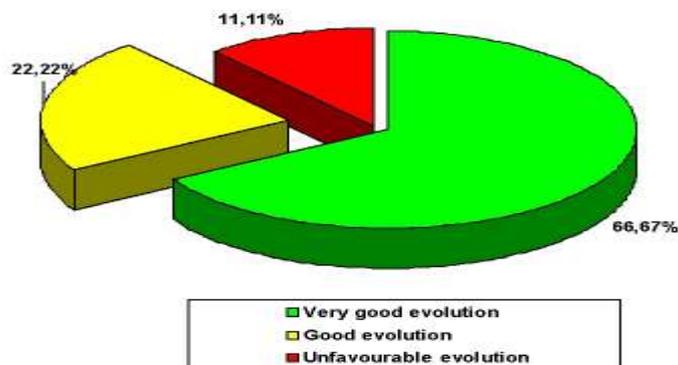


Figure 4 The results obtained after the classic medical treatment and kinetotherapy

Discussions and conclusions

1. Scapulohumeral periarthritis is an important issue, presents in about 80% of the diseases of the shoulder.
2. The PHS treatment must be made in order to offer the patient the best available treatment.
3. PHS is an expensive disease from a medical and social point of view (the loss of capacity to work), and both aspects must be taken into consideration by rheumatologists and kinetotherapists.
4. The incidence of scapulohumeral periarthritis is higher in men (55,56%) than in women (44,44%).
5. Morbidity of scapulohumeral periarthritis is concentrated between the ages 41-50 years (61,11%) because the neuro-musculoskeletal arthro-chinetic apparatus suffers degenerative changes in this age range.
6. The unfavourable progress can be caused by:
 - damage of several anatomical joint elements;
 - simultaneous damage to both joints;
 - old age;
 - late treatment.
7. Treatment of scapulohumeral periarthritis must be made only after the exclusion of joint and bone disorders in the location.
8. Recovery programme must be differentiated for each individual patient.
9. Obtaining the diagnosis and starting treatment immediately visibly influences the prognosis of the disease.
10. Kinetotherapeutic treatment, in addition to the classic medical treatment, visibly improves prognosis in painful shoulders post-trauma.

References

- Avramescu, T.E., (2007), Physical therapy in sports. Craiova: University Publishing House
- Kiss, I., (2004), Physio, physiotherapy and medical recovery in locomotor systems' disease, Bucharest: Medical Publishing House
- Pâncotan, V., & Moraru, G., (1999), Kinetic recovery in rheumatology. Craiova: Having the West Publishing Company
- Păun, R., (1999), Treaty of Internal Medicine – Rheumatology, Bucharest: Carol Davila University Publishing House
- Popescu, E. & Ionescu, R., (2002), Compendium of Rheumatology, Bucharest: Technical Publishing
- Trăilă, L.A., (2012), The recovery of painful shoulders in sportsmen through complementary techniques of massage. *Proceedings of the International Congress and Exhibition on Kinetotherapy with International Participation*. Căciulata.
- Trăilă, L.A., (2010), The functional role of kinetotherapy for scapulohumeral periarthritis. *Journal of Romanian Sport Medicine Association. Supplement 3*. Craiova: University Publishing House. 584-588
- Trașcă, E., Trașcă, E.T., Pătrașcu, M., et al., (2007), Clinical Anatomy, Craiova: Medical University Publishing House