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STUDY ON THE REHABILITATION OF A PATIENT WITH CERVICOBRACHIAL NEURALGIA USING PHYSIOTHERAPY METHODS

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Abstract

This paper aims to demonstrate the importance of physical therapy in a rehabilitation program for patients with cervico-brachial neuralgia. Due to its frequency and the problems it creates, particularly those related to difficulty in performing work activities, this condition is becoming increasingly common in society, making it difficult for individuals to carry out various daily activities.[4,7]

The objective of this paper is to rehabilitate patients suffering from this condition. The general goal of rehabilitation is to help the patient recover in the shortest possible time, prevent physical discomfort, and, most importantly, stop the progression of the disease. .[8]

Following the initial and final assessments, we were able to collect the results presented in this paper and formulate the final conclusions of the study.

The reason for choosing this topic is that a significant part of the population is affected by this condition, and through kinesiotherapy we can correct or halt the progression of this problem. .[9]

Introduction

Cervicobrachial neuralgia is a neurological condition characterized by radicular pain that radiates from the cervical spine to the upper limb.

Regarding the onset of this condition, it has been found to be closely associated with factors such as intervertebral disc degeneration, disc herniation, cervical osteoarthritis, or traumatic injuries. .[2,3]

The factors that have led to the increased prevalence of cervicobrachial neuralgia (CBN) today include population aging, modern lifestyle and sedentary work, advances in imaging techniques, and the growing recognition of the importance of conservative treatment. .[3,7]

Although known as a treatable condition, in the absence of appropriate therapy it may become chronic and lead to complications that significantly affect daily life. .[11,12]

Changes in lifestyle continually bring this condition into focus, considering the increasing levels of sedentary behavior. Although it may not initially present alarming symptoms, it can gradually begin to noticeably impair functionality. In cases of severe nerve compression, the patient may develop motor and sensory deficits; such complications may even lead to dependence on assistance from another person. .[10]

In other words, cervicobrachial neuralgia is a condition with variable progression from one patient to another, depending on the involvement of the nerve roots and the severity of cervical spine lesions. Even though treatments are effective, the condition must be managed conscientiously to ensure optimal recovery and prevent long-term disability, given its significant impact on quality of life. .[1,5]

Kinesiotherapy plays a fundamental role in restoring normal daily activities. It acts as an adjunct treatment; however, when performed consistently, it can lead to notable results and even improve quality of life. By focusing on stretching and strengthening exercises for the affected muscles, it can reduce nerve tension and alleviate pain. .[3,7]

Materials and Methods

In this study, we started from the hypothesis that by using kinesiotherapeutic means we can improve the condition of patients suffering from cervicobrachial neuralgia.

In this condition, kinesiotherapy does not represent merely an adjunct or a temporary improvement; it can be considered the actual remedy. Of course, therapy should be initiated as early as possible in the primary stage in order to achieve faster results and prevent disease progression.

Aim and Objectives of the Research

The study aims to highlight the importance of kinesiotherapy and the avoidance of a sedentary lifestyle in the rehabilitation and prevention of this condition.

Organization of the Research

Location and Material Resources

The activity was carried out within the CFR Polyclinic (CF Clinical Hospital Iași, CF Outpatient Specialty Clinic Suceava).

The material resources included elastic bands, sticks, a physiotherapy table, a Bobath ball, a medicine ball, dumbbells, and wall bars.

Duration and Work Stages

The study period lasted 2 months (January 22 – March 22), with sessions conducted 3 days per week.

Stages of the rehabilitation program:

- Acute stage, focused on pain reduction, muscle relaxation, and limiting the progression of nerve compression;
- Subacute stage, aimed at further reducing pain and increasing mobility;
- Stabilization phase.

Sample of Subjects

The study was conducted on patient B.I., born on January 16, 1991 (34 years old).

Implementation of the Therapeutic Program

Case Study – Period: 22.01.2025 – 22.03.2025

Medical History

The patient, a 34-year-old woman, reported chronic cervical pain radiating to the upper limbs, particularly the left upper limb. The symptoms began progressively approximately two years ago, with recurrent episodes of muscle weakness affecting fingers 1–3 of the left hand and fingers 3–5 of the right hand.

In recent months, the patient has experienced muscular fatigue and reduced grip strength. She had previously attended therapy sessions at two different clinics; however, she did not continue the prescribed exercises at home and discontinued therapy sessions once the pain subsided.

The specialist physician diagnosed the case as bilateral cervicobrachial neuralgia with left C6 and right C7 radicular involvement.

The patient presented on 15.01.2025 at the CFR Polyclinic in Suceava, and following the evaluation, the kinesiotherapy program was initiated.

Results and Discussions

Subject Analysis and Presentation of Results

Table 1. Initial and Final Values of the ADL (Activities of Daily Living) Score

Activity	Description	Score
Personal hygiene	Completely independent	2
	Requires partial assistance	1
	Completely dependent	0
Completely dependent	Completely dependent	2
	Needs help with dressing but not with footwear	1
	Unable to dress independently	0
Toileting	Uses the toilet without assistance	2
	Requires supervision	1
	Assisted in bed	0
Sphincter continence	Full control	2
	Occasional incontinence	1
	Frequent incontinence	0
Frequent incontinence	Frequent incontinence	2
	Requires partial assistance	1
	Requires full assistance	0

ADL Score Results

Maximum ADL score in the initial testing: 7 and 10 final testing

Classification:

- **Stage I** – 10 points: fully autonomous
- **Stage II** – 8–9 points: quasi-independent
- **Stage III** – 3–7 points: assisted independence
- **Stage IV** – 0–2 points: total dependence, requires personal assistant

Discussion

The initial ADL score of 7 placed the patient in **Stage III – assisted independence**, indicating a moderate level of functional limitation in daily activities.

Following the implementation of the kinesiotherapy program, the final ADL score improved to 10, corresponding to **Stage I – full autonomy**.

This significant improvement highlights the effectiveness of the therapeutic intervention in restoring functional independence and improving the patient's quality of life.

Table 2 Rezults ADL initial and final score

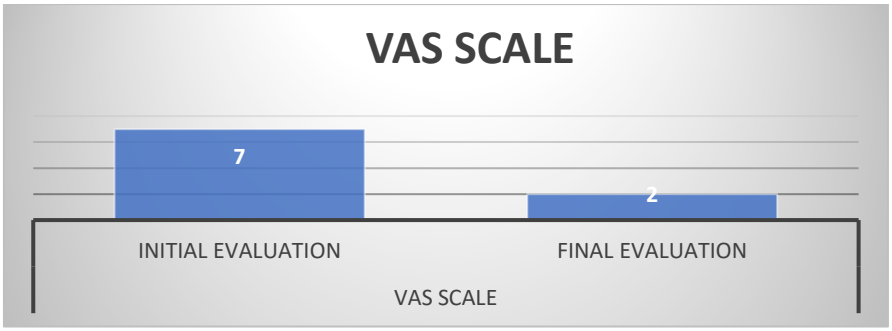
Rezults ADL initial score	**Rezults ADL final score**
7	10

The table above confirms the effectiveness of the rehabilitation program, as the patient's quality of life improved significantly.

Tabel 3. VAS Scale –initial and final rezults

VAS Scale

initial evaluation	final evaluation
7	2



Graph 1 Interpretation of the Initial and Final VAS Scale Results

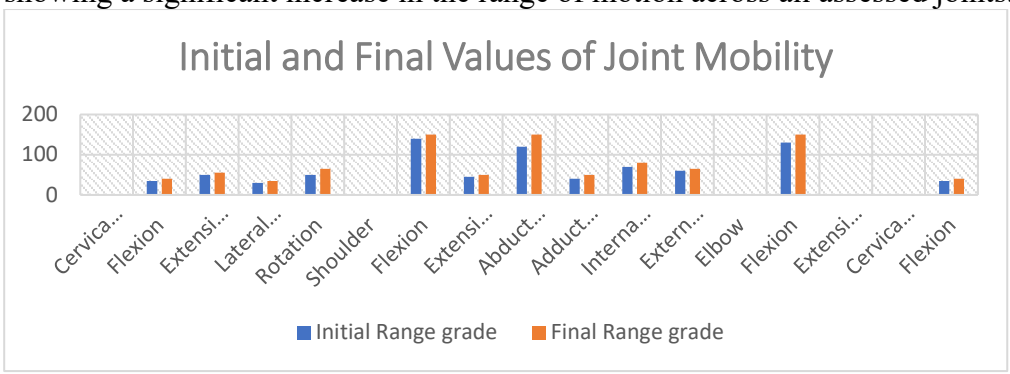
The graph presented above shows a reduction in the patient's pain following the therapeutic program.

Table 4 Initial and Final Values of Joint Mobility

Joint / Movement	Initial Range **grade**	Final Range **grade**

Cervical Spine		
Flexion	35	40
Extension	50	55
Lateral Flexion	30	35
Rotation	50	65
Shoulder		
Flexion	140	150
Extension	45	50
Abduction	120	150
Adduction	40	50
Internal Rotation	70	80
External Rotation	60	65
Elbow		
Flexion	130	150
Extension	10 flexion	0
Cervical Spine		
Flexion	35	40

The table above demonstrates the effectiveness of the therapeutic program, showing a significant increase in the range of motion across all assessed joints.



Graph. 2 Interpretation of Initial and Final Results

Graph 2 shows an increase in the range of motion of all three affected joints.

Table 5 MRC Scale – Initial and Final Evaluation

Grade	Description
Strength 0	No movement
Strength 1	No visible movement, contraction palpable
Strength 2	Movement present, but cannot overcome gravity
Strength 3	**Movement against gravity without resistance**
Strength 4	Movement against gravity and some resistance
Strength 5	**Normal muscle strength**

Table 6 Interpretation of Initial and Final Results of Tests Applied to Confirm the Patholog

Initial Result	Final Result
Spurling Test: Pain occurs when the head is rotated toward the affected side.	Pain no longer occurs when the head is rotated toward the affected side.
Jackson Test: Pain occurs when the head is rotated toward the affected side.	Pain is no longer felt when rotating the head.
Lhermitte Test: Passive head rotation causes a shock sensation along the spine or into the upper limbs.	Passive head rotation no longer causes discomfort.
Cervical Traction Test: Application of cervical traction relieves symptoms.	Cervical traction no longer relieves discomfort.
Roos Test: Maintaining the required position causes numbness or a feeling of weakness.	Patient no longer experiences issues while holding the position.

The table above indicates an improvement in the patient's functionality and confirms the effectiveness of the therapeutic program.

Discussion

- It is recommended that the patient continue performing the exercises at home daily.
- Adjustments to the therapeutic program should be made if necessary.
- Periodic evaluations are advised to monitor whether the condition is evolving.

Conclusions

- Due to adherence to the kinesiotherapy program and the patient's active involvement, the objectives set were successfully achieved according to the rehabilitation plan.
- At the final stage of recovery, the patient reported a significant reduction in pain, both at rest and during activities.
- The graphs and tables illustrating progress showed a notable increase in range of motion as well as muscle strength.
- Symptoms of neuralgia decreased thanks to stretching exercises, which helped reduce pressure on the affected nerve.
- The patient demonstrated a collaborative spirit and perseverance, carefully following the instructions for the exercises in the program.
- Kinesiotherapy served as a fundamental component in managing this condition by strengthening muscular and postural balance, helping to prevent relapses.
- The final functional assessment showed a significant decrease in pain and improved overall functionality.
- The collaboration between the patient and therapist allowed for constant adaptation of the program to meet the patient's individual needs.

- Through this study, I was able to consolidate my understanding of this pathology, its manifestations, and the therapeutic approach required

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