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STUDY ON REHABILITATION OF CERVICAL KYPHOSIS PATIENTS BY KINETIC MEANS

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Abstract

This study addresses a topical issue, which is generally based on the problems created by our vicious daily jobs.

The reason for choosing the topic is the result of the desire to document this topic that has created and creates great curiosity about the mechanisms of this pathology that affects not only the elderly but also young people, who often use mobile phones or spend hours on the computer. , thus they adopt a vicious position (head bent forward with antedus shoulders) which develops over time the popular term "hump".

All of the above has aroused curiosity, interest, and drive me to approach this topic, and this requires thorough documentation and understanding of all the mechanisms involved in cervical kyphosis.

Introduction

The spine has several types of curves but in small quantities. When those curves develop more in a certain area, they become a problem and can lead to various pathological conditions.

Cervical kyphosis is an increasingly common condition found in the population as a result of incorrect body position, to which are added other causes such as age, fractures, vertebral deformities, vertebral tumors, skeletal pathologies, etc.

Symptoms and signs that can be found in the cervical kyphosis are characterized by sore throat, headache, extremity pain, loss of sensation, tingling in the cervical area and upper limbs, deformities of the spine, muscle weakness in the affected area.

An untreated cervical kyphosis progresses slowly but surely, leading to disability. Failure to treat early increases the angle and substantially decreases the chances of treatment. The greater the angulation of a kyphosis, the greater the chances that the vertebrae will herniate and cause dizziness, paresthesias, paralysis,

pain in the affected area. It is best to treat the condition early by drastically reducing the chance of resorting to surgical treatment.

Physical therapy (movement therapy) is composed of specific medical recovery programs and its role is to heal as quickly as possible until "restitutio ad integrum", with the reintegration of the patient into daily life. Physical therapy is recommended in all types of kyphosis regardless of its type, location and severity.

The kinetotherapeutic recovery program will be prepared after a series of paraclinical investigations, physical evaluations and after asking some general types of questions that will help in measuring the success rate of the treatment.

Exercise has a major contribution to: regaining muscle strength, ensuring muscle control, regaining the ability to exercise, restoring normal nerve function, correcting trauma and normalizing organ functions to correct cervical kyphosis. They follow the following principles:

1. Forming a correct body posture and erasing the wrong posture.
2. Prevention of compensatory deviations created by cervical kyphosis.
3. Toning the muscles in the cervical region in order to shorten the posterior muscles of the neck and lengthen the anterior muscles of the neck.
4. Formation of cervical lordosis by hyperlordous actions.

Material and method

In this study we started from the hypothesis that using kinetic means we can rehabilitate people suffering from kyphosis

The material and methods used in this study are composed of kinetic techniques learned during the years of study, but also of recovery programs made through private practice.

Table 1 Case details

Name and surname	C. N.
Age	22 years
Profession	Instrumental music performer and delegate in the transport of values
Diagnosis	Cervical kyphosis
Reasons for presentation	Pain felt in the cervical area and unsightly posture
History	Radius fracture

Place of study and basic material conditions

The study took place in the private practice clinic "Kinetoclinic Real", from Suceava.

The basic material conditions consist of: gymnastics equipment, elongation table, hand bike, fitness bike, fitness belt, sliding plate, cube, stepper,

trampoline, trellis, elastic bands, shockwave machine, laser machine, ultrasound machine, ball basketball, handball, foam ball, gym ball, bobath ball, gym mattress.

Duration and stages of work

The study took place over 3 months (January, February, March), in the established time interval from 12:00 to 14:00, every Monday, Wednesday and Friday. In case of unfavorable situations for the kinetic program, the physiotherapy sessions were recovered on Tuesdays, Thursdays and Saturdays, respectively.

The work steps are as follows: the initial assessment, the realization of a kinetic program, the training of the patient on vicious positions and how to perform the exercises, the development of healthy habits and the appearance of positive results.

In the recovery program we used the infrared lamp which creates a thermal factor that helps to treat or ameliorate a condition. In thermotherapy, irradiation can be done for 5, 10, 15 minutes, but in our case we will apply for only 5 minutes because the cervical area is a well vascularized area, and irradiation over a long period of time can increase blood pressure.

Ultrasound uses the mechanical-thermal action of sounds to disperse calcified fat cells and to transmit heat to the deep layers of the skin. In the recovery sessions I used a preset program from the computer of the device that applies ultrasound for a period of 8 minutes.

The laser, through the action of light, penetrates the tissue and acts with different molecules, producing anti-inflammatory and analgesic effects. I used a program in the database of the device that applies ultrasound in two series (left, right) of 20 seconds each application.

Massage is used to reduce pain, stress, tension and because it helps to increase blood circulation. I applied massage techniques for about 12 minutes, all over my back and I insisted more on the cervical area.

The elongation table uses a special program for the cervical area that massages the spine and offers a pleasant warm elongation through the action of imperial jade stones that heat up to temperatures of 40-70 degrees.

All procedures infrared lamp, ultrasound, laser, massage were performed each time at the beginning of a treatment session, and the elongation table each time at the end of a session to relax the patient and prepare him for daily professional life.

In the rehabilitation program we also used a set of exercises specific to recovering people with cervical problems.

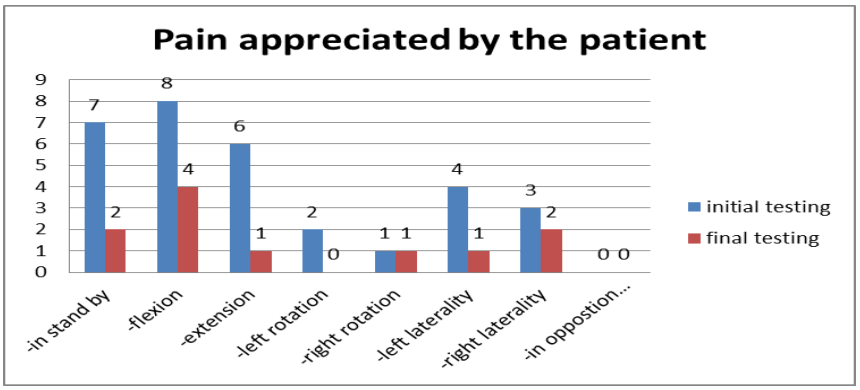
Table 2 Evaluation of the patient after physical therapy.

	Clinical-subjective examination	**Initial testing**	**Exam I**	**Exam II**	**Exam III**	**Final testing**
Spotaneous	***1.Pain*** (appreciated by the patient and between 0-10) -in stand by	**7**	**6**	**4**	**3**	**2**
	-to ordunary movements: -flexion	**8**	**8**	**6**	**6**	**4**
	-extension	**6**	**6**	**4**	**2**	**1**
	-left rotation	**2**	**1**	**1**	**1**	**0**
	-right rotation	**1**	**1**	**1**	**1**	**1**
	-left laterality	**4**	**3**	**2**	**1**	**1**
	-right laterality	**3**	**3**	**3**	**2**	**2**
	-in oppostion movements (hand on forehead,right and left temple)	**0**	**0**	**0**	**0**	**0**
Provoked	***2 .Palpation***					
	-on right and left sternocloidomastoid	**3**	**2**	**0**	**0**	**0**
	-on hyoid	**0**	**0**	**0**	**0**	**0**
	-on the upper trapezoid	**6**	**4**	**4**	**2**	**2**
	-on the cerebral paravertebral muscle	**3**	**0**	**0**	**0**	**0**
	Objective clinical examination	**Initial testing**	**Exam I**	**Exam II**	**Exam III**	**Final testing**
	***3.* Mobility(gonionetry)**					
	-flexion (45°-50°)	**31**°	**33**°	**35**°	**35**°	**36**°
	-extension (75°)	**64**°	**67**°	**67**°	**69**°	**69**°
	- right laterality (35°-45°)	**38**°	**39**°	**39**°	**40**°	**40**°
	- left laterality (35°-45°)	**37**°	**38**°	**39**°	**39**°	**40**°
	- right rotation (70°-75°)	**66**°	**67**°	**69**°	**70**°	**70**°
	- left rotation (70°-75°)	**67**°	**68**°	**68**°	**69**°	**69**°
	4. Complex movement					
	-menton-sternum (cm)	**8,3**	**8,6**	**8,6**	**8,8**	**9**
	-hear ear-acromion	**11**	**11.6**	**11.8**	**12**	**12,1**
	-occiput-wall	**5**	**4,8**	**4,5**	**4.5**	**4.1**
	-menton-acromion	**13.1**	**13.6**	**13.6**	**14**	**14**

The final postural analysis and observation differs from the initial one. The differences are only in the cervical spine and these are: the head is no longer projected before, the shoulders are no longer projected backword, the cervical kyphosis has improved becoming a slight cervical lordosis.

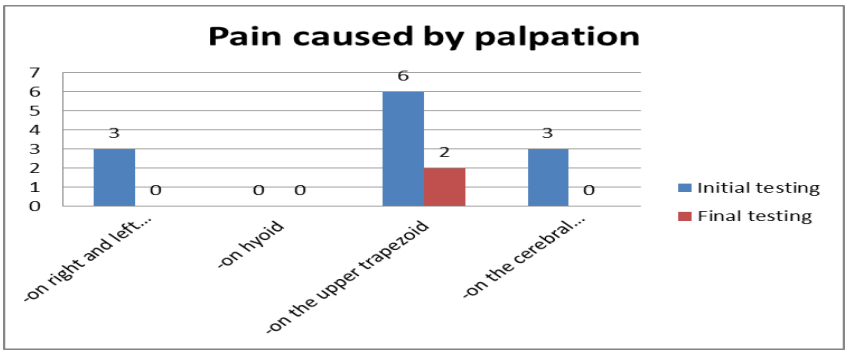
Results and Discussions

After applying the initial and final tests, we proceeded to the graphical interpretation of the data obtained. In the following we will present the graphical interpretation of the results.



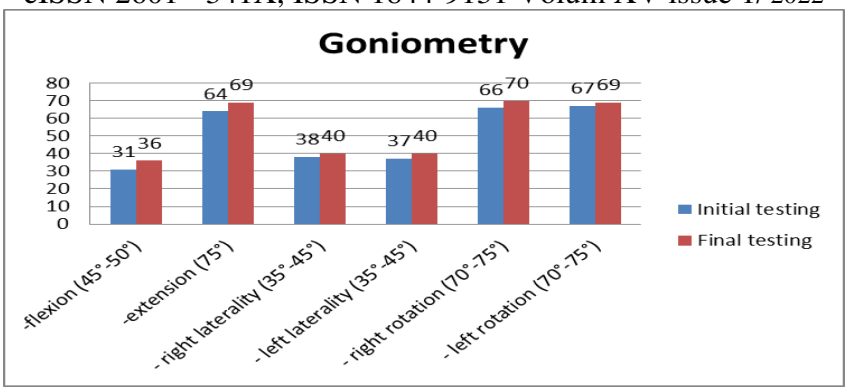
Graph 1 Pain appreciated by the patient

We can see that the pain appreciated by the patient decreases from one session to another, which shows the effectiveness of the kinetic treatment.



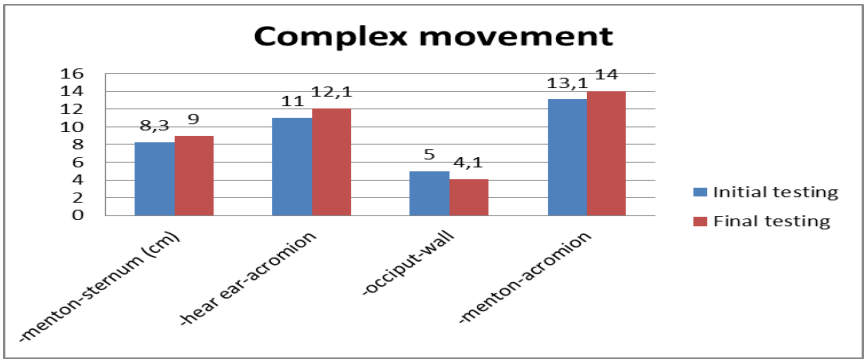
Grafic 2 Pain caused by palpation

In the above chart it is observed that the level of pain caused by palpation on certain key muscles decreases from one evaluation to another giving veracity to the study.



Grafic 3 Goniometry

Through goniometry we can see that the amplitude of movement increases on the movements of flexion, extension, rotation, laterality which confirms that the cervical kyphosis can be recovered by kinetic treatment.



Grafic 4 Anatomical distance measurements

The measurements show that the distance between the chin-acromion, the ear-acromion lobe, the chin-sternum increases progressively, which suggests that the cervical kyphosis is progressively reduced. The only distance that does not increase but decreases is that of the occiput-wall, which indicates that the distance decreases due to the recovery of cervical kyphosis.

Interpretation of results and dynamics of evolution.

Through complex and kinetic methods we have successfully managed to determine changes in the pain felt by the patient, the recovery of kyphosis and the improvement of the patient's mood. The dynamics of evolution are constantly evolving, and this can be best seen in interpreting the results that represent us clearly and concisely where the patient has made clear progress or where he has stagnated.

Discussions

The positive results were achieved by reducing the vicious, kyphotic positions in the activities of: playing musical instruments, using the phone, using the PC, lifting heavy weights being the main factor in the occurrence of cervical kyphosis. Although the patient is not in the right position all the time, he is aware of this fact and corrects himself as soon as possible.

In this study, the patient had no side effects from the therapy used and even had positive toning reactions.

Conclusions

Following the study, the hypothesis from which we started was strongly confirmed, meaning that using the kinetic means we recovered the patient with cervical kyphosis.

I believe that the use of physical therapy is a very effective means of rehabilitation in patients with cervical kyphosis.

First of all, the physiotherapy responds to the main reason for presenting at the recovery sessions and that reason is the pain felt by the patient. Through physical therapy we manage to tone the muscles and reduce the pain from the start.

Secondly, the kinetic means help in the recovery of kyphosis by toning the back muscles in conditions of shortening and toning the muscles of the trunk in conditions of elongation.

Lastly, the treatment applied determines positive changes regarding the joint mobility that influences the daily life, and the patient feels better in his skin.

In conclusion, the kinetic means successfully achieve all the objectives of the study and manage to bring beneficial results by treating cervical kyphosis.

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