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METHOD OF ASSESSING THE EFFECTIVENESS OF REHABILITATION OF PATIENTS WITH DEGENERATIVE-DYSTROPHIC DISEASES OF THE CERVICAL-THORACIC SPINE

Abdulkhakimov Parvoz Vakhobovich
Assistant of the Department of Neurosurgery, Samarkand State Medical University

Abstract: The cervical spine's anatomical structure is characterized by its close proximity to vital neural and vascular components. The vertebral arteries, spinal nerves, and spinal cord are directly adjacent to the intervertebral discs. Rapid changes in movement, such as sudden acceleration, deceleration, or sharp rotation, can cause these structures to impact the intervertebral discs. This can occur during activities like sports, passive neck movements or cervical spine injuries
Keywords: exercise therapy, degenerative-dystrophic diseases, muscles, complex exercises, rehabilitation.

Introduction

Over the past decade, rehabilitation strategies for managing cervical and thoracic syndromes have undergone significant changes. The previous emphasis on passive methods has been superseded by an interdisciplinary approach. Traditional methods such as massage techniques, wearing collars, and systematic reductions have given way to or are used with active, gentle exercises and continued physical activity. Pain management can be effectively achieved through a combination of appropriately chosen exercises and drug therapy.

A crucial biomechanical aspect of the cervical spine is the notable disproportion between its small cervical vertebrae and the relatively heavy head. This characteristic, combined with the extensive range of motion in all directions, creates clear preconditions for trauma. Before initiating any interventions on the cervical spine, physical therapy professionals should remember that in elderly and senile patients, this part of the skeleton undergoes a natural, favorable, partial immobilization. Consequently, rehabilitation measures and therapeutic exercise methods should be applied not only to the cervical spine, but also to the thoracic spine. The dorsal curvature of the thoracic spine means that the ventral parts of the thoracic spinal motor segments (TSMS) receive the greatest load.

Degenerative-Dystrophic Changes in the Spine

In the cervical spine, physiological lordosis primarily transfers compressive force to the intervertebral joints and interlaminar soft tissues. However, in the thoracic region, this load falls entirely on the vertebral bodies and discs. Activities involving lifting weights and rotating place the main load on Th8-Th12, which is the lower thoracic region. This explains why degenerative-dystrophic changes are commonly observed in these specific segments on radiographs. Even if the thoracic spinal motor segments are unstable as a result of degenerative-dystrophic changes, they are physiologically splinted by the costal framework through the costotransverse joints, so the clinical picture is not clearly expressed.

If symptoms of thoracic dorsopathy are caused by compression of the spinal nerve roots, then increased impulses lead to long-term disturbances in the blood supply to the soft tissues of the spine and degenerative changes in the ligaments. Over time, the stability of the PMJ is

compensated for by marginal growths (osteophytes). This stabilization of one PMJ can paradoxically lead to increased mobility of adjacent PMJ. Clinically, dorsopathy of the thoracic spine manifests itself as pain due to a disruption in the connection of the ribs with the bodies and transverse processes of the vertebrae through the openings through which the spinal nerves exit.

Patient Demographics and Equipment

A study conducted in 2020-2025 involved the examination of 138 patients diagnosed with dorsopathies of the cervicothoracic spine. This cohort included 83 women and 55 men. Specifically, 87 patients were classified as elderly (37 women, 50 men) and 51 as old (18 men, 33 women).

To perform the exercises, the following equipment is necessary: a gymnastic ball, an elastic band, and a rubber shock absorber with arms.

Exercise Equipment Considerations

A gymnastic ball, allows you to develop agility, flexibility and coordination. Key criteria for selecting a gymnastic ball for a patient are the size (diameter) and the degree of compression (rigidity).

Rehabilitation Exercise Complex

The following exercises form a core part of the rehabilitation program:

* Equipment: To perform the exercise you will need a gymnastic ball and an elastic band (Figure 3).

* Initial position: The patient sits on a gymnastic ball so that the legs are bent at the knee joints at an angle of 90 degrees. The legs can be shoulder-width apart or brought together, depending on the difficulty of the exercise. The patient chooses the degree of tension of the elastic band independently, choosing an average level of resistance so as to feel muscle tension in the shoulder blade area.

* Execution: The patient holds an elastic band in his hands and begins to slowly move his arms apart at the level of the 1-2 intercostal space, just below the collarbones 1-2 cm. When performing the movement, it is necessary to close the shoulder blades and hold this position for 4 seconds.

* Repetitions: The patient performs 12 repetitions with a 4-second pause. A total of 3 approaches are performed, with an interval of 30 seconds.

Exercise #2

* Equipment: To perform the exercise you will need a gymnastic ball and an elastic band (Figure 4).

* Initial position: The patient sits on a gymnastic ball so that the legs are bent at the knee joints at an angle of 90 degrees. The legs can be shoulder-width apart or brought together, depending on the difficulty of the exercise. The patient chooses the degree of tension of the elastic band independently, choosing an average level of resistance so as to feel muscle tension in the shoulder blade area.

* Execution: The patient holds an elastic band in his hands and begins to slowly spread his arms at the level of the umbilical region, while the elbows are pressed to the body.

* Repetitions: When performing the movement, you need to close your shoulder blades at the bottom point of contact and hold this position for 4 seconds. The patient performs 12 repetitions with a 4-second pause. A total of 3 approaches are performed, with an interval of 30 seconds.

Exercise #3

* Equipment: To perform exercises require a gymnastic ball and elastic band (Figure 5).

* Starting position: The patient sits on a gymnastic ball so that the legs are bent at the knee joints at an angle of 90 degrees. The legs can be shoulder-width apart or brought together, depending on the difficulty of the exercise. The patient chooses the degree of tension of the elastic band independently, choosing a medium level of resistance so as to feel the tension of the muscles in the shoulder blade area.

* Execution: The patient holds an elastic band in his hands, then slowly spreads his straightened arms at the level of the xiphoid process. When spreading the arms and closing the shoulder blades, the palms should be in position of maximum supination (palms up). When performing the movement, you need to close your shoulder blades at the bottom point of contact and hold this position for 4 seconds.

* Repetitions: The patient performs 12 repetitions with a 4-second pause. A total of 3 approaches are performed, with an interval of 30 seconds.

Exercise #4

* Equipment: To perform the exercise you will need a gymnastic ball and an elastic band (Figure 6).
* Initial position: The patient sits on a gymnastic ball so that the legs are bent at the knee joints at an angle of 90 degrees. The legs can be shoulder-width apart or brought together, depending on the difficulty of the exercise. The right arm is raised up, and the left arm is lowered down. The patient chooses the degree of tension of the elastic band independently, choosing the average level of resistance so as to feel the tension of the muscles in the shoulder joints (deltoid muscles).
* Execution: The patient holds an elastic band in his hands, then slowly performs rotational movements forward, describing a circle, so that the shoulder in the upper position rotates as close as possible to the head, and the contralateral limb in the lower position rotates as close as possible to the hips.
* Repetitions: The patient performs 12 repetitions with each arm. A total of 24 rotations are performed at 4 seconds per circle.

Exercise #5

* Equipment: To perform the exercise you will need a gymnastic ball and an elastic band (Figure 7).
* Initial position: The patient sits on a gymnastic ball so that the legs are bent at the knee joints at an angle of 90 degrees. The legs can be shoulder-width apart or brought together, depending on the difficulty of the exercise. The right arm is raised up, and the left arm is lowered down. The patient chooses the degree of tension of the elastic band independently, choosing the average level of resistance so as to feel the tension of the muscles in the shoulder joints (deltoid muscles).
* Execution: The patient holds an elastic band in his hands, then slowly performs rotational movements backwards, describing a circle, so that the shoulder in the upper position rotates as close as possible to the head, and the contralateral limb in the lower position rotates as close as possible to the hips.
* Repetitions: The patient performs 12 repetitions with each arm. A total of 24 rotations are performed at 4 seconds per circle.

Exercise #6

* Equipment: To perform the exercise you will need an elastic band or a rubber shock absorber (Figure 8).
* Starting position: The patient stands opposite the wall bars, feet together.
* Execution: The patient holds a rubber shock absorber or elastic band in his hands, bending his arms at the elbows, slowly rises onto his toes, pulling his hands to his waist, placing his elbows behind his back, and bringing his shoulder blades together.
* Repetitions: The patient performs 12 repetitions with a 4-second pause. A total of 3 approaches are performed, with an interval of 30 seconds.

Exercise #7

* Equipment: To perform the exercise you will need an elastic band or a rubber shock absorber (Figure 9).
* Starting position: The patient stands opposite the wall bars, feet together.
* Execution: The patient holds a rubber shock absorber or elastic band in his hands, slowly rises onto his toes, placing his hands behind his back, and brings his shoulder blades together.
* Repetitions: The patient performs 12 repetitions with a 4-second pause. A total of 3 approaches are performed, with an interval of 30 seconds.

Conclusion

Each exercise presented in this complex can have several execution options: different body positions, exercise machines, working blocks, devices, angles, positioning of limbs, etc.. The set of physical exercises presented in this article is the basis of a treatment and rehabilitation program, which is individually compiled and applied by doctors and instructors in therapeutic exercise for patients with degenerative-dystrophic diseases of the cervical and thoracic spine. The use of this complex when working with the overwhelming majority of patients with degenerative-dystrophic

diseases of the cervical and thoracic spine seems irrational to us. The main factor in choosing an exercise is understanding the goals and objectives prescribed treatment complexes, competent calculation of the therapeutic effect and impact on the patient's condition. In some clinical cases, the selection of exercise options is significantly complicated and the exercises from this list are not enough. This set of exercises is an individual basis for a treatment and rehabilitation program. Analysis and consideration of other exercise options not included in the presented complex will be published in the textbook and monograph.

List of references

1. Petrov Yu.A., Preobrazhenskaya A.B., Os

New in therapeutic physical training: a tutorial // St. Petersburg State Medical Academy named after I.I. Mechnikov. - St. Petersburg, 2011. - 62 p.
2. Surskaya E.V., Modern aspects of treatment dorsopathy // Russian Medical Journal. 2009. Vol. 17. No. 20. p. 1312.
3. Erdes Sh.F., Medical and social significance pathologies of joints and spine among the adult population of the Russian Federation Text. /Sh.F. Erdes, E.A. Galushko // Pain. 2009. - No. 3 (24). - p. 19-20.
4. Kraemer J., Intervertebral Disk Diseases, 3rd Edition (2008). -P. -177.
5. Gross J., Fetto J., Rosen E. Musculoskeletal Examination, 3rd Edition (2011), Wiley-Blackwell.
6. Tashmurodovich, Husanov Zafar. "ANALYSIS OF DIAGNOSTICS AND SELECTION OF SURGERY APPROACHES IN VARIOUS SPINAL CORD TUMORS." *Достижения науки и образования* 6 (86) (2022): 96-98.
7. Juraev, A. M. "TO THE QUESTION OF COMPLEX TREATMENT OF NEUROEPITHELIAL TUMORS OF THE BRAIN." *Достижения науки и образования* (2022): 120.
8. Aliev, M. A., et al. "The Result of Surgical Treatment of Secondary Stenosis of the Cervical Spinal Canal Due to Instability after Vertebra-Spinal Trauma (Clinical Case)." (2022).