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THE OPTIMIZING STRATEGIES OF LUMBAR DISK HERNIA REHABILITATION USING PHYSICAL THERAPY METHODS

CORDUN MARIANA[1], CALOTA NICOLETA[2]

Abstract
Purpose: To identify a physical therapy strategy which will optimize the somatic, functional and psycho-social rehabilitation of the patient with lumbar disk hernia.
Method: The study included 30 subjects, age 21-67 years old. For the global flexibility and the trunk muscles force were used the Krause Tests. The Oswestry Scale stabilized the disease impact upon the subjects quality of life.
The appliance of an original program of physical exercises upon the patients with lumbar disk hernia, meaning the combination of the Williams like moves with the McKenzie ones, in an active with resistance execution, can improve the physical therapy intervention.
Results and Conclusions: The subjects evaluation was made before and after the moving patterns appliance. The results obtained on the two evaluations, initial and final, are totally different.
Analysing and comparing the data, the conclusion is that active movements, upon a light resistance, on lumbar disk hernia patients do not increase their pain intensity. The combination of the Williams like exercises with the McKenzie method, in the same program, determines less symptoms.
Key words: Active moves upon a resistance; tonifying; the quality of life.

Introduction

Despite the methodological difficulties encountered, it can be proved that low back pain is the most common pain together with the headache. Between ½ and ¾ of the adults experienced the back pain once in their lifetime. About 40% of them had a flare once in a year and 15-20% can have an experience of this kind ever, at any time. Apparently, only 10-20% of the adults do not present back pains (Raspe, 1993).
Clearly, low back pain, the central symptom of a herniated lumbar disc is an endemic problem that will affect most mature individuals at some point in their lives. Lower-back pain is a symptom that describes a heterogeneous and dynamic state. Patients experience, from this point of view, varies depending on the duration, intensity, severity and degree of disability. Most chronical lumbar herniated disc pain is manifested by low intensity and low-disabilit, affecting only the severe minority. Some subjects have quite periods (without pain). However, given the high rate of prevalence of lumbar disc herniation causes a huge percentage of disability, having a significant impact on individuals and society.
The treatment of the patients with herniated disc varies considerably. There is no consensus on the best type of treatment for this dissease, so treatment applied is chosen according to the practitioner. Depends more on the person to whom the patient comes than his clinical symptoms (Deyo, 1993). Lack of effectiveness of physical therapy, considered by many current studies, systematic observation is reinforced by bed rest compared to remain active. It is proved that the rest is not always curative, but instead may delay recovery in acute pain. Instructed to remain active and resume normal activities as soon as possible, results in a faster return to work, reduced chronic disability and fewer relapses. If patients have to stay in bed during the acute phase, this shall be limited to a period of 2-3 days (Koes and van den Hoogen, 1994; Wadell et al, 1997; Hagen et al, 2000). This rule is applied even for lombosciatica crises (Vroomen et al, 1999). Must be emphasized the increasing trend towards activism, in an attempt to replace the old treatment concept, which promoted long periods of immobilization of the patient in acute phase and had the effect of fear of movement emergence, the maintenance of a vicious circle that hold further recovery. Thus, the overwhelming importance, that the exercise has in managing herniated lumbar disc, is emphased. Physical therapy helps the patient on the correct position by exercising weaknesses and regain that lost strength. An exercise program should be designed to take into account the physical condition of the subject and the intensity / level of pain. It must capture an optimal combination

[1]U.N.E.F.S., BUCURESTI, ROMANIA
[2]S.B.R. TECHIRGHIOL, ROMANIA
Email: nicocalota@yahoo.com

of stretching exercises, muscle toning and strength exercises effortlessly. Knowing the optimal physical therapy and the therapist right can make the difference between recovery and chronic pain.

Based on the context, the scientific approach we propose consists in designing a program of physical therapy to optimize improvement / abolish symptoms and prevent recurrence of lumbar disc herniation. Combining different types of physical education and sports physical therapy methods and means associated with physical therapy will intercede scientific approach.

Hypothesis: Applying original recovery program herniated lumbar disc, consisting of a combination type movements Williams, McKenzie type movements, executed active resistance as an alternative to classical program, physical therapy may increase the effectiveness of intervention.

Material and Methods

For the present study, we selected 30 subjects diagnosed with lumbar disc herniation, aged between 21-67 years.

To determine the degree of mobility in the lumbar segment it has been used the index-ground test, which consists in measuring the distance from the fingers to the ground during trunk flexion in standing position with the feet apropriate and knees locked. Typically the value is zero.

Krause tests were used to test the muscle groups involved in performing spinal muscular corset. The first three are tests for assessing the strength of the trunk flexors and quadriceps, 4 and 5 tests have the same thing for spinal extensors and hamstrings.

Each sample is marked as quotations muscular balance, from 0-5, with the same meaning: 0-zero (muscle does not produce any contraction), 1 -sketch, 2-poor, 3-acceptable, 4-good, 5-normal .

To assess the impact of painful lumbar status has on different sectors of life of patients Oswestry questionnaire was applied. Easy to complete (in about 5 minutes) by the subject himself, it enables the evaluation of clinical and functional status.

Oswestry scale includes the following ranking system:

- 0% - 20% minimum incapacity (disability);
- 20% - 40%) moderate incapacity (disability);
- 40% - 60% severe incapacity (disability);
- 60% - 80% maximum incapacity with severe disability;
- 80% - 100% of total incapacity, the need for restraint in bed.

Presentation recovery program herniated lumbar disc

Proposed movements are:

1. Hands behind his head, elbows as the side legs extended - ankle flexion-extension, 1 set x 8 reps.
2. In the same position, bend your knee towards your chest, 1 set x 8 reps with each leg.
3. One knee bent with foot on the ground - is bend your other knee towards your chest, pulling with hands, simultaneously bend your head to your knees, 1 set x 8 reps for each leg.
4. Knees bent, feet on the mat - simultaneously bend your hips on the trunk and pull your knees toward your chest with your hands, it returns to its original position, head still on the mat, 1 set x 8 reps.
5. Place one heel on the opposite knee, which is extended - running knee flexed hip abduction and returns to its original position, 1 set x 8 reps with each leg.
6. Knees bent, feet down - for pedaling motion with a single leg, 1 set x 8 reps forward, 1 set x 8 reps backward for each member.
7. Knees bent, feet on the ground, stuck together - departs and approaching knees (abduction - hip adductor), 1 set x 8 reps.
8. Same position, knees together go left-right movement as broad feet and shoulder blades remain on the ground, one set x 8 reps.
9. Knees bent, feet on the ground, slightly apart from each other, hands on the mat - amounts basin, retained the position 10 seconds slowly return, vertebra by vertebra, 1 set x 8 reps.
10. Knees bent, feet on ground, arms at your sides - the ground push the lumbar spine, shrink abdomen rises slightly on sacred ground, slowly return, 1 set x 8 reps.
11. Knees bent, feet down, get your hands in the air over the chest, 2 kg medicine ball with elbowsextended - bend your torso is 30 degrees, the ball easily lead to knee, slowly return, 3 sets x 10 reps in the first 3 sessions, 3 sets x 15 reps in sessions 4, 5, 6 and 3 sets x 20 reps in the last four sessions, with a break of 10-20 seconds between sets.
12. Lateral position, hands behind your head down, knees slightly bent, the torso and hips in extension 500g weight applied on ankles - upper limb hip abduction running and returns to its original position, 3 sets x 10 reps in the first 3 sessions, 3 sets x 15 reps in sessions 4, 5, 6 and 3 sets x 20 reps in the last four sessions, with a break of 10-20 seconds between sets.
13. Prone, the chin is placed on hands stacked with elbows to the side - Alternate head and chin rests on the hands, one set x 8 reps, just the right ear and left ear, one set x 8 reps.
14. Prone, chin on hands, a pillow under your abdomen - Bend your knees and extend them simultaneously, one set x 50 reps, free active in the first 3 sessions, active resistance in the following sessions, respectively 500g weight placed on the ankle in meetings 1kg in weight 4,5,6 and 7,8,9,10 meetings.
15. Prone, palms, forearms and elbows are supported the ground - push the palms and run simultaneously elbows and spine extension vertically ("cobra position"), slow, 1 set x 10 reps.
16. Prone, hands on the mattress in the shoulders, fingers forward - lifting the quadruped position for heel seat (stretching), return to start position, 1 set x 8 reps.

17. Quadruped position - stands alternately expanded upper member attached ear, 1 set x 10 repetitions for each upper limb, free active first 3 sessions, active resistance following sessions, respectively 500g weights placed on the wrist.
18. Quadruped position- rises higher and simultaneously a member of the opposite leg, extended, maintained position 10 seconds, alternating work (right upper limb - left leg, then the left upper limb - right leg), 1 set x 3 reps on each hand.
19. Quadruped position- Bend your one knee towards your chest then extended to the rear, 1 set x 8 reps with each leg.
20. Quadruped position, palms farthest knee - seat goes to heels (stretching), return the position, 1 set x 8 reps.
2,3,4,6 exercises were performed by active movements in the first 3 sessions free and active resistance movements (by applying the ankle weights 500g) in the last 7 meetings.

Comparative Analysis And Interpretation Of The Results

Characteristic values of the INDEX FINGER-LAND tests and KRAUSE - Oswestry scales were measured for 30 subjects in the two ratings.
Patient evaluations were performed before and after the movement scheme. The outcomes from the two assessments, initial and final one, differ statistically significant. Arithmetic mean calculated to all methods applied, have different values at the two assessments, with possitive developments. Standard deviation and coefficient of variation shows that the most frequently analyzed sample is homogeneous, their values at final testing, with clear downward trend, the results are closer values and goes to have a relatively homogeneous structure (for exemple:Krause for tests 1 and 4), which means progress.
The parameters in the process of verifying statistical hypotheses using t-test, rejecting the null hypothesis and accept the alternative hypothesis, the threshold of significance (p) calculated is lower than 0.05. Based on these results we can say that on average, the results of the evaluation methods are significantly different statistically, meaning that kinetic recovery programs implemented have given results.

Conclusions

Contrary to popular opinion, active resistance movements performed by patients diagnosed with herniated lumbar disc, with the criteria for inclusion in the experimental group should not cause increased pain.
Type combination of Williams movements is effective with the type McKenzie, in the same recovery program, resulting in diminishing symptoms.
Numerous studies carried out in recent decades, the incidence of low back pain on people of all ages, led placing the focus of physical therapy as a component of recovery programs. However, studies show that iatrogenic factors that can lead to chronic disease are exaggerated preoccupation with pain, over-prescription of rest and physiotherapy and off daily activities.
Passive therapeutic procedures seem to have no role in the recovery of the disease. Instead, there is evidence favoring the use of exercise, education, information and behavioral therapies.
Performed in a controlled, progressive, gradual exercise are designed to enhance the distribution of nutrients in the lumbar intervertebral disc and soft tissues to maintain health and function properly. Consistently repeated, physical therapy programs help prevent joint stiffness spine, muscle hypotonia and reduce recurrence flares or to reduce the severity and duration.
Exercise can create that favorable continuum decrease or even disappearance physical and psychological discomfort to the patient is installed with lumbar disc herniation, who receives affection as an obstacle arose in the normal course of his life. They are useful if they include programs that are individualized for each patient's condition and if executed correctly, observing a work pace appropriate, an optimal number of times throughout the course of motion. Therapist is to ensure the fulfillment of these conditions.

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