Journal of Sport and Kinetic Movement Vol. II, No. 30/2017

RECOVERY OF LUMBOSACRAL PAINS AFTER LUMBAR DISC HERNIATION SURGERY

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Abstract
*Background.*Lumbar disc herniation is a suffering with increased incidence and a tendency to continuously decrease the age at which it starts. In disc disorders where pain is accentuated during walking and resting and does not give in to medical and physical-kinetic treatment, surgical intervention is required. One of the possible complications in the operated hernia is lumbosacralgia.
In this context, we believe that specific post-operative recovery treatment can improve lower back.
Aims. The early application of a physical-kinetic program tailored to the particularities of patients with lumbosacralgia after lumbar disc herniation surgery can reduce their specific late symptomatology.
Methods. This study, based on the experimental method, was performed from September 2013 to January 2014 on a sample of 42 subjects aged 30-60 years, patients with lumbosacralgia secondary to lumbar disc herniation.
Results. The evaluation of the clinical-functional parameters specific to this pathology, registered at the beginning of the recovery treatment and 4 months after it, indicates the decrease and even the disappearance of postoperative lumbar pain, skin paresthesia and muscle contraction. There is evidence of improvement in lumbar mobility and increase the strength of paravertebral muscles.
Conclusions. The analysis and interpretation of the values obtained during 4 months of systemic and individualized application of the physical-kinetic program reflects the benefits of early postoperative physiotherapy in patients with operated lumbar disc.
***Key word**: lumbosacralgia, lumbar disc herniation, physiotherapy, recovery.*

Introduction

Lumbar disc herniation is a suffering with increased incidence and a tendency to continuously decrease the age at which it starts. Moraru, G. and Pâncotan, V. [1] states that there are few people who do not know during their active life, at least one of the forms of wear of the soft anatomic-functional components at the lumbar level.
The increased number of patients with lumbar disc hernia is due to the aging population, lack of physical activity and sedentary lifestyle [2].
In disc disorders where pain is accentuated during walking and resting and does not give rise to conservative recovery treatment, surgical intervention is required [3,4].
Surgical treatment usually consists of discectomy, removing fragments of the herniated disc, which injures nerve roots and cause severe pain [5].
Specialty studies confirm the improvement of the lumbar pain after the discectomy operation.
Furthermore, surgery has improved the symptomatology and maintained it up to 2 years after lumbar surgery [6, 7].
The surgical treatment of the herniated disc may result in possible complications such as lumbosacralgia [8].
The etiology of postoperative lumbosacralgia is unclear, with several factors being incriminated, the weight of which is variable on a case-by-case basis.
Clinically, two etiologies are distinguished: the first, most common, is characterized by the classic symptomatology of the hernia disk more or less complete, being parasitic by subjective accusations of the patient and occurs at a variable interval from one month to several years, and the second, less rarely after surgery, clinical symptomatology is maintained with small changes in intensity and topography.
Delaying surgical treatment may be a cause of postoperative lumbosacralgia.
In this context, we believe that specific post-operative recovery treatment can improve lower back.

Hypotheses

The implementation of specific kinetic programs tailored to the patient's particularities contributes to the improvement of the symptomatology resulting from the surgical intervention necessary for the treatment of the lumbar disc hernia. Through a phased recovery program, patients can recover with maximum efficiency and in the shortest possible time.

Material and methods

Research protocol
a) Period of the research
The present study was conducted between September 2013 and January 2014 and was based on the method of study of the specialized literature and the experimental method.

b) Subjects

The study was conducted on a sample of 42 subjects, aged 30-60 years, patients with postoperative sequelae.

In order to determine the role of physiotherapy applied in patients with secondary lumbosacralgia for lumbar disc herniation, the parameters studied for the analysis and interpretation of the results were measured and recorded and the recovery program was developed.

We note that all subjects have given their consent to participate in the study.

c) Applied tests

Study subjects were evaluated at two test points: Initial (T_I), after classical surgery and recovery program, and final (T_F), 4 months after.

The following parameters were evaluated for monitoring and interpretation of the results:

- The postoperative lumbar pain parameter highlighted by interviewing the patient about the intensity of suffering: high, medium, small and absent;
- The parameter of paresthesia, in the form of dizziness, tingling, with the same topography as pain: it was noted to what extent it is present or absent in patients [9];
- Parameter of paravertebral muscular contraction - its presence or absence was noted;
- The lumbar mobility parameter measured by measuring the fingers-to-ground distance, being below 50%, more than 50% of the normal and absent motion, without limitation [10];
- Parameter of muscular paravertebral force, noting the degree of muscle strength: under force 3, force 3 and over force 3 [11].

d) Studied moments

Rehabilitation treatment aimed at achieving the following general objectives:

- Improvement of pain and inflammation,
- Improvement of paravertebral contractions,
- Toning of deficient muscles,
- Recovery of static (posture) and lumbar dynamics,
- Restoring the functional synergism of agonist-antagonist muscles,
- Learning the patient with the importance and proper way of constantly performing the Back School,
- Increasing the quality of life of the patient, with the normal course of daily activities.

The means used to achieve the objectives were:

- Thermotherapy: Cryotherapy to combat muscle contraction, being associated with the mass-kinetic program, and in hemodynamically stable patients without inflammatory phenomena, heat,
- Electrotherapy with antialgic, decontracting effects: low-frequency currents - diadinamics and faradics, medium frequency currents, ultrasound,
- Relaxing massage,
- Physiotherapy based on a combination of exercises:

1. Exercise in kyphosis toning of preferred paravertebral and abdominal muscles in patients operated for L4-L5, L5-S1 lumbar disc hernia with or without hyperlordosis. Static exercises, posture exercises (breathing exercises, isometric contractions of abdominal muscles, buttocks, perineals) and dynamic exercises applied to develop voluntary control of the lumbar segment to strengthen abdominal muscles, buttocks, stretching of sacro-lumbar muscles and posterior ligaments of the spine.
2. Exercise in lordosis toning of preferred paravertebral and abdominal muscles in patients operated for L1-L3 high lumbar disc herniation with lumbar or flattened lumbar spine. Static exercises for patient habits with positions where the intervertebral space is maximum and dynamic exercises applied to increase the erector muscle of the rash, to restore the backbass motion of the basin, and to restore flexion of the thigh in the basin.

- Back School represented by:

1. Exercising by patient the correct positions of standing, sitting and lying down,
2. Patient compliance with the principles for lifting and transporting objects, pushing and pulling them [12].

e) The statistical methods used

The software used for statistical analysis was used Microsoft Excel 2013.

Statistical indicators followed were arithmetic averages and the difference between the initial and final values of the parameters evaluated.

Results

Following evaluations made were noted as follows:

- For the batch studied, the types of postoperative sequelae were:

1. Lumbar syndrome present in 10 patients,
2. Lomboradicular syndrome present in 6 patients,
3. Contralateral lumbaradicular syndrome present in 5 patients,
4. Chronic lumbar pain present in 21 patients.

- The monitoring of postoperative lumbar pain revealed a good evolution of this parameter in the

experimental group, 4 months after surgery, according to table no 1:

Table 1: Degree of pain intensity in the two tests

Degree of pain intensity	Initial Test (T_I)	Final Test (T_F)
Absence of pain	-	26
Low intensity pain	-	11
Moderate intensity pain	10	5
High intensity pain	32	-

At baseline, the intial test was present a high intensity in 32 patients and for 10 patients show an average pain level, and after rehabilitation treatment, the presence of the pain was maintained in moderate-intensity for 5 patients, 11 present low intensity and for 26 of patients the pain has disappeared.

- Parasite parameter was initially present in 27 patients, so that after therapy, it was found at the final test in 11 patients meaning that it disappeared in 16.
- The paravertebral muscle contraction parameter was initially present in 32 patients, and in the final evaluation, it disappeared for all patients.
- The lumbar mobility parameter assessed by measuring the fingers-to-ground distance was less than 50% of the initial normal movement for 36 patients, and at the final assessment the parameter improved in 7 patients and disappeared at 29.

Table 2: Evolution of lumbar mobility

The fingers-to-ground distance	Initial Test (T_I)	Final Test (T_F)
< 50% of the normal movement	36	-
> 50% of the normal movement	-	7
Without limitation	6	36

- Parameter of paravertebral muscular force was influenced directly by physical treatment. Initially, it was present in 32 patients *under Strength 3*, at the end of the study it improve to 18, reaching *Strength 3*, and in 14 patients at *overweight Strength 3.*

Discussions

The parameter of paresthesia expresses an important, hard or partially reversible sensory impairment, especially if the pain has evolved long enough to develop nerve chronic irritation.

The improvement and disappearance of postoperative lumbar pain, good mobility in the affected lumbar segment, the disappearance of the paravertebral muscle contracture in all patients of the experimental group highlights the effectiveness of the complex recovery therapy applied in lumbosacralgies after lumbar disc herniation surgery.

Specialist studies have found that postoperative lumbar pain is diminishing, while similar ones support its presence in approximately 6% of patients with operated lumbar disc hernia, with worsening of pain 1-2 years after surgery [13].

Conclusions

1. Lumbosacralgia is a complex clinical picture that sometimes remains dominated by certain sequelae even after surgery.
2. The risk of sequelae is higher if surgery is excessively delayed.
3. The age of disease predilection is between 40-50 years, but the process of degeneration of the intervertebral disc starts early, even at 20 years, which makes it possible for the lumbar disc herniation to occur in young people.
4. Applied recovery treatment is represented by: medical treatment, physiotherapy, electrotherapy, massage, thermotherapy and hygiene-dietetic regime (in 25% of cases).
5. Early establishment of postoperative rehabilitation treatment brings back the mobility of the spine and the force of paravertebral muscles.
6. Physical-therapy treatment improved lumbar pain and paravertebral muscular contracture after surgery.

Acknowledgments

The authors would like to thank all participants in this experimental study.

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