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**RELATIONSHIP BETWEEN THE EXPRESSION OF PAIN SYNDROME
 AND THE SIZE OF THE INTER VERTEBRAL HERNIA OF THE
 LUMBAR SPINE**

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ABSTRACT

The article highlights the experience of observing more than 500 patients with vertebral pain syndrome. The data of MRI and MSCT of patients with hernias of the lumbar spine were analyzed. The obtained data were compiled with the results of the survey of the observed patients on the questionnaires of pain and the questionnaire of Oswestri. Based on the results of the observation of patients, a conclusion was made about the absence of a clinically significant relationship between the size of the disc herniation and the size of the light bulb.

KEYWORDS: *Herniated Disc Of The Lumbosacral Spine, Severity Of Pain Syndrome, Size Of The Lumbar, Correlation Of The Size Of The Hernia With Pain Syndrome*

INTRODUCTION

The prevalence of vertebral back pain (VBP) is quite high. Often in the work of a neurologist, up to 85% of visits are associated with this disease. Also, back pain (in the lumbar region) is often the most common cause of disability and medical seeking [1,2,3,16].

According to the definition of the North American Society for the Study of Diseases of the Spine (NASS) [4,5] a herniated disc with symptoms of radiculopathy (discogenic radiculopathy) is a displacement of the components of the intervertebral disc outside the normal boundaries, manifested by pain and / or sensory disorders in the corresponding dermatomes, weakness in the corresponding myotomes (indicator muscles). According to foreign literature, in particular, epidemiological studies within one month on average, 20-30% of the population suffer from back pain on average [1,6,12,13]. Over the course of a year, 40-50% of adults over 22 years of age experience an episode of back pain, and 60 to 80% of people experience it during their lifetime, with a recent trend towards an increase in the prevalence of back pain among the younger population and disease progression over time.. The prevalence of chronic back pain reaches 20% [13,14,15].

According to the accepted diagnostic triad [9,10,17], the most common cause of back pain is musculoskeletal (nonspecific) sources, the second most common cause is discogenic lumbar radiculopathy. When lyumbalgicheskoy syndrome discogenic etiology with radiculopathy are used as surgical and various conservative therapies. Research data on their comparative effectiveness are contradictory [18,19,20,21,22].

At the same time, despite the high prevalence of pathology and the associated huge economic and labor-hour losses, the optimal algorithm for choosing tactics between conservative and surgical methods of treatment has not been determined [1, 12, 13]. Doctors of polyclinics and related specialties often focus on the size of the hernia when consulting patients with pain syndromes, forgetting about the possibility of a natural reduction in the size of a disc herniation, but with the preservation of the pain syndrome. However, the statistics that have emerged with the development of imaging technologies and screening research methodology force us to reconsider the emphasis.

Intervertebral hernia until relatively recently was considered almost the main cause of all dorsalgia (see "Back pain and other terms"). In some cases, a hernia is detected in people who did not even know about its existence, and vice versa: a lot of severe pain syndromes localized in the back area have nothing to do with an intervertebral hernia.

Of great scientific and practical interest is the identification of the relationship between MRI and MSCT, signs of degeneration and clinical manifestations of pathology of the lumbar spine.

The main purpose of the study was to identify the relationship between the size of the disc herniation and the severity of pain in patients with disc herniation of the lumbosacral spine, detected by imaging methods of examination.

MATERIAL AND METHOD

The study was carried out on the basis of the department of the Central Multidisciplinary Polyclinic (CMPP) of the Fergana City Medical Association. By the method of continuous sampling, from March 2018 to March 2020, a group of 547 patients was formed (279 women [51%] and 268 men [49%], aged 18 to 69 years (38.8 ± 11.8 years)) The group did not include patients with mental illness (3), metastases in the spine (1), acute infectious disease (2), rheumatoid arthritis (3), acute trauma (4), instability of the spinal motion segments of the lumbar spine caused by spondylolysis and spondylolisthesis (16).

TABLE 1. GENERAL CHARACTERISTICS OF THE GROUP OF PATIENTS WHO PARTICIPATED IN THE STUDY

Indicators		Number	%
Education	Bachelor	187	34
	High school	360	56
Job	Employed	282	51
	Unemployed	265	49
Unemployed	Pensioner	81	15
	Housewives	132	24
	Students	43	8
Stage of the disease	Acute	128	23
	Exacerbations	257	47
	Chronic without exacerbation	162	30
Nosology	Nonspecific pain in the lower back	122	23
	Discogenic radiculopathy	425	77

All patients underwent MRI or MSCT examination of the lumbar spine to clarify the presence and size of the hernia.

Depending on the size of the hernia revealed during examination (MRI and / or MSCT) of the disease, the patients will be divided into 4 groups - the first group - with a disc herniation of 9 mm or more, the second - with dimensions from 6 mm to 8 mm, the third - with sizes from 2 mm to 5 mm, the fourth - with sizes up to 2 mm or without pathology when visualizing the lumbar spine.

TABLE 2. DISTRIBUTION OF PATIENTS DEPENDING ON THE SIZE OF HERNIATED DISC

Hernia size in mm	2018	2019	2020	Total	%
9 mm or more (extra large)	35	59	48	142	26
6 mm to 8 mm (large)	46	55	45	146	27
2 mm to 5 mm (medium)	52	44	41	137	25
up to 2 mm or without pathology (small)	48	35	39	122	22
TOTAL	181	193	173	547	

To compare the presence and severity of pain in patients with disc herniation, a questionnaire was conducted using 3 pain questionnaires;

- VAS and NAS - Visual and numerical analogue scale of pain (determination of the intensity of pain, estimated from 0 to 10 points, where 0 is no pain, and 10 is the maximum pain that a person can imagine)
- CPOT (Critical-Care Pain Observation Tool), from 0 to 8 points
- Oswestry questionnaire (index of disability due to pain in the lower back) from 0 to 50 points.

Results

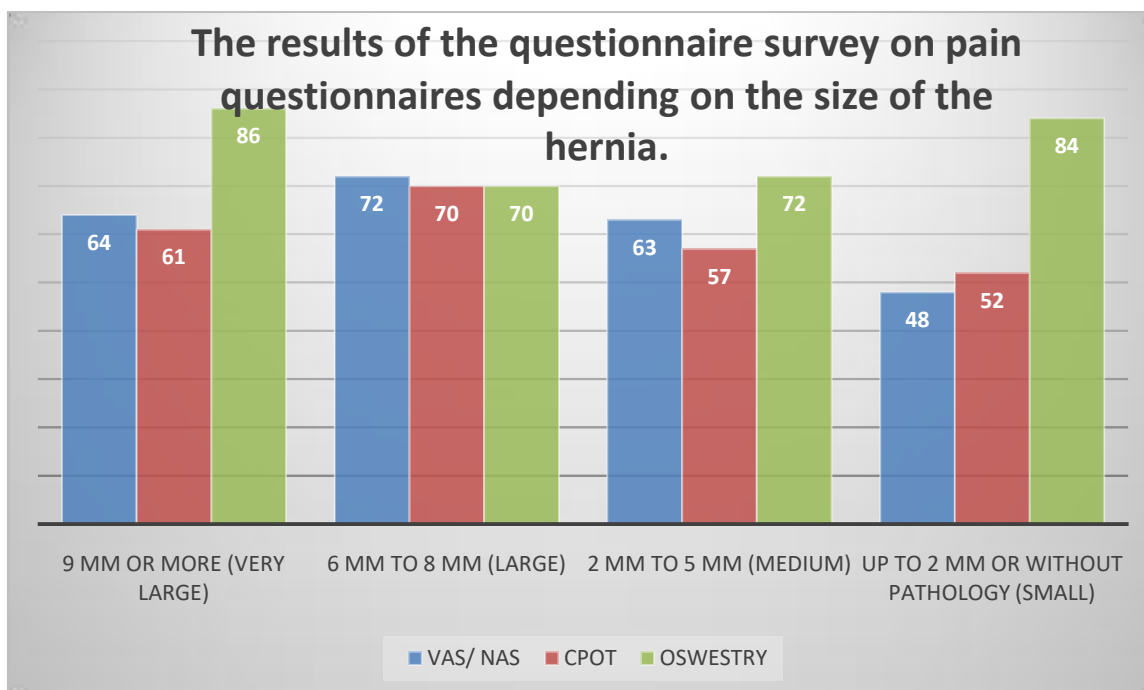
In the period from March 2018 to March 2020, 547 patients with herniated intervertebral discs of the lumbosacral spine were observed. Based on visualization diagnostic methods (MRI and MSCT), as well as as a result of questionnaires on pain questionnaires, data on the size of disc herniation and the severity of pain in patients were analyzed and compared.

According to the questionnaire VAS and NAS in the group of patients with disc herniation more than 9 mm (very large), the average result was 6.4 points, in the group from 6 mm to 8 mm (large) - 7.2 points, in the group from 2 mm to 5 mm (average) - 6.3 points, and in the group up to 2 mm or without pathology (small) - 4.8 points. According to the CPOT questionnaire, in the group of patients with disc herniation more than 9 mm (very large), the average result was 4.9 points, in the group from 6 mm to 8 mm (large) - 5.6 points, in the group from 2 mm to 5 mm (average) - 4.6 points, and in the group up to 2 mm or without pathology (small) - 3.8 points. According to the Oswestry questionnaire, in the group of patients with disc herniation more than 9 mm (very large), the average result was 43 points, in the group from 6 mm to 8 mm (large) - 35 points, in the group from 2 mm to 5 mm (average) - 36 points points, and in the group up to 2 mm or without pathology (small) - 42 points.

TABLE 3. RESULTS OF THE QUESTIONNAIRE SURVEY ON PAIN QUESTIONNAIRES

Hernia size in mm	Average score in the group						
	VAS/ NAS	% of max pain	CPOT	% of max pain	OSWE STRY	% of max pain	Total pain score in%
9 mm or more (very large)	6,4	64	4,9	61	43	86	70,3
6 mm to 8 mm (large)	7,2	72	5,6	70	35	70	70,7
2 mm to 5 mm (medium)	6,3	63	4,6	57	36	72	64,0
up to 2 mm or without pathology (small)	4,8	48	3,8	52	42	84	61,3

As you know, pain syndrome is considered to be directly proportional to the size of the disc herniation. However, the analysis of our data showed that in patients who deal with pain in the lower back, pain syndrome does not directly depend on the size of the disc herniation. Patients can have equally pronounced pain sensations, both with a large hernia (9 mm or more), and with a smaller hernia or in the absence of one. Pain intensity ratios and an index of disability due to lower back pain are practically at the same level, regardless of the size of the hernia. (Fig 1.)



The results are summarized in table. 3. When comparing the results of treatment in all four groups of patients, there were no clinically significant differences in the values of the intensity of pain syndrome and the index of disability due to pain in the lower back in the observed group of patients, which confirms the correctness of our assumption that there is no direct the relationship between the severity of the pain syndrome and the size of the intervertebral hernia of the lumbar spine.

DISCUSSION

The current state of the problem of conservative treatment is such that there are many methods that do not have an evidence base.

The first and most controversial question in the treatment of herniated intervertebral discs is what treatment tactics to choose for the patient, whether an operation is needed or it is possible to “cure a herniated disc” with conservative methods. The aim of this work was not to analyze all the existing variants of neurological deficit in a herniated disc. The logical position of a practicing neurologist, who daily faces the question of choosing a treatment tactic, based on the presence of radicular pain syndrome and confirmation of compression of this root according to MRI data, to emphasize that pain syndrome often does not depend on the size of the hernia, that patients, regardless of the size of the hernial protrusion, experience comparable painful sensations. And from this it follows that many conservative methods allow you to completely

eliminate radicular pain syndrome, and in this case, the meaning of the operation is lost. That is why the choice of tactics for treating a large hernia cannot be based only on the results of MRI and the presence of complaints of back pain.

The second debatable issue is the choice of the method of conservative treatment in each particular case and its criteria. The use of only one technique, in our opinion, is not constructive. Different methods have their own niche. ” This is due to the technical limitations of the institution, contraindications for carrying out certain manipulations and methods (allergies, concomitant pathologies, etc.), on the one hand, and serious economic costs, on the other. Among other things, it should be noted that an important issue is the doctor's experience in carrying out one or another manipulation. The so-called “learning curve” indicates that when mastering techniques, there is always a fairly significant percentage of complications and unsuccessful outcomes.

The third debatable issue is the complications of surgical treatment. The most pronounced neurological complication that we encountered during the study was transient monoradicular paresis in the leg (21 cases). The most probable cause of this complication is mechanical “pressing” of the outgoing spinal nerve by the endoscopic port. Given the transient nature of the disorders, the anatomical integrity of the root was not compromised, and the symptoms were caused by a transient disturbance of blood circulation in the spinal nerve.

Of the surgical complications of the operation, it is necessary note the two most significant - recurrent disc herniation and damage to the dura mater. Only recurrence of a herniated disc, causing symptoms, is an indication for reoperation, in other cases conservative therapy is continued. In 13 cases, during portal discectomy, damage to the dura mater occurred, which did not lead to any symptoms.

CONCLUSION

Based on the analysis of the results of intervertebral disc hernias and their size revealed by MRI and MSCT, as well as the use of various pain questionnaires, it was concluded that there was no clinically significant relationship between the size of the disc herniation and the severity of pain symptoms. The data obtained allow us to conclude that the choice of surgical tactics and treatment methods for patients with hernia sizes of more than 8-9 mm should not be based solely on the results of MRI and the presence of pain syndrome and take into account that the intensity of pain in the lower back does not directly depend on the size herniated disc.

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