

## Research Article

# Symptom and indications for surgery in patients with lumbar discopathy

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## ABSTRACT

**Background:** Outdated Lumbar discopathy is a deterioration of the intervertebral disc of the lumbar spine level. Spondylosis is a process that affects the entire axial skeleton and includes a stage of degenerative changes which occur at the cellular and biochemical level. Due to high occurrence rate of back discs over the society and its importance. The aim of this study was determine symptom and indications for surgery in patients with lumbar discopathy.

**Methods:** This is a descriptive-analytical study that has been done on 90 patient's candidate for lumbar discopathy surgery between 2009 and 2012. Their general condition and level of satisfaction after surgery were evaluated by phone calls of the patients

**Results:** From all 90 patients, 55 (66.1%) were men and 35 (39.9%) were women with sex ratio 1 to 1.6. From all patients, 41 (45.6%) were self-employed and worker and most of them with 46.7% were hospitalized for 4 days. Indications of neurologic deficit - Limits daily activations - Intractable pain medication altogether with 42.3% were the most. 84 (93.3%) patients were recovered respect to before surgery. 9 patients (10%) had recurrence of symptoms. Indications of intractable pain medication with 36 (40%) patients had a considerable amount. L4- L5 involvement level with 44 cases (48.9%) respect to other levels has been the most.

**Conclusions:** Based on the results, the most indications which patients had for surgery was intractable pain medication which in most of them patients were recovered and highly satisfied. According to the results, patients who have intractable pain and other patients with different indications could benefit from a surgical treatment.

**Keywords:** Inter vertebral discs, Herniation, Cauda equina syndrome, Discopathy

## INTRODUCTION

Spondylosis is a process that affects the entire axial skeleton and includes a stage of degenerative changes which occur at the cellular and biochemical level about the age of 40 in both men and women to an equal extent. In men, the incidence of lumbar disc pain increases until the age of 50 and then decreases. In women, the pain even increases after the age of 50.<sup>1</sup> Most of the clinic's patients were those with physical disability caused by lumbar disc changes. Non-surgical treatment included

relaxation, exercise, non-steroidal anti-inflammatory drugs, and surgical treatments were chosen in the case of severe and intractable pain, severe motor weakness, and progressive neurological weakness, Cauda-equina ponytail syndrome.<sup>2</sup> Surgery varies according to the type, age, and size of disc herniation, and the laterality or centrality of disc. Generally, patients undergo partial laminectomy or inter-vertebral fenestration depending on the disc unilaterally or laterality. In this treatment, the length of patients' rest at home is short, instability of spine is slight, and the patient is highly likely to return to

the before-disease condition and be able to do most of basic physical activities. The end of this study was to examine the pains and problems in these patients and the appropriateness of the chosen treatment, and identify the patients who had the required indications for surgery. Although, even in the cases that surgery is necessary, many of these patients can recover with palliative care; not performing surgery at the right time may lead to irreversible neurological damage that causes mental and social injuries in the community. Due to the high cost of treating disease, its severe and dangerous complications, lack of adequate information on the conditions of patients with discopathy, and prevention as the only way to control the diseases (by doing activities like weight loss, physical therapy, exercise).<sup>3</sup>

Intervertebral disc disease is a widespread medical and social problem. Degeneration of intervertebral discs can lead to disc disease, commonly known as discopathy.

The pain and neurological symptoms associated with intervertebral disc disease reduce the patients' satisfaction.<sup>10</sup>

Spinal cord infarction is a rare but devastating pathology causing acute neurological deficits. The incidence has been estimated to 1% of all strokes.<sup>11</sup>

Weight training can have a very positive impact on the body by improving both the functioning of internal organs and motor coordination. Weakening of the muscles leads to spinal pain, which in turn reduces one's mobility, this further decreasing muscular strength. Weight training can be used to treat both motor dysfunction and lumbar pain, but it is crucial to combine it with flexibility exercises.<sup>12</sup>

Thus patients with Lumbar discopathy hospitalized in Ardabil city hospital during 2009-2012, were studied in respect of the indications for surgery.

**METHODS**

This retrospective cross-sectional study was carried out on 90 patients with lumbar disc herniation symptoms who had undergone surgery. The condition of the patients was examined regarding pain before surgery, motor and neurological status after surgery, bladder dysfunction and urinary incontinence. Also, some necessary information about their overall condition and they satisfaction with surgery was collected. The obtained data were analyzed by SPSS.16 using statistical methods such as table and statistical ANOVA and chi-square tests. The P <0.05 was considered as a significant.

**RESULTS**

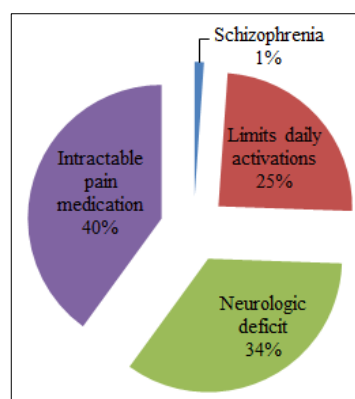
Of the patients 55 (66.1%) were male and rest of them were female. The gender ratio of male to female was 1.6 to 1. Concerning job category, 41 (6/45%) patients were

self-employed and worker. The minimum and maximum days that the patients were hospitalized were 2 and 15, respectively. However, most patients (46.7%) were bedridden for 4 days. The indications of intractable pain, limitation in doing daily activities and neurologic deficit, altogether were seen in 38 patients (42.3%), and were more prevalent than other indications. The indication of neurologic deficit had the lowest rate of incidence, i.e., 1 case (1/1%) (Table 1).

**Table 1: Frequency of surgery indication in patients.**

Indications type	Number (%)
Intractable pain medication	3 (3.3)
Limits daily activations - Intractable pain medication	20 (22.2)
Limits daily activations - neurologic deficit	27 (30)
Neurologic deficit	1 (1.1)
Neurologic deficit - Limits daily activations - Intractable pain medication	38 (42.2)
Schizophrenia - Neurologic deficit - Intractable pain medication	1 (1.1)

Compared with prior to surgery, signs of recovery were observed in 84 (93.3%) of patients following surgery. However, in 63 patients (70%) this rate was at a high or very high level, while the rest of cases had moderate or lower level of recovery. The recurrence of symptoms was seen in 9 patients (10%). The indications of intractable pain had the highest percentage in 36 patients (40%) (Figure 1).



**Figure 1: Frequency of prevalent indication in patients.**

**Table 2: Frequency of prevalent involvements in patients.**

Level	Number (%)
L1-L2	1 (1.1)
L2-L3	6 (6.7)
L3-L4	11 (12.2)
L4-L5	44 (48.9)
L5-L6	28 (31.1)

Involvement at the L4-L5 level in 44 cases (48.9%) of patients with relapse was more frequent than other levels (Table 2).

The relationship between type of indication and relapse showed that 5 patients (55.6%) had the indication of intractable pain, but the difference was not statistically significant. There was a significant relationship between type of indication and involvement. It can be said that most of patients with involvement in the L4-L5 level had neurologic deficit and intractable pain while other

patients with different levels of involvement showed different indications. It can be said that patients with different indications can have different levels of disk herniation ( $P = 0.023$ ).

Analyzing the relationship between selected indications and the level of improvement indicated that the patients with intractable pain medication had greater level of improvement compared to those with other indications, but no statistically significant (Table 3).

**Table 3: Relation between indication type and level.**

Level	L1-L2	L2-L3	L3-L4	L4-L5	L5-L6	Total
Indication type	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Schizophrenia	0	1 (100)	0	0	0	1 (1.1)
Limits daily activations	0	2 (9.1)	1 (4.5)	10 (45.5)	9 (40.9)	22 (24.4)
neurologic deficit	1 (3.2)	1 (3.2)	4 (12.9)	20(64.5)	5 (16.1)	31 (34.4)
Intractable pain medication	0	2 (5.6)	6 (16.7)	14 (38.9)	14 (38.9)	36 (40)

Moreover, the results related to testing the relationship between job and type of selected indications choice showed that there was no significant relationship between job and type of indication. This means that in people with different job categories, indications were randomly selected and the kind of their jobs had no effect on type of indication.

The examination of the relationship between mean of age and type of chosen indication showed that patients with the indication of schizophrenia and neurologic deficit have upper mean than other indications, but this difference was not statistically significant (Table 4).

**Table 4: The compare mean of age by indication type.**

Indication type	Mean $\pm$ SD	F	P value
Schizophrenia	51	0.426	0.735
Limits daily activations	45.69 $\pm$ 13		
neurologic deficit	44.5 $\pm$ 10.3		
Intractable pain medication	47.6 $\pm$ 9.1		
<b>Total</b>	46.1 $\pm$ 11		

## DISCUSSION

This study aimed at determining the indications for surgery among patients with Lumbar discopathy in different age groups and gender, with different signs and symptoms. The obtained results from study group including 90 patients with Lumbar discopathy revealed that 61% of patients were women and the rest of them were men, with a ratio of 1.6 to 1.

There wasn't any statistically significant difference between indications and gender. The minimum age was

23, and the maximum age 78 (with the mean = 46.12, and SD = 11). Examining the relationship between age and the chosen indications showed that people aged less than 40 and above 60 had the indication of intractable pain, and the patients aged between 40 and 60 had the indication of neurologic deficit.

Most of patients under study (45.6%), were self-employed and worker. The results of examining the work experience of the employed patients ranged from 1 to 40 years, and the mean years of work experience was 9.9 (SD = 10.3) years. Similarly, in a study done by Masoud et al.<sup>4</sup> Discopathy in men, was reported about twice more than women. Furthermore, the disease was mostly seen in workers belonging to the age groups of 30-40, and 60-70. Based on our findings, indications for intractable pain, neurological limitations on daily activities, and neurologic deficit altogether comprised 42.3% of indications and were more frequent than the other indications. Considering the indications individually, neurologic deficit with 1.1%, had the lowest percentage. Based on the achieved results, there was relapse in 10% of patients. Among patients who had experienced relapse, the highest rate of relapse was related to intractable pain.

However, this difference was not statistically significant. Testing the relationship between indications and the level of involvement revealed a statistically significant relationship. In other words, the patients with involvement at the L4-L5 had the indications of intractable pain, neurologic deficit, and other patients with different levels of involvement had other indications, it can be expressed that individuals with different indications can have different levels of involvements ( $P = 0.023$ ).

The results showed that there was no significant relationship between indications and job, level of improvement.

Examining the frequency of improvement symptoms in patients compared to before surgery showed that, 93.3% of patients had improvement regarding their symptoms. Of this percentage, 70% were of very high and high degree of improvement.

The most common involvement with 48.9% had occurred at the level of L4-L5 which was similar to result of study done by Masoud et al.,<sup>4</sup> because the most involved levels were L5-S1, and L4-L5. There was no relationship between disease relapse and the level of involvement.

Kimberley and et al.<sup>1</sup> in their study Low Back Pain (LBP) affects approximately 60-85% of adults during some point in their lives. Fortunately, for the large majority of individuals, symptoms are mild and transient, with 90% subsiding within 6 weeks. Chronic low back pain, defined as pain symptoms persisting beyond 3 months, affects an estimated 15-45% of the population. For the minority with intractable symptoms, the impact on quality of life and economic implications are considerable.

The Green's<sup>5</sup> study reported increasing neurological deficits, as the first clear indication for discectomy, and inefficient bladder and bowel, as urgent indications for surgery. In the present study as well, these indications made up 35.5% of the required indications for surgery.

Radziszewski in a study showed that conservative treatment and operative procedure yield improvement in the neurological status of the patients. The results of our study confirmed the Radziszewski's studies' findings, for the rate of improvement in the neurological status was high and very high.<sup>6</sup>

According to the findings of Ronthal and Peul<sup>7-8</sup> micro-discectomy is a valid primary treatment for curing severe sciatic in disc herniation. Thus, patients should undergo surgery and they will not have severe complication of discectomy.

In the research studies undertaken in two neurosurgery centers in Swiss,<sup>9</sup> 338 patients with required indications for surgery were examined. The surgery was effective in 62% of patients and ineffective in 38%. The half of 38% included those who had limitation on their daily activities.

One year following surgery, it showed good or very good results in 74% of patients. In the current study also in 70% of patients, the recovery was seen to a high or very high degree, while in the rest of patients, this improvement was of moderate or low level.

## CONCLUSION

The present study that was aimed at investigating the indications for Lumbar discopathy surgery, demonstrated that neurologic status, intractable pain and also limitation on daily activities of patients were improved, following surgery. As a consequence, indications including neurologic deficit and intractable pain can be an adequate indication for treating lumbar disc herniation surgery. It should be mentioned that our findings were in line with the findings of other studies.

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