Is There a Correlation Between Clinical Improvement and Return to Work in Patients, Civil Servants, Who Underwent Surgery for Lumbar Disc Herniation?

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Silva VB, Patriota GC, Scardino FB, Rotta JM, Botelho RV - Is There a Correlation Between Clinical Improvement and Return to Work in Patients, Civil Servants, Who Underwent Surgery for Lumbar Disc Herniation?

ABSTRACT

Objective. To analyze the rate of return to work in patients, civil servants, who underwent surgery for lumbar disc herniation.

Methods. Thirty patients were included in the study. The level of pain was accessed by Visual Analogue Scale preoperatively and at 3 months postoperatively, when also evaluated the situation of working using the Denis Work Scale. We compared the pain level pre and postoperatively, and the clinical improvement and return to work.

Results. The mean age was 47.42 years, females accounted for 54%. The mean preoperative pain was 9.11 and postoperatively was 3.11. Seventy-seven percent of patients returned to previous work. There was moderate correlation between postoperative pain and return to work.

Conclusion. There was a correlation between clinical improvement and return to work.

Keywords: intervertebral disk displacement, low back pain, neurosurgery, licensure medical, work.

SINOPSE

Objetivo. Analisar a taxa de retorno ao trabalho em pacientes, funcionários públicos, submetidos à cirurgia para hérnia discal lombar.

Métodos. A amostra foi formada por 30 pacientes. O nível de dor foi quantificado através da Escala Visual Analógica no pré-operatório e no 3º mês pós-operatório, quando também foi avaliada a situação do trabalho através da Escala de Trabalho de Denis. Foi comparada a dor do pré e do pós-operatório, a melhora clínica e o retorno ao trabalho.

Resultados. A média das idades foi de 47,42 anos, o gênero feminino prevaleceu em 54%. A média da dor no pré-operatório foi de 9,11 e no pós-operatório foi de 3,11 e 77% dos pacientes retornaram ao trabalho prévio. Houve correlação moderada entre a dor no pós-operatório e a condição de trabalho.

Conclusão. Houve correlação entre a melhora clínica e o retorno ao trabalho.

Palavras-chave: deslocamento do disco intervertebral, dor lombar, neurocirurgia, licença médica, trabalho.
INTRODUCTION

Great part of the economically-active population presents painful and disabling disorders related to the lumbar spine[23]. In Brazil, low back pain/sciatic pain is the first cause of medical attendance and the third cause of disability retirement[7,18,21].

Lumbar disc herniation (LDH) is a benign condition and the purpose of treatment is to relieve pain and to stimulate early return to activities and to work[29].

The presence of psychophysical factors influences treatment outcomes and increases disability resulting from physical disorders. Frequently depression and anxiety are associated with spine complaints, with a possible amplification of pain and disability[7,21].

Some authors state that public institutions workers present a greater potential to negative influence in returning to work[3,13].

The objective of this study was to evaluate the correlation between pain relief and return to work among civil servants, who underwent surgery for LDH.

PATIENTS AND METHODS

We performed a cohort, prospective study. Thirty patients operated on between 2007 and 2008 were included and four patients who did not complete the assessment were excluded. In this way, twenty-six public employees, economically active of both genders who underwent surgery for LDH, composed our sample.

Selection of candidates for surgery:

In order to identify patients with suitable psychological profile for surgery, we documented their symptoms according to the “pain drawing”[24], Wadell’s nonorganic signs[9] and were submitted to the predictive lumbar disc surgery score card by Finesson et al.[10] and filled out the Tampa scale for kinesiophobia[9]. Patients with signs and symptoms compatible with organic disease, without identified psychosomatic amplifications, with good clinical and radiological correlation, underwent surgery and were included in this study. Patients with obvious sensory-motor deficit were excluded to avoid contamination of results by the disability associated with neurological damage caused by herniated discs. All patients were unable to usual activities.

Clinical evaluation:

The key symptom was pain caused by disc herniation.

Patients were instructed to quantify the referred preoperative and at 3 months postoperative pain using the Visual Analogue Scale (VAS).

Evaluation of work status:

The evaluation of working condition was done by the Denis Work Scale on the third postoperative month, time considered sufficient for return to work after lumbar disc herniation surgery (Table 1).

Table 1. Denis’s Work Scale

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1</td>
<td>Return to previous employment (heavy labor) or physically demanding activities</td>
</tr>
<tr>
<td>W2</td>
<td>Able to return to previous employment (sedentary) or return to heavy labor with restrictions</td>
</tr>
<tr>
<td>W3</td>
<td>Unable to return to previous employment but works full time at new job</td>
</tr>
<tr>
<td>W4</td>
<td>Unable to return to full-time work</td>
</tr>
<tr>
<td>W5</td>
<td>No work, completely disabled</td>
</tr>
</tbody>
</table>

Patients in work situation in W1, W2 and W3 areas were considered as “return to work” and the ones in W4 and W5 areas as “unable to work.”

Evaluation of return to work:

The results obtained by the preoperative and postoperative VAS were compared and later correlated with the Denis Work Scale results.

Changes in pain-related variables were analyzed by nonparametric descriptive statistics and compared before and with Student T test when appropriated. The correlation between clinical factors and return to work was evaluated by Spearman’s rank correlation. The level of significance was p <0.05.

The project was approved by the Ethical Committee.

RESULTS

Twenty-six patients were included in this study (Table 2).
Mean age was 47.42 ± 8.49 years (95% CI = 43.9 to 50.85) and females predominated (54%).

Mean preoperative pain level was 9.11 ± 0.95 and postoperative was 3.11 ± 2.33 (T test; p <0.001). Mean pre and postoperative differences of pain levels were 6.38 ± 3.6 (95% CI = 4.9 to 7.8). All patients had improvement in pain.

**Return to work:**

Three months postoperatively, 20 patients (77%) returned to previous work and 6 patients (23%) remained unable to work (Graph 1).

**Table 2: Demographics data, scales results and return to work**

<table>
<thead>
<tr>
<th>Patients</th>
<th>Age (years)</th>
<th>Gender</th>
<th>VAS preoperative</th>
<th>VAS postoperative</th>
<th>Denis Work Scale</th>
<th>Return to work</th>
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</table>

**VAS:** Visual Analogue Scale

23% Unable to work
77% Return to work

Graph 1. Status at work in third month after surgery
Among patients who returned to work, ten (39%) returned without restriction, five (19%) returned with restrictions and five (19%) were readjusted (Graph 2).

Correlation between demographic data and pain improvement with return to work:

There was no difference in the distribution of age between patients who returned to work (47.3 ± 9.24 years) and those who did not return (47.8 ± 5.9 years) (T test, p = 0.44). There was no correlation between age and return to work (p = 0.006).

Nine male and eleven female returned to work. Among patients who did not return, 3 were male and 3 female.

Mean reported preoperative pain index among patients who returned to work was 9 ± 0.9. Among those who did not return, mean index was 9.5 ± 0.83 (T test, p = 0.13).

Mean postoperative pain index among patients who returned to work was 2.4 ± 2 and for those who did not return was 5.5 ± 1.5 (T test, p = 0.001).

There was moderate correlation between the assessment of postoperative pain and working condition ($r = 0.54$, $p < 0.05$), i.e. the more intense the pain, the worst working condition.

The difference between preoperative and postoperative reported pain showed moderate correlation with work ($r = -0.42$). The greater the improvement, the best the working state.

**DISCUSSION**

Disc herniation is the migration of the nucleus pulposus and fragment of the fibrous ring and, eventually, the vertebral cartilage of the *plateau* into the canal$^{18,17,15}$. It represents the most common cause of sciatica and lumbar spinal surgery$^{22}$.

Treatment is often troubled by the effects of secondary gain, emotional or laborite, of the disease to patients. However, since this is properly understood and identified, disc disease is benign and its treatment safe and efficient$^6$.

Great part of the population shows signs or symptoms related to the lumbar spine during his life, with enough intensity to seek medical assistance$^6$. It is believed that 50% of adults with moderate activity and 64% of individuals in heavy physical activity will present with low back or sciatic pain every year$^{23,17}$ and the cost to society (either due to the cost of medical care, loss of working days or the social burden of disability) is high$^{22,21,3}$.

Lumbar disc herniation is the second most frequent reason for absenteeism (average of loss of eight days out of work)$^9$ accounting for more than 70% of absences from work, medical expenses and indemnities$^{27}$.

The prognosis for return to work in patients with lumbar spine disorders involves several factors. It is believed that dissatisfaction at work is associated with a higher rate of poor results$^{22,2,26,28}$.

In our study, pain correlated with the working condition, the more intense the pain reported after surgery, the worst was working condition.

The public server, because of the work stability, accepts lack of identity with his job, lack of perspective, and salaries that valorize only the time in which the employee remains in its the place of work. Gomes, in 2008, stated that public servers present all conditions to be sick at work, being demonstrated by apathy, disbelief, poor service and absenteeism at work$^{13}$.

Costa (1991 apud Gomes, 2008) state that public servers seek financial pleasure, hiding the apathy and impossibility to have pleasure in work$^3$.

According to Fritzel$^{11}$ and Andersson$^2$, in the first three postoperative months, 90% of the results are defined. Patients who do not improve in this time course with a slow and uncertain result, are considered of having chronic pain$^{23,17}$. The percentage of return to work decreases with the increasing in time patients remain out of work$^2$. For this reason, we chose to reassess the pain three months postoperatively and working condition of this sample.

Many reviews of failures in disc herniation treatment emphasize the importance of psychosocial factors$^{12,4,32}$. The psychological tests are very important and the most significant isolated factor for success of surgery is the selection of patients, creating the concept of “patients with good prognosis.” Scha-
of patients returned to work. We found no correlation between age and return to work and there was correlation between clinical improvement and return to work.

**REFERENCES**


**CONCLUSION**

In this series of patients, surgery for lumbar disc herniation was effective and all patients achieved enough pain relief. Seventy-seven % of patients returned top work. We found no correlation

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**Who Underwent Surgery for Lumbar Disc Herniation?**

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