



Original Research Article

Y Risk Factors of Recurrent Lumbar Disk Herniation

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Accepted 9 December, 2015

Abstract

Recurrent intervertebral disc prolapsed (RDP) is a major cause of poor result after lumbar discectomy surgery. The aim of current study is to assess risk factors of recurrent disc prolapse in Iraqi population in Hilla teaching hospital from 2002-2013. The study reviewed 40 patients with recurrent disc prolapsed and 100 patients without recurrence retrospectively. To evaluate possible risk factors for herniation recurrence

A clinically significant recurrent herniation was defined as a disc herniation causing lower limb pain (sciatica) and (MRI) evidence of disc material at the same level of the previous surgery. Other 100 patients without recurrence were used just for compares to identify possible risk factors for recurrent RDP.

There was important variation between groups with and without RDP in sex, smoking, height, weight and occupational characteristic. By putting these differences in logistic regression analysis, it showed that gender (male), height, heavy workers and heavy smoker could expected in lumbar disc prolapsed recurrence(RDP).

Taking into consideration sex, heavy smoking and heavy workers as predictors of recurrent RPD, surgeons should advice their patients to limit hard work and put away smoking especially in tall and male ones to prevent RDP recurrence.

Key words: Intervertebral disc, Lumbar, Prolapsed, Recurrence, Risk factors

الخلاصة

رجوع حالات الانزلاق الغضروفي بعد اجراء عملية رفع الغضروف بنفس المستوى السابق من اكثر العوامل شيوعا في ضعف نتائج العملية والتي تكون مقلقة للمريض وللجراح في نفس الوقت فلا بد من دراستها وتعيين الاسباب وما يمكن تجنبه للتقليل من نسبة الرجوع مقابل عدمه دراسة سريرية اجريت في مستشفى الحلة التعليمي من خلال تسجيل ٤٠ حالة رجوع الانزلاق الغضروفي القطني بنفس المستوى السابق بعد اجراء عملية فتح فقرات ورفع الغضروف خلال اول سنتين ونمت مقارنتهم ب ١٠٠ حالة بدون رجوع للانزلاق الغضروفي. الدراسة تمت من خلال مراجعة الحالات المجرات لها عملية فتح فقرات خلال عشر سنوات من ٢٠٠٢ لغاية ٢٠١٣ والتي اجريت من قبلي ومن قبل عدة جراحي الجملة العصبية حيث قاموا شاكرين بالتعاون وتزويدنا بالمعلومات الخاصة بمرضاهم. الغرض من الدراسة هو لتحديد العوامل الاكثر خطورة التي يمكن ان تسبب حالات الرجوع والتي يمكن نقادي معظمها والتعاون مع المريض وأخباره بان يتجنبها للتقليل من خطورة ضعف نتائج العملية.

Introduction

Eighty to 90% of laminectomy for prolapsed disc get good results during the first postoperative year [1,2]. Recurrent inter vertebral disc prolapse (RDP) is a familiar cause of poor

results after lumbar laminectomy. Reported of recurrent disc prolapsed about 5% to 15% [3,4,5,6,7]. The overall rate of disappointing outcomes after primary lumbar laminectomy about 5% to 20%, making recurrent prolapsed is a major

cause of pain, disability, and reoperation [8,9,10].

A major reason for recurrent disc prolapse after a laminectomy is that the annular rent does not seal completely, causing a weak or destabilized defect to continue to be exposed to mechanical intradiscal pressure changes. Risk factors for recurrent disc prolapse reported in the literature include constitutional weakness of the annular tissue, contact to recurring lifting or vibration, lifting heavy Wight, old age, smoking, the preoperative size and level of the disc herniation, and the manifestation of the disc prolapse at the time of surgery [5,11,12,13,14].

Some neuro surgeons believe that spinal interpeduncular fusion is necessary for treating disc reherniation. As repeated discectomy for recurrence requires the removal of more disc material and posterior elements, such as lamina or facet joint [3, 11].

Complications related to laminectomy and removal of disc material can occur even in the very best of hands. The common things that can cause problems after laminectomy include:

1. Persistent nerve irritation and leg pain

This can occur when a large disc herniation was present and the nerve, although freed from the surgery, has not had time to recover yet or has had some element of permanent nerve damage [8,9,10].

2. Well improvement after that patient developed leg pain. This may occur if after the nerve was freed in surgery, remained disc material pushed into canal (recurrent disc herniation). and re laminectomy may be necessary to decompress the nerves again

3. Improved leg pain but lower backache remain If the nerve have been successfully released during surgery but the spine has been destabilized then the spine may not have sufficient stability to

function normally with everyday activities (spinal instability)[1,2].

Material and Methods

This study was carried among, 40 patients with recurrent disc prolapse (group I) and 100 patients without recurrence after surgery (group II) were selected among patients who had lumbar discectomy in Hilla teaching hospital Iraq to identify possible risk factors for disc prolapse recurrence. Group I included patients with recurrent prolapsed disc at the same level before 2 years postoperatively and group II included patients without recurrent herniation at the same level for more than 2 years after operation. Patients were chosen among those with the different neurosurgery team. The surgical technique was not considered in this study.

Indication for (MRI) investigation was requested for all postoperative patients experiencing persistent or recurrent leg pain. Consequently, A clinically significant recurrent herniation was defined as a disc herniation causing leg pain with (MRI) finding of disc material at the same level of the previous surgery causing obliteration, compression, or indentation of nerve tissue, severe back arthritis and neuropathic disease were excluded. The medical records for all patients were evaluated for age, gender and body weight and height (kilograms & cms)]. In addition to Smoking status and employment were based on data recorded in the patient's chart at the time of index surgery

Results

Patients categorized according to age, gender, height, weight, smoking diabetic and hyper tension are presented in (Table 1) by compares between group I with recurrence and group 2 with non recurrence

Table 1: Distribution of patient according to many suspected factors

Suspected risk factor	Group 1 Recurrence no.	%	Group 2 Non- recurrence no.	%
Age 50>years	12	30%	20	20%
Gender male	28	70%	58	58%
Weight 75>kgs	17	42.5%	27	27%
Tall 168>cms	18	45%	20	20%
Smoking	18	45%	25	25%
Diabetic	4	10%	12	12
Hypertensive	5	12.5%	14	14%

Smoker, men and patients with higher height and weight significantly higher recurrence percentage or rate. However, in

terms of age, diabetes and hypertension, there was no difference between groups Patients (Table 2).

Table 2: Patients with main risk factors

Risk factor	No. of recurrence	%
Smoker	18	45%
Height	18	45%
Weight	17	42.5%
Heavy worker	27	67.5%

Important notes in table 1 and 2 there are many patients shared multiple risk factor in the same study and giving their results in significant collection.

Occupational characteristic was divided into three parts as light (officer and constant

posture), housework (standard work), and heavy work (lifting or carrying heavy objects, forward bending. Heavy work was significantly higher in patients with recurrent herniation Table 3.

Table 3: distribution of patients according to occupational load

Work load	Case group no.	%
Light work	3	7.5%
Medium work	10	25%
Heavy worker	27	67.5%

The logistic deterioration analysis showed that (male), height, heavy works and being

smoker could cause recurrent lumbar disc prolepses.

Discussion

Recurrent intervertebral disc prolapse has been reported in 5-15% of patients. The definition of recurrent disc prolapse was various between the different authors. In most studies, recurrent disc prolapse was defined as disc herniation at the same level, regardless the side of herniation with a pain-free interval more than 6 months [7,15,16,17,18].

In our study, we retrospectively evaluated recurrent lumbar disc prolapse at the same level after discectomy in 140 patients undergoing primary lumbar disc herniation. We find that gender (male), tall height, heavy workers and smoker could predict recurrent lumbar disc prolapse. There are many risk factors for recurrent prolapsed disc. Age and gender are demonstrated as risk factors of RDP [22,23]. Young age and male gender are defined as risk factors for RDP recurrence.[7,15] However, some authors reported that gender and age were not associated with significant rates of recurrence [5,6,7,16,21]. In this study, recurrent lumbar disc prolapse was higher in male gender, but there is no role observed according to age. Opposite to our study, Keskimaki was not observed differences among genders, but patients below than 50 years had a higher risk of reoperation than the older patients [22].

It is shown that obesity is associated with recurrent RDP [30, 33] like in our study showed significantly higher weight and height play role in recurrent disc prolapse RDP, Smoking has been previously shown to be predictors of recurrent RDP.[12,13,14] In the study of Kim [25] who observed smoking was related to recurrent disc prolapse. Like in our study, smoking was significantly higher in patients with RDP. The mechanism by which smoking contributes to disc degeneration is still incompletely understood, but may be related to disc elements nutrition and oxygenation, [25] as well as increases in intradiscal pressure due to too much coughing [22,23].

Vascular insufficiency as a result of atheromas should also be considered.

Heavy workers is another important risk factor of recurrent disc prolapse RDP, including lifting or bending should be involved in most studies, has been previously shown to be predictors of recurrent disc prolapse RDP [12,13,14]. Kara [24] observed that the lack exercise was a significant risk for poor result after primary laminectomy, whereas work type did not indicate so much significance as regular exercise. Heavy work was significantly higher in patients with recurrent disc prolapse RDP in our study and highly expected its occurrence. In another study, although work type and profession were not found to be risk factors.

Conclusion

Taking into consideration that the sex, smoking and heavy works are suspected risk factors for recurrent disc prolapses RDP, surgeons should advice their patients to avoid hard work and tray to stop or decrease smoking especially in tall, obese and male ones to prevent recurrent disc prolapses RDP

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