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Research Article

**SURGICAL TREATMENT FOR LUMBER DISC HERNIATION
CAUSING PAINFUL INCOMPLETE FOOT-DROP**Dr Afshan Jabeen¹, Dr Sumbal Javaid², Dr Javeria Rahim³¹Sheikh Zayed medical college Rahim Yar Khan²Aziz Fatima medical and dental college Faisalabad³Islamic International Medical College**Article Received:** August 2020**Accepted:** September 2020**Published:** October 2020**Abstract:**

Introduction: Low back pain (LBP), as one of the most common diseases, is being experienced by about 70% of people at some point in their life. **Objectives of the study:** The main objective of the study is to analyse the surgical treatment for lumbar disc herniation causing painful incomplete foot-drop. **Material and methods:** This descriptive study was conducted in Sheikh Zayed medical college Rahim Yar Khan during February 2019 to February 2020. This study was conducted with the permission of ethical committee of hospital. The data was collected from 100 patients who were suffering from lumbar disc herniation. Patients who presented foot drop were assessed in the current study. The incidence of foot drop was 8.1% in patients of LDD. **Results:** The data was collected from 100 lumbar disc herniation patients. There were 20 females and 30 males. The mean age of the participants was 58.8±5.46 years and the mean GAD-7 score was 5.0. Almost 50% of the patients were suffering from chronic pain prior to surgery, which was defined as pain lasting for at least 6 months. The mean pain score was high before the surgery as compared to post surgery period. **Conclusion:** It is concluded that lumbar disc herniation conscripts have some psychological problems, such as depression and anxiety, in comparison with healthy controls. Foot drop caused by lumbar degenerative disease was often unilateral. L5 nerve root was most frequently affected.

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INTRODUCTION:

Low back pain (LBP), as one of the most common diseases, is being experienced by about 70% of people at some point in their life. It affects the quality of life in patients, and imposes a high economic burden on social health care system. Moreover, LBP is associated with psychological disturbance including depression and anxiety, which influence the outcomes of treatment adversely [1]. Degenerative disc disease is commonly accounted as causal in acute and chronic back/leg pain in the general population. About 15% of patients with a herniated disc require surgery, because they do not respond to conservative approaches or experience major neurologic losses. The main function of surgical treatment is the elimination of pain and associated physical dysfunction. Therefore, the measuring of pain is an important indicator for surgical success [2].

Studies showed that surgery helps the majority of patients to overcome pain symptoms, but between 7 and 23% of the operated patients still report severe pain or even experience no pain relief at all [3]. While surgical complications may be responsible for persisting symptoms in some patients, these problems do not give an all-embracing explanation for ongoing pain. Whether a patient benefits sufficiently from surgery or not can most likely be explained by patient characteristics [4]. Research revealed different socio-demographic, medical, occupational and psychological factors that were associated with persistent pain.

Lumbar disc herniation (LDH) is one of the most important causes of low back pain in adulthood. LDH patients may be usually treated with conservative care and a nonsurgical approach, such as physical therapy and pharmacotherapy for pain relief [5]. Only 1% of these patients have a medical condition requiring surgical intervention. One of the most important clinical variables to determine surgical approaches to LDH patients is the severity of pain and disability [6]. Foot drop can be unilateral or bilateral. Starting from a muscle strength test result of less than 3/5, i.e. when the foot can no longer be actively lifted against gravity, an abnormal gait pattern arises which affects both the

stance phase and swing phase. In order to prevent the forefoot from catching on the ground, patients with foot drop perform compensatory hyperflexion in the hip and knee joints and in addition internal rotation of the foot in the transverse plane. In the long term, this gait pattern results in improper loading of the entire skeletal axis [7].

Objectives of the study

The main objective of the study is to analyse the surgical treatment for lumbar disc herniation causing painful incomplete foot-drop.

MATERIAL AND METHODS:

This descriptive study was conducted in Sheikh Zayed medical college Rahim Yar Khan during February 2019 to February 2020. This study was conducted with the permission of ethical committee of hospital. The data was collected from 100 patients who were suffering from lumbar disc herniation. Patients who presented foot drop were assessed in the current study. The incidence of foot drop was 8.1% in patients of LDD. Of the patients, there were 62 men and 73 women, the mean age at surgery was 55 years (range 43-64), and the mean duration of foot drop was 186.4 days. Diagnoses were established based on history and physical examination in conjunction with MRI and/or CT findings.

Statistical analysis

All the collected data was entered into SPSS version 21.0 for further analysis. All the values were expressed in mean and standard deviation.

RESULTS:

The data was collected from 100 lumbar disc herniation patients. There were 20 females and 30 males. The mean age of the participants was 58.8 ± 5.46 years and the mean GAD-7 score was 5.0. Almost 50% of the patients were suffering from chronic pain prior to surgery, which was defined as pain lasting for at least 6 months. The mean pain score was high before the surgery as compared to post surgery period. Mean NRS scores preoperatively were 6.8 (SD 2.6), and decreased to 2.9 (SD 2.4) 6-weeks after surgery.

Table 01: Socio-demographic data and pain score of 50 participants

Characteristics	N=100
Mean age (standard deviation)	58.8±5.46
95% confidence interval of age	55.7–62.0
Range of age	24.4–86.9
Educational level	
Mean preoperative anxiety (standard deviation)	5.0±3.76
Number of anxiety cases ° (N, %)	45 (42.5)
Mild anxiety (GAD-7 score 6–9)	33.0%
Moderate anxiety (GAD-7 score 10–14)	6.6%
Severe anxiety (GAD-7 score >=15)	2.8%
Mean body mass index (standard deviation)	27.9±4.54
Preoperative ASA (American Society of Anesthesiologists physical status classification system)	
ASA 1 (%)	9 (8.5)
ASA 2 (%)	51 (48.1)
ASA 3 (%)	45 (42.5)
ASA 4 (%)	1 (0.9)
Mean duration of surgery in minutes (standard deviation)	117 (53)
95% confidence interval of duration of surgery	107–127
Range of duration of surgery	40–299

Table 02: Clinical stage of foot drop caused by lumbar degenerative disease.

Factor	Weight						
	0	1	2	3	4	5	6
Duration of palsy (days)	>180	140-180	130-150	80-120	50-90	40-60	<30
Preop muscle strength of TA	0	1	2	3			
Age (yrs)	>59	55-60	50-55	45-50	<45		

DISCUSSION:

Several studies showed surgery was an effective method to treat foot drop caused by lumbar degenerative disease, although motor function of spinal roots were thought hardly recovered after damage traditionally. In the study of Aono, 61% of patients recovered from drop foot after surgery, of all 46 patients, 14 patients had complete recovery, and 13 (28.3%) had no improvement after operation. Similarly, Iizuka showed the muscle strength of TA recovered to 4 or 5 in 12 of 16 patients suffered herniated nucleus pulposus and 3 of 12 patients suffered lumbar spinal stenosis [7]. In his study, the postoperative muscle recovery in patients with herniated nucleus pulposus was significantly superior to that in patients with lumbar spinal stenosis. In the current study, the muscle strength of TA improved in 113 patients (83.7%) after surgery, but only 15.6% of patients recovered from foot drop and 5.9% of patients had a complete recovery. Surgery of nerve roots decompression is beneficial to patients of foot drop. However this study showed few patients can get a satisfying recovery [8].

The prognosis factors of foot drop due to lumbar degenerative disease had been reported in several studies, but there are still some controversies. A study of 55 patients showed no statistically significant relationship was found between the extent of recovery and age, diagnosis (herniated nucleus pulposus vs. lumbar spinal stenosis), duration of symptoms, or severity of preoperative weakness [9]. In contrast, Aono showed palsy duration and preoperative strength were factors that most affected drop foot recovery following surgical intervention for spinal degeneration in a study of 46 patients. And Iizuka showed there was no prognostic factor in surgically treated herniated nucleus pulposus (16 patients), but significant associations with prognosis were observed with respect to preoperative muscle strength of TA and extensor hallucis longus in patients with lumbar spinal stenosis [10].

CONCLUSION:

It is concluded that lumbar disc herniation conscripts have some psychological problems, such as depression and anxiety, in comparison with healthy controls. Foot

drop caused by lumbar degenerative disease was often unilateral. L5 nerve root was most frequently affected. Double or triple roots compression was a common condition. The muscle strength of TA improved in most patients after surgery, but few patients can get a good recovery from foot drop.

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