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Research Article

**SURGICAL TREATMENT FOR LUMBER DISC HERNIATION
CAUSING PAINFUL INCOMPLETE FOOT DROP**

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Abstract:

Introduction: Foot drop is characterized by the inability or difficulty in moving the ankle and toes upward (dorsiflexion). **Objectives:** 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 cross sectional study was conducted in Holy Family Hospital, Rawalpindi during February 2019 to December 2019. 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. **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:

Foot drop is characterized by the inability or difficulty in moving the ankle and toes upward (dorsiflexion). It is a sign of an underlying neurological, muscular or anatomical problem. Most of the time, foot drop is the result of neurological disorder; only rarely is the muscle diseased or nonfunctional. The source for the neurological impairment can be central (motor neuron disease, parasagittal cortical or subcortical cerebral lesions) or peripheral (lumbar radiculopathy, mononeuropathies of the deep peroneal, common peroneal, or sciatic nerves) [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].

Objectives

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 cross sectional study was conducted in Holy Family Hospital, Rawalpindi during February 2019 to December 2019. 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.

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: 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 [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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