

Evaluation of the Outcome of PLID and Lumbar Canal Stenosis Surgery in a Tertiary Care Hospital in Bangladesh

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Abstract: Back ground: Low back pain, sciatica and low back pain with Radiculopathy are very common in adult person. These cause a great loss of working hours with financial loss, Disharmonic sexual life and psychological effect. Mostly careful assessment done to treat these patient. Injudicious treatment may aggravate the sufferings. Objectives: This study aim was to assess the outcome of PLID and lumbar canal stenosis surgery. Materials and Methods: This prospective observational study was done from October 2018 to June 2022 at a tertiary care Hospital in Bangladesh. Total 156 patients were enrolled who have symptoms of PLID and/or lumbar canal stenosis on MRI & who underwent corrective surgery. Results: Among the study population 93 (59.62%) were female and 63 (40.38%) were male. Age range from 20 to 75 years. Majority 58 (38.46%) were aged between 31 - 40 years. Distribution of level of disc prolapse majority 48.08% were in between L4 - L5 level and bilateral. Outcome of operation where majority 81.41% of the patient had no pain. 10.25% having occasional pain and 4.49% complaints opposite leg pain. Conclusion: Appropriate selection of patient and right surgery in timely manner is required for best outcome in PLID patient with or without spinal canal stenosis.

Keywords: Prolapse of lumbar intervertebral discs (PLID), lumbar canal stenosis (LCS), Surgical Correction

1. Introduction

Low back pain is major health related issue in world wide. Most of the people having experiences of at least once occasion low back pain (LBP) in their life. Several causes are responsible for LBP. Among them prolapse lumbar intervertebral disc (PLID) and lumbar canal stenosis (LCS) cause more morbidity.

PLID frequency envisage in clinic and might often encourage low back pain and leg pain. The occurrence rate is 1.9 % - 7.6 % in men and 2.2 % - 5.0 % in women [1]. People are always annoyed by back and leg pain. Oppenheim and Krause perform the first successful surgical excision of herniated intervertebral disc in 1909. Unfortunately they could not recognize the excise tissue as disc material and interpreted it as anenchondroma [2].

Basically, management of Lumbar canal stenosis (LCS) usually started with conservative treatment and preferably with a multimodal approach (medical treatment, bed rest, and physiotherapy), but in cases of severe pain with extensive neurogenic claudication symptoms, surgical interference is indicated [3]. Lumbar decompression surgery is a commonly used treatment for degenerative LCS [4]. Classic surgical treatment of LCS involves wide laminectomy, foraminotomy, discectomy, and medial

facetectomy as needed [5]. The current evidence suggests that surgery for spinal stenosis is more effective than conservative treatment when the latter has failed for up to six months [6, 7]. For instance, in the Spine Patient Outcomes Research Trial (SPORT) patients treated surgically reported lower pain levels compared to patients assigned to nonsurgical care [8]. But doing inappropriate surgery, wrong level and inadequate planning suffers a patient lot and hamper daily life and also chance of recurrence.

Objective

This study aim was to assess the outcome of PLID and lumbar canal stenosis surgery

2. Method & Materials

This prospective observational study was done at Sheikh Fazilatunnessa Mujib Memorial KPJ Specialized Hospital, Gazipur, Dhaka, Bangladesh from October 2018 to feb 2022. Total 156 patients were enrolled who have symptoms of PLID along with lumbar canal stenosis on MRI & who underwent corrective surgery, like - Fenestration & Discectomy. Foraminotomy, Laminectomy, Laminotomy & Decompression.

Total 156 patients were enrolled. Written informed consent was obtained from the participants before enrolling into the study and those not available verbal consent taken over phone. Most of the patients come with low back pain, claudication, some are numbness some having positive history of weight lifting. Diagnosis was confirmed by MRI and supported by x - ray image. According to the inclusion Criteria of the study, only the patients, who were medically fit to undergo the full treatment procedure, were included in the study. On the other hand, according to the exclusion criteria of this study, over aged geriatric patients (>75Years) as well as severely ill patients were excluded from the study.

3. Result

We operated 156 patients and follow up periodically in outdoor. Table - 1 show the gender distribution of the patients which shows that, most of them 93 (59.62%) were female and 63 (40.38%) were male. **Table - 1** shows the majority were aged between 31 - 40 year were 38.46%. 25.63% were in between 41 - 50 years age, 15.38% were in between 21 - 30 years and 12.17% were aged between 50 - 59 years and we found 8.32% were more than 60 year. Distribution of level of disk prolapse reveals majority occurs in L4 - L5 level (48.07%), then L5 - S1 (26.28%), then L3 - L4 (13.46%), then L2 - L3 (7.64%), and lowest in L1 - L2 (4.48%). (**Table 2, Figure 2**). We found most of case were bilateral about 39.10% and left sided were 33.33% and right sided 28.84%. Outcome of operation where majority 81.41% of the patient had no pain. 10.25% having occasional pain and 4.49% complaints opposite leg pain. (**Figure 1**).

4. Discussion

Obtaining good result in PLID and lumbar canal stenosis surgery is challenge. because some other factor that may hamper the outcome which are not operable (facetarthopathy, psychosocial factor) but if we select perfect patient for surgery and do the right surgery then the outcome is favorable. Most of the patient come with low back pain usually improve by conservative treatment (rest, NSAIDs, hot compression, postural change, exercise, physiotherapy). Those patient having claudication, numbness, lower limb weakness, or bowel bladder involvement they need surgery. Before surgery both clinical and radiological evaluation is mandate with proper counselling regarding the expected outcome of surgery. A study done by Spangfort in reviewing 2504 lumbar disc excisions shows that 30% of the patient complained back pain after disc surgery [9]. Some study also done in Bangladesh by different author they found. On 2012 one study found 94% patient had no pain after surgery with 64 number sample size [10].

Another study they found majority 92.38% had no pain with 105 sample size [11] but we found slight variation regarding their result. We found 81.41 % pain free patient after surgery.

5. Limitation

It was descriptive study with small sample size. Which does not reflect the scenario of whole country.

6. Conclusion & Recommendation

PLID surgery is not routine or regular surgery. But if failed conservative treatment then we recommend for surgery. So proper evaluation and assessment of the patient is mandate before planning for surgery. And good planning & right surgery give good result and less morbidity. From our study we can conclude that if we select patient properly and plan the appropriate surgery for patient, and properly advice after discharge then we can get good result.

Disclosure: None

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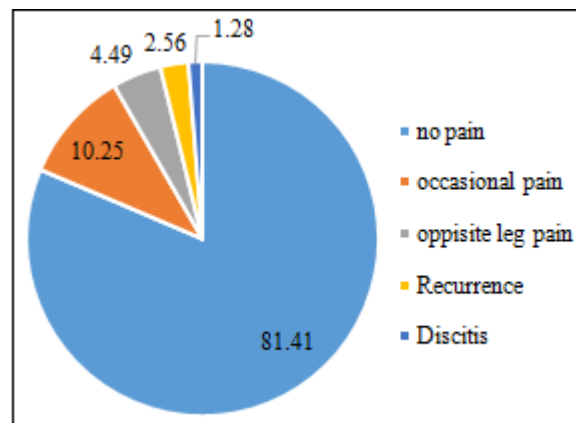
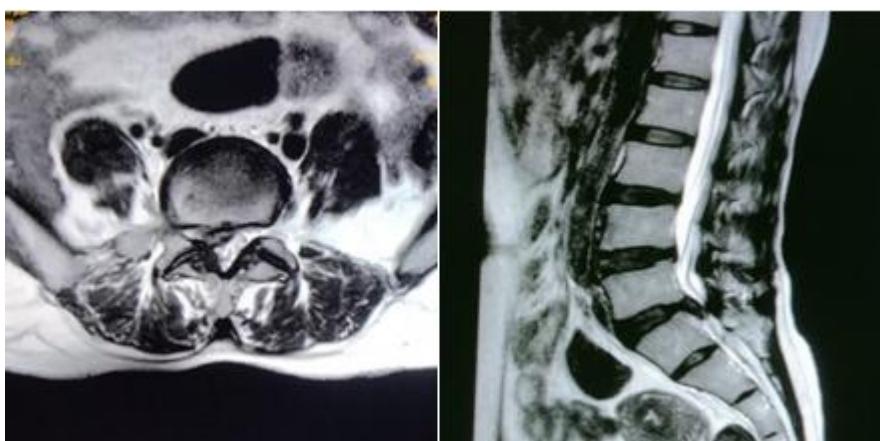
Figures & Tables

Table 1: Distribution of patient according to age

Age in years	Gender		%		Total
	Male	Female	Male	Female	%
21 - 30	4	20	2.56	12.82	15.38
31 - 40	25	33	19.23	19.23	38.46
41 - 50	17	25	10.89	14.74	25.63
51 - 60	8	11	5.12	7.05	12.17
>60	9	4	5.76	2.56	8.32

Table 2: Distribution of level of disc prolapse

Variable	Number	%	Side		
			Right	Left	Bilateral
L1 - L2	7	4.48	1	2	4
L2 - L3	12	7.69	3	7	2
L3 - L4	21	13.46	7	9	5
L4 - L5	75	48.07	16	25	34
L5 - S1	41	26.28	18	9	16

**Figure 1:** Pie chart shows the outcome of operation**Figure 2:** MRI of disc prolapse and canal stenosis