INTRODUCTION

Backache is second most common problem presenting to the primary healthcare providers. A survey of 2008 showed that almost 26% of US population had low backache and 14% had cervical pain. No statistical data for Pakistan is published so far. Lumbar disc herniation is a cause of low backache. Lumbar disc herniation occurs due to degeneration of annulus fibrosus. Many theories explain the degeneration of annulus fibrosus include mechanical, chemical, age related autoimmune and genetic. Factors associated with lumbar disc herniation are age, improper working posture, bearing heavy loads, trauma and smoking. Common age for lumbar disc herniation is 30–45 years with a male to female ratio of almost 3:1. The lumbar disc is mostly herniated in posterolateral (Para-central) or lateral but sometimes posterior (central) herniation is also seen. Among the vertebral levels L4-L5 and L5-S1 intervertebral disc is herniated in almost 95% of cases between 22–50 Years and Level above L4 is common in older age groups. The clinical symptoms depend on the level of disc herniation, the direction, i.e., central, para-central or lateral, and the degree of herniation. The symptoms include lumbago, sciatica and bladder symptoms. Sometimes patients present with motor or sensory deficit along the distribution of nerve root involved. MRI is the gold standard investigation for diagnosis and planning the treatment. Conservative treatment for 6 weeks of analgesic and strict bed rest is effective in almost 85% of cases. Surgical intervention will be indicated in case of failure of medical therapy or progression of symptoms despite of medication.

DISCECTOMY FOR PROLAPSED PARA SPINAL INTERVERTEBRAL DISC

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Background: Backache is second most common problem presenting to the primary healthcare providers. Lumbar discectomy has been revolutionized from open conventional discectomy to endoscopic removal. Endoscopic procedures are proving their superiority regarding good outcome, less wound site pain and shorter hospital stay, in Neurosurgery as well. Micro discectomy and Endoscopic discectomy is used only in few centres in Pakistan. This study aimed to share our experience of early surgical outcome endoscopic lumbar discectomy in terms postoperative pain improvement and duration of hospital stay Methods: This prospective study was carried out at Neurosurgery Department, Jinnah Hospital, Lahore from Jan 2014 to Jan 2016. During this period, 35 patients of both sexes, aging between 20 and 60 years, with symptoms and signs of lumbago with sciatica were enrolled. Data was collected on a questionnaire after informed verbal and written consent. Results: A total of 35 patients were operated including 10 males and 25 females. Their age ranged from 20 to 60 years with mean age 33.14±8 years. Majority (32, 91%) of the patients had left side prolapsed paracentral disc, and remaining (3, 9%) had right sided prolapsed disc. Regarding the level of disc herniation, the direction, i.e., central, para-central or lateral, and the degree of herniation. The post-op wound site visual analogue score was 1.57±1.1. Twenty-five patients had VAS of 1 (71.4%). Minimum hospital stay was 1 day in 16 (45.75%) patients and maximum was 4 days in 3 (8.6%) patients. Mean hospital stay was 1.83±0.95 days. The only complication encountered was iatrogenic dural tear seen in one patient but with no CSF leak from wound site. No surgical site infections were reported at follow-ups.

Conclusion: Endoscopic Lumbar discectomy is a safe procedure with short hospital stay.

Keywords: sciatica, prolapsed intervertebral disc, microscopic discectomy, endoscopic discectomy
this study we shared our experience of early surgical outcome endoscopic lumbar discectomy in terms post-operative pain improvement and duration of hospital stay.

MATERIAL AND METHODS
This prospective study was carried out at Neurosurgery Department of Jinnah Hospital Lahore from Jan 2014 to Jan 2016. During this period 35 patients were enrolled. Patients of both genders were included with the ages between 20 and 60 years, having signs and symptoms of sciatica and MRI findings of Prolapsed paracentral intervertebral disc prolapsed between L3-S1. Patients with Cauda Equina Syndrome, Central Lumbar Disc Prolapse, and Recurrent Lumbar Disc Prolapse were excluded.

All patients underwent endoscopic lumbar discectomy with the use of EASYGO system. Data was collected on a preformed questionnaire and variables studied were gender, age distribution, level and side of lumbar disc herniation, pre op straight leg raising test, wound site pain quantified on visual analogue score (VAS) scale of 0–10, duration of hospital stay and complications. Data was studied on SPSS version 17.0.

Position was prone with chest and pelvis supported and desired inter-vertebral Space was marked and confirmed by Fluoroscope. Annulotomy was accomplished with a sheathed micro knife while protecting the nerve root with the suction retractor. The herniated disc was then removed with a pituitary rongeur in a standard fashion. The nerve root was explored to ensure the decompression was complete.

RESULTS
A total of 35 patients were operated including 10 males and 25 females. The age range from 20–50 years with the mean of 33.14±8 years and younger patient was 20 years old. Majority of the patients enrolled in study had left side prolapsed paracentral disc, i.e., 32 (91%) and remaining had right sided prolapsed disc, i.e., 3 (9%). Regarding the level of disc, 19 (54%) pts had L4–5 while 15 (43%) pts had L5–S1 and remaining 1 (2.9%) pt had L3–4 level. The post op wound site visual analogue score was 1.57±1.1. Out of the 35 patients, 25 had VAS of 1 (71.4%). Regarding hospital stay, the minimum hospital stay was 1 day in 16 (45.75%) patients and maximum was 4 days in 3 (8.6%) patients. Mean hospital stay was 1.83±0.95 days. The only complication encountered was iatrogenic dural tear seen in one patient but with no CSF leak from wound site. No surgical site infections were reported at follow ups.

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<th>Table-1: Side involved</th>
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<td>Side</td>
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<th>Table-2: Level of disc involved</th>
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<td>Disc level</td>
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<td>L3-L4</td>
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<td>L4-L5</td>
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<td>L5-S1</td>
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<th>Table-3: Postoperative wound site VAS</th>
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<th>Table-4: Hospital stay</th>
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<td>No of days</td>
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DISCUSSION
Microdiscectomy, introduced by Yasargil and Caspar (1977)12, is considered as a gold standard in prolapsed paracentral intervertebral disc. Katayama et al.18 compared the results of macrodiscectomy versus microdiscectomy and concluded that there was no difference between the surgical outcomes of both techniques but microdiscectomy gave better magnification and decreased the length of incision and tissue invasion. They found that microdiscectomy allowed the patients to return early to functional level and required lesser use of postoperative narcotic analgesics.

Microendoscopic discectomy (MED) introduced by Foley et al.16 combines standard lumbar microsurgical techniques with an endoscope, enabling surgeons to successfully address free-fragment disc pathologic factors and lateral recess stenosis. The endoscopic approach allows even smaller incisions and less tissue trauma, compared with standard open microdiscectomy. Because the MED procedure causes significantly less iatrogenic injury to the paraspinal musculature, it may potentially provide additional long-term benefits over more aggressive open procedures. The only thing which requires to be established is the long-term result comparable to standard microdiscectomy and the lesser tissue invasiveness than microdiscectomy.

Many reports are presented which prove the efficacy of MED with overall comparable results.21–25 it had an overall result of 91% which was compared with results of Perez-Cruet et al.19 (n=150) where the average surgical time was 66 min, average blood loss was 22 ml, average hospital stay was 7.7 h, complication rate was 5%, reoperation rate was 4%, and average return to work was 17 days with an overall result of 94%. Foley et al.26 had 24–48 hrs of hospital stay compared to 7.7 h.
of Perez-Cruet et al. Other factors like surgical time (66 vs. 70 min), complication rate (5% both series), re-operation rate (4% vs. 3%), return to work (17 vs. 21 days), and overall results (94% vs. 91%) were comparable in both series. Similar results are reported by Ranjan et al. in the series of 107 cases. From these data, it can be concluded that MED is safe and effective. As yet, there is no good prospective randomized study to compare the results of MED, microdiscectomy, and standard discectomy. Though there is one nonrandomized study by Schizas which compared the results of MED with standard microsurgical discectomy and concluded that MED is at least as effective as microsurgical discectomy for the treatment of uncontained or large contained disc herniations.

It seems MED is a technique which gives early rehabilitation and less bleeding. The limitation of this study has been lack of comparable control to compare and quantify that in MED there is less bleeding and early rehabilitation compared to standard or microdiscectomy. A well-designed double-blind prospective randomized control trial needs to be done comparing MED and microdiscectomy and standard discectomy to prove these facts.

Generally, on the basis of above discussion, microsurgical discectomy after laminotomy is still considered the gold standard but recently numerous studies involving endoscopic discectomy have been reported, and the outcomes have been improving gradually. In comparison with microsurgical discectomy, return to work or sports activities is more rapid, and thus it is accepted by patients more readily with a high patient acceptance. In addition, epidural scarring develops in more than 10% of patients after conventional laminectomy and discectomy, and in posterolateral endoscopic discectomy, such scars have not been detected by MRI or during revision surgery. Therefore, subsequent endoscopic or conventional procedures are easy.

Despite such numerous advantages, endoscopic discectomy is not universally accepted because endoscopic procedural skill is difficult to acquire, with a flattened and lengthy learning curve, and in comparison with the microsurgical discectomy, surgical outcomes after endoscopic discectomy are not hugely superior and its indications are limited due to anatomical limitations such as endoscopic discectomy using a lateral approach is through the iliac wing, and thus the iliac wing and the height of the working disc space should be adequate. One has to approach the working disc space through the foraminal space, which is difficult similarly the approach in cases with high-grade migration and high canal compromise is also difficult. To overcome such limitations, it is important to understand the anatomic relationship of the lesion disc and adjacent structures prior to surgery.

So the endoscopic approach, as its feasibility and proven safety in other surgical specialties, is same incase of neurosurgery. Endoscopic discectomy is on a rise all over the world due to the minimal invasive approach and improved outcomes but long term outcomes are yet to be established. But the safe removal of the prolapsed disc and improved VAS resulted in the tilt of neurosurgeons from MED to percutaneous endoscopic lumbar discectomy (PELD). We performed PELD in our institution and our results showed that PELD is superior to MED in VAS and hospital stay but long term outcome is yet to be established.

Our experience of Endoscopic Lumbar discectomy was comparable to that of other international published studies. Haung et al. showed that the pain VAS in patients of endoscopic lumbar discectomy was 1.4±0.1. Teli et al. showed that the average post-operative pain was 3±1 on VAS in endoscopic discectomy. Hsien-Ta Hsu et al. showed that patients who underwent endoscopic Lumbar discectomy had a post-operative VAS of 1.6. Lee et al. showed that the average hospital stay was in endoscopic lumbar discectomy was 0.9±0.5 day. Haung et al. showed that the postoperative hospital stay was, 3.57±0.9818. Teli et al. showed that the average hospital stay was 54±12 hours. As our VAS 1.57±1.1 and mean hospital stay was 1.83±0.95 days. So the short term efficacy of PELD is obvious but comparison of long term outcomes are yet to be established.

**CONCLUSION**

Percutaneous endoscopic lumbar discectomy (PELD) is a minimally invasive procedure for discectomy with early encouraging results. It has a learning curve initially but once expertise is acquired over the technique, the results of this procedure are acceptable, safe and effective.

**REFERENCES**


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