Laminotomy Discectomy Versus Conservative Management for Lumbar Disc Prolapse: Short Term Results

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Abstract

Background & Objectives: Back pain, the ancient curse is now appearing as a modern epidemic. 80% of the population is affected by this symptom at sometime of life. Impairments of the back and spine are ranked as the most frequent cause of limitation of activities in people of all age groups. Lumbar discs are responsible for well over 90% of all organic symptoms attributable to low backache. Here we have done a clinical study, which includes sixty cases of lumbar intervertebral disc prolapse in the age group of 20 to 70 years, irrespective of sex, with clinical symptoms, signs and radiological evidence treated either conservatively or surgically with discectomy in the Department of Orthopaedics at our institute. All cases were followed up and functional results were analysed. The objective was to study the clinical presentation, evaluate outcome of both conservative and surgical management and to compare the results of both modes of treatment.

Methods: Out of 60 patients included in the study, 30 were treated conservatively & another 30 underwent laminotomy discectomy in the Department of Orthopaedics at our institute between October 2007 & September 2013. The short-term follow-up results in patients who were followed up for a minimum of 6 months after treatment were evaluated by using the Japanese Orthopaedic Association scoring system through clinical examination and questionnaire.

Results: Prevalence of disc prolapse was in age group of 20 to70 years, while peak incidence was between 30-40 years of age. Incidence of disc prolapse in males was almost twice as much as in females (in our series 65% male cases were noted). 56.67% cases had disc prolapse at L4-L5 level, which being the commonest site of disc prolapse followed by L5-S1 of about 41.67% and 1.67% at L3-L4 level. In the short term follow-up of 6 months, the outcome was good in 90% & excellent in 6.67% of surgically treated patients with 3% complication rate. Conservatively treated group of patients showed 46.67% good, 43.33% fair & 10% poor results.

Interpretation & Conclusion: Short term outcome of standard discectomy in our study was favourable and comparable to other studies. With the execution of appropriate selection criteria and appropriate pre & post treatment planning, a good to excellent outcome was seen in nearly 97% in surgical study. In conservatively treated group, 90% patients showed fair to good result. Therefore lumbar discectomy is still a simple, safe & effective treatment with rapid relief for patient while conservative treatment if given to properly selected cases also gives effective results. Patients undergoing surgery for lumbar disc herniation achieved greater improvement in outcome than conservatively treated patients.

Key Words: Conservative, Disc prolapse, Discectomy, JOA, Laminotomy

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Introduction

Back pain, the ancient curse is now appearing as a modern epidemic. Humans have been plagued by back and leg pain since the beginning of recorded history. 80% of the population is affected by this symptom at sometime of life. Impairments of the back and spine are ranked as the most frequent cause of limitation of activities in people of all age groups. Lumbar discs are responsible for well over 90% of all organic symptoms attributable to low backache. Clearly lumbar disc herniation is a significant medical and social problem. What is less clear is the efficacy of treatment and type of treatment to choose. Either conservative or surgical treatment is followed which requires a careful and detailed approach in the anticipation, prevention and management of orthopaedic complications that are a part of surgery of the spine for discogenic disease. The incidence of back pain appears to be constant. Efforts are being made to decrease the risk factors. Unfortunately, the cost of medical care and claims for disability appears to be rising. However at present the claims of disability in India appear to be negligible, that too in rural setup we have never come across the patient having employment disability claim. One word of caution in treating a home keeping women is that one should always rule out psychogenic cause of pain especially when patient contemplates

Surgery. Discogenic pain is one of the causes out of innumerable causes of low back pain. In our country where the protected water supply is yet a long way to achieve especially in rural people, Fluorosis may be a cause of disc degeneration and ligamentous calcification which needs a thorough and in depth study

at a bigger level. In absence of parameters for the diagnosis of Fluorosis and lack of facilities to monitor blood samples, urine samples and biochemical investigations to prove it, thus, Fluorosis is only hypothesis and many cases of discogenic pain could also be preceded by Fluorosis. With the basic understanding of disease process, new diagnostic techniques, refinements in conservative treatment and discectomy, improvements in surgical instrumentation revealed that surgical removal of the offending disc herniation is reasonably safe procedure with satisfactory results. Mortality of this surgery is almost negligible. In this study, we have tried to analyze the efficacy and clinical outcome of lumbar disc prolapse managed either by conservative treatment or laminotomy discectomy in our institute.

Objectives of the study

To evaluate 60 cases of lumbar disc prolapse that were admitted to our institute and compare and correlate the results with figures published in standard text books and reports submitted in this regard. And to study the clinical presentation of patients suffering from lumbar intervertebral disc prolapse, to evaluate outcomes of both conservative and surgical management, to compare the results of conservative and surgical management.

Materials and Methods

We studied 249 cases suffering from low back ache. In that sixty patients suffering from low backache with radiating pain to lower limb who met with below mentioned inclusion and exclusion criteria were selected for study. **Inclusion criteria:** All patients in the age group of 20 to 70years with prolapse of intervertebral disc, which had positive clinical symptoms, signs and radiological features.

Exclusion criteria: Patients with intervertebral disc prolapse associated with Structural scoliosis, Spondylolysthesis, Congenital anomalies, Developmental dysplasia, Infections of spine, Cauda-Equina syndrome, Failed back syndrome, Disc herniations at multiple levels, Tumours of lumbar spine. Patients presenting with symptoms and signs of lumbar Disc Prolapse who were admitted to the Department of Orthopaedics, at our institute from October 2007 & September 2013 were studied. We did a prospective study by managing the patients both conservatively and by laminotomy and discectomy and comparing the results of both the modalities of management. And at the end of six months patients were assessed by Japanese Orthopaedic Association Backache Score both before and after treatment.

Japanese Orthopaedic Association low backache score

I. Subjective symptoms Score

1. **Low Back pain** (3 points)
   a. No Low back pain 3
   b. Occasional mild low back pain 2
   c. Low back pain always present / severe low back pain occur Occasionally 1
   d. Severe low back pain always present 0
2. **Leg pain and or tingling** (3 points)
   a. No lower extremity pain or numbness 3
   b. Occasional mild lower extremity pain and numbness 2
   c. Lower extremities pain and numbness always present/ severe lower extremities pain and numbness occur occasionally 1
   d. Severe lower extremities pain and numbness 0
3. **Ability to walk** (3 points)
   a. Normal walking 3
   b. Walking at least 500m is possible, but pain, numbness & weakness are felt 2
   c. In walking 500m or less, pain, numbness and weakness occur, and walking becomes impossible. 1
   d. In walking at most 100m, pain, numbness and weakness occur, and walking become impossible. 0

II. Clinical Findings Score

A. SLRT (2 points)
   a. Normal 2
   b. 30 degree – 70 degree 1
   c. Less than 30 degree 0

B. Sensory Abnormality (2points)
   a. Normal 2
   b. Mild sensory disturbance (Hypoesthesia) 1
   c. Distinct sensory symptoms (Anaesthesia) 0

C. Motor Abnormality (2 points)
   a. Normal 2
   b. Slightly decreased muscle strength 1
   c. Markedly decreased muscle strength 0

Total score 15

Rate of Improvement =

Post treatment score – pre-treatment score / 15-Pre-treatment score x 100

Results after treatment are assessed according to the rate of improvement **Excellent:** > 90%, **Good:** 75 % to 89% improvement, **Fair:** 50 to 74% improvement, **Poor:** <49%

Methods

All patients admitted at our institute, who were within the limits of inclusion and exclusion criteria were taken up. A detailed history and clinical examination done, diagnosis was confirmed by magnetic resonance imaging, based on which patients were either conservatively or surgically treated with laminotomy discectomy after obtaining written

informed consent for risk and complication involved in operative procedure.

Conservative Treatment: Patients were treated by complete bed rest with pelvic traction with weight around 8 to 10 kg, in hospital for a minimum period of two weeks followed by week to ten days of gradual mobilization is instituted if patient has substantial relief of pain and no paraspinal muscle spasm.

Drug therapy: Nonsteroidal Anti – inflammatory drugs with muscle relaxants were used for a period of one week. Those who were allergic to nonsteroidal anti-inflammatory drugs managed with tramdol.

Lumbosacral Corset & Brace: It functions as an abdominal binder that in turn supports the back was given to patient after initial period of 2 weeks bed rest and traction.

Exercises: Exercises were advised only after acute symptoms of disc herniation reduced. Flexion exercises (Williams Flexion exercises) – to reduce lumbar lordosis, relocate the subluxated facet joints, prevent shearing stress, widening of intervertebral foramina, and strengthen the abdominal musculature and flexors of the spine. Extension exercises (Mackenzie extension exercises) are mainly indicated in sciatica or radiating pain. By this exercises the herniated disc is forced interiorly, thus preventing pressure over the nerve root and back muscles are strengthened. These exercises were done on daily basis.

Physiotherapy: After 1 to 2 weeks, once the acute symptoms subside, physiotherapy was recommended in the form of passive exercises and short wave diathermy, Transcutaneous electrical nerve stimulation, electrotherapy for two weeks.

Surgical Treatment

Position of patient: After general anaesthesia was induced, patient was put prone over spinal frame with intervening space free for abdominal movement, thus preventing pressure over inferior venacava and pelvic veins.

Pre-operative preparation: Corresponding disc level either L4- L5 or L5-S1, depending upon level of lesion, identified under image intensifier. Level was marked by scratching a needle horizontally, needle placed over the scratch and fixed with an adhesive plaster. An anteroposterior radiograph was taken under image intensifier and needle was removed, this facilitates easy identification of level of spine during operative procedure. Prophylactic antibiotics were administered about one hour before surgery.

Procedure: Back was painted with betadine solution, spirit and draped. Paraspinal and subcutaneous tissue was infiltrated with 1:500,000 epinephrine mixed normal saline which helps in providing haemostasis. A midline skin incision of about 5 to 6 centimetres over spinous process centering the affected disc level was put extending down into the subcutaneous tissue, lumbodorsal fascia and supraspinous ligament. Subperiosteal dissection was carried out and muscles were stripped from spine and laminae of vertebrae from distal to proximal on side of spinous processes. Laminotomy is done using kerrison rongeours. Cotton balls tied to cotton thread were used to tamponade the epidural veins, dura and nerve roots retracted medially while feeling for the tension, which is present when underlying disc herniation is present. As the nerve root was held medially with help of dural retractors, the herniated disc is brought into view. An incision was made over posterior longitudinal ligament and annulus fibrosus. Nucleus pulposus removed piecemeal with disc forceps, disc space was curetted out for loose fragments, with help of ring curette, avoiding injuries to aorta, venacava or iliac arteries by deep penetration. Disc space was irrigated with normal saline to remove any loose fragments. If herniated disc was not seen, careful search for the extruded disc or far lateral herniation, followed along the root around the pedicle. Searching around the axilla of the root to ensure fragments that have migrated inferiorly. If herniated fragment was exceptionally, large exposure of facet joints was required. When disc fragment herniated in axilla of the root, cruciate incision was made over disc and disc space was decompressed so as to allow retraction of nerve root over defect to medial side. Wound was closed in layers following complete haemostasis with suction drain in situ.

Postoperative management: Patient was allowed to turn (with no twisting of spine) in bed to select position of comfort. Parental antibiotics were given for first three days after surgery followed by oral antibiotics for another three days and addition to analgesics and anti-inflammatory drugs until sutures were removed. Drain was removed after 48 hours, and sutures removed after 2 weeks. Back exercises were started 4^{th}-6^{th} post-operative days once pain is minimal, sitting with back rest was allowed after 2 weeks but long journey was avoided up to 3 months. Isometric abdominal exercises started after suture removal with spine extension and isotonic exercise of leg with lumbo-sacral belt for 3 months and forward bending was restricted for 12 weeks. Patients with jobs requiring much walking without lifting weights are allowed to work after one month. Patients with jobs requiring prolonged sitting were allowed to go for work after 2 months. Patients with jobs requiring heavy labour were advised to switch to light work. Patients were regularly assessed at 6^{th} week, 3^{rd} and 6^{th} month.

Observations and Results

The study included a total of 60 patients. 30 were operated for lumbar disc herniation by laminotomy and discectomy and 30 patients were treated conservatively between October 2007 & September 2013. All patients were available for follow-up for this prospective analysis. The minimum follow-up duration was 6 months. The age of the patients varied from 31 – 65

years with the mean age of 45.32 years. The age of the females varied from 31 – 65 years (mean 46.46 years) and age of the males varied from 31– 65 years (mean 44.58 years).

Age Distribution: In our study there was highest incidence of disc prolapse in the age group of 31-40 years that is 50 %(30). Fifteen patients in conservatively treated group were in age group of 51-60 yr & in surgically treated group it was 76.7 %(23) were in 31-40yr age.

Sex Distribution: In our study there were total of 39 males (65%) and 21 females (35%). Out of 30patients in conservative group, 16 (53.33%) were males & 14(46.67%) were females. Out of 30 patients in surgically treated group 23(76.67%) were males & 7(23.33%) were females.

Distribution of Strenuousness of patient occupation: Occupational activity has been divided into three categories according to the criteria of physical involvement needed, light work (office jobs), medium strenuous work (household tasks) and heavy work (farmers, construction workers). In our study there were all patients belonging to heavy strenuous work. Female patients who were supposed to be confined to household tasks also engaged themselves with fieldwork and carrying weights, therefore making them to classify under heavy workers.

Distribution of Symptoms: All cases came with complaints of low backache and radicular pain. Among the conservatively treated group, 12 (40%) patients had sudden onset pain while lifting heavy weights or bending forwards or doing household activities. The remaining 18(60%) had insidious onset of pain. The duration of symptoms varied from 1 month to 5 years with the mean duration of 3years 8 months. Among the surgically treated group, 9 (30%) patients had sudden onset pain while lifting heavy weights or bending forwards or doing household activities. The remaining 21(70%) had insidious onset of pain and duration of symptoms varied from 3 month to 5 years with the mean duration of 4years 2 months.

Distribution of Signs: Majority of patients had a positive SLRT along with neurological deficit. Patients with motor deficit of grade 4 and 3 were considered to have slightly decreased muscle strength and those with less than grade 3 were considered to have markedly Reduced muscle strength.

Distribution of JOA score pre-treatment: Out of 30 patients in conservatively treated group majority of patients 27(90%) had a pre-treatment JOA score of 6-10 & in surgically treated group 20(66.67%) had pre-treatment JOA score of 6-10.

Distribution of level of lumbar disc prolapse: 56.67% cases had disc prolapse at L4-L5 level, which being the commonest site of disc prolapsed followed by L5-S1 41.67% and 1.67% at L3-L4 level.

Distribution of type of prolapsed: Majority of patients in conservatively 24(80%) had protrusion and for 6(20%) it was extrusion. Among surgically treated 21(70%) patients had protrusion, 6(20%) had extrusion and remaining 3(10%) had sequestration, confirmed by magnetic resonance imaging.

Distribution of complication – Surgically Treated: The average surgical time was 65 minutes (45 to 135 minutes). Patient was mobilized on the second post-operative day with a lumbo-sacral corset. No case of superficial wound infection was noted. One case of dural tear noted, intra-operatively fat graft was placed over the leak.

Distribution of JOA score post-treatment: Post Treatment JOA score after a mean follow up of 6 months for both Conservatively Treated and Surgically treated patients was recorded.

Final outcome JOA Score, in both conservative (90%) & surgically (100%) treated patient groups was found 11 to 15 signifying considerable improvement with both modes of treatment.

Distribution of Treatment outcome on basis of JOA score: Treatment outcome on basis of JOA score was found to be fair to good in 27(90%) of conservatively treated patients & Good to Excellent in 29(96.67%) of surgically treated patients. While 3(10%) patients showed poor outcome in conservatively treated group.

Outcome of Pain Relief: 90% of conservatively treated group and 100% of surgically treated group got relived from low backache and radicular pain after treatment.

Outcome of Neurological deficits: In our series patients having motor deficits were 15 in conservative group and 18 in surgical group. The patients having sensory involvement were 18 in conservative and 22 in surgical group. Majority of the patients had neurological recovery except 1 following discectomy & 3 patients in conservatively treated group did not have full neurological recovery.

JOA score (symptoms) at the final follow-up examination: Even though majority had low back pain relief, most had residual back pain. However in conservatively treated group most patients 26(86.67%) had, only occasional low backache (JOA Score, 2 points). Similarly 19(63.33%) had occasional tingling or leg pain. 24(80%) of patients had no gait disturbance at the final follow-up examination. In surgically treated group 11(36.67%) patients had complete relief from backache while other 19(63.33%) had only occasional backache. 20(66.67%) patients had complete relief from leg pain & 27(90%) patients had no gait disturbance at final follow-up examination that is at 6 months.

JOA Score (signs) at the final follow-up examination: The result of SLRT was negative in 93.33% of patient population at the final follow-up examination. Sensory and motor disturbances were present in 60% and 50%, respectively, of the entire conservatively treated patients group, before treatment and in 3.33% and 6.67% of the patients, respectively, at the final follow-up examination.

JOA Score (signs) at the final follow-up examination (6 months): The result of SLRT was negative in 93% of patient population at the final follow-up examination (Fig 1). Sensory and motor disturbances were present in 73.33% and 60%, respectively, of the entire surgically treated patients group, before surgery and only 3.33% of the patients had motor disturbance, at the final follow-up examination. Final outcome according to the JOA score was correlated and analyzed for a set of variables like Age, Duration of symptoms and Neurological deficit.

Correlation with Age: In our conservative group fair to good results were seen in 22 patients of age more than 40 years. While in surgical group good to excellent results were seen in 14 patients less than 40 years and another 11 patients more than 40 years. Excellent results were seen in 2 patients less than 40 years in surgical group.

Correlation with duration of symptoms: In our study patients with duration of symptoms less than 6 months gave better outcome in both conservative group where 18 (60%) gave fair to good results and in surgical group 23 (76.67%) gave good to excellent results.

Correlation with Neurological deficits: In our study patients, both in surgical and conservative group showed good result. This was seen in 26(86.67%) cases with deficits present before treatment in surgical group and in 10(33.33%) cases with deficits present before treatment in conservative group.

Discussion

Low backache is a major public health problem in the in developing country in both rural and urban setup. It causes suffering and distress to patients and their families, and affects a large number of people. The prevalence of lumbar intervertebral disc prolapse constitutes about 5 – 10% of all low backache patients and is a common cause for sciatica. Back pain with radiation to legs is commonest presentation in patients suffering from lumbar disc prolapse. Males are more prone to disc prolapse (Male: Female 3:1). Pathology of disc degeneration is age related, occurring more commonly between 30 to 70years. Strenuous activities and occupational influence are factors in the precipitation of disc prolapse. Exacerbations and remissions are common features in patients suffering from disc prolapse. Straight leg raising test is constant reliable sign of nerve root irritation. Clinical findings and pre-treatment imaging is essential tool for confirmation and planning the modality of treatment. L4-L5 disc prolapse is commonest presentation in disc lesion Disc prolapse alters disc height and the mechanics of the rest of the spinal column, possibly adversely affecting the behaviour of other spinal structures such as muscles and ligaments. The standard treatment of lumbar disc prolapse is conservative treatment or surgical excision of the disc, though the methods vary. The first disc prolapse operation falsely accredited to Mixter and Barr had been conducted by Oppenheim and Krause in Berlin but interpreted it as an enchondroma of spinal disc. Mixter and Barr's classical paper "Rupture of intervertebral disc with involvement of spinal canal" opened an era of systematic diagnosis and operative treatment of lumbar disc prolapse [1]. Their approach showed the effectiveness of Laminotomy and Discectomy in its management and since then there has been an ever increasing enthusiasm to solve sciatica problems surgically by disc excision. Although minimally invasive operations such as percutaneous nucleotomy and micro endoscopic discectomy have gained attention in recent years [2, 3, 4], standard discectomy is still the preferred management technique among the majority of surgeons because of its favourable outcome and affordability [5]. Although early results of surgical discectomy have shown success rates of over 90%, but discectomy can also lead to unsatisfactory outcomes, such as recurrent or increased back-pain and or sciatic pain [5, 6]. The rate of recurrent disc herniation ranges from 3 – 20% and it constitutes a major cause of failed back surgery syndrome [7]. This implies that there are many factors which influence the outcome of lumbar disc surgery. Therefore emphasis should be on proper patient selection [5] before embarking on a surgical procedure, it is essential to remember that patient selection is crucial to a successful outcome. There is no substitute for a careful and accurate history and physical examination correlated with imaging studies. Magnetic resonance imaging/ Computerised tomography/ Myelography have revolutionized the diagnosis of spinal disease by accurate visualization of all structures within the neural canal. In addition, it offers the opportunity to outline the neural foramen and extraforaminal areas and thus guides the surgeon in planning the precise surgical correction, avoiding unnecessary exploration of uninvolved levels [8]. Other mode of treatment, "active" nonoperative treatment is also used, except in patients with progressive neurologic deficit and cauda-equina syndrome, both of which are indications for urgent decompression [9]. Hence any surgical intervention without appropriate conservative therapy leads to unnecessary surgery and also a poor outcome. [10]

Long-term results of surgery have been less positive, with success rates of 40% to 79% over an extended period of follow-up. [11, 12] The most likely factors leading to variable results are patient selection, varying follow-up intervals, and differences in analyzing outcomes[5]. There appears to be a significant deterioration of symptoms with time after surgery. Some reports have noted that residual low back pain and recurrent herniations were the major postoperative problems encountered. The results are favourable when there is proper selection of cases, appropriate correlation between clinical presentation and imaging studies and valid indication for operative treatment of a patient who has herniation of a lumbar disc [13, 14].

In this study 60 cases suffering from lumbar intervertebral disc prolapse admitted to our hospital, fulfilling the inclusion criteria were included. Patients were divided into two groups that are conservative treatment group and surgical treatment group on the basis of symptoms, signs, age, affordability and willingness of patients for a particular treatment method. We have utilized Japanese Orthopaedic Association low backache score to analyze the short-term results to assess the patient's outcome. It also helps in correlating the results to various factors that might influence the outcome.

Since 1934, many studies have demonstrated the success of surgical treatment for sciatica. In Weber's landmark study comparing surgery with conservative care in a randomized clinical trial, which excluded patients with "intolerable" pain, the outcome of surgery was superior at 1-year follow-up, whereas after 4 years the results of surgery and conservative treatment no longer differed [15]. The primary outcomes of our study were also strongly influenced by a substantial crossover of patients assigned to conservative treatment, but the effects of crossover on the differences between the groups were mitigated by early performance of surgery in the group assigned to surgery.

Majority of our patient population comprised of males which were in accordance with studies by Weber et al [15], Spengler et al [5], Davis et al [13] and Pappas et al [16]. In our study there was highest incidence of disc prolapse that is 30(50%) patients were in the age group of 31-40 years & most common level of involvement in our study was L4 – L5 followed by L5 – S1. Majority of cases came with complaints of low backache with radicular pain. The duration of symptoms varied from 1 month to 5 years with the mean duration of 3years 8 months. Most of patients had a positive straight leg raising test along with neurological deficit & paraspinal muscle spasm.

In majority of patients that is 80% of conservatively managed and 70% of surgically managed were having disc prolapse in stage of protrusion which was confirmed by MRI. The incidence of complication in our study was 3% as dural tear. Nearly all the patients had low backache and radicular pain got relived except in two patients managed by conservatively treated group and all patients who were managed by surgery were relived from low back and radicular pain.

Table 1 Outcome comparison with studies of Weber et al & Spengler et al

Outcome	Weber Et Al[15]	Spengler Dm Et Al[17]	Surgically Treated Group
GOOD	93%	88%	90%
FAIR	7%	6%	3%
POOR	0%	6%	0%

MRI showing L5-S1 disc prolapse

Post operative SLRT 90°

A good to excellent outcome was obtained in our short term follow-up study in 97% and a fair outcome of 3% which are comparable to the short term outcome studies of Weber et al and Spengler et al. This could probably be attributed to proper selection of cases, appropriate correlation between clinical assessment and imaging study and a valid indication for surgical intervention. Our conservative management group showed a good result of 47%, fair result of 43% & poor outcome in 10% which is favourable and comparable to those studies of Vroome, which showed fair to good results in 93% cases, but results in our study was marginally on lower side probably due to low socioeconomic status, psychological factors and low literacy rate[18]. Nearly in all patients with good result, the pre-treatment low backache and sciatic symptoms were reported to be improved following both the procedures in our study which are comparable to other studies by Spengler et al.

In our conservative study, 3 cases had a poor outcome in that two patients were aged above 40 however & one below 40 indicating an insignificant correlation which was in accordance with Weber [9] who found no predictive outcome with age. However in the surgical study there was a decrease in the outcome with advancing age, which was comparable with finding of Mathi Hueme et al [19], who found that if the patients age is more than forty years, was associated with fair to poor outcome. No significant correlation was found between gender of the patient and short term follow-up outcome. However in the surgical study, female gender was associated with unfavourable outcome compared to males which goes well with the study of Weber et al [9].

Depending upon the duration of the symptoms the results were found to be fair in both the studies when duration was more than 6 months. The patients with lesser duration of symptoms were associated with good to excellent outcome. In our conservative study light workers were found to have better outcome when compared to the heavy workers. Economic burden, the reason for continuing prior occupational activity and the nature of heavy manual work might have indirectly affected the surgical outcome.

Results of our study showed a favourable outcome with laminotomy & discectomy for lumbar disc prolapse and are comparable to other techniques of discectomy.[20, 21] In the present series it was observed that there was one case of post-operative infection(3%), 3% had dural tears, there were no nerve root injuries and mortality. In a series of 2503 patients, Sprangfort [22] concluded that 2.2% had wound infections, 1.6% had dural tears, 0.8% had nerve root injuries and 0.1% had mortality. Adhesion is a consequence of prior surgery or the result of inflammatory changes by disc prolapse itself. The dura is often under pressure due to buckling of a thickened ligamentum flavum, especially in elderly patients with degenerative changes.

Conclusion

Our study consists of analysis of 60 cases of Lumbar Disc Prolapse who took treatment. 30 cases underwent surgical treatment and 30 conservative treatments from October 2007 & September 2013 at our institute. Patients were divided into two groups of 30 patients depending upon mode of treatment. The peak incidence of lumbar disc prolapse was between 30-40 years of age. Incidence of disc prolapse in males was 65%. 62% were hard working manual labourers. 60% and 77% of patients respectively of conservative and surgically treated group were with symptoms of less than six months duration. The precipitating factor for disc prolapse was non- apparent in 70% and occupational strain in 30 %of cases. Left side was involved in 55% of cases and right side was involved in 45% of cases. Out of 60 patients, 25% patients presented with both motor and sensory deficit, whereas 27% presented with motor deficit only. Tenderness was elicited in 93% of cases and paraspinal muscle spasm present in 81% cases. 56.67% cases had disc prolapse at L4-L5 level, which being the commonest site of disc prolapsed followed by L5-S1 41.67% and 1.67% at L3-L4 level. Per operatively there was dural tear in 1 case which was managed by subcutaneous fat graft coverage over the leak. Post operatively patients were on rehabilitation program started by third day in all the cases. In second week they were mobilized with lumbosacral belt and continued rehabilitation program. Post conservative treatment patients were advised to do back extension exercises & advised to avoid strenuous activities for 3 months. Our results are comparable to standard results as in our study it was excellent in 3% cases, Good in 68% ,fair in 24% and poor in 5% of cases. The results were better in patients who had symptoms of nerve root compression than who had backache as main symptom. Patients undergoing surgery for lumbar disc herniation achieved greater improvement than non-operatively treated patients. Surgery provides quicker relief, compared to conservative management.

Conflict of Interest: None

Source of Support: Nil

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