E:/Nsurg/Vol. 13, No. 2, Jul. - Dec. 2009/Nsurg-3.doc (A) P. 103 – 107

ORIGINAL ARTICLE

Analysis of Patients Operated For Lumber Disc Herniation

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ABSTRACT

Objectives: *To analyze different variables of patients operated for lumber disc prolapsed.*

Material and Methods:

Study Design: *Observational study.*

Sample Size: *Three hundred and twelve consecutive patients operated for lumber disc herniation.*

Settings: *Department of Neurosurgery, Postgraduate Medical Institute, Govt Lady Reading Hospital, Peshawar. Pakistan.*

Duration: *The study duration was nine months from January 2008 to sept; 2008.*

Inclusion criteria*: Patients irrespective of age and sex with lumber disc herniation having.*

1. *Failed conservative treatment.*
2. *Severe intractable pain.*
3. *Patients with positive prognostic factors.*

Exclusion criteria: *Patients with sciatica from causes other than lumber disc herniation as;*

1. *Spinal stenosis.*
2. *Spinal tumors.*
3. *Spinal tuberculosis.*
4. *Spondylolysthiasis.*
5. *Sciatic nerve lesions.*

Results: *Out of 312 patients 208 were male and 104 female with male to female ratio of 2:1. Their ages ranged from 17 to 70 years. Majority (56.1%) of patients were from northern areas. Straight leg raising test was impaired in 295 cases. The ratio between contained and ruptured disc was 3:1. About 44.9% of patients (140 cases) had left side disc prolapse, while right side in 29.5% and bilateral in 25.6% cases. The common level affected was L_4-L_5. In 225{72.1%} patients modified fenestration Discectomy was suitable and in the rest Laminectomy was carried out. The removed disc tissues were send for Histopathology in all cases. Out of which one was reported as non-Hodgkin lymphoma and one infected disc. Ten patients developed discitis postoperatively.*

Conclusion*: From this study we conclude that Lumber disc herniation is common in male gender in 4th decade of their life, which occur commonly due to misuse of back. It usually occurs in Labourers and drivers. Left side and L4-5 level is involved in majority of patients. Sciatica with backache, and impaired straight leg raising test are important clinical features. Contained disc is more common than ruptured disc. Minimal invasive procedures like modified fenestration Discectomy gives good results. It is also concluded that because of normal histology of most of prolapse disc, histopathologic examination should not be asked routinely but only in suspected cases.*

Key words: *prolapsed Lumber disc, backache, modified fenestration Discectomy.*

INTRODUCTION

Disc herniation is a common neurological disorder in Neurosurgical practice. It can occur in cervical and thoracic spine but is more common {90% cases} in the lumber spine[1]. Disc degeneration and trauma are the main reasons for its herniation.[1-3] Disc Prolapse is more common in men in their 4th to 5th decade specially those who misuse their spine and make it prone to loading. So it is common in Labourers, farmers, drivers and weight lifters.[3 4] Anyhow no person in the community is immune to this.

Most of the patients with disc prolapse have backache and pain in a specific dermatome.[4,5] They may have numbness or weakness in the respective area supplied by the compressed nerve root. Along with the above features if the patient has sphinteric problem and perineal numbness with areflexia, the condition is called Cauda Equina syndrome, which is a Neurosurgical emergency.[4] Positive straight leg raising test is an important finding on neurological examination. Plain X-rays, myelogram, CT scan and MRI are the investigations which helps a lot in identifying the site and side of herniated disc[4]. Disc dehydration and thecal sac compression are the important findings of herniated disc. Majority of the patients {90%} with prolapse intervertebral discs are treated conservatively with satisfying results. Patients with failed conservative treatment or having progressive neurodeficit needs surgical intervention. Cauda Equina syndrome and patients with motor deficit need emergency surgery.[4,6]

Laminectomy, after its introduction by Mixter and Barr in 1934, remained main stay of surgical treatment for disc prolapsed.[1, 4,7] Microsurgical technique was introduced later because the results were equal to standard Laminectomy with lower complication rate.[4,7,8]

Minimal invasive spinal procedures as percutaneous endoscopic Discectomy laser Discectomy and laparoscopic Discectomy are now a days commonly practiced worldwide. These surgical procedures are adopted according to the clinical status of the patients and radiological picture of the spine[1]. Preoperative prognostic factors helps a lot in explaining the postoperative out come of the surgical procedure. Different variable like age, sex, occupation, address, clinical features, side, site {level}, surgical procedure, contained vs ruptured disc, complications and Histopathology; definitely affect the post operative results and needs consideration during surgical management of these patients.

MATERIAL AND METHODS

This study was carried out at the Neurosurgery department Lady reading hospital Peshawar. Lady Reading Hospital is a tertiary care hospital providing Neurosurgical care to the people of N.W.F.P as well as patients from near afghan border. This was an observational study. A total of 312 patients were operated for prolapsed lumber disc. Duration of the study was from January 2008 to sept; 2008. Patients of all age groups and both the genders with lumber disc herniation were included in the study. Sciatica with causes other than disc prolapse like spinal stenosis, spinal tumors, spinal tuberculosis and sciatic nerve lesions were excluded from the study. Patients presenting symptoms were made to collect. All the necessary information and data regarding the patients and disease was recorded on separate designed Proforma considering different variables. History was taken, clinical examination performed with special emphasis on straight leg raising test and neurological status. Neuroimaging were carried out in these patients before surgical decision. The objective of the study was discussed with patients and their relatives. Written informed consent was taken. Necessary arrangements were made for surgery, most of the patients were treated with modified fenestration Discectomy and some were subjected to Laminectomy or Hemilamenectomy.

RESULTS

Table 1: *Sex incidence (n = 312).*

Sex	No. of Patients	% age	Ratio
Male	208	66.6%	2
Female	104	33.4%	1

Table 2: *Age incidence (n = 312).*

Age Range	No. of Patients	% age
10-19 years	12	3.8%
20-29 years	44	14.1%
30-39 years	136	43.6%
40-49 years	94	30.8%
50 years and above	24	7.7%

Table 3: *Occupation of male patients (n = 208).*

Occupation name	No. of Patients	% age
Labourers	79	37.9%
Driver	51	24.5%
Farmer	43	20.7%
FC personal	17	8.2%
Office workers/sedentary	18	8.7%

Table 4: *Geographical areas from where the patients belonged (n = 312).*

Area name	No. of Patients	% age
Northern	175	56.1%
FATA	51	16.3%
Central	51	16.3%
southern	35	11.2%

Table 5: *Clinical features.*

Name	No of Patients	% age
Impaired SLR	295	94.5%
Nerve root pain	280	89.7%
Backache	228	73.1%
Foot drop	15	4.8%
Cauda Equina syndrome	10	3.2%

Table 5: *Side of lumber disc herniation (n = 312).*

Side	No of Patients	% age
Left	140	44.9%
Right	92	29.5%
Bilateral	80	25.6%

Table 6: *Level of lumber disc herniation (n = 312).*

Level	No of Patients	% age
L1-2	3	0.9%
L2-3	4	1.3%
L3-4	6	1.9%
L4-5	148	47.4%
L5-S1	130	41.6%
More than one level	21	6.7%

Table 7: *Surgical procedure performed (n = 312).*

Procedure name	No of Patients	% age
Modified fenestration	225	72.1%
Hemilamenectomy	58	18.6%
Laminectomy	29	9.3%

Table 8: *Improvements of symptoms.*

Name	No of Patients	% age
Nerve root pain	238{280}	85%
Backache	170{228}	74.56%
Foot drop	10{15}	66.66%
Sphincter dysfunction	6{10}	60%

Table 9: *Contained vs ruptured disc (n = 312).*

Name	No of Patients	% age	Ratio
Contained	234	75%	3
Ruptured	78	25%	1

Table 10: *Histopathlogical report (n = 312).*

Name	No of Patients	% age
Fibro cartilage	310	99.36%
Non HKL	01	0.32%
Infected disc	01	0.32%

Table 11: *Postoperative Complications.*

Complication	No of Patients	% age
Wound infection	14	4.5%
Discitis	10	3.20%
Durotomy	4	1.28%

DISCUSSION

Degenerative disc prolapsed is one of the cause of backache. The incidence disc prolapse varies in different classes of society but is more common in people misusing their back like labour, weight lifter, and driver etc. Anyhow no person in the community is immune to this order.

The total number of patients operated for lumber disc herniation during the study period was 312.

Majority {66.6%} of them were males and 104 {33.4%} were females. Siddiq and perisini in their different studies also reported that disc prolapse is more common in male gender.[4,5,9] Males are affected more in our province. This may be because of misuse of back, hard manual work, labour, driving, lifting and smoking. The ages of patients ranged from 17-70 years with the mean age of 39.4 years in our study. Most of them were in their 4th decade. This may be due to commonality of degenerative spine disease in this age group. The patients from Northern areas of the province were significantly more {56.1%}, Followed by 51 {16.3%} patients each from FATA and central areas. While those from southern parts were only 35 {11.2%} of the total. The reason may be because of poverty, poor nutrition and low literacy rate make these people Prone to degenerative disc herniation. Most of male patients from northern areas, they work in overseas countries as UAE and Saudi Arabia, where they are involved in heavy mechanical work. Although anatomical and physiological factors play an important role in patients with sciatica, provocating factor like nature of job, overuse of back and poor nutritional status combining with these factors become etiological factors. Number of Patients from southern areas is low. This may be because they are drained to hospitals of Punjab. MRI was done in most of the patients because it helps in diagnosis. MRI is commonly done and has replaced myelogram except in patients with contraindication to CT scan and MRI.

In our study 79 {37.9%} patients were Labourers. Drivers and formers formed 24.1% and 20.7% {43} of the total. Another study also concluded that lumber disc prolapse is common in drivers. The most common symptoms were nerve root pain in 280 patients followed by bachache in 228 patients. SLR was impaired in295 cases while foot drop and Cauda Equina syndrome in 15 and 10 patients respectively. Left sided disc herniation was common in our study {140 cases}. This reason may be that most of the people are right handed and they bend on the right side while lifting weight so intervertebral disc is squeezed from right to the left.

Studies have shown that disc herniation is more common at L_{4-5} level[4]. We have comparable results in our study {47.4%}. We have done modified fenestration Discectomy in 225 {72.1%} patients. Because this microsurgical technique is the procedure of choice in patients with disc herniation, having root pain. The rest were subjected to Laminectomy specially having associated spinal stenosis with disc prolapse or Cauda Equina syndrome. The ratio between contained and ruptured disc was 3:1 in our study. 85% of patients had improved root symptoms after surgery. But those having bachache responded in almost 74% cases. The rest were having no or minimal improvement. Foot drop and sphincter dysfunction improved in 66.6 and 60% respectively. None of the patients complained about worsening of the condition. Asch and his colleagues also concluded in their study that relief of leg pain is more than relief of back pain in patient with lumber disc herniation after surgery[10]. 14 patients had superficial wound infection and 10 patients {3.2%} developed post op discitis. Almost the same results were reported in a local study[4].We collected disc tissue for Histopathology evaluation in all patients. Two patients were having Histopathology finding favouring non-Hodgkin's lymphoma and infected disc. This indicates that prolapse disc has normal histology and does not need routine histological examination. By following these guidelines the economic burden on hospitals and patients can be decreased tremendously. Histopathology examination should be advised in suspected cases or abnormal disc fragments.

CONCLUSION

From this study we conclude that Lumber disc herniation is more common in male gender in 4th decade of their life, which occur commonly due to misuse of back. It usually occurs in Labourers and drivers. Left side and L4-5 level is involved in majority of patients. Sciatica with backache and impaired SLR are the common clinical features. Sciatica respond well to surgery than backache. Contained disc is more common than ruptured disc. Minimal invasive procedures like modified fenestration Discectomy gives good results. It is also concluded that because of normal histology of most of prolapse disc, histopathologic examination should not be asked routinely but only in suspected cases.

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