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Challenges in the Conservative Management of Intervertebral Disc Prolapse

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Abstract

Seven cases attending the Department of Physical Medicine and Rehabilitation, having Intervertebral Disc Prolapse are presented in this paper. Five cases had the Intervertebral Disc Prolapse in the lumbosacral region and two in the cervical region. The cases belonged to different age groups. All the cases had varying degree of neurological deficit, both motor and sensory. MRI was done in all the cases to confirm the diagnosis. All the cases were put up for surgical removal of disc but surgery was not done for certain reasons, viz. the patients did not have finances, they were afraid to get it done or the surgery was delayed for certain reasons. They were subjected to conservative rehabilitative management with prolonged rest. In all the cases motor deficit reverted to normal and the sensory deficit improved considerably. All the patients at the end of the treatment were pain free and did not have any motor deficit. They were able to perform all their activities of daily living without any modifications, while taking due precautions to prevent any aggravating factors. A follow-up of the patients upto a period of about six months after the "clinical cure" is presented. From the study it is concluded that careful prolonged conservative management has a role in the management of Intervertebral Disc Prolapse with neurological deficits and all such patients need not be rushed in for surgical removal of discs.

Key words: **Intervertebral disc, Cervical spine, Lumbar spine, MRI, Rehabilitation.**

Introduction

With the advent of modern high powered investigations like CT scans and MRI scans, impetus for surgery is really strong whenever an anatomic defect is present. It has also been the general feeling that most surgeons are relying less on the clinical examination and more on the findings of such investigations. There is no doubt that patients with intervertebral disc prolapse (PID) are being operated more often than the times, prior to advent of these investigations, though data on such is not available in the scientific literature. Some of the recent studies suggest that conservative management gives satisfactory results in a high proportion of patients with disc herniation in course of few months of treatment onset. This is likely to occur in mild to moderate nerve root compression. Chances of successful outcome with surgery are higher in patients with a marked nerve root compression, no or mild back pain and short duration of symptoms. The results of surgery often deteriorate in long term because of reccurance of radicular and specially low back pain. In most patients the deterioration is not related strictly to surgery because chances of pain recurrence or worsening with time are similar in the patients treated conservatively and in those who undergo surgery.[1] In this study, the outcone of non-surigcal rehabilitation managemnt is observed in patients

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having PID with neurological deficit and clear indication for surgery which could not be performed due to one or the other reason.

Material and Method

Seven male patients (Table 1) in the age group of 19 years to 60 years, diagnosed to be having PID on the following criteria were studied:

(a) those having neck or back pain,
(b) presence of radicular pain,
(c) having a positive straight leg raising (SLR) test of below 60° (in lumbosacral disc prolapse) and
(d) having motor and sensory deficits.

All these cases were seen by the physiatrists in the Department of Physical Medicine and Rehabilitation, All India Institute of Medical Sciences (AIIMS) and also in the Department of Neuro-surgery, AIIMS. All the patients were subjected to MRI, which confirmed the diagnosis. In all the seven patients surgical removal of the disc was advised by consensus amongst specialists from both the departments based on the standard criteria for indications of surgery:[2]

a) Acute protrusion with nerve root compression, with a well defined neurological deficit,
b) chronic degenerative disc with referred pain where failure of adequate trial of non-perative therapy, though none of our patients was in this category,
c) progressive motor deficit

Table 1: Patients' Profile

Age (yrs)	*Occupation*	*Motor deficit*	*Level*
19	Naval trainee	EHL+Ankle DF	L4-5
32	Businessman	EHL (recurrent)	L4-5
40	Office attendant	EHL+Ankle DF	L4-5 & L5S1
45	Driver	Lt.EHL + Rt. GS	L4-5 & L5S1
36	Policeman	Quadriceps + Ankle DF	L2-3 & L3-4
60	Politician	Deltoid and Biceps	C4-5 & C5-6
31	Businessman	Wrist DF	C5-6 & C6-7

EHL: Extensor hallucis longus, DF: Dorsiflexors, GS: Gastrosoleus

All the patients were advised surgery but refused to undergo surgery for the following reasons:

(i) Refused
  a) due to fear 3 patients
  b) due to financial reasons 2 patients
(ii) Surgery delayed for some reason 2 patients

In all the seven patients, the conservative treatment was continued with the following regimen during the early phase: prolonged rest, no exercises till 80% of the pain subsided, superficial heat, analgesics and non-steroidal anti-inflammatory medicines. Bracing with soft cervical collar was given in all cases with cervical involvement. Lumbosacral belt was limited only to the early phase of treatment for the fear that the patient might try doing various activities with the belt on and might not be restricted to rest as advocated. Steroids were given in only one case having an acute attack with neurological deficit, that reported within two days following onset of PID in the lumbo-sacral region. It were given in a tapering dose over 5 days. The important points, made clear to all the patients were (i) a clear understanding of their condition, (ii) need for surgery, (iii) risks of either kind of management, (iv) life style to be expected and (v) possible complications in either approach of treatment. Rest was advised according to the following criteria:

Total bed rest, till the time SLR test was below 45° or the presence of continuous pelvic list.

Relative rest, allowed to move about in the house and in the vicinity of the house. No bending, lifting weight nor going to work till SLR was between 45° to 60° and with no list or occasional list.

Rest on demand, when the SLR was above 60° and when there was no list.

All the patients were advised to take standard precautions about posture and positioning. None

of the patients was advised any traction. The exercises were started only after SLR was above 60°, without the presence of any list and presence of occasional radicular pain.

End of the treatment was decided on the following criteria:

a) when the patient was pain-free
b) when the patient was list-free
c) improvement of motor deficit
d) no major recurrence of radicular pain
e) able to perform Activities of Daily Living (ADL) with precautions
f) no episodes of increase in neurological deficit
g) reduction in sensory deficit

During the time the patient was coming for the follow-up, need for surgery was made known to the patient every time. Duration of continuation of the therapy was based on the above criteria, irrespective of the time elapsed. The patients were followed-up upto about six months after clinical recovery.

Observations and Results

With the continuation of the conservative treatment, observations as noted are depicted in the Table 2.

The table depicts improvement in the motor power of the muscles and the time taken for the recovery of each muscle from the initial level. The last column indicates the total duration of the follow-up of the patient, when last seen, after the first visit to the hospital.

Discussion

The literature repeatedly shows that surgery is often recommended as a definitive treatement in lumbar disc herniations.[1] It has been studied that the natural course of the lumbar disc herniation followed up over a period of one to five years indicate that the results after surgery have been satisfactory in 45% cases and unsatisfactory in 55% cases.[2] In the same study it was quoted that 30-95% patients showed improvement in the non-surgical group in cases of lumbar radiculopathy. Acute protrusions respond well to surgery. In most patients with conservative treatment normal life pattern returns within 2 months. In this study all patients had a clear indication for surgery. There was no grey zone in the indication for surgery. There was no comparison available to show how did they fare as compared to the conservative group. In light of the literature, our small group of patients took longer to return to their normal life pattern. Results of surgery versus conservative depicted in two studies[4,5] show immediate results are better with surgery but 3 years later, there is relatively no difference statistically between the

Table 2

Age (yrs)	*Occupation*	*Mm. involved*	*Power improvemnt*	*Time taken time*	*F.U.*
19	Naval trainee	EHL+Ank. DF	2 to 4+	8 mo	1 yr
32	Businessman	EHL	3+ to 4+	6 mo	3 yrs
40	Office attendant	EHL+Ank. DF	3 to 5	6 mo	2 yrs
45	Driver	EHL + Rt. GS	2+ to 5-	5 mo	9 mo
36	Policeman	Quad + Ank.DF	3- to 5-	3 mo	6 mo
60	Politician	Delt. and Biceps	2 to 5	2.5 mo	9 mo
31	Businessman	Wrist Dorsiflex.	2+ to 5	1.5 mo	4 mo

mo: months, yr/yrs: year/years EHL: extensor hallucis longus, GS: Gastrosoleus, Delt.: deltoid DF: Dorsiflexors

two groups. Psychological factors in the causation of back pain need to be carefully screened before subjecting the patients for surgery since they may greatly influence the outcome after any treatment. Saal et al[6] state that lumbar radiculopathy can be treated conservatively. Some studies have reported the success rate of 71% in case of treatment by non operative means.[1] The above fact has been supported by another study[7] which further suggests that surgery should be undertaken if patient does not respond after at least 2 months of conservative treatment. Thus it can be concluded that a high proportion of patients with PID make a satisfactory recovery with aggressive conservative management and this recovery is accompanied by resolution of the disc herniations in significant number. Only a small proportion of patients need surgical decompression.

Therefore, it can be implied that there should not be a great rush for surgery in patients with PID. Of course, unless the patient understands what the doctor wants him to do and both the patient and the doctor work together towards the common goals.

Conclusions

Careful non-surgical rehabilitation treatment has a role in the treatment of PID with neurological deficit. It is very important that the physician makes the patient understand the problem. One should not just base the surgical indication on the findings of the CT and MRI scans, without their clinical correlation. There should not be a rush for surgery in most cases. It appears that in the indications for surgery in the cases of PID, the zone of grey areas (whether surgery should be done or not) is increasing.

References

1. Postacchini F. Results of surgery compared with conservative management for lumbar disc herniations. Spine 1996 Jun 1:21(11):1383-7.
2. Rothman & Friederick A Simone. Non operative Treatment of Cervical Disc Disease. In: The Spine (II Edition). WB Saunders Co. 1982. Philadelphia, London, Toronto, 440-499.
3. Macroy R Ellenburg et al. Prospective evaluation of the course of Disc herniations in patients with proven radiculopathy. Arch Phys Med Rehabil. Jan 1993 :74:3-8.
4. Saal JA. Natural history and non-operative treatment of lumbar disc herniations. Spine. 1996 Dec 15:21(24 Suppl):2S-9S.
5. Rust MS, Olivero WC. Far lateral disc herniations: the results of conservative management. J Spinal Disorders 1999 April;12(2):138-40.
6. Saal JA, Soal JS. Nonoperative treatment of herniated lumbar intervertebral disc with radiculopathy. An outcome study. Spine. 1989 Apr.14(4):431-7.
7. Bush K, Cowan N, Katz DE, Gishen P. The natural history of sciatica associated with disc pathology. A prospective study with clinical and independent radiologic followup. Spine 1992 Oct;17(10)1205-12.