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A CLINICO-OPERATIVE STUDY OF LUMBAR INTERVERTEBRAL DISC HERNIATION

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Abstract

Background: Herniation is a greater threat in younger individuals between the ages of 30 and 50 years, in whom the nucleus material has good turgor, in contrast to older individuals in whom the nucleus is desiccated and fibrotic. Open discectomy is the gold standard for operative intervention in patients with herniated disc where conservative treatment has failed.

Aim of objective: To study the reliability of clinical signs in diagnosing lumbar disc herniation.

Material and Methods: This study was done collecting data of patients presenting to, JLNMCH, Bhagalpur. During this period there were 46 patients with a history of low backpain and at least one symptom suggesting root compression (Radiating pain, numbness, weakness or loss of sensation) who underwent surgery.

Conclusion: Commonest presentation is that of, long histories of back pain with superimposed syndrome of sciatica. Patients with predominant leg pain or only leg pain have high incidences of ruptured herniations.

Keywords: Herniation, Sciatica, Numbness, loss of sensation.

Introduction

Back pain, is still, one of the unrewarding problems to deal with in clinical medicine. it appears that the life time prevalence of low back pain is approximately 60 to 80 percent. The life time prevalence of a herniated disc appears to be in the vicinity of 2 cent, a small fraction of the prevalence of low back pain. Herniation is a greater threat in younger individuals between the ages of 30 and 50 years, in whom the nucleus material has good turgor, in contrast to older individuals in whom the nucleus is desiccated and fibrotic. Open discectomy is the gold standard for operative intervention in patients with herniated disc where conservative treatment has failed.It is generally held that the result of lumbar disc surgery depends entirely on whether one manages to detect and remedy compression of the root. It is consequently, to make the diagnosis as definite as possible. This primarily a question of determining whether a root compression is present, and if is, where. Clinically the diagnosis of a disc herniation is based on history, physical examination findings and imaging test results. A conventional physiical examination consists of tests for pain and motor, reflex and sensory deficits, as well as special tests such as the straight leg raising test, no single test in the physical examination has a high diagnostic accuracy alone. Although the modern era of computerized imaging techniques, undoubtedly has improved the diagnosis of lumbar spinal syndromes, it has not absolved the need for a through clinical examination. If the decision to operate is based chiefly on the presence ofneurological signs, it is important to know the extent to which these signs reflect disc herniation. clinical findings with that of surgical findings with a view to assess the reliability of the clinical signs in predicting surgical findings.

Material and Methods:

This study was done collecting data of patients presenting to, Jawahar Lal Nehru Medical College and Hospital Bhagalpur Bihar. There were 46 patients with a history of low backpain and at least one symptom suggesting root compression (Radiating pain, numbness, weakness or loss of sensation) who underwent surgery.9 patients with previous back surgery, multiple level disc herniations or evidence of concomitant spinal conditions at different vertebral levels such as spinal canal stenosis, were excluded. The remaining 37 patients were included in this study. All the patients had a history of acute symptoms, and the location of dischernation was subsequently confirmed at operation. The taking of a history in which fromeach case, details of age, sex, duration of symptoms-including the distribution of the pain and the presence of tingling and numbness, the occupation, the circumstances of injury related to onset of symptoms, if present were noted. All the patients underwent laminectomy and the disc material was removed extradurally. The herniations were classified in to three types according to their situation in relation to the dura. The central herniations

Results:

Total 37 patients were investigated. The youngest patient was 21 years and oldest 70 years. Most were in the fourth decade and almost three quarters were between the ages of twenty and fifty years .There were73% male and 27% females. The age distribution of the 27 males and10 females is shown in Table1.

Table 1: Age and sex distribution

Age in years	Males Number	FemalesNumber	Total number
<20	0	0	0
20-29	4	2	6
30-39	9	2	11
40-49	6	2	8
50-59	4	3	7
760	4	1	5
Total	27 (73%)	10 (27%)	37(100%)

Causative Injury

12 patients had remembered injury which was attributed to the causation of the syndrome. The type of causative injury was determined from whom exact information was obtained. In 66.7% of patients theinjury was sustained in lifting heavy weights, 12.5% had twisting has the causes and in 20.8% the causative injury was fall.

Causative injury

Injury	No. of patients	Percentage
Lifting	8	66.67
Fall	3	20.83
Twisting	2	12.5
Total	13	32.43
No. injury	25	67.56

Duration of Sciatica

Duration in weeks	No. of patients	Percentage
<1	3	8.1
1 - 4	10	28.4
>4	24	63.5

The majority of Patients had more than 4 weeks of sciatica is due to ,the trialof conservative treatment the patients were subjected to,7(19%) patients presented with lower limb pain only.20(68.3%) patients with back and lower limb pain had lower limb painworse than the back pain at presentation. NEUROLOGICAL SIGNS: Of the 37 patients, 31 (83.8%) had objective clinical neurological signs and the rest did not. The signs included objective motor weakness in23 (63.5%) patients, absence of deep tendon reflexes in 15 (41.9%) patients; sensory objective findings were present in 25 (68.92%) patients.

Discussion

Successful surgery for lumbar disc herniation depends upon identifying those patients with a significant herniation, determining the level of herniation and removing the pathological disc. Since the initial description by **Mixter and Barr** in 1934, many articles have been published describing the importance of various clinical signs resultant from disc herniation. In this study the symptoms and signs of patients have been assessedwith the prior knowledge, that all patients had a lumbar disc herniation. Lumbar disc herniation seems to occur around 42 years of age with amale preponderance. **Spangfort's** series had an average age at presentation of 40.8 years with males constituting almost twice the number as females. Average age at presentation of 58 men and 42 women in Popleand **Griffith's** series was 42 years. **Kerr's** series of 100 patients had anaverage age of 40 years preoperatively. That males are affected twice as often as females in this series maybe attributed to the heavier nature of their work. The causative injury in 32% of the patients, in this series with remembered injury, was sustained in lifting some heavy weights and in falls. The occupation of 15 (39%) patients caused physical stress. Weber's excellent prospective study of lumbar disc herniation suggested that in more than 90% of the patients studied, there was nearly 10 years of low back pain before the insidious on set of the

radicular component By definition, for a patient to have sciatica, they must describe pain inthe distribution of sciatic nerve. All the patients in this series described suchpain. In most patients lower limb pain and low back pain were present together. In 19% of patients, pain was present in lower limbs alone, innone of the patients was it confined to the lumbar region alone. In 41 (68.3%) patients, although associated with back pain the leg pain was the predominant symptom. 39(52.7%) patients described typical dermational distribution of pain, 23 in L5 dermatome, 15 in SI dermatome. Sensory symptoms in this series was found to be of limited value. 36 (65.5%) of the 55 patients with lower limb pain alone and predominant lower limb pain, had extrusions and sequestrations at operation. All the patients with predominant back pain had protrusions at surgery. **Pople and Griffith** in their series found that all the patients presented with sciatica and 88% of these patients had predominant leg pain. Of 27 patients who had only leg pain at initial presentation 26 (96%) were found subsequently to have an extruded fragment of the 12 patients who had predominantly back pain 10 were found to have disc protrusions. The location of herniation at operation in 12 patients with sciaticscoliotic list is compiled in table 2. 70.8% of the patients had intermediateprotrusions, with the direction of sciatic list not of significant value inpreoperative localization of the herniation. **Matsui et al,** also suggested thatsciatic scoliotic list is not a predictive factor of the anatomic localization of disc herniation: rather, it is only suggestive of the side of disc herniation. These findings are in agreement with those of **Kerr and Hakelius** and **Hindmarsh.** The variability in the distribution of the nerve roots and size and location of herniation in relation to the neural structures, have been attributed to the inconsistency of findings.

Conclusion

Commonest presentation is that of, long histories of back pain with superimposed syndrome of sciatica. Patients with predominant leg pain or only leg pain have high incidences of ruptured herniations. Tenderness and neurological findings on examination have significant localizing importance. Straight leg raising test is a reliable indicator of root compression. Correlation of clinical findings with that of investigative findings is amust prior to surgical consideration.

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