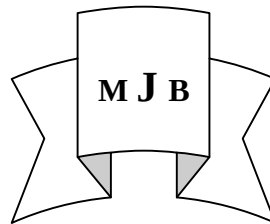


Prolapsed Inter Vertebral Disc in the Lumbar Area and Joint Mobility among Iraqi Patients

Samier H . AL-Amiedy

Ethiel A.Kommona

Merjan Teaching Hospital, Hilla, Iraq.



Abstract

Objective: To assess the relation between prolapsed intervertebral disc (P.I.D.) in the lumbar area and Joint mobility.

Patients and methods :Eighty patients with (P.I.D.) in the lumbar area proved by magnetic resonance imaging (M.R.L) (65) or Myelography (15) were compared with that in an age and sex matched controls group without (P.I.D.) in the lumbar area Joint mobility was scored on a scale of 0-8 using the method described by Beighton et al.

Results: The number of patients with hypermobile joints and the total mobility scores were comparable in both studied groups.

Conclusion: This study showed that there is no relation between P.I.D. in the lumbar area and joint mobility

الخلاصة

لتحديد العلاقة بين تدلي القرص الفقري في المنطقة القطنية وفرط الحركة للمفاصل تم أخذ عينه من ثمانين مريضاً ، خمسة وستون منهم اثبتت عندهم تدلي القرص الفقري في المنطقة القطنية بواسطة فحص الرنين المغناطيسي ، وخمسة عشر منهم اثبتت بواسطة الأشعة مع تلويين النخاع الشوكي .

تم مقارنة أشخاص من نفس العمر والجنس ليس لديهم تدلي القرص الفقري في المنطقة القطنية مع وجود فرط حركة المفاصل والتي تم قياسها باستعمال سلم بايتون المؤلف من ثمان درجات .

أظهرت الدراسة أن عدد المرضى الذين لديهم فرط حركة المفاصل ومجموعة فرط الحركة كانت متشابهة تقريباً في مجموعتي البحث .

تبين خلال البحث انه لا توجد علاقة بين تدلي القرص الفقري في المنطقة القطنية وفرط الحركة للمفاصل .

Introduction

Low back pain with history of lifting, bending and sneezing radiating down the leg(s) beyond the knee(s) which is aggravated by coughing, sneezing and straining during defecation is due to prolapsed intervertebral disc (P.I.D) in the lumbar area leading to nerve root(s) irritation or compression[1].

Although physical stress (a combination of flexion and compression) is the main cause of P.I.D in the lumbar area, it seems unlikely that a disc would rupture unless there were also some disturbance of hydrophilic properties of the nucleus pulposus[2]. Lumbar disc prolapse diagnosis is usually made on the clinical evidence alone (plain x-ray shows no abnormalities if taken early); confirmation is not usually made by

myelography. MRI or CT scan unless exploration is being considered or if any of features of the case raises the possibility of intrathecal tumor or other pathology.

MRI is superior to myelography because it is non-invasive, more informative to display soft tissue abnormality with no ionizing radiation hazards, yet still expensive, noisy, cause pacemaker dysfunction and need good interpretation, also replaced by mvelography in claustrophobia states and in patient with ferromagnetic clips.[3]

Hypermobility syndrome (HS) is defined by Kirk as patients with Joint laxity produce musculoskeletal complaints without other features of hereditary connective tissue disorders (HCTD). [4] Joint hypermobility is recognized by movement of Joint beyond its normal range [5], that is important in rheumatologic practice because it produces a wide variety of articular complaints such as knee effusion [6], ligaments injury [7], dislocation [8], low back pain [9], disc prolapse and spondylolisthesis. [10]

Normal tight ligaments protect joints both by limiting the range of movement and imposing stability. The lax joint(s) is deprived of such safeguards and is therefore more vulnerable to the effect of injury from trauma and over use. [11]

Aim of the Study

This study was designated to report the correlation of P.I.D in the lumber area to joint mobility.

Patients and Methods

Eighty patients with P.I.D in the lumber area. attending Baghdad Teaching Hospital from September 1999 till May

2000 were included in this prospective study.

Another eighty healthy individuals from patient's relatives were included and served as a control group.

Detailed history was taken from all individuals with special concentration on back or leg pain and its duration, impulse on coughing or sneezing, symptoms of root(s) compression including pain, numbness and paraesthesia in the lower limb(s) were reported.

Patients and controls were examined for back movement (Schober test), local tenderness, straight leg raising (SLR) test, femoral stretching test (F.S.T.) and signs of lumbar or sacral root(s) compression.

Patients were diagnosed as having P.I.D in the lumber area if there were low back pain of more than two weeks with radicular pain. Local tenderness, restriction of spinal movement (schober test of less than 5cm) and limitation of SLR test (less than 40°) and /or F.S.T. with neurological deficit[12], which was confirmed by MRI or myelographic finding of P.I.D in the lumber area.

Joint mobility was recorded blindly by another observer using methods described by Carter and Wilkmson and modified by Beighton et al., (knees flexion, wrists extension, elbows extension, indices extension, anterior bending) [13], which record numerical score of 0-8 (back mobility was not recorded due to severe-back pain in most of the patients which prevents them from doing full flexion of the back). Individuals scored 0-3 were considered as normal whilst those scoring 4- 8 were hyper mobility.

Statistical analysis

Data were analyzed using chi-square and fisher exact tests

Results

Eighty patients with P.I.D in the lumbar area were studied and compared with an age-and sex-matched healthy eighty individuals without P.I.D in the lumbar area.

The demographic characteristics of both groups are shown in table (1) there were three hyper mobile patients in the P.I.D

in the lumbar area group compared to two individuals in the control group ($P > 0.05$) whilst the total mobility score of patients and controls were (76) and (94) respectively ($P > 0.05$) as shown in table (2). L4/L5, L5 / S1, levels were commonly involved whilst other levels were less frequently involved as shown in table (3).

Table 1 Demographic distribution of patients among imaging tools

Imaging tool	No.	F	M	Age groups (years)			
				20-29	30-39	40-49	50-59
MRI	65	34	31	8	9	25	23
Mimeograph	15	4	11	1	3	8	3

F: Female M: Male

Table 2 Total mobility scores of patients with P.I.D in the lumbar area and controls group.

Patients			With P.I.D.		controls group	
Score	No.		total score		No.	total score
0-3	77		57 (NS)		78	79
4-8	3		19 (NS)		2	15
total	80		76		80	94

Table 3 Distribution of P.I.D in the lumbar area according to vertebral level

Imaging tool	No.	L5/S1	L4/L5	others
MRI	65	26	26	13
Myelography	15	8	7	0

Discussion

The association between joint laxity and P.I.D in the lumber area was not reported earlier in a controlled study.

Joint hyper mobility was reported in three patients with P.I.D in the lumber area and two healthy controls, the number were too small to show significant differences.

The total mobility scores were lower for patients with P.I.D in the lumber area. (76) Compared to healthy individuals (94) but the differences were insignificant, so no positive correlation could be detected between P.I.D in the lumber area and joint mobility.

This finding is in agreement with a previous report and is different from another report which showed positive correlation between P.I.D in the lumber area and joint mobility but the study was not a controlled one.

Our findings of P.I.D in the lumber area involving mainly L5/S1 or L4/L5 levels by P.I.D in the lumber area are in agreement with other report. It concluded that there is no positive correlation between P.I.D in the lumber area and joint mobility.

References

- 1- Aleen CM ,Lueck CJ. Lumbar disc herniation .In: Haslett Ch , Chiliveres ER, Hunter AA, Boon NA(eds.).Davidsons Principle and Practice of Medicine. 18th edn. Edinburgh,Churchill Living stone. 1999;12:1004.
- 2- Graham AA, solomon L. Acute disc prolapse. In: Apley's system of Orthopaedics and Fractures 17th edn . Kent,Butterworth.1993:348-9.
- 3-Scott WW. Imaging technique. I n:Klippel JH. Primer on the Rheumatic Disease . 11th edn. Atlanta, Arthritis Foundation . 1997;7:109

- 4- KIRK JH, Ansell BM, Bywater EGL. The hypermobility syndrome. Ann Rheum Dis . 1997;26:419-25
- 5- Malik AK, Ferrel WR, McDonald A, Sturrock RD .Impaired proprioceptive acuity at the proximal interphalangeal joint in patient with hypermobile syndrome. Br J Rheumatol. 1994;33: 631-7
- 6- CarterC, Wilkinson J. Persistent joint laxity and congenital dislocation of hip. J Bone joint surg.{Br}1964;46:40-5
- 7- Grahame R, Joint hyper mobility-clinical aspect-proc Roy Soc Med. 1971; 64: 692-4
- 8- Dubs L, Gschwend N .General joint laxity. Quantification and clinical relevance. Arch orthop Trauma surg. 1988; 107:65-72
- 9- Howes RJ, Isdale 1C. The loose back, an unrecognized syndrome -Rheumatol phys Med.1971;11:72-7
- 10- Bird HA, Eastamand CS, Hudson A, WrightV. Is generalized joint laxity a factor in spondylolisthesis ? Scand J Rheum .1980;9:203-5
- 11- Beighton P, Grahame R, Bird H . Hypermobility in adult. In: Hypermobility of Joint. 3rd. edn. London, springer. 1999;5:54
- 12- Mathews JA, Mills SB, Jenkins VM ,et al. Back pain and sciatica. Br J Rheumatol. 1987;26:416-23.
- 13- Beighton PH, Solomon L, Soskelene CL . Articular mobility in an african population .Ann Rheum Dis .1973; 32:413-8
- 14- AL-Rawi ZS, AL- Jobori SA .Joint mobility among young adult men with low back pain. Ann Rheum Dis (supplement) 2000; 59:217 15. Grahame R. Low back pain with hyper mobility