RESEARCH PAPER | Medical Science | Volume : 6 | Issue : 4 | April 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

# Role of Complete Neurological Examination to Detect Missed Dorsal Spine Lesion in Patients With Low Back Pain.

KEYWORDS: low back pain, dorsal lesion, neurological examination, red flag sign

| Krishna Kumar Pandey | Digamber Peepra | Manish Singh Rajpoot |
|---|---|---|
| Associate Professor, Department of Orthopaedics, Traumatology and Rehabilitation, Netaji Subhash Chandra Bose Medical College, Jabalpur, Madhya Pradesh, India | Assistant Professor,Department of Orthopaedics, Traumatology and Rehabilitation, Netaji Subhash Chandra Bose Medical College, Jabalpur, Madhya Pradesh, India | Senior resident, Department of Orthopaedics, Traumatology and Rehabilitation, Netaji Subhash Chandra Bose Medical College, Jabalpur, Madhya Pradesh, India |

**ABSTRACT** *Low back pain is a common disorder noticed in adolescent to elderly age groups due to various causes like lumber disc prolapse, tumours, spondylolisthesis and infection etc. Weakness in legs and sensory disturbance are easily co-related with lumbar nerve roots compressions.*

*Sometimes dorsal spine lesions in patients with low back pain are missed. There are reports of the neurological deterioration from missed dorsal compressive lesion in patients undergone for the lumbar surgery. We did complete neurological examination in patients with back pain from 10 years of age to 60 years of ages and found 12 case of dorsal spine lesion.*

*Key indicators in finding out missed dorsal spine lesion are thoracic pain, muscle weakness and exaggerated tendon reflexes where local and radiological examination are negative. Early infection, vertebral tumour and spinal cord space occupying lesion should be suspected and ruled out with complete neurological examination.*

**Introduction**: Low back pain is a common problem noticed in adolescent to elderly age groups due to various causes like lumber disc prolapse, tumours, spondylolisthesis and infection etc. Weakness in legs and sensory disturbance are co-related with lumbar nerve root compressions. Sometimes early lesion in dorsal spine of patients with low back pain is missed because of incomplete neurological assessment. There are reports of the neurological deterioration from missed dorsal compressive lesion in patients undergone for the lumbar surgery [1]. Takeuchi et al reported three cases of thoracic paraplegia due to missed thoracic compressive lesions after lumbar spinal decompression surgery. [2] Ko SB et al reported two cases of paraplegia due to missed thoracic meningioma after laminotomy for lumbar spinal stenosis.[3]Complete neurological examination in patients of low back pain with yellow/red flag signs is a must to detect dorsal lesion.

**Material and Method**: We screened out 12 cases with dorsal spine lesion in outdoor patients having low back pain or whole back pain from January - December 2014 with positive red flag signs.

**Exclusion criteria:**
(1) Patients with history of spinal injury.
(2) Patients with history of neck pain and upper limb weakness in neurological examination.
(3) Patients with osteomalacic myopathy ,thyrotoxic myopathy in which proximal muscle weakness with exaggerated tendon reflexes occur.
(4) Patients with history of stroke and peripheral neuropathy.

The complete neurological examination includes a good history to identify any red flag signs, gait assessment, motor, sensory and reflex examination. In motor examination we assessed strength, tone and coordination. In sensory examination we assessed soft touch, pin-prick testing, and vibration and position sense. We paid attention to the fact that signs of upper moter neuron lesion with thoracic mylopathy are masked in patients with lumbar compressive lesion.

We found 12 case of dorsal spine lesion in subsequent MRI investigation.

| Serial No. | Diagnosis | Number |
|---|---|---|
| 1 | Spinal epidural abscess | 1 |
| 2 | Spinal space occupying lesion | 2 |
| 3 | Hemangioma of vertebral body encroaching spinal canal | 1 |
| 4 | Intradural spinal arachnoid cyst | 1 |
| 5 | Metatastatic collapse of vertebral body compressing spinal cord | 3 |
| 6 | Idiopathic epidural lipomatoses extending from C7 to L1 with significant dorsal canal stenosis | 1 |
| 7 | Early Potts spine | 3 |

**Figure 1-Posterior Epidural Abscess in upper dorsal spine in 30 year male**
**Figure 2.Thoracic space occupying lesion with lumbar**

Volume : 6 | Issue : 4 | April 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

**canal stenosis in 54 year female**

**Figure 3-Extensive hemangioma of D6 vertebra in 12 year female**
**Figure 4-Posterior epidural fibrolipomatoses from C7 - T1 in 22 year female**

**Discussion** : To identify missed dorsal spine lesion or any serious spinal pathology , history of red flag signs are a must which are thoracic pain, fever with unexplained weight loss, gait disturbance, saddle anaesthesia, bowel or bladder dysfunction , age of onset below 20 years of age and above 55 years of age and progressive neurological deterioration.[4] Miyazaki et al reported that in 61.4% of patients with lumbar degenerative disease there are compressive lesions of the spinal cord in cervical and thoracic spine [5].

A spinal epidural abscess, a rare infectious disease presents with a classic triad of fever, backache and neurological deficits occur usually from hematogenous spread from cutaneus or a mucosal lesion in patients with diabetes mellitus , intravenous drug addicts, alcoholism and cancer .[6,7,8] which is primarily located in posterior part of spinal canal. [9] Anterior spinal abscess usually comes from discitis or spondilitis. [10, 11]

Spinal meningiomas, intradural extramedullary tumors are usually slow growing and spread laterally in the subarachnoid space, having average 2.9 years delay in diagnosis [12, 13]. Hemangiomas presents as solitary round masses except in 10% to 15% of cases as extensive lesions that replace the entire vertebral body , pedicles, lamina, and up to spinous process. [14, 15].

Intradural spinal arachnoid cysts were most commonly found in the thoracic spine (81%) which has average 3.7 vertebral bodies cranio -caudal extension.[16,17]

Spinal epidural lipomatosis is characterized by abnormal deposition of unencapsulated fat in epidural space, usually found in Cushings disease, hypothyroidism or in morbid obese patients.[18]

**Conclusion**: We conclude that whenever we see the patients with low back pain in busy outdoor department, we must see the red flag signs for dorsal spine pathology by complete neurological examination.

**References:**


1. Valls PL, Naul LG, Kanter SL. Paraplegia after a routine lumbar laminectomy: report of a rare complication and successful management. Neurosurgery 1990;27:638–640.
2. Takeuchi A, Miyamoto K, Hosoe H, Shimizu K. Thoracic paraplegia due to missed thoracic compressive lesions after lumbar spinal decompression surgery: report of three cases. J Neurosurg. 2004;100:71–74.
3. Ko SB, Lee SW, Shim JH. Paraplegia due to missed thoracic meningioma after laminotomy for lumbar spinal stenosis: report of two cases. Asian Spine J. 2011; 5:253–257.
4. Jo Samanta, Julia Kendall, Ash Samanta.10-minute consultation, Chronic low back pain.BMJ 2003;326:535
5. Masashi Miyazaki, Toyomi Yoshiiwa, Ryuzo Kodera, Masanori Kawano, and Hiroshi Tsumura.Analysis of the Prevalence and Distribution of Cervical and Thoracic Compressive Lesions of the Spinal Cord in Lumbar Degenerative Disease. . Asian Spine J. Feb 2014; 8(1): 19–26.
6 . Baker AS, Ojemann, Swartz MN, et al. Spinal epidural abscess. N Engl J Med (1975) 293:463–468.
7. Hlavin ML, Kaminski KJ, Ross JS, et al. Spinal epidural abscess: a 10 year perspective. Neurosurgery (1990) 27:177–184.
8. Danner RL, Hartman BJ .Update of spinal epidural abscess: 35 cases and review of the literature. Rev Infect Dis(1987) 9:265–274.
9. Calderone RR, Larson JM .Overview and classification of spinal infections. Orthop Clin North Am (1996) 27:1–8.
10. Verner EF, Musher DM .Spinal epidural abscess. Symposium on infections of the central nervous system. Med Clin North Am (1985) 69:375–384.
11. Ozuna RM, Delamarter RB .Pyogenic vertebral osteomyelitis and postsurgical disc space infections. Ortho Clin North Am (1996) 27:87–94.
12. Gelabert-González M, García-Allut A, Martínez-Rumbo R. Spinal meningiomas. Neurocirugia (Astur)2006;17:125–131.
13 .Woltman HW, Kernohan JW, Adson AW, Craig WM. Intramedullary tumors of spinal cord and gliomas of intradural portion of filum terminale: fate of patients who have these tumors. AMA Arch Neurol Psychiatry.1951;65:378–395.
14. Osborne AG. Diagnostic Neuroradiology. St. Louis: Mosby–Year Book Inc.; 1994. pp. 877–879.
15. Fox MW, Onofrio BM. The natural history and management of symptomatic and asymptomatic vertebral hemangiomas. J Neurosurgery. 1993;78:36–45.
16. Wang MY, Levi AD, Green BA. Intradural spinal arachnoid cysts in adults. Surg Neurol 2003 Jul;60(1):49-55; discussion 55-6.
17. Athanasios K. Petridis, Alexandros Doukas, Harald Barth, and Hubertus Maximilian Mehdorn. Spinal cord compression caused by idiopathic intradural arachnoid cysts of the spine: review of the literature and illustrated case. Eur Spine J. Jul 2010; 19(Suppl 2): 124–129.
18. Fogel GR, Cunningham PY, Esses SI. Spinal epidural lipomatosis: case reports, literature review and meta-analysis. Spine J. 2005;5:202–11.