VOLUME-6 | ISSUE-1 | JANUARY-2017 • ISSN No 2277 - 8179 | IF : 3.508 | IC Value : 78.46

# Typical case of atypical lumbar Scheuermann's disease in weightlifter - a report

Sports Science

**KEYWORDS:** Scheuermann's disease, Lumber, Weightlifter

**Dr. JAHNAVI DANDE** — Dept of sports medicine, SAI, NSNIS, Patiala, Punjab, India

**Dr. ANIRBAN MALLICK** — Dept of sports medicine, SAI, NSNIS, Patiala, Punjab, India

## ABSTRACT

Scheuermann's disease is the most common cause of kyphosis in adolescence. Though most commonly located in thoracic spine and is generally painless, the lumbar variant is less common and may go undetected in daily clinical practice. In sports it should always be in the back of mind of clinician dealing with skeletally immature athletes. The lumbar form is often painful and can be confused with that of traumatic, infectious or neoplasm. Most of the time a lateral view x-ray of lumbo-sacral spine is enough to establish the diagnosis and to differentiate both forms. This case report is about a young weightlifter who presented with longstanding low back pain. Clinical suspicion lead to x-ray and MRI to establish the diagnosis. The patient responded well with the management plan. This case highlights the special clinical consideration of young and adolescent athletes with low back pain.

## INTRODUCTION

Scheuermann's disease is the most common cause of thoracic kyphosis in adolescents and second most common cause of back pain in children after spondylolysis with spondylolisthesis.[1] It usually presents with the insidious onset of thoracic kyphosis and back pain that is worse in the afternoon and relieved with rest. Symptoms are typically attributed to poor posture, and medical evaluation is often delayed. The criteria for clinical and radiological diagnosis are established by the appearance of 3 or more vertebrae adjacent to the apex of the curve with wedging of 5º or more and without evidence of congenital, infectious or traumatic alterations.[2-4] Spinal deformity is characterized by irregularities of the vertebral endplates, the presence of Schmorl's nodes, disk space narrowing, vertebral wedging and is diagnosed using lateral radiographs of the spine. The thoracic spine is most often affected, but Scheuermann's disease may also involve the lumbar spine. Lumbar Scheuermann's disease affects the T10 - L4 vertebrae. Blumenthal et al.[5] described two forms of involvement depending on the radiographic manifestations: the classical form (CSD), similar to dorsal spine involvement as described above, and the so-called atypical lumbar form (ALSD). The atypical form consists in the appearance of Schmorl herniation in one or two vertebral bodies, with a narrowing of the intra discal space and changes in the vertebral endplates.

## CASE REPORT

A 17 year old weightlifter presented with diffuse low back ache of six months duration. The pain was insidious in onset and not radiating. Though it was not affecting his activities of daily living, it interfered with his training. There was no history of trauma, morning stiffness or night pain. Initially he was diagnosed as lumbago due to an old fracture and managed by NSAID and physiotherapy but without any improvement. The athlete was involved in some noncompetitive combat sports before starting weightlifting at the age of thirteen years. Physical examinations were within normal limits except restriction in lumbar flexion and bilateral paravertebral muscle spasm. SLR and femoral stretch both were negative.

Laboratory investigations including CRP (C reactive protein) and ESR (erythrocyte sedimentation rate) were within normal limits but lateral radiograph of lumbo sacral spine showed irregularity of the superior endplate of L4 resembling limbus vertebrae ( fig 1). MRI was also advised which revealed Schmorl node herniation into anterosuperior end plates of L3 and L4 and dehydrated L2-3 and L3-4 discs showing diffusely bulging annulus. Small posterocentral bulge was also noted in L5-S1 disc ( fig 2).

Initially the patient was immobilized temporarily with an orthosis and muscle relaxant was prescribed. A gradual core stabilization programme was planned after 2 weeks with emphasis on neutral thoraco-lumbar alignment and lumbo pelvic stabilization. Patient was asked to avoid the activity in lumbar flexion. He was followed up after every 2 weeks and lumbar flexion range of motion (ROM) was measured. After 6 months follow up, patient was absolutely pain free and with full ROM. But he was advised not to involve in weight-lifting till completely matured skeletally.

**Figure 1**

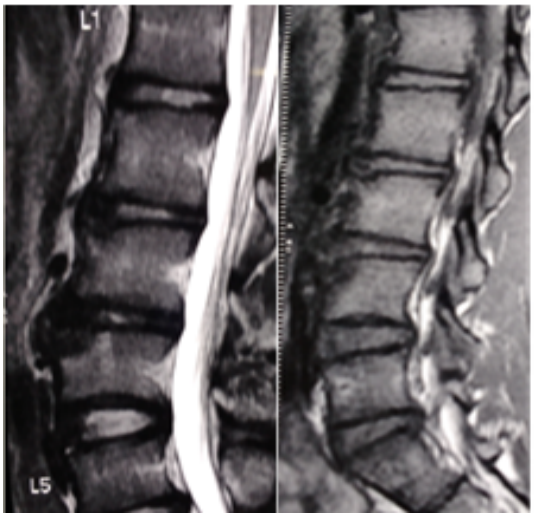


**Figure 2**

## DISCUSSION

Scheuermann's disease affects between 0.4% and 8% of the population.[3,6] It is noteworthy here that in case of dorsal or typical lumbar variant there is no increased uptake in bone scintigraphy scan but on the other hand, this uptake is evident in the atypical form, which may create a diagnostic dilemma with neoplasm and infections.[3] Hence clinical and radiological examination is of utmost importance for appropriate management and to avoid overtreatment.

The injury may be related to excessive stress on immature skeleton which breaks discal material within the vertebral body.[7] The history of trauma was also described in some reports[5,8] There was also a theory of disc degeneration, as claimed by Schmorl[9] which was later confirmed by Heithoff et al.[10] who found that 55% of patients with Scheuermann's disease presented images of disc alteration on magnetic resonance imaging scans, compared to a control group where these images only appeared in 10% of cases. These authors also suggested that it might be due to an intrinsic defect of the disc or the vertebral epiphysis. However, there is hardly any literature on this condition which showed the effect of power sports like weightlifting on skeletally immature athletes. Weightlifting demands high levels of dynamic force using both the upper and lower extremities, with the trunk musculature serving as both stabilizers and primary movers, depending on the phase of the lift. As a result, the loads used in weightlifting may put the back at risk of injury specially on immature skeleton. Hence this report can guide the sports physicians to think out of box.

## CONCLUSION

Young athletes are always a special consideration in sports. To the best of our knowledge this is the first report presenting an atypical lumbar Scheuermann's disease in sports like weightlifting. Although the treatment of Scheuermann's disease is still controversial, management of the disease generally includes rehabilitation, bracing and physical therapy. Exercises causing excessive pressure and repetitive strains on the spine, such as weight lifting and rugby should be avoided for all cases.[11] In adolescent subjects presenting with low back pain Scheuermann's disease should be considered and lateral radiography and MR imaging should be advised. Sports restriction may also be required till the maturity completes.

## REFERENCES

1. Lowe TG: Scheuermann's disease. Orthop Clin North Am 1999;30:475–87
2. Scoles PV, Latimer BM, Digiovanni BFL, Vargo E, Bauza S, Jellema LM. Vertebral alterations in Scheuermann's kyphosis. Spine. 1991;16:509---15.
3. Mandell G, Morales RW, Harcke T, Bowen R. Bone scintigraphy in patients with atypical lumbar Scheuermann disease. J Pediatr Orthop. 1993;13:622---7.
4. Sørensen KH. Scheuermann's juvenile kyphosis: clinical appearances, radiography, aetiology, and prognosis. Copenhagen: Enjar Munksgaard Forlag; 1964.
5. Blumenthal SL, Roach J, Herring JA. Lumbar Scheuermann's. A clinical series and classification. Spine. 1987;12:929---32.
6. Shelton YA. Scoliosis and kyphosis in adolescents: diagnosis and management. Adolesc Med State Art Rev. 2007;18:121---39.
7. Greene TL, Hensinger RN, Hunter LY. Back pain and vertebral changes simulating Scheuermann's disease. J Pediatr Orthop. 1985;5:1---7.
8. McCall IW, Park WM, O'Brien JP, Seal V. Acute traumatic intraosseous disc herniation. Spine. 1985;10:134---7.
9. Schmorl G. Die Pathogenese der juvenilen Kyphose. Fortschr Röntgenstr. 1930;41:359---83.
10. Heithoff KB, Gundry CR, Burton CV, Winter RB. Juvenile discogenic disease. Spine. 1994;19:335---40.
11. Palazzo C, Sailhan F, Revel M. Scheuermann's disease: an update. Joint Bone Spine. 2014;81(3):209-14.