

Scheuermann's Disease –Apprentice's Spine

Dr Sanjay Keshkar, MBBS, MS (Ortho.), Assistant Prof (Ortho.)

Dr Aameed Equebal, MBBS, MD (PMR), Assistant Director (Trg.)

Dr Ratnesh Kumar, MBBS, MS (Ortho.), DNB (PMR), Director

Dr N Jungindro Singh, MBBS, Jr. Resident (PMR)

National Institute for the Orthopaedically Handicapped (NIOH), Kolkata

Abstract

An uncommon case of Scheuermann's Disease (apprentice's spine) is being reported for two simple reasons (1) to show that it is a self limiting disease which needs only proper observation, extension exercises & extension spinal brace, (2) it becomes a diagnostic riddle when osteolytic lesion is seen in epiphyseal plates of adjacent vertebral bodies in an adolescent. Hence it stressed the need to publish this condition not only for its rarity but also for its diagnostic puzzle to differentiate it from other conditions.

Key Words: Idiopathic kyphosis, Adolescent kyphosis, Scheuermann's Disease, Apprentice's spine

Case Report

16 years old male patient was brought to us with complaints of low back pain for the last two years. There was no obvious deformity of spine but local mild tenderness was present at D-12 to L-2 level. Para spinal muscle spasm was present with loss of normal lumbar lordosis. There was no distal neurological deficit and the straight leg raising test was also negative. X-ray of dorsolumbar spine revealed minimal anterior wedging of lower dorsal and upper lumbar spine with huge osteolytic lesion on anterior part of inferior epiphyseal plate of L-1 vertebral body. Routine blood investigations were normal. To rule out possible causes of the lesion like infective lesion (e.g. tubercular) and Juvenile Idiopathic Arthritis (JIA), patient was further investigated. Throat swab culture, Rheumatoid Factor (RA Factor), Anti Streptolysin O Antigen (ASLO), and C-Reactive Protein (CRP) were negative. Finally patient was sent for Computerized Tomography (CT) scan & simultaneous CT guided biopsy. In CT there was a huge osteolytic lesion in inferior part of L1 vertebral body with mild anterior wedging of D11 to L2 vertebrae. CT guided biopsy revealed immature osteoid cells and was non infective. With this we labeled the case as Scheuermann's Disease. The patient was given anti inflammatory drug for about 3 weeks and then advised for extension spinal exercises. ASH brace was given for

Address for correspondence: Dr Sanjay Keshkar, Assistant Professor (Ortho.), National Institute for the Orthopaedically Handicapped, BT Road Bon – Hooghly, Kolkata – 700090, E-mail – s_keshkar@yahoo.co.in

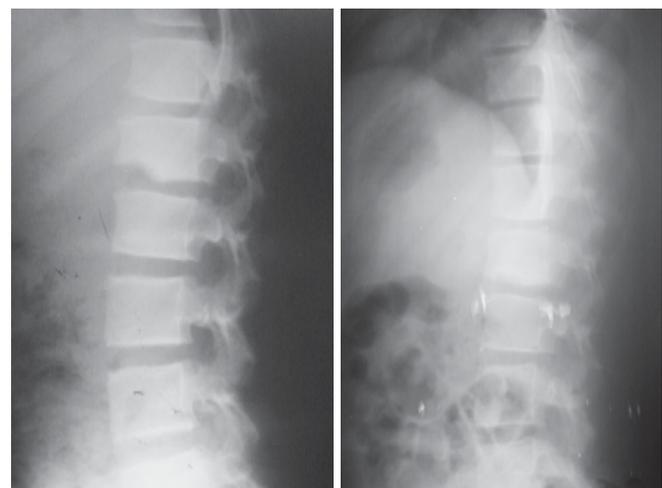


Fig 1. Initial X-ray showing osteolytic lesion in the inferior part of L1

Fig 2. X-ray after one year showing resolution of the lesion



Fig 3. CT Scan of L1 showing the lesion

precautionary measure. After one year patient had no problem & x-ray showed resolution of the lesion.

Discussion

Scheuermann, in 1920, described a condition which he called dorsal kyphosis, distinguishing it from the more common postural (correctable) kyphosis. The characteristic feature was a fixed round-back deformity associated with wedging of several vertebrae¹. Later on this idiopathic kyphosis, the so called Scheuermann's Disease was defined by Sorenson (1964) as kyphotic wedging of three consecutive apical vertebrae by 5 degree or more². There are two types of idiopathic kyphosis; thoracic (type-I) & thoracolumbar (type-II). Type I is common however type II is uncommon. Here our discussion is centered to type-II Scheuermann's Disease. This was referred to by Sorenson as 'apprentice's spine' & presents in adolescent age group after general skeletal maturity but not before the attainment of spinal maturity². The presentation is typically local pain rather than deformity & sometimes the pain is in low back region rather than over the apex of kyphosis (Hensinger et al 1982). This condition is often associated with lower lumbar spondylosis. The x-ray appearance of lumbar Scheuermann's disease (osteolytic lesion on anterior part of epiphyseal plate) is often mistaken for a fracture or tubercular lesion, however the fact about this lesion is abnormal ossification of ring epiphysis.¹ In some cases Schmorl's nodes may also be seen which mimics the conditions called intraosseous disc prolapse/ herniation.³ ⁴ Before labeling the case as lumbar Scheuermann's disease, it is important to exclude the possibilities of these above mentioned conditions. That means a diagnostic puzzle is required starting from good history to examination and investigations like complete hemogram, ASLO, RA, CRP, CT, (Magnetic Resonance Imaging (MRI), CT guided biopsy etc. Once the diagnosis is confirmed through exclusion criteria, treatment is not a

problem. The kyphosis, if present does not require surgery & in absence of spondylosis, symptoms respond well with extension exercise.²

In our case there was no history of injury which excluded the possibility of fracture. Possibility of tubercular lesion was excluded by means of normal hemogram and no infective lesion in CT guided biopsy. Juvenile Idiopathic Arthritis (JIA), was excluded by throat swab culture, RA test, ASLO, and CRP. All were found negative. Though Schmorl's node were present but is not because of intraosseous disc prolapse or herniation as disc spaces were normal. With exclusion of all possibilities we labeled our case as Scheuermann's Disease (type-II) who had no kyphosis and not associated with spondylosis but had loss of normal lumbar lordosis. Patient responded well with simple extension exercises of spine.

Conclusion

The type II Scheuermann's Disease is simple to treat but sometimes differential diagnosis is a big puzzle for the treating doctors and costs a lot to the patient towards investigations.

References

1. Lous Solomon, David J Warwick, Selvadurai Nayagana. Adolescent Kyphosis (Scheuermann's Disease). In : Louis Solomon, David J. Warwick, Selvadurai Nayagana, eds. Apley's System of Orthopaedics & Fractures. London- UK: Arnold publishers; 2001: 383-5.
2. Robert A Dickson. Spinal Deformities in Children. In: Robert B Duthie & George Bentle, eds. Mercer's Orthopaedic Surgery 9th ed. New York: Oxford University Press, Inc. 1996: 504 – 7.
3. Parasnis R, Talawadekar G, Sancheti KH, Bhojraj S. Intraosseous disc prolapse - a diagnostic puzzle ; Indian Journal of Orthopaedics 2006; 40 (3): 168-72.
4. Peng B, Wu W, Hou S, Whang X, Yang Y. The Pathogenesis of Schmorl's nodes. JBJS (Br) 2003; 85-B (6): 879-882.