

<https://doi.org/10.33472/AFJBS.6.Si2.2024.1719-1726>



African Journal of Biological Sciences

Journal homepage: <http://www.afjbs.com>



Research Paper

Open Access

## Scheuermann's disease in adolescent in India with positive family history: A case report.

Authors: Dr. Sonesh Jain<sup>1</sup> Dr. Ashutosh Patel<sup>2</sup> Dr. Jasmine Singh<sup>3</sup>

Corresponding author: Dr. Sonesh Jain

Article History

Volume 6, Issue Si2, 2024

Received: 13 Mar 2024

Accepted : 16 Apr 2024

doi: 10.33472/AFJBS.6.Si2.2024.1719-1726

**ABSTRACT:** - **Introduction:** Typical Scheuermann disease affect thoracic vertebra and dorsal spine which results KYPHOSIS. **Case report:** We are presenting an OPD case of 12 years old male with strong maternal history of typical Scheuermann disease which involves thoracic vertebrae and dorsal spine without any neurological deficits. Even the blood investigations and radiological imaging are in favor of diagnosis. **Conclusion:** Further investigations are required to finalize the differential diagnosis of bilateral knee pain, left forearm pain and stiffness in back. **Keywords:** Typical Scheuermann disease, Familial history, Maternal history, kyphosis, thoracic vertebrae, dorsal spine, young patient

**INTRODUCTION :** Scheuermann's disease is the most common cause of degenerative structural thoracic or thoraco-lumbar kyphosis and is also known as Scheuermann's kyphosis, is a relatively uncommon spinal disorder that primarily affects adolescents during their growth spurts.<sup>[1]</sup> It affects about 5% of the population, with a slight male predominance and it usually remains asymptomatic unless severe deformities develop.<sup>[2]</sup> This condition is characterized by an abnormal curvature of the upper spine, leading to a rounded or hunched back, commonly referred to as kyphosis.<sup>[3]</sup> This condition is considered a type of structural kyphosis, which means the curvature of the spine is fixed and not due to poor posture.<sup>[4]</sup> This disease is typically manifest

during adolescence, often between the ages of 13 and 16, when the body is going through a period of rapid growth with the most noticeable symptom is the development of a rounded upper back.<sup>[5,6]</sup> Other common symptoms may include back pain, stiffness, and fatigue. In some cases, there might be discomfort when breathing or lung-related issues due to the spinal deformity.<sup>[1,2]</sup> It manifests itself with successive endplate irregularities and anterior vertebral wedging in radiography, and additionally as disc degenerations, herniations and syringomyelia in spinal cord in magnetic resonance imaging (MRI). Impairment in intervertebral distance and disc degeneration are more evident in Scheuermann's disease with atypical pattern. When multiple endplate irregularities and anterior vertebral wedging are observed in MRI of patients thought to have thoracolumbar disc pathology, Scheuermann's disease should be considered.<sup>[7]</sup>

### **CASE REPORT:**

My patient a 12 years old male was apparently alright 2 years back then he develops pain in both knees without any history of trauma or fall. The pain was insidious in onset, gradual, non-progressive & continue in nature. Then he starts taking treatment from hospitals but not get complete relief. Still the pain was aggravated on movement & exercise but it was relived on rest & medication. Now he came to orthopedic OPD of Dhiraj hospital with the chief complaint of bilateral knee pain, left forearm pain and unable to bend forward from last 2 years, without any neurological deformities and now he is admitted her for further treatment and management.

On examination, my patient was conscious, co-operative, well oriented, nourished with average built. His all vital were within range. During routine inquiry we found that there was a strong maternal history of scoliosis. His mother and maternal family was suffering from Scheuermann disease. While at the time of examination we call him to lying down / sleep then we observe his spine deviates laterally toward right side (Figure 1). We evaluated the patient further with radiological imaging. Digital X-ray shows scoliosis with curve towards right side in thoracic spine and lateral radiograph of thoracic spine show irregularities (Figure 2). And MRI shows vertebral end plate irregularities at multiple end plate levels with reduced intervertebral disc space at multiple vertebral levels, disc desiccation is noted at multiple vertebral levels, mild scoliosis with curvature towards right side is noted, there is long segment intra-medullary T2 and STIR hyperintense signal noted from D2 to D10 and vertebral levels- suggest possibility of changes of cord ischemia (Figure 3A & 3B).

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His blood investigations like CBC, ESR, CRP, Serum Calcium & Serum Creatinine all were in normal range without any infective or inflammatory etiology.

According to all findings, it was a Typical Scheuermann's Disease which involves thoracic vertebrae and dorsal spine.

After confirmation of diagnosis, the disease was explained to patient and carrier giver and start a treatment accordingly with NSAIDs, Antacids, Antioxidants, Multivitamins and physiotherapy.



**Figure 1 : Showing body getting curved when lying down**

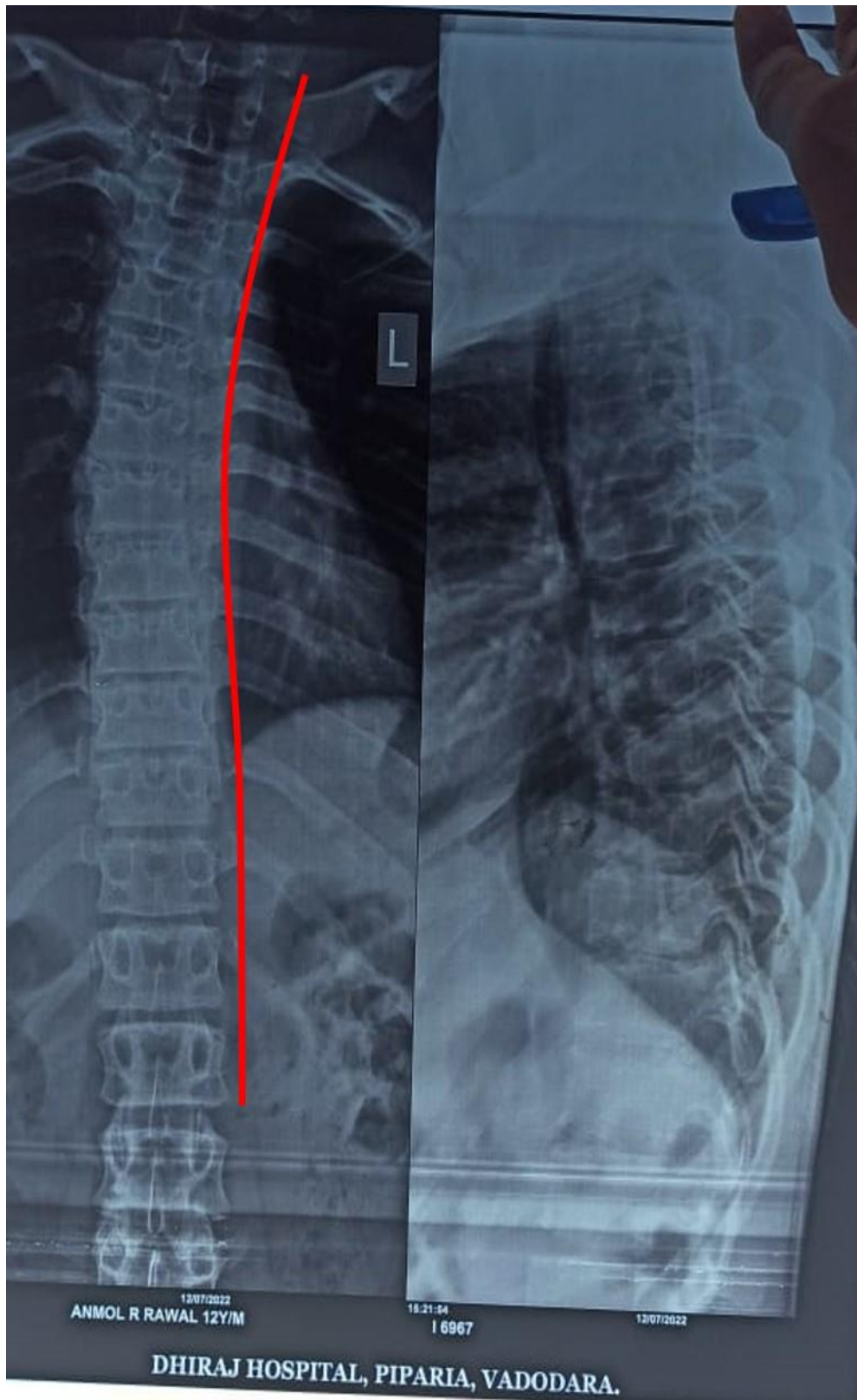
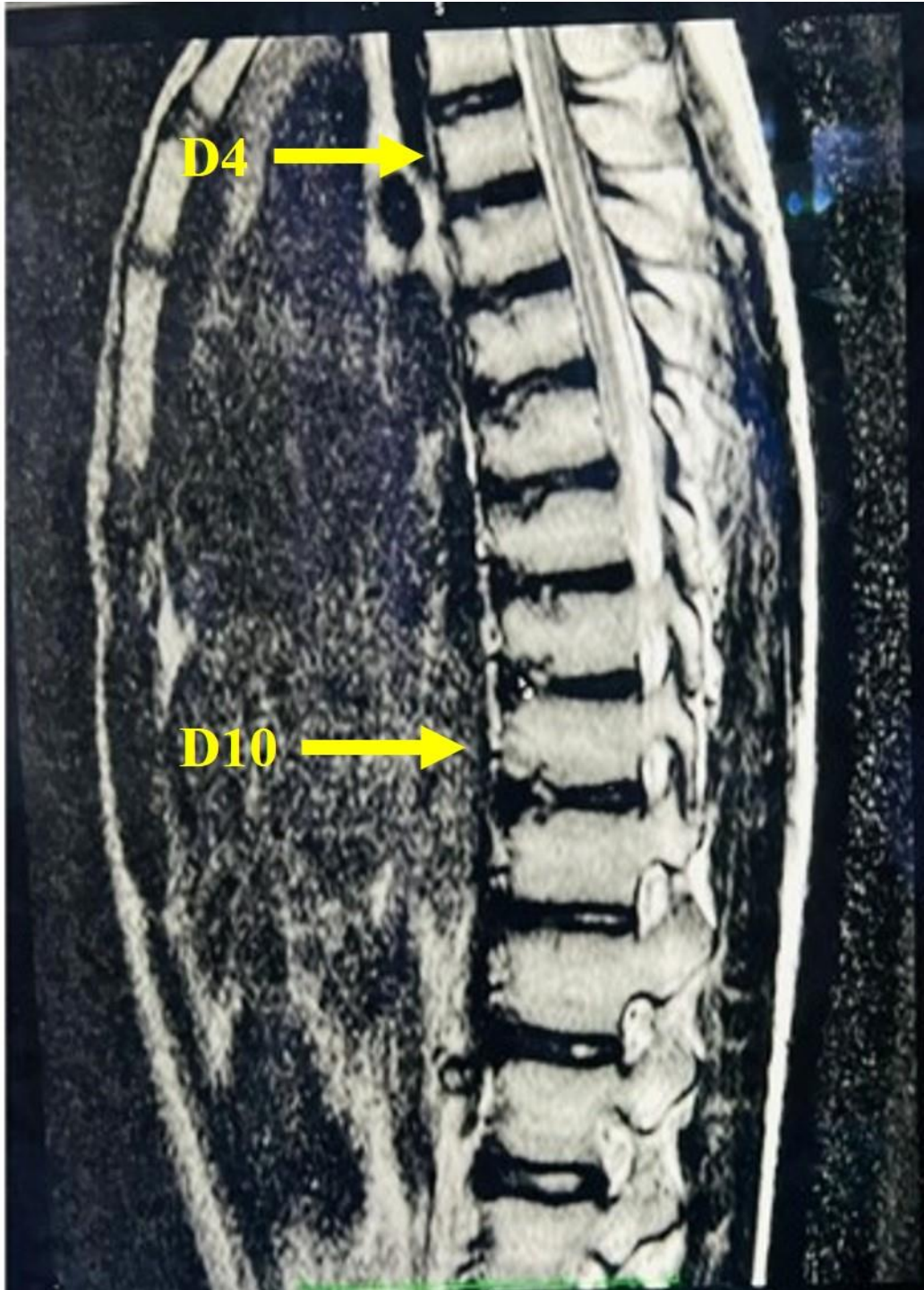


Figure 2 : Digital X-ray shows a bent in vertebra

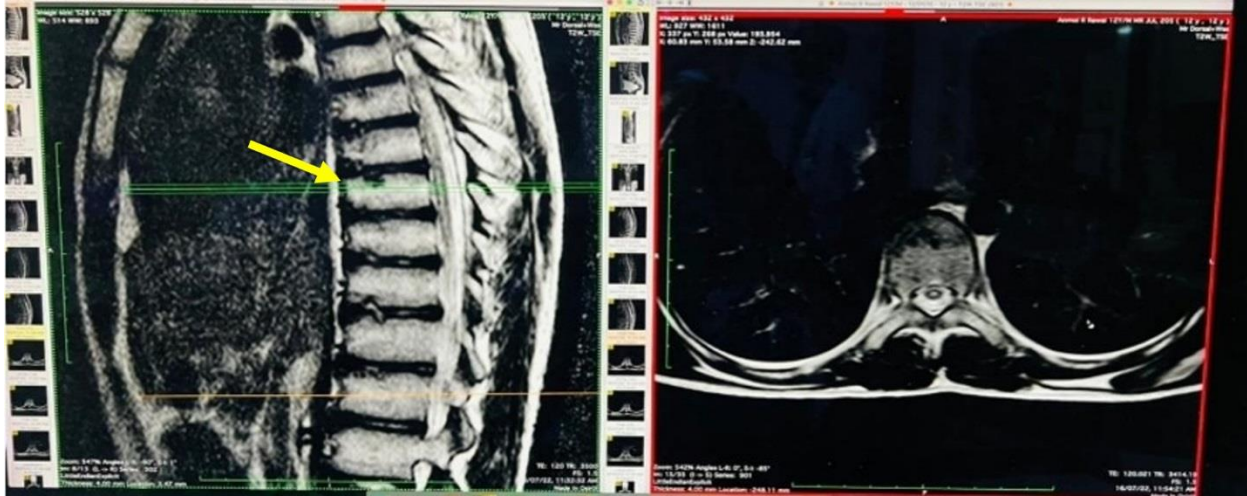
- The red line shows a curve in the spine



**Figure 3A : A sagittal section of the dorsal spine showing end plate irregularities noted**

**involving multiple dorsal vertebral bodies.**

- There is also long segment intramedullary T2 and STIR hyperintense signal noted at D2-D10 vertebral level suggesting possibility of cord ischemia.



**Figure 3B : An axial section taken at D8 vertebral body level (marked by an arrow)**

- There is intramedullary T2 and STIR hyperintense signal noted suggesting possibility of cord ischemia.

**DISCUSSION :**

A young boy aged 18 years came to hospital OPD with chronic lower back pain from last 6 months. It was not associated with pain at lower limb or any neurological complaints. His history, general examination, blood investigation and radiological imaging shows atypical Scheuermann's disease.<sup>[2]</sup>

Here, a 19 years old young boy came with abnormal and excessive curvature of spine. Showing typical type 2 Scheuermann's disease with pain in lower portion of back with numbness of both limbs. His blood investigations and vitals are also within range.<sup>[6]</sup>

A 16 years old boy of Chinese family from central south university suffering from kyphotic deformity since last 4 years with positive family history. He has limited lumbar activity due to lumbar vertebral wedging.<sup>[8]</sup>

A patient presents with upper back pain and deformity in lumbar region and it associated with urinary retention. He is walking with kyphotic gait. Treated by TLSO (thoracic lumbosacral orthoses) brace with smith-peterson osteotomy. He got improvement after surgery.<sup>[9]</sup>

**CONCLUSION :**

A Typical Scheuermann's Disease is a rare disease which involves thoracic vertebrae and dorsal spine of young patient. Generally, a patient come with back pain or lower limb pain without any neurological impairment. To make a proper diagnosis, personal history, family history, blood investigations, radiological imaging are required and can be fixed by suitable orthopedic surgery of spine and maintained by physiotherapy and good nutritional diet. Not all cases require urgent surgery but after some time they require, till that time medications and physiotherapy play an important role.

**DECLARATION OF PATIENT CONSENT :** The written consent was taken by patient and his guardian for publishing his/her image, general information and clinical information in this case report. We already explained to the patient that his/her name, surname will be anonymous.

**ETHICAL APPROVAL :** Not required

**CONFLICT OF INTEREST :** Nil

**FUNDING :** Nil

**SOURCE OF SUPPORT :** None

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