Scheuermann's kyphosis

see also Lumbar Scheuermann's disease.

To apply the label of classical Scheuermann's disease, the Sorensen criteria need to be met [1)]

thoracic spine kyphosis >40° (normal 25-40°) or thoracolumbar spine kyphosis >30° (normal ~zero degrees) and

at least 3 adjacent vertebrae demonstrating wedging of >5°

Key concepts

- criteria: anterior wedging of at least 5° of ≥ 3 adjacent thoracic vertebral body
- presentation: usually pain (when thoracic kyphosis (TK) > 50–60°) or cosmetic deformity
- workup: standing scoliosis X-rays, neuro exam, ± MRI
- surgical treatment: usually reserved for TK > 70°

AKA: Scheuermann's kyphoscoliosis, Scheuermann juvenile kyphosis, juvenile kyphosis, Scheuermann disease, juvenile osteochondrosis of the spine, vertebral epiphysitis. Originally dubbed "osteochondritis deformans juvenilis dorsi" by Danish orthopedic surgeon Holger Werfel Scheuermann in 1920 [2)].

Scheuermann's kyphosis is the most classic form of hyperkyphosis and is the result of wedged vertebrae that develop during adolescence. The cause is not currently known and the condition appears to be multifactorial and is seen more frequently in males than females.

Case reports

A 24-year-old man presented with progressive back pain and a fixed severe thoracolumbar kyphosis centered at the L2-L3 disc space seven years after removal of instrumentation for intractable infection following correction of Scheuermann's Kyphosis. The patient also demonstrated pseudoarthrosis of the posterior thoracolumbar fusion bed. The original operative plan was to perform a vertebral column resection (VCR) of L2 to correct his severe kyphosis. During preparation for the VCR, the patient's deformity corrected completely after insertion of blunt distraction paddles for the interbody fusion after the Ponte osteotomy at L2-L3. A VCR was avoided, and the construct was able to be completed with simple rod insertion and posterolateral fusion.

The described technique achieved 69 degrees of correction at the L2-L3 disc space without any remodeling of the surrounding vertebrae. The C7 plumb line was normalized, and the patient was able

to stand upright with horizontal gaze and without pre-existing discomfort. At the six-month follow-up, the patient reported a significant improvement in pain and was able to resume normal activities [3].

1)
Sørensen KH. Scheuermann's juvenile kyphosis. København: Munksgaard 1964:222-4
2)
Scheuermann HW. The classic: kyphosis dorsalis juvenilis. Clin Orthop Relat Res. 1977:5–7
3)
Molloy SS, Ahmad FU, Baum GR, Green BA, Lebwohl NH. Focal Correction of Severe Fixed Kyphosis with Single Level Posterior Ponte Osteotomy and Interbody Fusion. Cureus. 2016 Jun 23;8(6):e653. doi: 10.7759/cureus.653. PubMed PMID: 27462479.