



## The management of severe rigid tuberculous kyphosis of the lumbar spine with multilevel vertebral column resection

A 19-year-old HIV-negative man presented to a Scoliosis Research Society Global Outreach Site with progressive low back pain. Physical examination revealed no neurological deficit. Standing plain radiographs (Fig. 1), T2-weighted sagittal magnetic resonance imaging (Fig. 2), and sagittal computed tomography (Fig. 3) demonstrated a significant rigid kyphotic deformity (greater than 98°) at

L3. The patient underwent a single Stage 3-level posterior vertebral column resection (PVCR) with neuromonitoring, followed by reconstruction of the anterior column with two cages and posterior pedicle screw instrumentation (Fig. 4). Estimated blood loss was 4,000 mL, the duration of the procedure was 480 minutes, and there was no neurological deficit. The patient's postoperative period was uneventful.

The thoracic spine and thoracolumbar junction are involved in 90% of spinal tuberculosis [1]. Anti-tuberculosis chemotherapy has transformed the management of spinal tuberculosis into predominantly a “medical disease” [2]. Five percent of tuberculosis patients develop kyphotic deformities that necessitate operative intervention [3]. Whereas PVCRs of thoracic spinal tuberculosis



Fig. 1. Preoperative standing posteroanterior and lateral scoliosis radiographs.

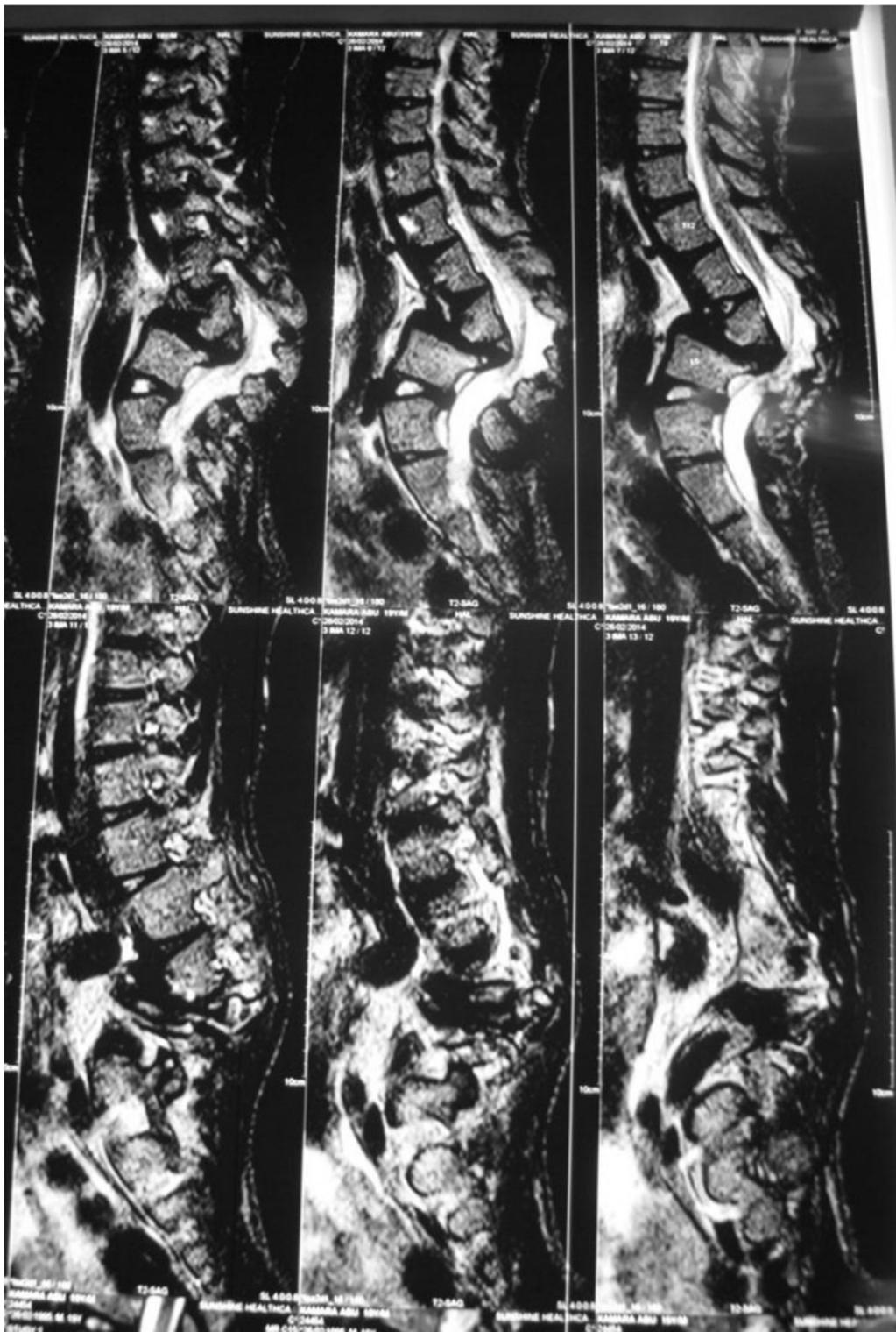


Fig. 2. Preoperative sagittal T2-weighted image of lumbar spine.

have been well described [4], a three-level PVCR of the post-tuberculous lumbar spine has not been described in the literature and posed distinctive technical challenges as the lumbar nerve roots had to be protected and not sacrificed.

## References

- [1] Tuli SM. Historical aspects of Pott's disease (spinal tuberculosis) management. *Eur Spine J* 2013;22(Suppl 4):529–38.
- [2] Dye C, Scheele S, Dolin P, Pathania V, Raviglione MC. Consensus statement. Global burden of tuberculosis: estimated incidence,

- prevalence, and mortality by country. WHO Global Surveillance and Monitoring Project. JAMA 1999;282:677–86.
- [3] Rajasekaran S, Vijay K, Shetty AP. Single-stage closing-opening wedge osteotomy of spine to correct severe post-tubercular kyphotic deformities of the spine: a 3-year follow-up of 17 patients. Eur Spine J 2010;19:583–92.
- [4] Papadopoulos EC, Boachie-Adjei O, Hess WF, Sanchez Perez-Grueso FJ, Pellišé F, Gupta M, et al. Early outcomes and complications of posterior vertebral column resection. Spine J 2015;15:983–91.

Paul D. Kiely, MCh, FRCS (Tr&Orth)<sup>a</sup>  
 Oheneba Boachie-Adjei, MD<sup>b</sup>  
 Han Jo Kim, MD<sup>b</sup>  
<sup>a</sup>Center for Spinal Disorders  
 Department of Orthopaedic Surgery  
 Miami Children's Hospital  
 3100 SW 62nd Ave., Miami  
 FL 33155, USA

<sup>b</sup>Spine Care Institute  
 Department of Orthopaedic Surgery  
 Hospital for Special Surgery  
 535 E 70th St, New York  
 NY 10021, USA

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Fig. 3. Preoperative sagittal computed tomography scan of the spine.

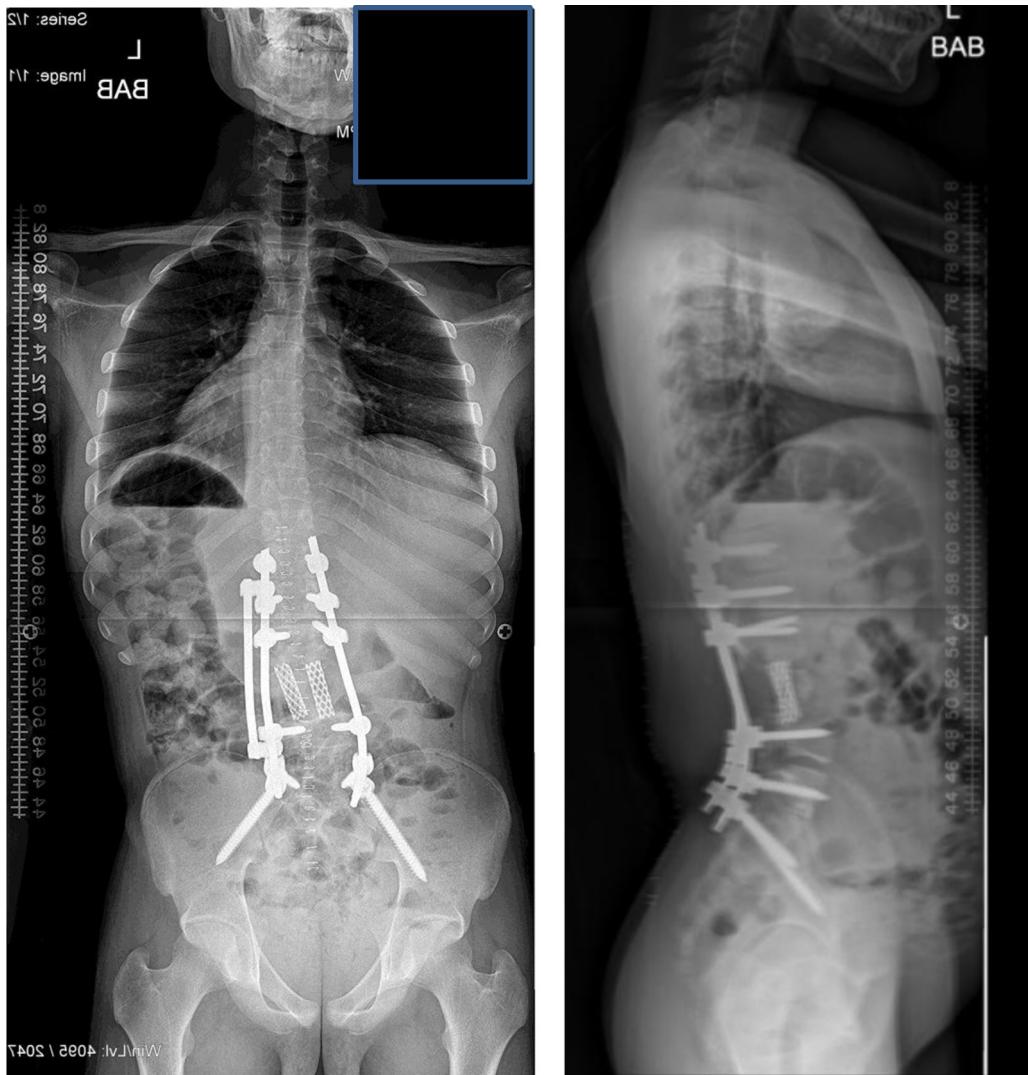


Fig. 4. Postoperative standing posteroanterior and lateral scoliosis radiographs.