

TITLE: Management of Cervical-Thoracic Junction Kyphotic Deformities

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ABSTRACT:

Hypothesis:

Severe kyphotic deformities of the cervical-thoracic junction primarily involving the sagittal plane causing chin-on-chest posture and loss of forward gaze are among the most challenging deformity problems to correct.

Methods:

Nine patients with upper thoracic and cervical-thoracic junction kyphotic deformities were treated for chin-on-chest posture. Etiologies were spinal cord tumor, post-laminectomy kyphosis, neurofibromatosis, and severe degenerative spondylosis. Surgical treatment included either: (1) posterior osteotomies and instrumented fusion, or (2) multi stage (i.e. 2-3 stage procedures) anterior and posterior osteotomies and instrumented fusion. Post-operative immobilization was dependent upon anatomic region treated, patient age, and bone quality.

Results:

The mean preoperative deformity was 54 degrees (range 32-90). Correction of deformity to achieve forward gaze was accomplished in all 8 (100%) patients. Single stage procedures were performed in 4 (50%) of patients, 2 procedures were required in 2 patients, and 3 procedures were required in 2 patients. The mean post-operative deformity was 25 degrees (range 10-44). The mean deformity correction was 29 degrees (10-60). Oswestry, SF-36, and visual analog outcomes were improved in all cases. Halo fixation was used in 3 cases and non-halo orthoses were used in 5 cases. There were no major neurological or life threatening complications. There were 2 unscheduled re-operations (25%) for hardware revision.

Conclusion:

Correction of severe cervical-thoracic junction deformities for chin-on-chest posture requires major spinal reconstruction techniques to achieve forward gaze. In selected cases a single stage procedure can achieve correction, but multi-stage procedures may be required. Cervical thoracic junction kyphotic deformity correction requires individualized surgical management and can be accomplished with safety and success.

KEYWORDS: Kyphotic Deformity, Upper Thoracic, Cervical-thoracic Junction

Learning Objectives:

1. Understand indications for deformity correction
2. Understand the treatment options for correction of cervical-thoracic and upper thoracic deformity
3. Describe the procedures used to correct complex sagittal plane deformity