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Experience with combined video-assisted thoracoscopic surgery (VATS) anterior spinal release and posterior spinal fusion in Scheuermann's kyphosis.

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Abstract

STUDY DESIGN: Retrospective.

OBJECTIVES: To determine whether anterior endoscopic release and posterior spinal fusion could achieve stable correction in Scheuermann's kyphosis.

SUMMARY OF BACKGROUND DATA: The initial treatment of choice of Scheuermann's kyphosis is thoracic hyperextension and postural exercises and/or Milwaukee brace. Milwaukee bracing is most efficacious in the early stages when the curvature is flexible and in the skeletally immature. However, it is known that larger curves, vertebral wedging greater than 10 degrees, and skeletally mature patients will not usually respond to this treatment. Surgery is indicated in the skeletally immature with severe deformity where brace treatment has failed to prevent progression. Posterior spinal instrumentation can achieve adequate correction in the less rigid curves. However, the more rigid curves have been shown to be resistant to posterior spinal fusion alone, therefore needing anterior spinal release.

METHODS: Between 1995 and 2001, 19 patients underwent video-assisted thoracoscopic surgery and posterior spinal fusion for the treatment of Scheuermann's kyphosis. The average age was 17.4 years with closed triradiate cartilage in all. Average follow-up was 2.7 years. An average of 8.3 discs were released anteriorly; an average of 13 levels were fused posteriorly.

RESULTS: Average preoperative kyphosis was 84.8 degrees. Average postoperative kyphosis was 43.7 degrees. Average kyphosis at follow-up was 45.3 degrees. Only 1.6 degrees of correction loss was noted. No junctional kyphosis was present. Two patients developed pleural effusion; one required thoracocentesis. Two patients developed pneumothorax. One patient underwent revision surgery for inferior hook pullout. One required mechanical ventilation.

CONCLUSIONS: Combined video-assisted thoracoscopic surgery release and posterior spinal fusion for the treatment of Scheuermann's kyphosis is a viable option for the treatment of the more severe and rigid curves.