Circumferential Correction of Post-infectious Thoracolumbar Deformity in High-risk Patients with Active Osteomyelitis

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Introduction

Post-infectious deformity is a rare complication of osteomyelitis of the spine.Non-operative or limited operative treatment with debridement is usually futile due to destruction of the anterior column. Major reconstructive surgery may be a large undertaking with high morbidity. We describe our experience and outcomes with circumferential correction and fusion for patients with post-infectious deformity.

Methods

A retrospective review of 10 consecutive patients who underwent a three-column osteotomy for thoracolumbar deformity due to bacterial osteomyelitis during an 18-month period is reported. Preoperative data included ambulatory status, CCI, clinical and infectious data, and VAS scores.Complications are reported.The severity of their immediate postoperative condition is reflected by the SAPS II score. Outcome variables included VAS scores, ambulatory status, ability to care for self, return to work status and imaging.

Results

The mean age was 60.5±6.6 years. All patients had refractory back pain, were unable to ambulate and had confirmed diagnosis of a spinal infection.The median CCI was 5(range, 1-8) and mean VAS was 8.7± 1.8. All patients underwent a 3-column osteotomy with an average number of 8 levels fused. The mean EBL and operative time was 4200mL and 8.6 hours respectively. The median SAPS II score was 25 (range, 15-52). The median ICU and total hospital stay was 4 and 13 days respectively.The most common complication was intraoperative hypotension requiring vasopressor support.Postoperative VAS was reduced to 1.5±1.06, and all patients except one (preoperative paraplegia) regained ambulatory status.Mean preoperative segmental kyphosis of 30±11 degrees was corrected to 10±7 degrees.

Conclusions

This study suggests that extensive circumferential reconstruction for deformity originating from bacterial discitis,although a massive procedure, is effective in restoring these very sick patients to self-care and ambulatory status.Extensive reconstruction is feasible and should be considered even during the acute phase of these complex infections, especially considering how debilitating the added components of instability and deformity.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the importance of early sagittal correction in patients with post-infectious deformity, 2) Discuss the expected functional outcomes of patients undergoing a large 3 column osteotomy for post-infectious deformity 3) Identify preoperative risk factors and comorbid conditions that increase the risk of these surgery's.

References

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