Posterior Fixation without Debridement for Vertebral Body Osteomyelitis and Discitis: A 10-Year Retrospective Review

Sarah E. Lindsay, Hanne Astrid Gehling, Jung U Yoo[1], Travis Philipp
[1]OHSU

INTRODUCTION:

Vertebral discitis and osteomyelitis are complex medical problems that are associated with significant morbidity and mortality. Delayed diagnosis and treatment are associated with neurologic deficits, spine deformity, sepsis, and death. These infections often occur through hematogenous seeding of vertebral bodies and disc spaces from distant sources. While vertebral osteomyelitis and discitis often can be managed medically with prolonged antibiotic therapy, surgical treatment is indicated in the setting of failure of antibiotic therapy, neurologic deficits, epidural abscess, or spinal instability / deformity.

Historically, surgical treatment of vertebral osteomyelitis and discitis mandated aggressive debridement in addition to posterior spinal fixation. However, there is growing evidence in the literature that direct debridement may not be necessary and may contribute to overall morbidity. The purpose of this study was to evaluate the efficacy of posterior instrumentation alone in treating spontaneous spinal infections.

METHODS: Retrospective chart review was performed to identify patients treated with posterior instrumentation for spontaneous spinal infections between 2011 and 2021. Exclusion criteria were age less than 18, patients with epidural abscess without spinal instability who underwent laminectomy only, and patients treated for late sequelae of osteomyelitis without ongoing infection. Details regarding patient diagnosis, surgical procedure, microbiology, and antibiotic treatment were abstracted from the data. Success of treatment was determined based on postoperative ambulatory status, surgical complications, and need for revision surgery.

RESULTS:

A total of 31 patients meeting inclusion criteria were reviewed. Most common indications for surgical intervention included bony instability (48%), neurologic compromise (61%), and failure of prolonged antibiotic treatment (68%). Twenty-six patients underwent posterior long segment fixation and laminectomy without formal debridement; 42% of patients had at least two levels of pedicle fixation on either side of the involved disc spaces.

Postoperatively, all patients were treated with intravenous antibiotics by an infectious disease specialist. The most common organism isolated was MRSA (23%) followed by MSSA (19%). The average duration of IV antibiotic therapy was 6.9±2.4 weeks. Most patients (65%) were then placed on oral antibiotics with 26% receiving lifelong suppression.

The average follow-up time was 8.2±9.8months. Nineteen of 31 (61%) of patients were ambulatory. Surgical complications included dural tear and pain. Two patients (6%) required repeat surgery for persistent infection. No patient required subsequent direct debridement.

DISCUSSION AND CONCLUSION:

Vertebral discitis and osteomyelitis are challenging medical problems. In our cohort, we found posterior long-segment fixation in the absence of formal debridement to be effective in the management of spontaneous spine infections.