Vertebral Osteomyelitis
By Thomas Rieser, M.D., Midwest Spine Institute

Vertebral osteomyelitis continues to be a diagnostic challenge for the physician. The delay in diagnosis, often greater than three months, is associated with epidural abscess formation, spinal instability, neurological/medical deterioration, and death. Eighteen percent of patients develop epidural abscesses and fifty percent of these develop neurological changes, including myelopathy when located in the cervical or thoracic spinal canal.

The presenting symptoms of vertebral osteomyelitis initially can be nonspecific axial back or neck pain with muscle spasm but tend to become more intense and unremitting, including night pain and eventual multiple system failure. Risk factors include age greater than fifty, diabetes mellitus, obesity, malignancy, immunodeficiency and drug use. Hematological seeding is considered the most common cause.

Diagnosing vertebral osteomyelitis usually involves obtaining imaging, serologic and microbiologic studies. The MRI is the most sensitive imaging study; however, if the MRI is inconclusive, a technetium-99 bone scan is recommended which is ninety percent sensitive, but not specific. If necessary, a gallium-67 will improve specificity. The sedimentation rate and the C-reactive protein levels are elevated in ninety percent of the cases. Cultures are best obtained from blood when the patient is febrile. CT-directed percutaneous biopsies yield positive cultures in fifty to seventy-five percent of patients, and open biopsies with cultures can be obtained when surgical intervention is required.

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The organism responsible for this condition is Staphylococcus aureus which occurs in cases forty to fifty-five percent of the time. Pseudomonas is common in drug users and Salmonella is isolated more often in patients with sickle cell disease.

Vertebral osteomyelitis can be treated nonsurgically fifty percent of the time. Broad spectrum antibiotics are utilized initially, and then tailored to the culture and sensitivity results. Surgical treatment is usually indicated to evacuate an epidural abscess, decompress the spinal canal especially in the presence of neurological changes, and stabilize the spine when compromised.