occurred with rare fungi after epidural injections of corticosteroids that were contaminated with a plant pathogen, *Exserohilum rostratum,* that rarely infects humans.

Clinical Presentation

The classic triad of fever, spinal pain, and neurologic deficits may not be identified in all patients, leading to a delay in diagnosis. Patients are usually febrile and have acute or subacute neck or back pain. An important physical finding is focal tenderness over the affected spinous processes. Stiff neck and headache are common. The pain can be mistaken for sciatica, a visceral abdominal process, chest wall pain, or cervical disk disease. If it goes unrecognized at this stage, the symptoms can evolve over a few hours to a few days to weakness, loss of lower extremity reflexes, and paralysis distal to the spinal level of the infection. In this clinical setting, spinal epidural abscess should be assumed, systemic antibiotics begun, and urgent neuroradiologic imaging pursued.

Diagnosis

The diagnosis is made by CT or MRI (Fig. 90-3). The differential diagnosis includes transverse myelitis, intervertebral disk herniation, epidural hemorrhage, and metastatic tumor. These conditions can usually be detected by MRI. Epidural abscess is often accompanied by diskitis or osteomyelitis of the vertebral bodies.

Treatment

Unless culture and sensitivities dictate otherwise, a penicillinase-resistant penicillin should be started empirically as antistaphylococcal treatment for presumed bacterial infection. If methicillin resistance is suspected, vancomycin should be used. Considering the severity of the disease, additional gram-negative coverage with a third-generation cephalosporin or a quinolone may be needed.

Surgical decompression was previously considered mandatory, but early diagnosis by MRI may allow for effective medical therapy if started before the occurrence of neurologic complications. These patients should be monitored closely, and if signs of neurologic deterioration emerge, surgical intervention may be necessary.

SINUS THROMBOSIS

Septic Cavernous Sinus Thrombosis

Septic cavernous sinus thrombosis usually results from spread of infection from facial structures through facial veins or from the sphenoid or ethmoid sinuses. Symptoms include headache or lateralized facial pain, followed in a few days to weeks by fever and involvement of the orbit (i.e., proptosis and chemosis due to obstruction of the ophthalmic vein). Paralysis of oculomotor nerves follows rapidly. In some instances, sensory dysfunction occurs in the first and second divisions of the trigeminal nerve along with a decrease in the corneal reflex. Further involvement of the contiguous orbital contents follows, with mild papilledema and decreased visual acuity that sometimes progresses to blindness.

Extension to the opposite cavernous sinus or to other intracranial sinuses with cerebral infarction or increased intracranial pressure due to impaired venous drainage can result in stupor, coma, and death. The CSF is abnormal if there is accompanying meningitis or parameningeal infection. The most common causative organism is *S. aureus*, followed by streptococci and pneumococci; anaerobic infection may occur.

FIGURE 90-3 Magnetic resonance imaging shows an epidural abscess due to *Staphylococcus* in the cervical spine of a patient with human immunodeficiency virus infection. **A,** Noncontrast T1-weighted image shows an extensive lesion in the epidural space that extends from C2 to C7. Notice straightening of the cervical spine. **B,** After a laminectomy from C2 to T1 and fusion, the short tau inversion recovery (STIR) image shows fluid collection in the epidural space as a high-signal-intensity lesion. Normal curvature of the spine is seen.