

PYOGENIC SPINAL EPIDURAL ABSCESS

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Over the last 10 years, four cases of spinal epidural abscess have been admitted and treated at King Fahd University Hospital. Three of these patients were surgically treated, while one was treated conservatively. Acid-fast bacilli (AFB) were not detected in any of the cases. All four patients were put on antibiotics for periods of 4-8 weeks and showed remarkable recovery.

Case 1

A 17-year-old Saudi university student was admitted to our service with a short history of back pain and rapid onset of weakness in both lower limbs. The patient had a fever of 38°C, and on examination, was found to have paraparesis grade 2 in the right side and grade 3 in the left, with a sensory level at D8. He was able to control his sphincters. CT scan showed a large chest abscess extending posteriorly and laterally to the epidural space in the levels D8-D9. The patient underwent urgent surgery of laminectomy of D8 and D9, and evacuation of the abscess. The pus was examined for pyogenic organisms as well as AFB by standard laboratory methods.¹ No AFB were detected by direct smear and culture. *Klebsiella* spp. was isolated and the patient was treated with piperacillin, meropenem and cefamandole for five weeks. The patient showed immediate improvement postoperatively, and had another operation for thoracotomy and removal of the chest abscess a week after the first surgery. He improved markedly and was discharged, walking normally after four weeks.

Case 2

A 22-year-old Saudi man, a known case of sickle cell disease with several months of back pain, was admitted to

our hospital complaining of severe lumbar pain. He had no neurological deficit, had normal motor power and normal control of the sphincters. He was highly febrile, with a temperature of 39°C. Lumbar x-rays and CT scan showed a small epidural abscess at the level of L1-L2, extending from the thoracic cavity. No evidence of osteomyelitis was detected. The patient was treated conservatively with antibiotics (gentamycin and ceftriaxone) and painkillers (voltaren) for six weeks. He showed marked improvement and was discharged home after eight weeks.

Case 3

A 35-year-old Indian man was admitted to our hospital suffering from severe low back pain, fever and weakness of both lower limbs. He was partially incontinent, and sensation was reduced at the sensory level of L3. The patient reported that he was operated on at the age of six years for low back midline subcutaneous abscess. As the CT scan showed a large epidural abscess at level L3-L5, an emergency laminectomy of L3-L4 and evacuation of the abscess were performed. A drain was left in the wound for four days. There was no evidence of dermal sinus, however such a possibility could not be ruled out completely. *Staphylococcus aureus* was isolated from the abscess cavity. The organism was sensitive to cefazolin, and the drug was given for four weeks. No AFB was detected. The patient's condition improved and he returned to normal activities within two weeks.

Case 4

A 42-year-old Saudi patient who was unable to walk was admitted complaining of low back pain. The patient had been operated upon three weeks earlier for L4-L5 laminectomy and discectomy in another hospital. He was highly febrile at 39.5°C. CT scan showed a large epidural abscess. Surgical evacuation of the abscess was done and a drain left in the wound for one week. *Staphylococcus epidermidis* was cultured from the abscess swabs but no AFB were detected. The patient was treated with ampicillin/ceftazidime and painkillers, and he had a complete recovery in six weeks.

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Discussion

Pyogenic epidural abscess is a rather rare disease, especially in young adults. This disease has been reported in elderly patients, and as a complication of septic infection, spinal surgery or even coronary angioplasty.²⁻⁴ Several organisms are reported to be the cause of epidural abscess, including *Staphylococcus aureus*, *Streptococci* and *Klebsiella* spp.^{2,3,5-7} Other uncommon organisms have also been reported, including *Hemophilus paraphrophilus*,⁸ and *Nisseria* spp.³ However, spinal TB should always be ruled out by clinical, radiological and laboratory studies.

Spinal epidural abscess is a very serious condition and may result in mortality or severe neurological deficits.³ Therefore, it should be suspected in every patient with severe back pain associated with fever. Certain groups of patients are more at risk of harboring this disease than others. These groups include elderly and immunocompromised patients, patients with a septic focus, such as chest infection, and patients with a recent history of spinal surgery.

Most authors agree that urgent multiple level decompression laminectomy and evacuation of the abscess should be the first line of management.^{2,5-7} This surgical management was what was undertaken in three cases of our series. The other case, however, was treated conservatively with antibiotics because the abscess cavity seen on the CT scan was small, and the patient was neurologically intact.⁹ Other methods of treatment have been reported, such as epidural drainage, with either a free hand needle or endoscope. These gave good results as well, especially for those patients who are too ill to undergo open procedures. We strongly recommend the surgical option, and we believe that patients should be operated on as soon as possible. This policy will provide a rapid decompression of the cord and subsequently prevent further deterioration which can be irreversible.^{2,3,10,11} In addition, wound culture may reveal the bacterial cause of the infection, and thus indicate where the proper effective antibiotic should be started.^{10,12}

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