

Epidural Abscess: The Importance of Re-Imaging

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Abstract

Epidural abscesses are rare but potentially fatal. It is well recognised that early diagnosis and rapid initiation of treatment are associated with good prognosis. This case illustrates the importance of repeating initially normal investigations when the clinical picture worsens.

CASE REPORT

A 67-year-old manual worker presented to our unit with non-specific lumbar back pain and decreased mobility. He described a twenty-year history of back pain which had worsened over the past three days. He did not complain of sensory changes, weakness, weight loss, night pain, bowel or urinary symptoms, and felt well otherwise. He had a past medical history of myelodysplasia which was under regular review. He took no medications. He was a smoker and drank thirty units of alcohol per week.

On examination he had mild lumbar spine tenderness over L3, 4 and 5. No neurological deficit was demonstrated. His temperature was 38.1°C but all other observations were normal. Initial blood tests were within normal limits. Urine dipstick and chest radiographs were also unexceptional. Urgent Magnetic Resonance Imaging (MRI) was arranged.

Over the next two days he became hypotensive and spiked temperatures of 38°C intermittently. His initial C-reactive protein (CRP) was 85 and Erythrocyte Sedimentation Rate (ESR) was 65. This climbed to CRP of 473 and ESR of 88. Blood cultures were taken from three different sites. No focus of infection had been identified. MRI showed no evidence of discitis. There was a disc prolapse at L2-3 anteriorly, but nil else of note.

Five days after admission blood cultures grew *Streptococcus Milleri*. The patient clinically deteriorated, becoming hypotensive, confused and with a continuous raised temperature. Intravenous antibiotics were commenced.

Urgent echocardiography was arranged to exclude an infective endocarditis. Computerised Tomography (CT) of the abdomen and head showed no abscess. He was admitted

to the Intensive Therapy Unit with sepsis of unknown origin, for invasive monitoring and fluid resuscitation.

Urgent repeat MRI showed a large posterior collection at L3/4 and a small anterior epidural collection at the level of L2/3. There was also evidence of active infection at the L2/3 disc.

The patient was taken to theatre for drainage of the L3/4 collection. Frank pus was found in a large abscess cavity. The cavity was excised and washed out. The patient made routine postoperative progress. Intravenous antibiotics were continued for four weeks, followed by long-term oral antibiotics.

DISCUSSION

Spinal epidural abscesses are uncommon, accounting for 0.2-2 cases per 10 000 hospital admissions.^{1,2,3} They occur mostly in the sixth or seventh decades of life, and affect males to females in a ratio of 2:1.^{1,3} Factors which predispose to epidural abscesses include: diabetes, intravenous drug abuse, alcoholism, chronic renal failure and malignancy.^{1,3,4}

Most epidural abscesses form by haematogenous spread, with the skin and soft tissues being the usual sources of bacteraemia. They have also been commonly described after direct spread from adjacent infected structures, for example a discitis or spondylitis.^{1,3} There are also reports of epidural abscesses following spinal surgery or epidural catheter insertion.^{1,3}

The most common causative microorganism is *Staphylococcus Aureus*, which is isolated in approximately seventy per cent of cases.³ *Streptococcus* accounts for

approximately seven per cent of cases. *Streptococcus Milleri* has been implicated in epidural abscess formation, but reports of this are rare.^{1,5} It is a gram-negative coccus found in the gastrointestinal tract which has a tendency to form abscesses.

The symptoms and signs of spinal epidural abscesses are variable. The typical presentation is back pain, fever and spinal tenderness.^{1,2,3} Ninety per cent of patients have back pain and approximately one third of patients have neurological signs at presentation.³ Other features that may be present include decreased mobility and malaise.^{2,4}

MRI is the investigation of choice for detecting epidural abscesses.⁶ Several papers have highlighted the importance of early detection and treatment of epidural abscesses.^{1,4} Prognosis depends on the patients clinical and neurological condition at presentation and the speed of diagnosis. Mortality is approximately fifteen per cent.^{1,3}

The importance of this case is that the clinician must be prepared to reconsider an apparently initial benign diagnosis and re-investigate as necessary. We are fortunate to have an

interested and co-operative radiology department who were particularly forthcoming in repeating this patient's scan. It is anticipated that this might prove more difficult in other units and we hope that this case will serve as an example of the importance of serial investigation if the case requires.

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