

## Epidural abscess T5T8 due to methicillin-resistant staphylococcus aureus in an immunocompetent patient

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**A 28-year-old man was admitted with severe thoracic pain, a body temperature of 37.2°, paraplegia and sphincter disturbances. MRI revealed an epidural abscess T5T8. A decompressive laminectomy T5T8 was performed and the abscess was removed. A methicillin-resistant *Staphylococcus aureus* was cultured. Vancomycin was administered. Six months later muscle testing showed values from 3/5 to 4/5. MRI is the first choice diagnostic tool. Laminectomy, drainage and intravenous antibiotics constitute the basic treatment. Antibiotics alone can be sufficient in case of whole spine involvement, lumbosacral localization without neurological symptoms, fixed neurological deficit, complete paralysis for more than 72 hours, or severe concomitant medical problems.**

**Keywords :** epidural abscess ; thoracic spine ; laminectomy ; MRSA ; vancomycin.

now achieving full recovery has plateaued at 41 to 47%, and mortality remains at 15% (7,10). The authors describe a patient with an epidural abscess T5T8, caused by a methicillin-resistant *Staphylococcus aureus*. There were no predisposing factors such as smoking, drug abuse, trauma, immunodeficiency, previous spinal surgery, travelling abroad, or exposure to sick patients.

### CASE REPORT

A 28-year-old man noted thoracic pain, 10 days before admission. Headache, visual troubles, weakness, numbness and sphincter disturbances were absent. The pain was activity-related but did not radiate. Non-steroidal anti-inflammatory drugs brought no relief.

### INTRODUCTION

Epidural abscess is a rare infectious disorder, affecting 0.2 to 2 patients per 10.000 hospital admissions (7). *Staphylococcus aureus* is the most common responsible pathogen : it is cultured in 75% of the cases. Methicillin-resistant *Staphylococcus aureus* (MRSA) is responsible in 26% of these (2). Risk factors for epidural abscess are spinal surgery, epidural anaesthesia or analgesia, recent trauma, immunodeficiency (especially diabetes), skin furuncles and intravenous drug abuse (8,10). Back pain and fever are classical (4). The percentage of patients

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Two days before admission he came to the outpatient clinic, because of increasing thoracic pain, as well as intermittent weakness and numbness in the lower limbs. The body temperature was 37.2°C. Biochemistry : WBC 10500/mm<sup>3</sup>, sedimentation rate and CRP were normal, there was hypokalemia at 2.73 mmol/l. Administration of non-steroidal anti-inflammatory drugs and potassium chloride had no effect.

One day before admission there was complete paraplegia (table I) and hyporeflexia in the lower limbs. Haemocultures were obtained. MRI

revealed an epidural abscess T5T8 with cord compression (fig 1).

The next day he was admitted and a laminectomy T5T8 was immediately performed. The abscess was emptied and irrigated. A drain was inserted. A methicillin-resistant *Staphylococcus aureus* was cultured from the blood and tissue specimens. Vancomycin, 2g/day, and ceftriaxone, 4g/day, were administered intravenously, respectively for 2 and 4 weeks, after which cefdinir, 200mg/day, was given perorally.

Table I. — Evolution of the neurological condition

	1 day before operation		1 month after operation		6 months after operation	
C8 : hand intrinsics	5/5(L)	5/5(R)	5/5(L)	5/5(R)	5/5(L)	5/5(R)
L2 : hip flexor	0/5(L)	0/5(R)	2-/5(L)	2+/5(R)	3/5(L)	3/5(R)
L3 : knee extensor	0/5(L)	0/5(R)	2+/5(L)	2-/5(R)	3/5(L)	3+/5(R)
L4 : ankle dorsiflexor	0/5(L)	0/5(R)	2+/5(L)	2+/5(R)	3+/5(L)	3/5(R)
L5 : long toe extensor	0/5(L)	0/5(R)	2-/5(L)	2-/5(R)	4/5(L)	3+/5(R)
S1 : ankle plantar flexor	0/5(L)	0/5(R)	3/5(L)	3/5(R)	4/5(L)	4/5(R)
Sensibility	Anesthesia below T6		Anesthesia below T8		Hypesthesia below L1	
Achilles tendon reflex	decreased		+		++	
Patellar tendon reflex	decreased		++		++	

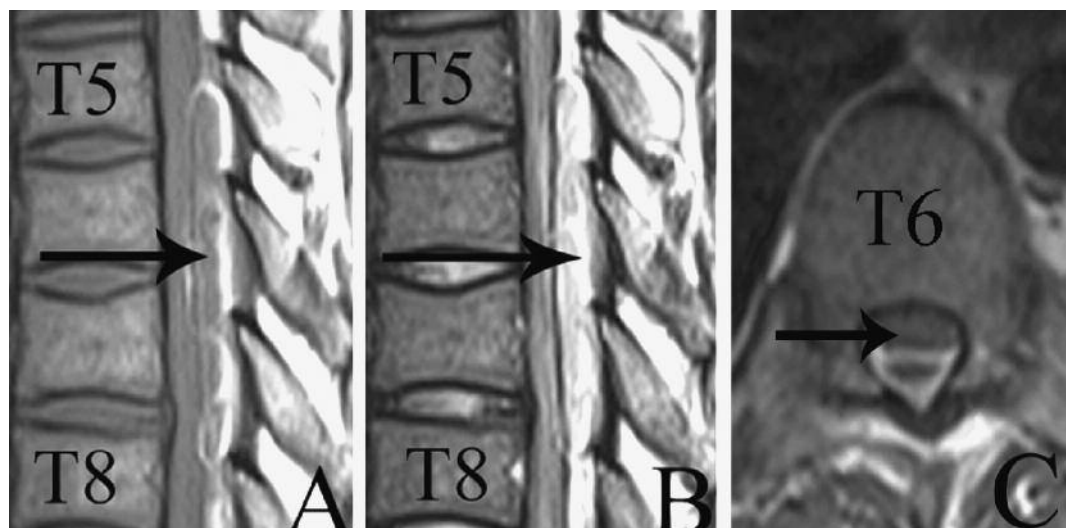


Fig. 1. — MRI. Left and middle images : T1- and T2-weighted sagittal images of the thoracic spine, showing an epidural fluid collection T5T8. Right image : T2-weighted transverse image at level T6, showing spinal cord oedema and cord compression.

One month later, thanks to an intensive rehabilitation program, muscle strength reached values from 2/5 to 3/5 (table I). Two months after surgery gait training was initiated. Six months after surgery, muscle strength reached values from 3/5 to 4/5, while the patient was able to ambulate with a walker. He only needed a moderate level of assistance to perform the activities of daily living.

### DISCUSSION

Epidural abscess is a rare condition, which, if left untreated, may result in serious morbidity and mortality. Reihnsaus *et al* (7) searched the literature and compiled 915 cases in a 43-year-period. Initial signs and symptoms are aspecific and include spinal pain (71%) and fever (66%) as the most common clinical features. Only 10 to 20% of the cases are diagnosed before the onset of neurological symptoms. After several days there is a rapidly progressing paraparesis, resulting in paraplegia, associated with sensory loss and sphincter disturbances. The average leucocyte count is 15,700/mm<sup>3</sup>, and the average sedimentation rate is 77 mm (range 2-150mm). Lumbar puncture is unnecessary and even dangerous. MRI is the first choice diagnostic tool; it yields insight about level, volume and infiltrative character of the abscess (6). Urgent laminectomy, drainage and intravenous antibiotics constitute the basic treatment. Antibiotics alone can be sufficient (8) in case of whole spine involvement, lumbosacral localization without neurological symptoms, fixed neurological deficit, complete paralysis for more than 72 hours, or severe concomitant medical

problems. Antibiotic therapy must be guided by the antibiogram (3, 9); its duration ranges from 6 to 8 weeks (2). Excellent review articles about epidural abscess are available (2, 7).

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