

A case of spinal epidural abscess following a pyelonephritis in a patient with stress fractures

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Spinal epidural abscess (SEA) caused by *Escherichia coli* (*E. coli*) is not common and usually secondary to urinary tract infection by hematogenous propagation from urinary tract system. Although less common, stress fracture can occur on lumbar spine, even though after using an electrical automated massage chair. Here, we describe a case of SEA secondary to urinary tract infection (UTI) in a patient with pre-existing stress fractures of the lumbar spines because of using an electrical automated massage chair, which was successfully treated by surgical debridement and 6-month antibiotic therapy. A 85-year-old Korean man was admitted to our hospital for evaluation of fever (38.4°C) and flank pain. Laboratory studies produced the following results: serum creatinine 2.0 mg/dL, C-reactive protein 24.4 mg/dL, and Hgb A1C 9.1%. The urine analysis showed 20-29 white blood cells/high power field, and perirenal fat infiltration of the right renal pelvis was shown in non-contrast enhanced computed tomography. In a lumbar magnetic resonance imaging (MRI), stress fracture was found on lumbar vertebrae (L3 and L4) incidentally without SEA. The patient did not have any history of trauma. However, he received a 15-min course of massage for several days. Intravenous cefotaxime was administered for a presumed diagnosis of UTI with stress fracture on lumbar spines. Urine and blood cultures grew *E. coli* sensitive to cefotaxime. Although inflammatory markers improved following antibiotic treatment, fever was developed after cessation of cefotaxime. Therefore, he underwent non-contrast enhanced computed tomography and MRI again, which revealed SEA in a region anterior to the lumbar and sacral vertebrae (L3-S1). An urgent decompressive laminectomy left L4 to S1 and epidural abscess removal was performed. The culture of abscess was also positive to *E. coli*. Antimicrobial treatment was continued for 6 months, then epidural abscess disappeared on repeat MRI.

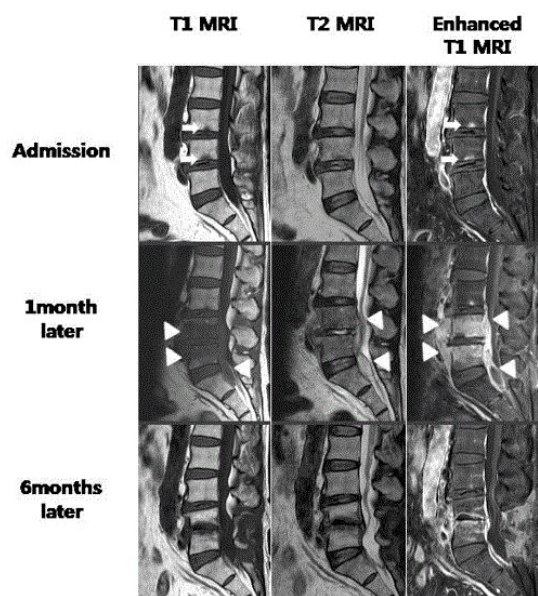


Figure 1. Lumbar magnetic resonance T1-weighted sagittal, T2-weighted sagittal, contrast enhanced sagittal images (MRI). Admission lumbar MRI showing stress fracture on L3 and L4(white arrow). 1 month later, repeated MRI showing Infectious spondylitis on L4, L5 and epidural abscess.(White arrow head). 6 months later, follow up MRI showing decreased infectious spondylitis and resolved epidural abscess

Table 1. E test MICs of antibiotics tested against *Escherichia coli* isolated from blood

antibiotics	Susceptibility	MIC(ug/mL)
Extended-spectrum beta-lactamase	Negative	
Ampicillin	R	≥ 32
Piperacillin/Tazobactam	S	≤ 4
Cefotaxime	S	≤ 1
Ertapenem	S	≤ 0.5
Amikacin	S	≤ 2
Levofloxacin	R	≥ 8
Trimethoprim/sulfamethoxazole	R	≥ 320

S, susceptible; MIC, minimum inhibitory concentration