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Development of Epidural abscess and Paravertebral abscess after treatment of acute pyelonephritis caused by Methicillin-Sensitive Staphylococcus Aureus

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Background:

When diagnosing patients with community-acquired UTI with *S. aureus*, It is important to investigating the concomitant presence of bladder obstruction and metastatic infection especially to vertebral column, and heart. These complicated UTI require more than 2 weeks of antibiotics, the typically recommended length for pyelonephritis. Here, we describe a patient presenting with fever and flank pain who was diagnosed with complicated epidural and paravertebral abscesses after treatment of acute pyelonephritis with *S.aureus*.

Methods: .

Results:

A 62-year-old male with type 2 diabetes was admitted with fever and left flank pain. Blood pressure, 120/70 mmHg; temperature, 38.4°C, and knocking tenderness in his left flank area was noted. The initial laboratory data were as follows: white blood cell (WBC) count, 14680/mm³; hemoglobin, 12.2 g/dL; platelets, 373,000/mm³; C-reactive protein (CRP), >12 mg/dL; and hemoglobin A1c, 12.5%. Contrast-enhanced abdominal computed tomography(CT) showed a multifocal decreased perfusion defect of the left kidney, but there was no abscess formation. He was immediately started on intravenous antibiotics and his fever subsided within 72 hours. On hospital day 5, the urine and blood cultures obtained on admission revealed growth of methicillin-sensitive *S. aureus*. Echocardiography for screening of infective endocarditis and urologic consultation for bladder obstruction could'nt be done because of poor compliance. On hospital day 8, the laboratory data were further improved(WBC count, 8760/mm³; CRP, 1.95 mg/dL), and he discharged home without specific complaints. He was lost to follow-up after applying of antibiotics for 2 weeks. Approximately 1 month later, the patient revisited the outpatient clinic with fever and bilateral flank pain. CT showed multifocal decreased perfusion defect of both kidneys and distended urinary bladder; 250 mL of residual urine was collected, with normal range prostate specific antigen level. He was started on intravenous antibiotics and an oral alpha blocking agent was added. The flank pain was too severe for UTI pain despite opioid agent, Magnetic resonance imaging was performed, revealing spinal epidural abscess with paravertebral abscess. Ultrasound-guided aspiration at the paravertebral muscle layer was done, cultures of blood and percutaneous aspirated fluid revealed *S. aureus* growth, with the same pattern of antimicrobial susceptibility as during the first admission. Transesophageal

echocardiography revealed no evidence of infective endocarditis. After a prolonged course of antibiotics, follow-up MRI on hospital day 57 showed decreases in the epidural and paravertebral abscesses. the patient was discharged home with oral antibiotics without neurologic sequelae.

Conclusion: .

Keywords: epidural abscess, paravertebral abscess, pyelonephritis, staphylococcus aureus