

## *Case report*

# **Anterior spinal artery syndrome complicating massive paravertebral abscess**

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### **Introduction**

Anterior spinal artery (ASA) syndrome is associated with a variety of conditions, such as aortic dissection or traumatic rupture, complications of aortic surgery, thrombosis or embolism, hematomyelia, vasculitis, vertebro-cervical arthrosis, or coagulopathy,<sup>1–5</sup> although the condition could be also idiopathic. The clinical features include sudden onset of significant intractable back pain followed by rapid development of paraparesis, dissociated sensory loss, and bladder and bowel disturbances.<sup>2</sup> We describe here a case of ASA syndrome associated with paravertebral abscess and pyothorax in a patient known to have malignant rheumatoid arthritis and renal failure. We discuss the possible mechanism of ASA syndrome in this unusual case with review of the literature.

### **Case presentation**

A 56-year-old man with a 35-year history of malignant rheumatoid arthritis was referred to our Neuro-orthopaedic Unit at the University Medical Center for emergency treatment due to severe back pain and paraparesis below the L1 cord segment together with acute-onset urinary incontinence.

At the age of 25 years, he was diagnosed with chronic renal failure secondary to chronic pyelonephritis and subsequently received hemodialysis twice a week at the age of 30 years. At about the age of 37 years, the patient developed aseptic necrosis of the femoral head bilaterally as a complication of high-dose prednisolone (30–40 mg/day for about 2 years) after renal transplantation. Two months before the current admission, he was

admitted to the Pulmonary Disease Unit at our Medical Center for treatment of pulmonary problems.

On presentation as an emergency patient at our unit, clinical and radiological examinations and blood and sputum cultures suggested he had pneumonia of the right upper lobe and bilateral pleurisy. Analysis of arterial blood gases on breathing 100% oxygen through orotracheal intubation showed  $P_{O_2}$  of 65 Torr,  $P_{CO_2}$  34 Torr, and pH of 7.47. A 12-lead electrocardiogram showed atrial fibrillation with rapid ventricular response but no changes suggestive of ischemia. Hemoglobin was 10.9 g/dl and the leucocyte count was 8100 cells/ml. Serum electrolytes were sodium 136 mEq/l, potassium 4.9 mEq/l, chloride 107 mEq/l,  $HCO_3^-$  23 mEq/l, creatinine 5.6 mg/dl, and glucose 206 mg/dl.

Neurological examination showed the patient was paraparetic below the L1 spinal cord segment (Frankel-ASIA grade B). Pain-prick sense was completely lost on both lower legs. Tactile and position sensation was preserved, although decreased, on the lower extremities bilaterally. Deep tendon reflexes of the lower extremities were absent, and Babinski and Chaddock signs were all negative. The patient complained of persistent middle back pain, and there was moderate tenderness on the spinous processes of T11–L1 level. There was also severe tenderness in the paravertebral muscles at the levels approximately T5–T10. The patient required an indwelling urinary catheter because of anuria. Magnetic resonance imaging (MRI; 1.5 Tesla Signa, General Electric, Milwaukee, WI, USA) showed a huge paravertebral mass lesion, suggestive of an abscess, on the left of T1-weighted image (TR, 416 ms; TE, 11 ms), with a multifocal heterogeneous hypointense signal within the lesion at T8–T11 (Fig. 1a, b, and d). T2-weighted images (TR, 4000 ms; TE, 70 ms; Fig. 1c and e) showed an inhomogeneous hyperintense signal. As routine procedure for this “spinal cord emergency,” under the tentative diagnosis of ASA syndrome based on the presence of massive paravertebral abscess, possibly related to impaired ven-

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