

A Case of Cervical Epidural Abscess — Diagnosis using MRI and non-surgical treatment —

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A 65-year-old man with cervical epidural abscess presented with high fever and severe neck pain. On admission, he had difficulty in walking, and the next day paralysis and hyposthesia below the level of C₆ developed. Magnetic resonance imaging (MRI) revealed an anterior epidural abscess at C₅₋₇ vertebral bodies levels. All of three blood cultures were positive for *Staphylococcus aureus*. He was treated with ceftazidime and ampicillin, supplemented with rifampicin and isoniazid for four weeks. The follow-up MRI demonstrated resolution of the abscess and cord compression. After three months, the patient was able to walk with a stick.

Key words : *Staphylococcus aureus*, Abscess, Antibiotics, MRI

Introduction

Spinal epidural abscess is a rare disease, of which *Staphylococcus aureus* is the most common cause^{1,2)}. Epidural abscess is a neurological emergency and early diagnosis prior to the onset of neurologic deficits is important, as these are usually permanent and are associated with high mortality. Recently, modern diagnostic imaging modalities such as computed tomography (CT scan) and magnetic resonance imaging (MRI) have been shown to be helpful in establishing the diagnosis of spinal epidural abscess^{3,4,5)}. This report describes a case of acute cervical epidural abscess of *Staphylococcus aureus*, diagnosed and followed by MRI during non-operative treatment.

Case Report

A previously healthy 65-year-old man began suffering from right shoulder pain and high fever over a 6-day period. Four days before admission, he suffered a severe neck pain. Two days before admission, a radicular pain appeared over neck and legs. He was admitted to our hospital on August 5, 1991. On admission he had difficulty

in walking. The next day, paralysis of the upper and lower extremities developed, and hyposthesia below the level of C₆ and urinary incontinence appeared.

On physical examination, the patient appeared acutely ill with a temperature of 38.8 °C. Redness, local heat and swelling were present on the left shoulder, the back of right hand and upper end of the sternum. There was neck stiffness, and Kernig's sign was present. Deep tendon reflexes were absent in the lower extremities, with weakness and hyposthesia below the level of C₆ were noted.

Laboratory investigation revealed an elevated erythrocyte sedimentation rate (76 mm/hr), leukocytosis (13,200/mm³) with 85 % neutrophils, and increased C-reactive protein (26.3 mg/ml). Hemoglobin (13.6 g/dl), platelet counts (382,000/mm³), and fasting blood sugar (107 mg/dl) were normal. All of three blood cultures were positive for *Staphylococcus aureus*. The cerebrospinal fluid (CSF) was not xanthochromic, but was cloudy. The concentration of protein in the CSF was 910 mg/dl. The number of CSF cells was 972/mm³ with 68 % mononuclear cells and 32 % polymorphonuclear cells. Culture of CSF was negative.

MRI revealed an anterior cervical epidural collection extending from C₅ through C₇ vertebral bodies levels (Fig. 1). Compression of the spinal cord by the epidural mass was noted. The patient was treated with intravenous ceftazidime (2 g/day) and ampicillin (4 g/day), supplemented by isoniazid (400 mg/day) and rifampicin (450 mg/day), for a period of 4 weeks. A short course of steroid treatment was started to reduce the local edema.

Two days later his clinical condition had improved. As weakness of the extremities decreased gradually, a laminectomy was not performed. The follow-up MRI demonstrated resolution of the abscess and cord compression. There was a decrease in signal intensity of the C₆ and C₇ vertebral bodies and disc on T₁ weighted image (Fig. 2). Three months after the onset of treatment, the patient was able to walk with a stick.

and drainage of the abscess⁹. Our patient was successfully treated with antibiotics alone. Conservative treatment with antibiotics alone was reported to be successful in some patients⁹. Analysis of 33 previously reported patients treated with antibiotics also suggests that non-operative treatment could be a reasonable alternative therapy under certain clinical conditions⁵.

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