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SHORT COMMUNICATION

Linezolid and dexamethasone experience in a serious case of listeria rhombencephalitis

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KEYWORDS
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Summary Listeria rhombencephalitis is a rare cause of brain stem encephalitis. We report a case with a history of immunosupressive therapy due to Takayasu's arteritis that was treated with corticosteroids and linezolid for Listeria rhombencephalitis.

A 63-year-old woman was admitted to the hospital with fever, headache, nausea, and vomiting. The patient's body temperature was 38 °C, and she had a stiff neck. *Listeria monocytogenes* was isolated from the cerebrospinal fluid (CSF), and penicillin G and gentamicin treatment was initiated. Linezolid and dexamethasone were added. Due to hematuria and thrombocytopenia, the linezolid was discontinued.

In immunocompromised patients with CNS infections, Listeria rhombencephalitis should be suspected. Linezolid can be used in combination with dexamethasone.

Introduction

Listeria rhombencephalitis is a rare central nervous system infection that typically occurs in immunocompromised patients. Early diagnosis and appropriate and adequate antimicrobial therapy are essential to reduce the mortality and sequelae. Corticosteroid therapy and novel antibiotherapy strategies can be considered for appropriate patients. We report a case of a 63-year-old immunosuppressed woman who presented with Listeria rhombencephalitis.

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Case report

A 63-year-old woman with Takayasu's arteritis, hypertension and corticosteroid-induced diabetes mellitus on methylprednisolone and methotrexate and antihypertensive, oral antidiabetic and insulin medicines, with no history of unpasteurized dairy product consumption, was admitted to a nearby hospital with fever, headache, sweating, nausea, and vomiting. Because she had symptoms of a possible CNS infection, cranial scanning was performed, but no significant pathology was observed, and the patient was discharged with a recommendation to use NSAIDs. Because the patient's symptoms did not improve, she presented to our hospital and was evaluated by the emergency department for a suspected central nervous system (CNS) infection. Her body temperature was 38 °C on admission, and she was conscious, with a GCS of 15 on arrival. She was evaluated by a neurologist, and nuchal rigidity was present. Her Kernig and Brudzinski signs were negative, and no other pathological neurologic findings were observed.

Lumbar puncture (LP) was performed based on the suspicion of CNS infection. Her white blood cell (WBC) count in the cerebrospinal fluid (CSF) was 700 cells/μL, with lymphocyte predominance (Table 1). Gram staining of the CSF was negative. After performing blood cultures, acyclovir (10 mg/kg, iv, every 8 h) and ceftriaxone (2 g, iv, twice per day) were administered under the presumption of herpes encephalitis and early-stage bacterial meningitis. *Listeria monocytogenes* was isolated on CSF culture on the second day and was susceptible to penicillin G (minimum inhibitory concentration, MIC $\leq$ 0.5), ampicillin (MIC $\leq$ 2), and gentamicin (MIC $\leq$ 2). Ceftriaxone and acyclovir were stopped. Penicillin G (4 million IU, iv, every 4 h) and gentamicin (80 mg, iv, every 8 h) were initiated because this is the suggested first-line therapy for Listeria. On the 2nd day of antibiotherapy, linezolid (600 mg, iv, twice per day) was added due to the development of worsening consciousness. A rheumatologist was consulted regarding the cessation of immunosuppressive therapy. Methotrexate was stopped, and methylprednisolone (20 mg, iv, every 48 h) was administered. She became afebrile on the 4th day of penicillin G-gentamicin and the 3rd day of linezolid therapy. Brain magnetic resonance imaging (MRI) showed mild hyperintense signal changes on T2-weighted images in the anterior part of the pons and the periphery of the aqueductus Sylvii (Figs. 1—3). No gadolinium-enhanced lesion was detected. On the 7th day of admission, she became lethargic and immobilized. Also on the 7th day of admission, medial

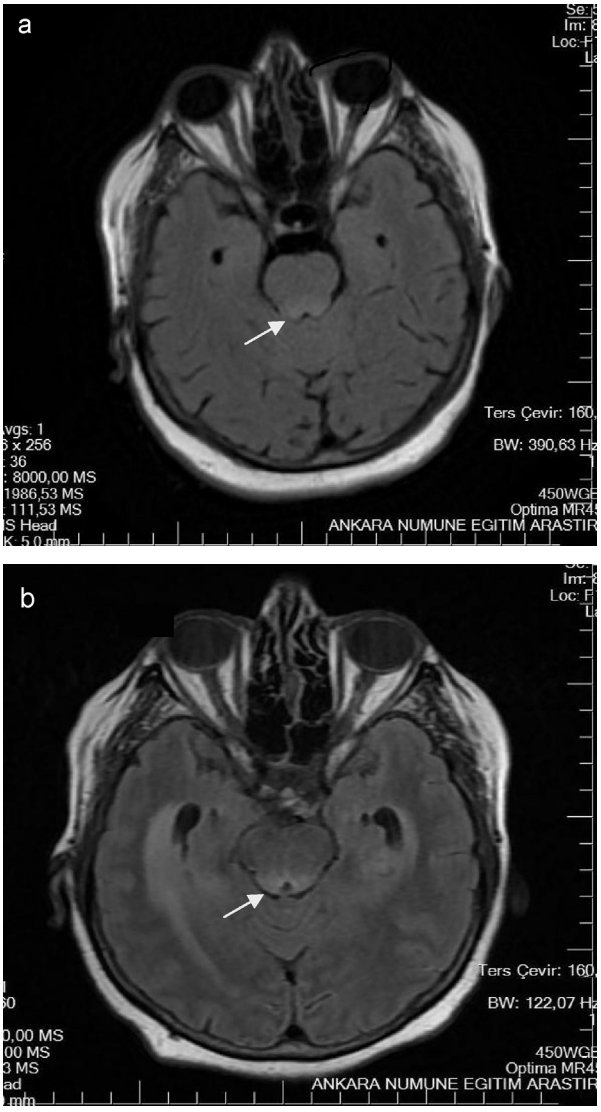

Figure 1 (a) MRI signs of anterior part of pons at admission. (b) MRI signs of anterior part of pons on 7th day of admission.

deviation of the eyes in the primary position, a limitation of lateral glance in the left position and bilateral horizontal nystagmus were detected. Her swallowing reflex was intact. She was admitted to the ICU with the clinical findings of brain stem involvement, and iv dexamethasone therapy was initiated. On the 11th day of admission, she was intubated due to respiratory distress. On the 13th day of admission, she became febrile. Urinary, blood and deep tracheal aspirate samples were taken, and control CSF sampling was planned. On the 19th day of antimicrobial therapy, the linezolid was stopped due to hematuria and eventual thrombocytopenia (on the 21st day of admission). On the 22nd day of admission, *Acinetobacter baumanii* was isolated from both blood