



Image in Medicine

Infectious cerebral embolism

Embolia cerebral infecciosa

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An 82-year-old woman with a history of Alzheimer disease and hypertension was emergently transferred to our hospital with a fever of 37.4°C, dysuria for three days, and reduced level of consciousness. Her blood pressure was 88/55 mmHg and she had a Glasgow Coma Scale (GCS) score of E1V1M4; she presented no nuchal rigidity. Lumbar puncture was performed between the level of L4/L5. The cell counts of cerebrospinal fluid were 85/μg; protein, 50 mg/dL (standard value: 10-40 mg/dL); glucose, 40 mg/dL (blood glucose: 120 mg/dL). Considering the hypothesis of meningitis, antimicrobial agents were administered.

Diffusion-weighted image (DWI) of brain magnetic resonance image (MRI) showed multiple high signal-intensity lesions in cerebrum (mainly watershed areas) and cerebellum (Fig. 1). Trousseau syndrome, coagulation abnormalities including heparin-induced thrombocytopenia, eosinophilic meningoencephalitis, and fat embolism demonstrate images similar to the present patient's.

However, bacteremia was suspected, based on acute course and examination of the cerebrospinal fluid. There were no findings in the transthoracic echocardiography to clearly demonstrate infective endocarditis in a visible range. Since

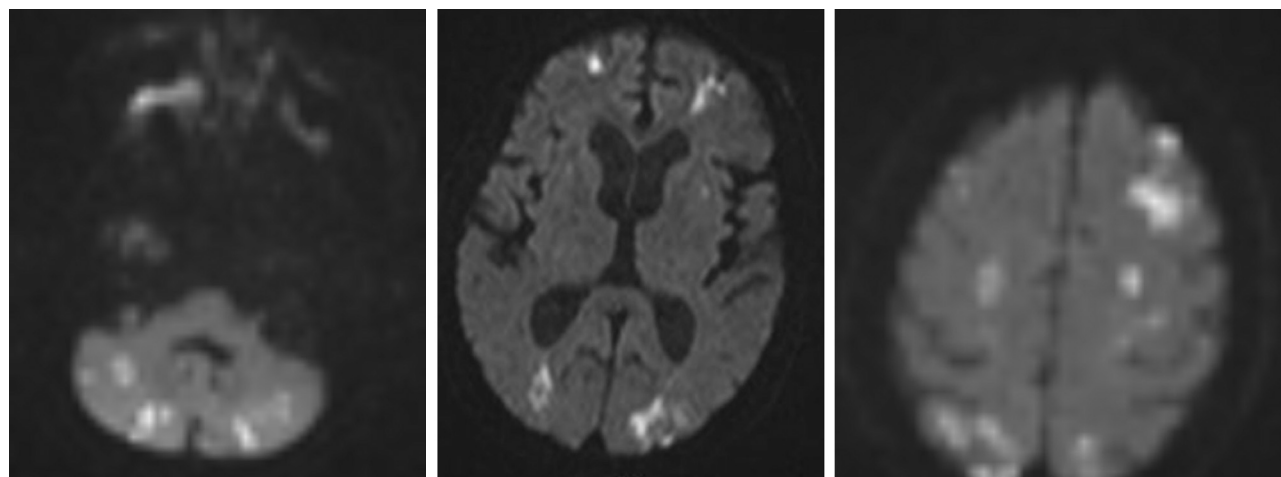


Fig. 1 – Diffusion-weighted image (DWI) showing multiple high signal-intensity lesions in the cerebral hemisphere (mainly watershed areas) and the cerebellar hemisphere.

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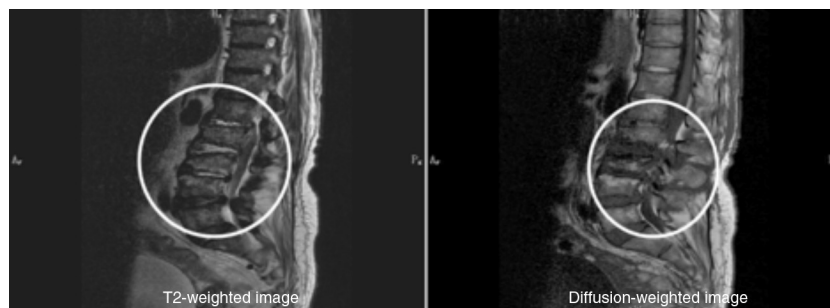


Fig. 2 – MRI of the lumbar spine. Left image: T2-weighted image. Right image: Diffusion-weighted image. The white circles indicate the discitis image.

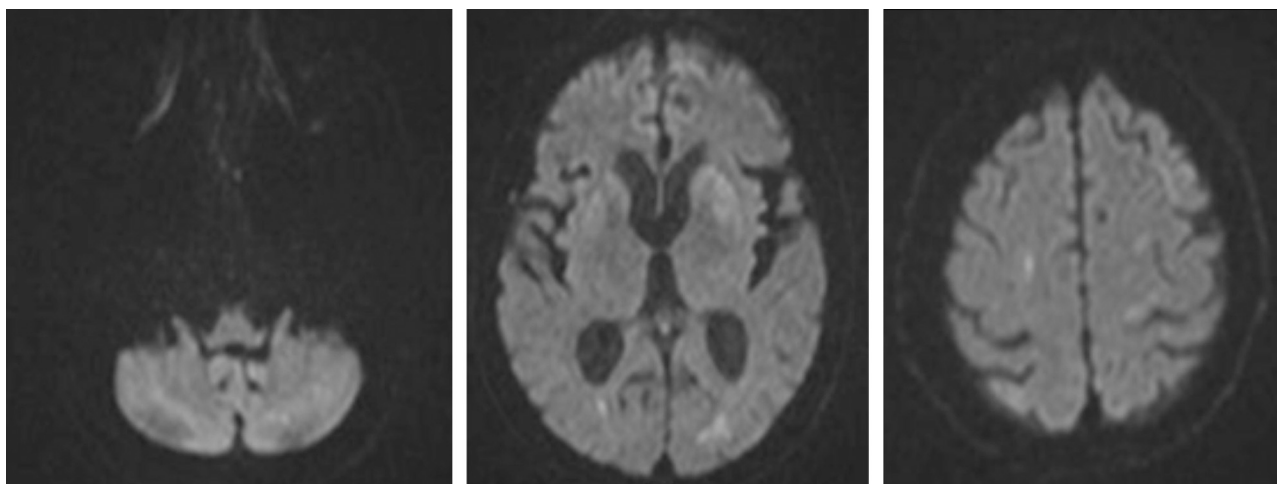


Fig. 3 – MRI of the head on the 15th day of hospitalization.

her general condition was poor, undergone transesophageal echocardiography in the acute phase was not possible. On the third day of hospitalization, her level of consciousness mildly improved, and she had a complaint of lumbago. MRI of the lumbar spine revealed a discitis image in the level of L2/L3 (Fig. 2). While *Escherichia coli* was detected in the urine, blood cultures, and cerebrospinal fluid, the susceptibility for the antimicrobial agents of *E. coli* was the same in

all the specimen materials. Therefore, the diagnosis of clinical infective endocarditis with infectious cerebral embolism and infectious discitis due to *E. coli* was made. Additionally, the MRI allowed for the diagnosis of infectious cerebral embolism.

After the administration of antimicrobial agents, her level of consciousness improved; further, brain MRI showed improvement of the multiple infarcts (Fig. 3).