NEUROLOGICAL PICTURE.....

MRI findings in mesenrhombencephalitis due to *Listeria monocytogenes*

A 53 year old woman was admitted as an emergency case with a two day history of fever, malaise, and vomiting, as well as bifrontal headache. At the time of admission, she felt numbness on the right side of her face and she had an unsteady gait. She did not have a significant past medical history and was not immunocompromised.

The neurological examination showed asymmetrical cranial nerve palsies with Bell's paralysis, a one and a half syndrome of the left side (a gaze palsy when looking towards the side of the lesion and internuclear ophthalmoplegia on looking away from the lesion) and a palate palsy on the right side. Moreover, she had a mild hemiparesis on the right side with a dysmetric finger nose test and a hypoaesthesia of the right side of the face. The lumbar puncture showed 1335 white blood cells per mm³ with 63% of lymphocytes and monocytes.

In concordance to the patient's clinical features, the magnetic resonance imaging (MRI) demonstrated in the midsagittal postcontrast T1-weighted scans, multiple parenchymal nodular and ring-enhancing lesions in the brainstem structures (fig 1) and in the coronal views, multiple pontine lesions with "abscess-like" appearances (fig 2). A positive blood culture of *Listeria monocytogenes* confirmed the suspected diagnosis of listerial mesenrhombencephalitis.

Antibiotic therapy with minocycline and gentamicin (the patient had a known history of amoxicillin allergy) helped the patient to recover in the following couple of weeks. A follow up midsagittal T1-weighted MR scan showed a decline of the number and size of enhancing lesions 14 days after onset of treatment, in correlation with clinical improvement (fig 3).

This case demonstrates a good anatomical correlation of brainstem abnormalities in MRI with the clinical features of the patient, which was also described by Lever and Haas.¹ In contrast to other forms of listeria infection, the specific infection of the brainstem often occurs in otherwise healthy adults, with only 8% of cases found in immunosuppressed patients.²

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Figure 1 T1-weighted postcontrast magnetic resonance imaging shows multiple parenchymal nodular and ring-enhancing lesions in the brainstem structures.

References

- 1 **Lever N**, Haas L. Serial MRI in listeria mesenrhombencephalitis: a case report. *J Neurol Neurosurg Psychiatry* 1995;**59**:524-7.
- 2 **Armstrong RW**, Fung PC. Brainstem encephalitis due to *Listeria monocytogenes*: case report and review. *Clin Infect Dis* 1993;**16**:689-702.

Figure 2 The coronal view demonstrates multiple lesions with "abscess-like" appearances in postcontrast T1-weighted scans.

Figure 3 The midsagittal T1-weighted magnetic resonance scan shows two weeks after treatment an improvement of the lesions.