PLEIOCYTOSIS IN ADEM: A STILL OPEN DEBATE

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Introduction: in inflammatory central nervous system diseases, cerebrospinal fluid (CSF) examination is mandatory, together with radiological and haematological findings. The CSF cell amount is crucial to confirm/exclude an infective pathological process. However, in immune-compromised patients CSF cell amount can also be normal as can be absent all the other inflammatory clinical signs like fever, neck stiffness or laboratory test like WBC and PCR.

Case report: a 39 y-o woman with no previous medical history, taking only estroprogestinic (EP) therapy, suddenly in full healthness developed acute left lower arm weakness. During the next 48 hours she worsened to left>right tetraparesis and urinary retention. At CSF examination cell amount was 180 cell (75% mononuclear cell, 25 % polymorphonuclear cell); isoelectric focusing showed no monoclonal pattern, no neoplastic cells were found in CSF. Brain and spinal cord MRI showed left temporal cortico-subcortical (Fig 1 and 2) and cervical C4-C6 level enhanced contrast lesions (Fig 3) suggestive for an inflammatory nature. Immediate anti-viral and empiric anti-bacterial therapy was started; also ev-1 gr/die methilprednisolone was prescribed in the hypothesis of ADEM. After the PCR exams for CMV, E-B virus, HSV, Enterovirus , HZV , West-Nile, Panflavavirus were negative, only steroid therapy was prolonged. Early slight clinical improvement was evident and after 14 days the patient was transferred to rehabilitation department with oral steroid therapy in slow tapering. After 3 months at brain (Fig 4) and spinal cord MRI (Fig 5) no contrast enhancement was detectable and the cervical lesion seems almost invisible. She strongly improved with only residual distal lower arm weakness. Therefore, the diagnosis of ADEM should be confirmed.

Discussion: pleiocytosis is a condition that strongly points out to an infective ethiology but also in inflammatory pathology it can be present and sometimes misleading. In these cases it is strongly suggested to perform viral and bacterial determination to exclude infection in CNS and actually advisable to start an empiric wide spectrum anti-viral and anti-bacterial ev therapy while waiting for the results of cultural exams. A wide MRI study, including brain and spinal cord sequences, is also really helpful for differential diagnosis.

Conclusion: our case demonstrates that in ADEM the cerebrospinal fluid cell number (pleiocytosis) tcan be also very high and that this datum doesn't make the diagnosis of ADEM unlikely. In Literature there are no specific determinations of quantitative pleiocytosis in ADEM.
We strongly look forward to further studies of consecutive cases of confirmed ADEM to provide more insight in this field.

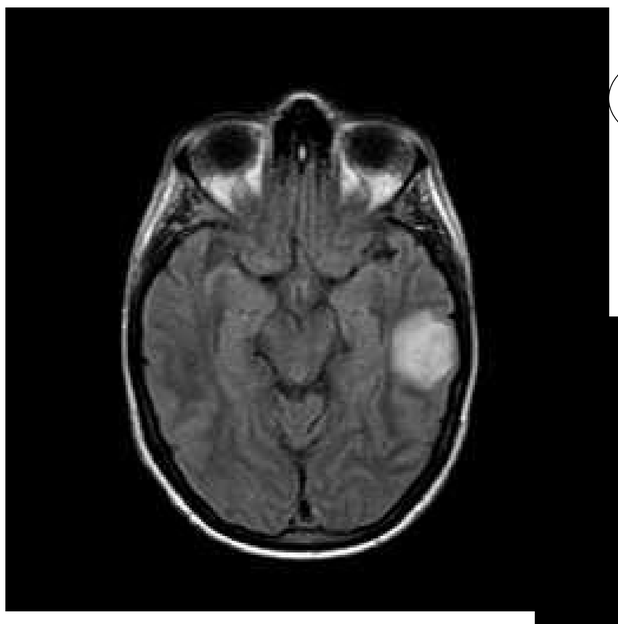

Fig 1

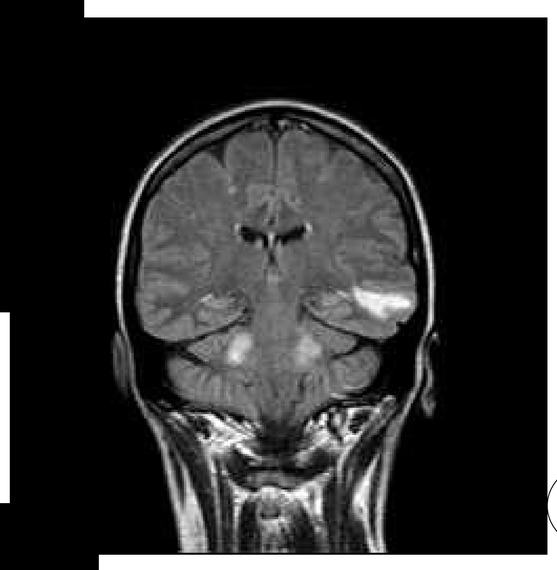

Fig 2

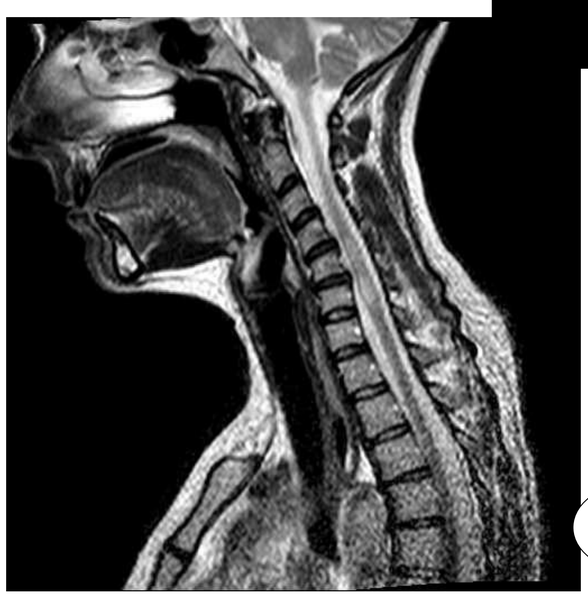

Fig 3

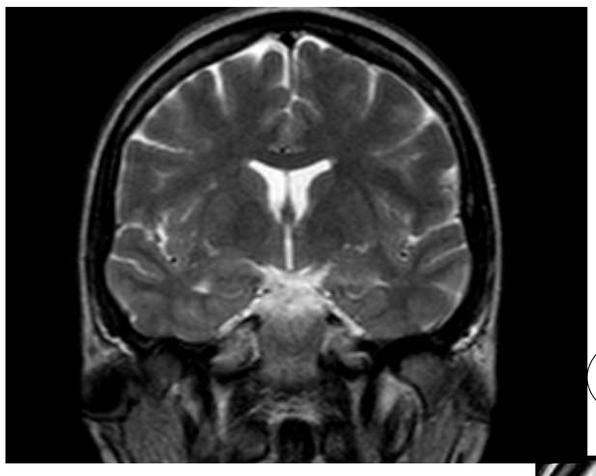

Fig 4

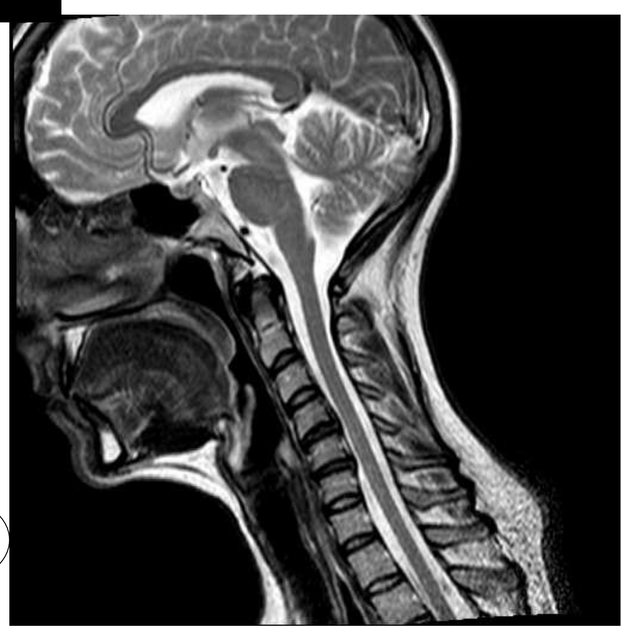

Fig 5

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Diederik L H Koelman, Farrah J Marteen. Acute Disseminated Encephalomyelitis: current controversies in diagnosis and outcome. J Neurol (2015) Mar 13. [Epub ahead of print]

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