

Mild Encephalitis/Encephalopathy with a Reversible Splenial Lesion (MERS) Following Tuberculosis Meningitis: A Case Report

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DOI: 10.36347/sjmcr.2022.v10i04.008

| Received: 23.02.2022 | Accepted: 05.04.2022 | Published: 08.04.2022

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Abstract

Case Report

Encephalopathy/encephalitis syndrome with reversible splenial lesion (MERS) is a clinical-radiological syndrome, combining encephalopathy and a specific radiological picture. MERS is caused by many factors, and the main pathogenesis is due to virus infection. Here, we reported the case of a 25-year-old patient with MERS following tuberculosis meningitis.

Keywords: Mild encephalitis/encephalopathy with a reversible splenial lesion (MERS), Magnetic resonance imaging (MRI), Tuberculosis meningitis.

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INTRODUCTION

Mild encephalitis/encephalopathy with a reversible splenial lesion (MERS) is defined as a clinicoradiological syndrome with acute encephalopathy preceded by acute inflammatory disease. Brain magnetic resonance imaging (MRI) show transient changes mainly in the corpus callosum and mostly recover without special treatment [1]. Here we describe a case of MERS occurring after tuberculosis meningitis in a 30-year woman.

CASE PRESENTATION

A 25 years old previously healthy woman was admitted to the emergency department of our hospital, 2 weeks after tuberculosis meningitis. She has been treated with isoniazid 250 mg, rifampin 450 mg, streptomycin 750 mg, and pyrazinamide 1000 mg once daily, and she evolved well initially under treatment. Three days before his admission, she presented confusional syndrome, a headache, and vomiting,

complicated by a sudden seizure. On admission, she had a temperature of 37.3°C, without neck resistance. Neurological examination showed mild confusion and bilateral paralysis of nerve VI. The remaining neurological exam was with no particularity. Otherwise, cardiovascular and respiratory systems examination were within normal limits.

Blood chemistry and urine analysis showed no abnormalities. Cerebrospinal fluid (CSF) examination gave a normal cell count of 1/mm³, a slight increase in protein content, and a slight decrease in glucose. Bacterial smears and cultures prepared from CSF were negative.

Brain MRI showed hyperintense lesion in the splenium of the corpus callosum (SCC) on fluid attenuated inversion recovery (FLAIR) images, and diffusion weighted images (DWIs) with a reduced apparent diffusion coefficient (ADC) mapping (Figure 1).

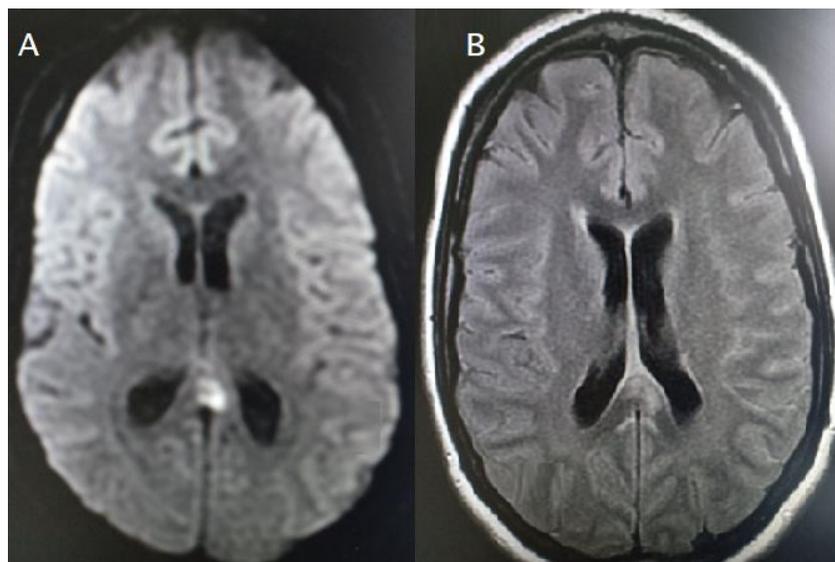


Figure 1: Brain MRI showed hyperintense lesion in the splenium of the corpus callosum on FLAIR images (A), and diffusion weighted images (B)

We diagnosed the patient with MERS associated with tuberculosis meningitis. Treatment with intravenous antiepileptic drug and methylprednisolone was initiated. The patient had complete recovery within 6 days without sequelae.

DISCUSSION

Viruses are common pathogens responsible for MERS. Additionally, some cases of MERS are associated with bacterial infection, and increasing reports of *M. pneumoniae* infections have recently emerged. A few MERS cases have also been reported to occur during the course of non-infectious diseases [2-4].

Currently, the pathogenesis of MERS remains unclear. Various possible causes include intra- or intermyelinic oedema, axonal injury, hyponatraemia, oxidative stress, and genetic factors. MERS may be caused by a combination of multiple factors [2, 5].

The most common neurological symptom of MERS is delirious behavior, followed by consciousness disturbance, and seizures. All of these clinical symptoms recover within a month [1, 7, 8].

Brain MRI shows representative features of MERS as prolonged signal on T2, reduced diffusion on DWI, restricted water diffusion, and decreased ADC values in the SCC. The lesion on MRI could completely disappear on follow-up. Moreover, MERS could be classified into a transient lesion in SCC called type I or associated in the frontal white matter called type II [1].

No specific treatment is available. Studies from other countries have reported that methylprednisolone shock therapy, dexamethasone therapy, anti-epileptic drugs for short-term therapy, antiviral therapy, or injection of gamma globulin can

have a good prognosis, with complete disappearance of neurological symptoms and without any sequelae. The prognosis is good even without special medical treatment. The symptoms of the patient in this study have obviously improved after treatment with dexamethasone and gamma globulin, which is consistent with the previous studies [8].

CONCLUSION

The presence on the MRI of an isolated lesion in the SCC, associated with an infection, in a patient with neurological symptoms suggest the diagnosis of MERS. The outcome of MERS is good with the vast majority of patients achieving a full recovery. The early recognition of MERS in pediatric patients can avoid unnecessary treatments and provide reassurance about good outcomes [9].

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