A pediatric case of reversible splenial lesion syndrome (RESLES) associated with SARS-CoV-2

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INTRODUCTION

Reversible splenial lesion syndrome (RESLES) is characterized by a reversible lesion in the middle part of the splenium of the corpus callosum (SCC) (1). The pathophysiology of the disease is unclear (2). It might be associated with infectious and non-infectious diseases. Influenza virus, measles, mumps, rotavirus, adenovirus, Epstein Barr virus, herpesvirus 6 have been reported in patients with RESLES (3, 4). Encephalitis and encephalopathy are the main neurological presentation of RESLES (5, 6). Idiopathic intracranial hypertension has been rarely reported in RESLES (7).

Although the main target of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection is lung, different neurological findings such as meningitis, ischemic stroke, encephalitis and Guillain-Barré syndrome have been reported in patients (8, 9). Here, we report clinical features of a girl with RESLES associated with SARS-CoV-2.

CASE REPORT

A previously healthy 14-year-old girl presented with dizziness, ataxia and blurred vision for three weeks. Neurologic examination revealed she was confused, ataxic. Cranial nerves were intact. Her muscle tone and deep tendon reflexes were normal. She demonstrated no pathologic reflexes. An ophthalmologic examination revealed bilateral papilledema. The results of routine laboratory investigations were all normal. The cerebrospinal fluid pressure was measure as 39 cm H_2O via lumbar puncture. She has no history of SARS CoV-2 infection or vaccination. However, SARS CoV-2 Ig G was found to be positive. The patient's nasopharyngeal swab remained negative for SARS CoV-2 with polymerase chain reaction.

Brain magnetic resonance imaging (MRI) revealed limited diffusion in the splenium of the corpus callosum and hyperintensity on T2-weighted images (Figure 1). She was treated with intravenous immunoglobulin (IVIG) and acetazolamide. Her complaints were subsided within one week. Control Repeat brain MRI performed after 3 weeks revealed resolution the splenial lesion.

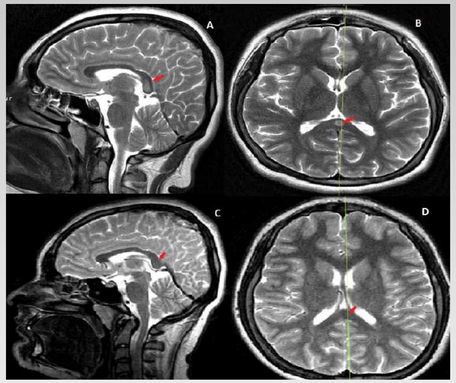

Fig. 1. Brain magnetic resonance imaging of patient. T2-weighted sagital (A), axial (B) images of patient show hyperintensity and restricted diffusion in the splenium of the corpus callosum. T2-weighted sagital (C), axial (D) images of patient resolution of the lesion in the splenium of the corpus callosum.

RESULTS

We, here in, describe a child with RESLES associated with SARS CoV-2. Case were diagnosed with SARS CoV-2 infection based on the detection of anti-SARS-CoV-2 IgG. We also showed that patients with COVID-19 could develop cerebellar ataxia as the initial symptom. Hayashi et al. reported an adult patient with preceding neurologic comorbidities associated with COVID-19. They notified the resolution of neurologic symptoms in 1 week (10). EL Aoud S et al. described the improvement in neurologic disturbances in 1 week in an adult patient with related to SARS CoV-2 infection and show the resolution of the splenial lesion at 1-month follow-up MRI without any immune-modulatory therapy (11). Our patient's complaints were subsided within one week and brain MRI performed after 3 weeks revealed resolution the splenial lesion. RESLES is associated with a wide variety of pathological conditions and various neurological symptoms, rarely presenting in the adult population. Persaud A et al. reported the first case of RESLES with idiopathic intracranial hypertension (12). Similarly, in our case, it was unusual as a RESLES case with idiopathic intracranial hypertension. Due to the insufficient number of patients, there had been no evidence-based therapeutic regimen for RESLES associated with neurologic symptoms (13). According to the descriptions of literatures, the commonest prescriptions included antibiotics, acyclovir, anti-epileptic drugs, corticosteroids, and IVIG (14,15). Our patient was treated with intravenous immunoglobulin (IVIG) (2 g/kg) and acetazolamide. However, some cases with good prognosis had not been administrated any purposeful treatments(13).

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