

# A Rare Complication of COVID-19 in a Pediatric Patient; Acute Transverse Myelitis

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## INTRODUCTION

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was first identified in Wuhan, China in December 2019. Studies reported a wide spectrum of signs and symptoms associated with COVID-19 including nonproductive cough, fever, myalgia, fatigue, dyspnea, diarrhea, and nausea/vomiting while some patients are known to be asymptomatic. According to studies, more than 35% of COVID-19 adult patients develop neurological symptoms. Neurological complications may be related to the central nervous system and peripheral nervous system. Neurologic manifestations can also be seen in pediatric patients with COVID-19.

Here we report an adolescence patient with COVID-19, presented with transverse myelitis.



**Figure A:** The sagittal T2 image. Signal changes and accompanying plaque formations consistent with long segment myelitis( LETM)

**Figure B:** In the postcontrast series, pathological contrast material uptake is most prominent at the T1-2 level

## CASE

A 15-year-old healthy boy admitted to our hospital with acute onset lower limb weakness, difficulty in walking and urinary retention. His complaints started 6 days ago and progressively progressed. Nine days prior, his nasopharyngeal swab for SARS-CoV-2 PCR had been positive. Also, five days prior, he had been experienced anosmia and ageusia, which were resolved in 2-3 days. He had no history of previous medical illness and medication consumption.

At the time of admission, his neurologic examination revealed flaccid paraplegia, hyperreflexia at lower extremity and sensory loss at the level of T9 and bilateral positive Babinski's sign. He was unable to walk and also unable to sit without support. Muscle strength of upper extremity were normal. He was conscious, and had no encephalopathy. There was no neurologic involvement of cranial nerves. Meningeal signs were absent, and other systemic examinations were within normal limits.

Routine hematological tests, biochemical tests, acute phase reactants and coagulation parameters were normal. Lumbar puncture was performed. The cerebrospinal fluid (CSF) test showed normal protein 40mg/dl (15-40mg/dl) , glucose 56mg/dl (40-70 mg/dl) levels and normal white blood cell count. His brain magnetic resonance imaging (MRI) were normal. Spinal MRI demonstrated longitudinally extensive hyperintensity on T2-weighted image, extending from lower medulla to the conus medullaris level. In the post contrast series pathological contrast material uptake was most evident at T1-2 level (Figure A and B). Extensive evaluation for causative entities, including investigation for rheumatologic disease, infectious etiologies, aquaporin-4 and myelin oligodendrocyte glycoprotein (MOG) autoantibodies were performed. Other parameters except serum MOG-antibodies were negative. MOG-antibodies was low titer (1/10) positive. CSF was negative for SARS-CoV-2 by PCR.

We also suspected transverse myelitis associated with SARS-CoV-2 infection. Pulse methylprednisolone therapy was given at a dose of 30 mg/kg/day for 5 days. After treatment, on neurological examination, lower limb muscle strength was improved (4-5/5) and he started to walk independently. At the first visit (1 month) after discharge, he had no active complaints and he was fully recovered from the lower extremity weakness. At the 6th month follow-up, control of the MOG antibody was planned.

## DISCUSSION

A wide variety of neurological manifestations are seen in children associated with SARS-CoV-2 infection. CNS involvement can be isolated, develop during or after recovery from COVID-19, or occur during an MIS-C. The most reported neurological symptoms were cerebrovascular accidents, GBS, benign intracranial hypertension, encephalitis, cranial nerve disorder, ADEM. Transverse myelitis is also a possible complication as we observed in our patient. The outcome is favorable in almost all patients.

Serum MOG-antibody positivity was also reported in patients with transvers myelitis, associated with COVID-19, as in our patient. Especially during the pandemic, COVID-19 should definitely be considered in the etiology of child patients presenting with different neurological signs.

## REFERENCES

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