



# COVID Encephalopathy in a Newborn

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*To the Editor:* Neurological symptoms are sparsely reported with neonatal COVID-19 infection [1, 2]. However, rapidly accumulating evidence suggests that neurological considerations with neonatal COVID might be misconstrued [3, 4]. We encountered a term neonate born in good condition to a healthy mother with unremarkable antenatal history, presenting on day 18 with poor feeding, lethargy and abnormal movements since day 10 of life. Infant was hypoxic at presentation; examination was remarkable for marked central and peripheral hypotonia with poor reflexes. Serial blood work showed C-reactive protein (CRP) of 13.3 mg/L, low platelet count (80,000), and persistent lymphocytic counts. He had progressive respiratory distress with bilateral ground glass opacities on chest X-ray. Nasal swab tested positive for COVID-19 RT PCR, but cerebrospinal fluid (CSF) was negative. Metabolic parameters were non-contributory. MRI brain with spectroscopy did not reveal any areas of diffusion restrictions and was reported normal. A dysmature background with diffuse slowing but no ictal rhythms were seen on electroencephalogram. He responded well to the supportive treatment in form of continuous positive airway pressure (CPAP), and nebulised steroids. Diagnosis of COVID-19 induced encephalopathy was made based on exclusion.

Neonatal encephalopathy (NE) is characterized by altered consciousness, seizures, depressed tone and reflexes, and/or poor respiratory efforts. Absence of alternate metabolic or infectious explanation in a previously neurologically intact neonate, with labs favouring a viral etiology makes the diagnosis of COVID encephalopathy plausible. Infant's overall activity, tone and reflexes improved slowly and was

discharged home during the fifth week. Evidence of neurodevelopmental delay and persistent hypotonia on follow up at 3 mo of age in the high risk clinic supports the potential of long term neural dysfunction. Identification of neonatal manifestations is crucial to obtain a more comprehensive understanding about the novel coronavirus. We propose that COVID-19 should be considered in the differential diagnosis of neonatal encephalopathy during the ongoing pandemic era.

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## Declarations

**Conflict of Interest** None.

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