Neonatal COVID-19 with Rare Presentation in COVID Dedicated Hospital of Bangladesh: A Case Report

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Abstract

Although Coronavirus disease (COVID-19) can affect all age groups, severity of clinical presentation among children and newborns are milder than in adults. Along with classical symptoms, atypical presentation could be noted in the neonate. We report here a case of neonatal COVID-19 where a newborn infant presented with fever, lethargy, respiratory distress and recurrent seizure. Early detection and prompt management is the prerequisite for limiting transmission and reducing neonatal death rate. [Journal of National Institute of Neurosciences Bangladesh, January 2021;7(1): 87-89]

Keywords: : Neonate; Covid19; seizure; phenobarbitone

Introduction

A highly contagious global pandemic, the novel coronavirus disease (COVID19) was first reported in Wuhan, China in December 2019. Since the first case of COVID-19 was detected in Bangladesh on 8 March 2020, there has been a rapid rise in the number of cases. About 8,26,922 Bangladeshi population have been infected, and 13,118 people died of this pandemic, as of 13 June, 2021. Among the confirmed cases 3.3% were below 10 years of age. Any age group can be affected, however the disease is usually milder in children than in adults, and the presentation in neonate can range from asymptomatic infection to severe respiratory distress. While symptoms of COVID-19 are primarily pulmonary, it can affect multiple organ systems including the brain, with neurological involvement affecting up to ~36% of patients and there is possibility that SARS-CoV-2 could invade the brain, meninges, spinal cord and peripheral nerves. There is scarcity of neonatal case reports, giving rise to many unanswered questions regarding COVID-19 infection in this group of population. The aim of this case note is to aware health care personals particularly pediatricians and neonatologists regarding likelihood of the disease in newborn presenting with neurological manifestations and their management.

Case Presentation

The 05 days old, term neonate was admitted to the Kurmitola General Hospital with H/O fever, lethargy, respiratory distress, and recurrent seizure. Mother had no history of fever with rash, DM, HTN, and any other chronic illness. Routine lower uterine caesarian section was performed in a rural hospital and the baby girl, weighing 3000 grams. Baby breathed spontaneously and no resuscitation was required. The baby was born with no perinatal complication and she was lethargic, febrile, dyspneic, mildly pale, with no history of fever with rash, DM, HTN, and any other chronic illness. Routine lower uterine caesarian section was performed in a rural hospital and the baby girl, weighing 3000 grams. Baby breathed spontaneously and no resuscitation was required. The baby was born with no perinatal complication and she was lethargic, febrile, dyspneic, mildly pale, with no history of fever with rash, DM, HTN, and any other chronic illness.
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Discussion
Global knowledge about this new infectious pandemic is
expanding. The virus is less virulent in children,
although there have been case reports of older children
death due to this infection1. Usually infants are
affected after exposure to an infected contact. There is
no clear evidence of vertical transmission though some
reports suggested the possibility in neonates. The
median incubation period is five days with a range of 2
to 14 days2.

Presentation can vary from asymptomatic infection to
severe respiratory distress3. History and symptoms
include known contacts with infected patient,
temperature instability, respiratory symptoms like
congestion, tachypnea, grunting, respiratory distress,
apnea, lethargy, poor feeding, vomiting, and diarrhea4.
In this report, a case of neonatal SARS-CoV-2 infection
is presented on 5th day of life with fever, lethargy,
dyspnea which are consistent with several published
report. Ligura et al5 found dyspnea was the most
common reported sign in neonatal age (40.0%) with
fever (32.0%). However recurrent seizure has been
observed in a few published reports so far. In a case
report in our country, the baby presented with
convulsion6. On another report the patient, aged 26
days with history of 2 paroxysmal episodes, the first
one was with upward rolling of the eyes and
generalized hypertonia lasting several minutes7. In

was done due to Placenta Previa and she delivered a
baby girl, weighing 3000 grams. Baby breathed
spontaneously and no resuscitation was required. The
baby was given breast milk within half an hour of birth
and was with her mother. Mother developed fever on
the second day of delivery. Newborn’s father also
developed fever, cough, and sore throat and was
isolated. The newborn developed fever, lethargy and
respiratory distress on the 5th day with recurrent
generalized tonic-clonic seizure persisting for 5-10
minutes. As her condition deteriorated she was
admitted in Kurmitola General hospital. On admission,
she was lethargic, febrile, dyspneic, mildly pale,
icterus up to chest, euglycemic, ant. fontanel open,
but not bulged. Temperature was 35.5°C Celsius,
Respiratory rate 70/min, Oxygen saturation was 88%
in room air, Heart rate 140/min, BP was 80/50 mm of
Hg, capillary refilling time was less than 3 seconds.
OFC was 35 cm, anthropometric parameters were
within the centile chart. She was conscious, with poor
reflex activity. There was crepitation over left lung
field. Tone increased in all 4 limbs, no hepato-splenomegaly. Other systemic examinations
revealed normal findings. Oxygen was started at a rate
of 2L/min and kept nothing per oral and appropriate
I/V fluid started. Blood samples were sent for
necessary investigations. Inj. Phenobarbitone loading
dose was given, followed by a maintenance dose 12
hourly. Inj. Meropenem (40mg/kg/dose 8hourly) and
Inj. Vancomycin (10mg/kg/dose 6hourly) started after
sending blood sample, urine and CSF samples for
culture sensitivity and colony count. Other supportive
and symptomatic treatment ensured. A nasopharyngeal
swab was sent for RT-PCR for COVID-19 on the same
day (at her 9th day of age). Which became positive.
Chest X-ray was done. The test reports were -

Figure I: Showing left sided consolidation

WBC-7000/C, mm with Neutrophil 60%, lymphocyte
30% Hb -15.1 gm/dl, Platelet count-2,10,000/Cmm,
CRP- 24 mg/L, Blood Group- AB +ve, RBS-8.6
Mmol/L, S. Bilirubin (total) 7.8mg/L (direct 0.8 and
indirect 7mg/dl), S. Calcium-8.5mg/dl, S.
Electrolytes-Na 138 mmol/L, K-3.8 mmol/L, S.
Creatinine -0.4mg/dl, SGPT-30U/L. Dimer- 0.3
gm/L, S. Ferritin-700 ng/ml. Chest X-ray showed
consolidation on upper left lung zone. Blood and urine
C/S shows no growth. CSF study was within normal
limit.

As the condition improved, exclusive breastfeeding
started and oxygen gradually was withdrawn. Oxygen
saturation improved to 95%. Inj. Meropenem
continued and Inj. Vancomycin for 14 days. RT-PCR
for COVID-19 was negative on 14th day of hospital
stay. Before discharge, USG of brain was done to see
any complication and the report was normal. She was
discharged with the advice of TORCH screening and
advice of home care. The newborn was maintaining
normal clinical parameters and thriving well at two
weeks follow up visit.

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summary, neurological involvement in children are rare but acquiring. However, studies on coronavirus indicate that these respiratory viruses have neurotropic properties. There have been records of patients with convulsions, febrile seizures, decreased level of consciousness, encephalomyelitis and encephalitis. The present neonate shows normal total and differential white blood cell count with raised CRP (24mg/L), high ferritin and chest x-ray shows consolidation on upper left lung zone. These findings are consistent with findings of Ligura et al. Teruel et al findings were that the metabolic panel were normal (liver and kidney function and electrolyte levels) with a cranial ultrasound examination that revealed no abnormalities and the blood, urine, CSF and stool cultures were negative. These findings are consistent with current case. Supplemental oxygen along with symptomatic and supportive treatment is the mainstay of treatment for COVID-19 patients. Supplementation of fluid and electrolyte should be appropriate to avoid pulmonary edema and hypoxia. The neonate was managed in the line of neonatal sepsis and convulsion and was discharged when discharging criteria was fulfilled. Failure of earlier screening for COVID-19 was a limitation in the management of present case.

Conclusion

Probably this is one of the first few reported neonatal cases of COVID-19 infection in Bangladesh with convulsion. Neonatologists and Pediatricians need to be aware of this. Suspicion about probability of COVID-19 in newborns with prompt diagnosis and initiation of early supportive treatment, close monitoring and follow-up may save the life of a COVID-19 affected newborn with a positive outcome.

References