

CROUP AS A PREVIOUSLY UNRECOGNIZED SYMPTOM OF COVID-19 IN INFANTS

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Abstract: Although the most common symptoms of coronavirus disease 2019 (COVID-19) in children are fever and cough, cases of croup associated with COVID-19 are reported in the literature and have increased sharply with the Omicron variant. We present severe acute respiratory syndrome coronavirus 2 as a viral agent in an infant presenting with croup.

Key words: Croup, Infant, COVID-19

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The written informed consent to publication has been obtained from the parents.

We confirm that we have read the Journal's position on issues involved in ethical publication and affirm that this report is consistent with those guidelines. Address for correspondence: Sevgi Dasdemir, MD, Department of Pediatrics, Gazi University Hospital, Ankara, Turkey. E-mail: sevgidasdemir@gmail.com

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CASE REPORT

A previously healthy and fully vaccinated 23-month-old child presented with a 1-day history of noisy breathing and reduced oral intake. According to the mother, the child had a fever and a “barking” cough at home for the past 3-days. The patient was admitted to the PICU due to decreased oxygen saturation and cyanosis while crying. On physical examination, the temperature was 36.6°C, heart rate was 130 beats per minute, and oxygen saturation was 90% in room air. The child was tachypneic at 50 breaths per minute with suprasternal and subcostal retraction. Respiratory system examination revealed externally audible biphasic stridor, increased respiratory effort with crying and coarsening of respiratory sounds. The other system examination, the patient's history and family history were unremarkable. In the laboratory, inflammatory markers were elevated with 10.9 mg/L of C-reactive protein. The chest radiograph showed a positive steeple sign and no consolidation. Nasopharyngeal swab for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) PCR test was positive and negative for other respiratory pathogens, including adenovirus, human metapneumovirus, human enterovirus/rhinovirus, influenza A, influenza B, H1N1, parainfluenza types 1–4, respiratory syncytial virus A/B, Bordetella pertussis, Chlamydia pneumoniae and Mycoplasma pneumoniae, human bocavirus, human parechovirus.

The patient was diagnosed with SARS-CoV-associated croup and was treated on the first day with 0.6 µg/kg oral dexamethasone, inhaled adrenaline and had O₂ saturation of 96% under 10 L/min oxygen in a reservoir mask. Since stridor and tachypnea continued 10 hours after the first dose of dexamethasone, a second dose of 0.6 mg/kg dexamethasone and inhaled adrenaline treatment was given the next day. Noisy breathing and tachypnea resolved

after 24 hours. On the 3rd day, the patient's dexamethasone treatment was discontinued and the patient was discharged. She was called every day to monitor the complications of coronavirus disease 2019 (COVID-19) and to look for possible symptoms related to MIS-C. It was learned that all her complaints, including cough and hoarseness, had resolved on the 7th day.

DISCUSSION

Croup is a common viral infection associated with parainfluenza, rhinovirus and respiratory syncytial virus infections and Human coronavirus NL63 (HCoV-NL63) and self-limiting illness that typically resolves within a few days.¹ Thus, COVID-19, another coronavirus causing respiratory illness, could also cause croup. Recently, due to increased Covid-related croup cases in the literature, it is important to discuss whether we should consider such cases as incidental presentations of COVID-19 as croup, or a case for adding COVID-19 to the list of viruses that can cause croup.^{2,3}

All of the described SARS-CoV-associated croup patients in the literature had stridor; however, the severity of the disease was variable. While Pitstick et al.⁴ reported a case of mild croup discharged with supportive treatment in one day, Venn et al.⁵ described a patient who received heliox treatment and did not recover as quickly as is typical for croup patients. In addition, complications related to COVID-19 croup were reported. Aghdam et al.¹, presented a secondary bacterial tracheitis after COVID-19 croup and Lim et al.⁶ discussed the stormiest clinical COVID-19 croup course among the other children with a patient developed MIS-C. It stated that the association of COVID-19 croup with MIS-C infection requires closer monitoring and longer-term treatment than typical croup.

In addition, it has been stated in the literature that SARS-CoV-related croup cases were not seasonal such as classical autumn-winter croup and correlated with the increase of Omicron, as demonstrated in the retrospective analysis of Brewster et al.^{1,3} Our case was also seen in the spring when the Omicron wave was seen in Turkey.

Our case had a mild course of SARS-CoV-associated croup treated with early isolation measures and was discharged after 3 days of treatment. We recommend that one of the causes of croup in children is COVID-19 and that COVID-19 should be added to the viral panel to determine the origin of croup. We would also like to point out that COVID does not contribute to the severity of croup and may not be an indicator for complications such as MIS-C.

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