

Novel coronavirus SARS-CoV-2: familial spread resulting in COVID-19 pneumonia in a pediatric patient

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Dear Editor,

In December 2019, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2, formerly known as 2019 novel coronavirus) infection was discovered in Wuhan, Hubei Province of China, for the first time. The disease caused by SARS-CoV-2 (COVID-19) is transmitted by respiratory droplets and close contact (1, 2). By mid-March 2020, more than 180 000 cases with COVID-19 have been reported in the world and currently it is accepted as a pandemic by the World Health Organization. Until recently, COVID-19 infection and pneumonia have been rarely reported in pediatric patients; however, there have been a couple of pediatric COVID-19 pneumonia cases that occurred likely secondary to familial spread (3, 4). Herein, we aim to briefly communicate a pediatric COVID-19 case, which is a result of familial aggregation.

A 57-year old male police officer was referred to fever clinic of Xiangyang First People's Hospital Affiliated to Hubei Medical College on February 1, 2020. Main complaints were mild cough for 3 days, low grade fever for 10 hours (maximum temperature 37.6°C), diarrhea, and anorexia. In his social history: on January

20, 2020, he escorted a male criminal to Wuhan and returned to Xiangyang 5 days later. Blood lab results were white blood cell count, $12.3 \times 10^9 / L$ (\uparrow); neutrophil percentage, 89.0% (\uparrow); eosinophil percentage, 0.1% (\downarrow); lymphocyte absolute value, $0.71 \times 10^9 / L$ (\downarrow); neutrophil count, $9.48 \times 10^9 / L$ (\uparrow); lymphocyte percentage, 7.2% (\downarrow); monocyte percentage, 2.2% (\downarrow); C-reactive protein, 14.8 mg/L (\uparrow); and oxygen saturation, 92%. Unenhanced chest CT revealed bilateral multi-focal ground glass opacities with consolidation (Fig. 1) (5); subsequent SARS-CoV-2 nucleic acid test was positive, confirming the diagnosis of COVID-19. He was immediately referred to isolation ward for intensive treatment with oxygen inhalation, intravenous cefuroxime sodium 1.5 g and oral abidol tablets (200 mg), lopinavir/ritonavir 200/50 mg. On February 6, 2020, he developed dyspnea and severe cough with 75% oxygen saturation. Further treatments included non-invasive ventilator to assist respiration, infusion of intravenous plasma donated by a recovered COVID-19 patient, and sputum aspiration by fibrobronchoscopy. Following his recovery on February 13, 2020, he was discharged and referred to a designated hotel for 14 days of isolation.

Upon confirmation of COVID-19 pneumonia, we immediately informed the local Centers for Disease Control to investigate the patient's close contacts in the past seven days. His 30-year-old daughter (Fig. 2) and 3-year-old granddaughter (Fig. 3) who lived with him were also tested positive for SARS-CoV-2, with chest CT findings of COVID-19 pneumonia. His granddaughter only complained of low fever (maximum temperature 37.7°C) for three days and the fever subsided without any medicine. Patient's daughter was treated with oral abidol, lopinavir/ritonavir 200/50 mg and recovered after 8 days. Patient's granddaughter was administered azithromycin 0.2 g/day per oral and recovered after 5 days. Our case emphasizes that COVID-19 can easily result in familial spread

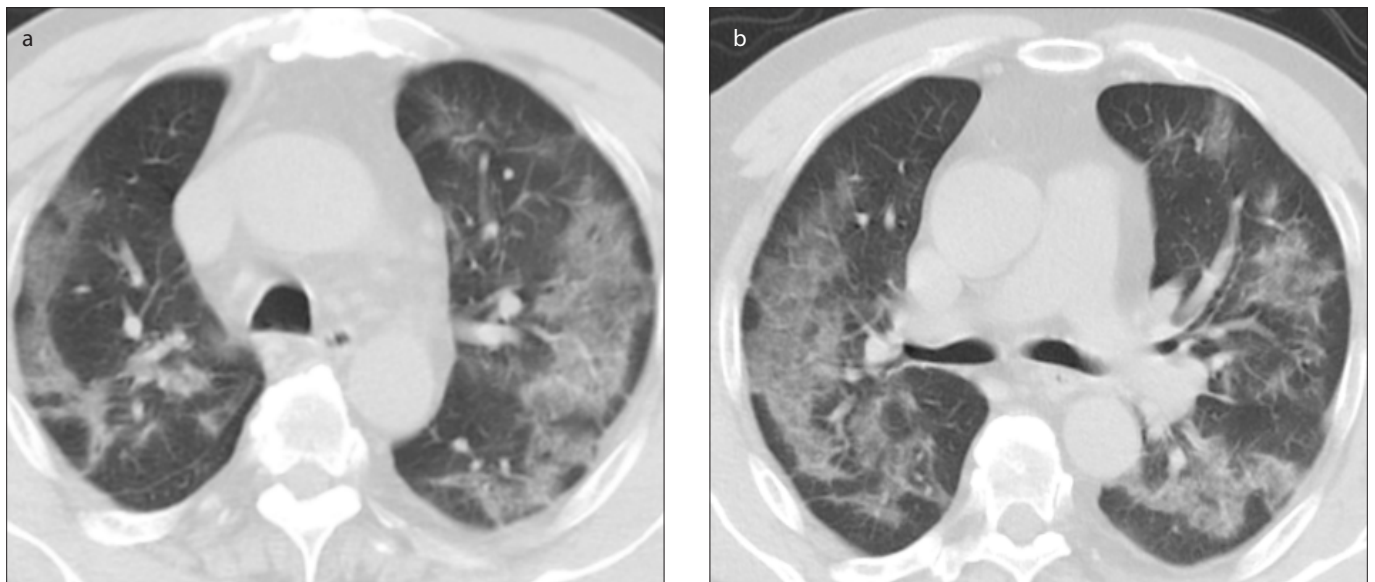


Figure 1. a, b. A 57-year-old man presented with fever and positive polymerase chain reaction assay for SARS-CoV-2. Axial chest CT images (a, b) show multifocal ground glass opacities with consolidation.

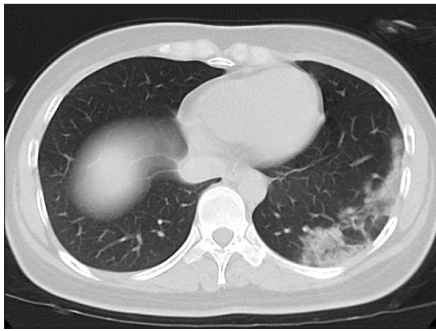


Figure 2. Axial CT image of a 30-year-old female (daughter of the patient in Fig. 1) shows multifocal round glass opacities with consolidation related with COVID-19 in the left lower lobe.

and it may lead to COVID-19 pneumonia in young adults and children, which can be asymptomatic in the initial phases of the infection. Careful testing for COVID-19 and further evaluation with imaging to rule out COVID-19 pneumonia in test positive individuals can be helpful for early diagnosis.

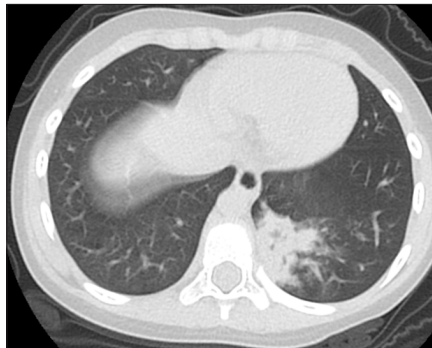


Figure 3. Axial CT image of a 3-year-old female (granddaughter of the patient in Fig. 1) shows consolidation associated with COVID-19.

Conflict of interest disclosure

The authors declared no conflicts of interest.

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