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Case Report

A mild type of childhood Covid-19 - A case report

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Abstract

This case is about a 9-year-old child diagnosed with COVID-19, with a history of epidemiology; SARS-CoV-2 nucleic acids testing was positive, while chest CT examination was negative. The clinical classification was light. Nonetheless, isolation measures should still be taken to avoid infecting others.

Keywords: COVID-19; SARS-CoV-2; Child; CT; Mild

1. Introduction

Since December 2019, there have been a series of unexplained cases of pneumonia in Wuhan, whose clinical manifestations are very similar to those of viral pneumonia. Deep sequencing of the patients' lower respiratory tract samples showed that the source of infection was a new type of coronavirus. On February 11, 2019, the new coronavirus was named severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), according to the international committee for the classification of virus. Meanwhile, world health organization (WHO) decided to name the disease caused by SARS-CoV-2 as Coronavirus disease 2019 (COVID-19). Many studies have reported epidemics in adults and even the old, but attention has rarely been paid to reports on children patients. Here we present a child case with mild symptoms.

2. Case report

A 9-year-old male patient was hospitalized due to having had a fever for three days. The child had no obvious inducement of fever three days before this. His temperature was as high as 38.9 °C, and he presented no chill or shivering, cough, sputum or sore throat, chest tightness or chest pain, acid reflux, nausea, abdominal pain or diarrhea, dizziness or headaches, or breathing cyanosis, and no weakness or muscle ache. The patient had lived in Wuhan for a long time. There was also no clear history of exposure to patients infected with SARS-CoV-2. He was in good health and denied a history of food and drug allergies. Routine blood examination in the external hospital showed: leukocyte 13.07 $\times$ 10^9/L, erythrocyte 4.25 $\times$ 10^{12}/L, neutrophil ratio 72.71%, lymphocyte ratio 16.12%, absolute value of lymphocyte 2.1 $\times$ 10^9/L, influenza A and B pathogen detection were negative. A chest X-ray did not find any obvious abnormality in either lung. The patient was given "oral administration of cattilan and intravenous drip of lysine acetylsalicylate injection" for one day (the specific dosage is unknown), and no fever occurred. The child was sent to hospital by his parents for further diagnosis and treatment. Because the child had lived in Wuhan two weeks before the onset of the disease and had a fever, SARS-CoV-2 infection

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was not excluded. During patient admission examination: T 36.6 °C, P 100 times/min, R 20 times/min, BP 100/65 mmHg, no congestion in the pharynx, no swelling of the tonsils, clear breath sounds in either lung, and no obvious dry and wet rales were recorded. Routine blood examination after admission was conducted with the following results: white blood cell 4.22 × 10^9/L, red blood cell 3.80 × 10^{12}/L, hemoglobin 118.00 g/L, platelet 363.00 × 10^9/L, neutrophil percentage 37.40%, lymphocyte percentage 53.80%. Novel coronavirus nucleic acids testing was positive. Results for biochemical examination are: lactate dehydrogenase 69U/L↑, α-hydroxybutyrate dehydrogenase 258U/L↑, creatine kinase 139U/L, creatine kinase isoenzyme 41U/L, C- reactive protein 15.2 mg/L↑, serum amyloid >300 mg/L↑, procalcitonin 0.28 ng/mL (see Figs. 1−3).

3. Discussion

In December 2019, unexplained cases of pneumonia appeared in Wuhan. On 11 February 2019 the world health organization (WHO) decided to name the disease caused by the novel coronavirus as COVID-19. COVID-19 is a disease

Fig. 1. Chest CT on the first day after admission showed there was cord shadow in the middle lobe of the right lung, and no obvious abnormality was found in the remaining part of the lung.

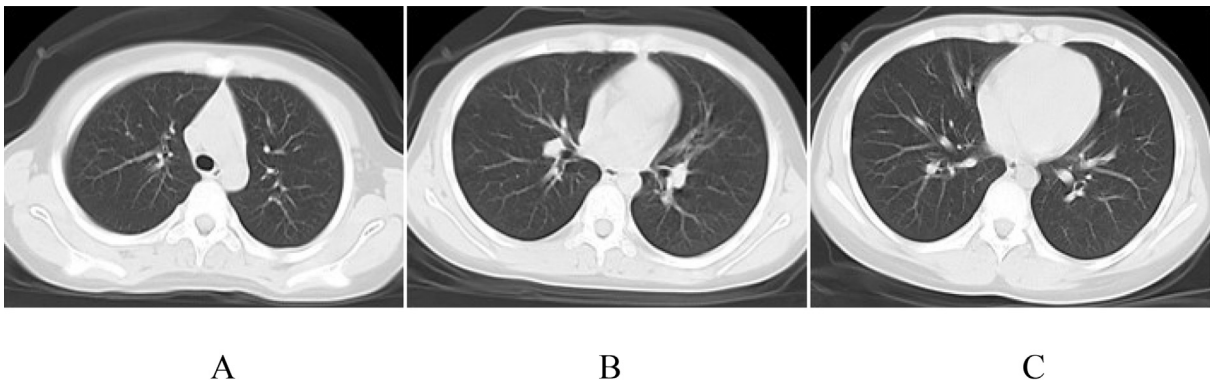

Fig. 2. Chest CT images on the third and fifth days after admission showed no obvious changes in the bilateral lung.

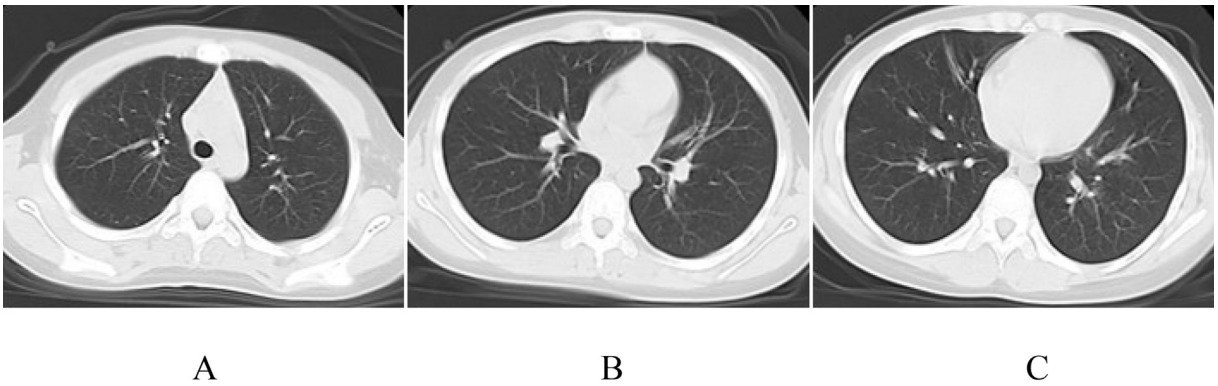

Fig. 3. Chest CT images on the third and fifth days after admission showed no obvious changes in the bilateral lung.

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caused by SARS-CoV-2, which mainly causes pulmonary inflammatory lesions, and can also cause damage and corresponding symptoms of intestinal tract, liver and the nervous system. The virus spreads through droplets and contact. The chief clinical manifestations are fever and low fever, and it can also be manifested as fatigue, dry cough, dyspnea, etc. Acute respiratory distress syndrome (ARDS) can occur in severe cases. Clinical manifestations in patients are divided into mild, ordinary, severe and critical[1] conditions. Laboratory tests showed that white blood cells were normal or decreased and lymphocytes decreased. The diagnosis is based on viral nucleic acid detection and gene sequencing, but nucleic acid detection has strong specificity and poor sensitivity.

COVID-19 has a strong transmission and high concealment, and its chest imaging findings are characteristic. Some patients have imaging findings earlier than clinical manifestations. The stages of imaging manifestations include early, advanced, and severe[2]. There are few existing reports of children, and only one case report of adults[3]. Children and teenagers infected with SARS-CoV-2 have mild clinical symptoms and radiological manifestations[4], and are rarely severe or critical. Mild-stage patients have mild clinical symptoms and no pneumonia on imaging[1]. Thin-slide chest CT can be non-invasive and more sensitive to nucleic acids and clinical manifestations. In order to avoid missed diagnosis of the progress in this child, a chest CT examination was performed on the third and fifth days of admission. No positive signs were found, which can provide high indication for clinical judgment of good prognosis. The child's nucleic acid turned negative eight days after admission and he was then discharged.

Based on the clinical and imaging data of this case, the following guidelines are recommended. If children and adolescents have a history of living or traveling in epidemic areas within one to two weeks, or they have had contact with confirmed or suspected cases, or stay in an aggregated disease environment, the possibility of their infection with SARS-CoV-2 cannot be ruled out, even when their clinical symptoms are mild and there is no typical chest imaging manifestation. SARS-CoV-2 nucleic acid or gene testing is required for these patients. If these tests are positive, the patient should be placed under immediate quarantine. Patients with negative results from viral nucleic acid testing need to be closely observed or to undergo CT examination of lung changes to reduce and avoid missed diagnosis and misdiagnosis of patients with atypical clinical manifestations and occult symptoms, in order to take timely isolation and prevention measures.

Statement of ethics

The study was approved by the Ethics Committee of Affiliated Hospital of Hebei University.

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