Case report

Gastrointestinal Bleeding in COVID-19 Due to Low Personal Protective Equipment of a Nurse; a Case Report

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Abstract

It is important to diagnose coronavirus disease 2019 (COVID-19) by the clinical symptoms, although they are not specific. Clinical symptoms of COVID-19 in pediatrics are less severe and milder than in adults, which can be threatening to the health staff. In this case study, we report a 23-year old female pediatric nurse who developed COVID-19 with the rare symptom of gastrointestinal bleeding (GIB). The case of interest was affected by two children who had a positive reverse transcription-polymerase chain reaction (RT-PCR). The patient had no respiratory symptoms. Despite the use of an N95 mask and face shield, the nurse was infected because the gastrointestinal symptoms were predominant. Medical staff should pay attention to silent symptoms in pediatrics. Neglecting the use of personal protective equipment in dealing with pediatric patients can be hazardous.

Keywords: COVID-19, Novel coronavirus, Gastrointestinal bleeding, Personal protective equipment

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Introduction

The successive spread of pneumonia related to SARS-CoV-2 has led to the pandemic of coronavirus disease 2019 (COVID-19) announcement by the world health organization (WHO) on March 11, 2020 (1-3). Due to the acute and severe consequences of this viral disease, including kidney, respiratory, and other organ involvement, China's public, clinical, and scientific health associations reacted quickly to identify and treat the COVID-19 in the world (3-7). It is important to diagnose the clinical symptoms of COVID-19, although they are often non-specific. Common symptoms are fever, shortness of breath, cough, and myalgia or fatigue. Patients may have diarrhea and nausea before getting a fever, indicating that the fever is predominant but not an absolute sign of infection. A small number of patients may experience headaches or hemoptysis, and may even be relatively asymptomatic (8-10). Children are susceptible to develop COVID-19, and there is no significant gender difference. Also, clinical symptoms of COVID-19 in pediatrics are less severe and milder than in adults (11, 12). We report an

affected nurse with gastrointestinal bleeding following close contact with the two admissions.

Case Report

A 23-year-old woman without the underlying disease who worked as a pediatric nurse had physical and respiratory contact with two pediatric patients with gastrointestinal bleeding (GIB) and no respiratory symptoms that were hospitalized for endoscopy following GIB. Due to suspicious results including high C-reaction protein (CRP) and lymphopenia, an RT-PCR test has been done for two children from nasopharynx and oropharynx, which was positive, and the two children were isolated. Two children had low volume bloody vomiting over the past three days. There was noise reduction in the lower two-thirds of the right lung. Reverse transcription-polymerase chain reaction (RT-PCR) for COVID-19 with a nasopharyngeal swab was positive. Auscultation of the lung was accompanied by coarse crackles bilaterally. Chest X-ray revealed a consolidation and round opacity in the right lung. The two children had not apparent symptoms but the results of erythrocyte sedimentation rate (ESR) (Mean: 50 mm/1hr) and C-reactive protein (CRP) (+1) were abnormal and suspicious. The affected nurse showed gastrointestinal symptoms such as diarrhea, vomiting, fever, severe headache, and myalgia four days after contact with the two children. So chest x-ray was performed immediately, which had no significant findings (Figure 1), and in RT-PCR tests from nasopharynx and oropharynx, the COVID-19 test was positive. Therefore, the patient was quarantined at home and treated with azithromycin and hydroxychloroquine tablets for 5 days and acetaminophen as pro re nata (PRN) to control fever. Dry cough and SpO2 of 88% in room air without respiratory distress were found two days after quarantine. High-resolution computed tomography (HRCT) of the chest was requested for the patient. There were changes in ground-glass opacity (GGO) in the apical segment of the right lower lobe (RLL) (Figure 2).

Due to low SpO2, the patient underwent oxygen therapy using a simple face mask (4-5 lit/min) to maintain SpO2 above 94% at home. Early detection

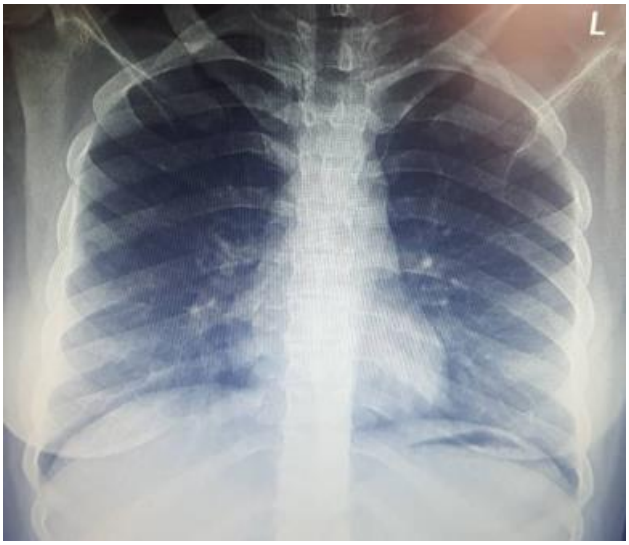

Figure 1. Normal chest x-ray of the patient with COVID-19.

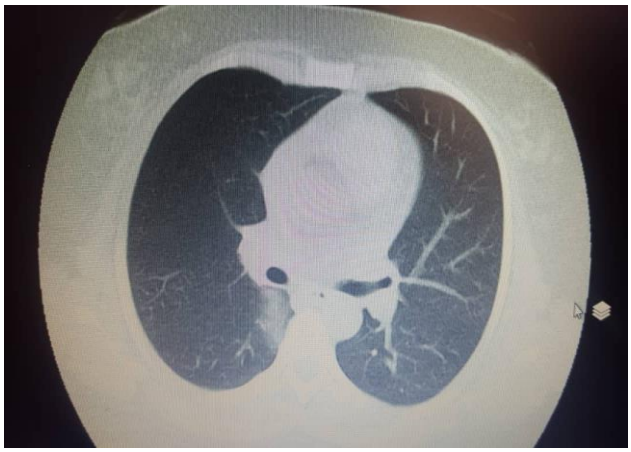

Figure 2. Chest HRCT of the patient with GGO in the apical segment of RLL.

symptoms were pulse rate of 82 beats/minute, respiratory rate of 14 breathes/minute, the core temperature of 38.50C (axillary), and blood pressure of 10.5/82 mmHg. Paraclinical tests were as following: Platelet per microliter (Plt)=210,000, Hemoglobin=10.5 gr/dl, 25 OH vitamin D level= 52 ng/ml, Aspartate aminotransferase (AST)=23 IU/L, Alanine aminotransferase (ALT)=30 IU/L, Alkaline phosphatase (ALP)=152 IU/L, CRP=+2 mg/L, Erythrocyte sedimentation rate (ESR) =33 mm/hr, Blood urea nitrogen (BUN)= 15 mg/dl, Creatinine (Cr)=1.1 mg/dl, Lactate dehydrogenase (LDH)= 570 IU/L , Prothrombin time (PT) = 13 seconds, Partial

thromboplastin time (PTT) =32 s, International Normalized Ratio (INR)=1.1, Calcium (Ca) =8.8 mg /dl, White blood cell per microliter (WBC)=5,200, Neutrophils= 75% and Lymphocytes= 17%. The patient fully recovered after 5 days and the gastrointestinal symptoms and fever were resolved and did not require oxygen therapy and SpO2 (on room air) was 95%.

Discussion

Following the announcement of a pandemic by the WHO, more attention has been paid to health care organizations in the country so that they can examine the disease from different aspects. Further studies in different designs are needed to fully know the nature, manifestation, and consequences of the COVID-19. We report an affected 23-year old female nurse with gastrointestinal bleeding following close contact with the two children with COVID-19 who had gastrointestinal bleeding at admission. Because children have mild symptoms, the care providers should not be ignored by this fact and should be more careful, because few care providers suspect COVID-19 in pediatrics with gastrointestinal symptoms.

Therefore, we should not neglect personal protective equipment (PPE) especially in close contact with children. Given that new drugs can be useful to treat or reduce the symptoms such as bromhexine but the best strategy in prevention using PPE (13).In a study by Xia et al., cough and fever were the most common symptoms in 13 children with COVID-19; six patients had unilateral pulmonary lesions; ten patients had bilateral pulmonary lesions, and also four patients were normal on CT. The majority of patients had ground-glass opacities (n=12) and consolidation (n=10) (13).

The results of Xia et al. were consistent with our report regarding the symptoms and radiological findings of the two children affecting the nurse with COVID-19. However, the symptoms of the affected nurse were similar to the two children, in which the nurse had GIB because of the main display of COVID-19 in the two children with GIB.

Another study revealed that about 90% of COVID-19 children were asymptomatic, and in some cases were mild or moderate (14); the latter findings ring a bell to care providers to be alert about the possibility of COVID-19 in pediatrics without apparent symptoms. It should be stated that children of all ages are prone to develop COVID-19, and there is no significant difference between the male and female gender. Even the slightest symptoms and signs of COVID-19 in children should lead us to the diagnosis of COVID-19 because discretion is the key to maintaining good health among all people, especially in care providers. Transmission of the COVID-19 in the populous area should be considered serious and paid more attention in which populous areas such as closed places or metropolis (15).

As mentioned, the two children with COVID-19 as a carrier had hematemesis accompanied by the noise reduction in the lower two-thirds of the right lung. Mild symptoms of children with COVID-19 must be paid attention to by care providers. Hence, there is a mild symptom, the use of radiologic imaging and molecular tests are useful to detect COVID-19. The children can manifest COVID-19 atypically and it is dangerous to spread the infection.

Conclusion

Due to the atypical and mild clinical symptoms of COVID19 in children such as our reported case, it is necessary to educate the medical staff about the importance of gastrointestinal symptoms in addition to the respiratory symptoms of pediatric patients as possible symptoms of COVD19. Neglecting the use of personal protective equipment in dealing with pediatric patients can be hazardous. Medical staff should pay attention to silent symptoms in pediatrics.

Acknowledgment

None.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

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