

Case Report

Case Report: One Case of Coronavirus Disease 2019 (COVID-19) in Child with Thrombocytopenia and Skin Lesion

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Abstract: COVID-19 disease characterized by a wide range of clinical manifestations of respiratory and gastrointestinal symptoms, like diarrhea and vomiting, in children and adults; also, some laboratory findings like thrombocytopenia and lymphopenia are reported in some cases, but Skin lesions are uncommon symptoms. In this study, we report a 7-year-old girl admitted to an emergency department of Besat hospital in Sanandaj, Iran, with erythematous maculopapular skin lesions manifestation. Our patients had other symptoms including fever, gastrointestinal symptoms (vomiting, loss of appetite, and diarrhea) severe systemic symptoms include respiratory distress and cardiomyopathy, and also she had abnormal laboratory findings like thrombocytopenia, leukocytosis, and lymphopenia. First of some differential diagnosis like gastrointestinal infection and Kawasaki disease was consider and but after rule outing these disease, COVID-19 infection was diagnosed for the patient by PCR testing of the nasopharyngeal sample. She treated with chloroquine and Kaletra for five days and Meropenem and Clindamycin. So we introduce thrombocytopenia and skin lesion as the clinical manifestation of COVID-19 disease in children. Also, according to this study, we recommend doing diagnostic tests to rule out COVID-19 disease in children with skin manifestation or thrombocytopenia. Also, it is necessary to understand the clinical features of COVID-19 in children.

Keyword: COVID-19 Disease, Thrombocytopenia, Skin Lesion

1. Introduction

WHO Director-General, announced that the disease caused by COVID-19, which is the acronym of "coronavirus disease 2019" On February 11, 2020 [1, 2].

Children often have gastrointestinal symptoms, compared with adults, many of the children affected by MERS-CoV are asymptomatic and SARS-CoV-2 is less severely in children, most of the children affected by SARS-CoV present with fever and cough [3, 4].

In this study we report One Case of Coronavirus Disease 2019 (COVID-19) in Child with Thrombocytopenia and Skin Lesion, who was admitted to Besat hospital in Sanandaj, Iran.

2. Case Presentation

In April 2020, a 7-year-old girl referred to an emergency department of Besat hospital in Sanandaj, Iran, with 4-days history of fever and erythematous maculopapular skin lesions. The skin lesions first appeared on the trunk and then gradually spread to the patient's entire abdomen and back, extending to

the upper and the lower limbs. The lesions were slightly itchy. Also, one day after the onset of fever, she had started to vomit (several times), and then diarrhea had started. The fever did not control despite using acetaminophen. She had no past medical history of a specific disease and medical drug use; also, None of her family members were ill and had not traveled in the past few months.

When checking into the emergency department of Besat hospital, the general patient's appearance was ill and had a vital sign (Temp: 39 °C / O₂Sat: 95% / RR: 28 / PR: 130). A physical examination, erythematous maculopapular lesions on the back and abdomen were evident (Figure 1). The lips were red, and the tongue was white and dry, the Bottom of the throat was erythematous, the urticarial lesion was between the fingers and the papules were seen individually on the forearm and arm, as well as on the knees and legs.



Figure 1. Cutaneous rash on the trunk in 7 Years Old Girl with COVID-19.

The initial laboratory results of the patient's examinations were following the table below (Table 1).

Ultrasound showed moderate amounts of free fluid in the abdominal and pelvic cavities, and multiple lymph nodes with a maximum size of 21 by 9 mm were evident in the right lower quadrant (RLQ).

Table 1. Lab results.

BUN	24mg/dl	Serum amylase	52 U/L			
Cr	0.82	BS	85			
AST	46 U/L	CBC	WBC	17000/ μ l	Neut	95%
ALT	67 U/L		Hb	14.5 g/dL	lymph	5%
Na	125 mmol/L		Plt	75000/ μ l		
K	3.3 mmol/L	LDH	MCV	72		
Ca	8.4 mg/dL		917U/L			
CRP	+1		12 s			
ESR	28 mm/hr	PTT	58 s			

After stabilizing the patient, we monitored her in the pediatric department of the hospital. She received a dose of intravenous immunoglobulin (IVIG) because of the decrease in platelet count.

Due to the lack of a cause for thrombocytopenia and

gastrointestinal symptoms and the prevalence of coronavirus disease, chest Computed tomography SCAN requested for the patient, but the Chest CTS was normal.

On the second day of hospitalization skin, lesions became reticular. Echocardiography performed to rule out Kawasaki; in echocardiography, evidence in of myocarditis seen and ejection fraction reported to be 10%. A few hours after echocardiography, she developed symptoms of severe respiratory distress with extensive lower extremity edema and abdominal distension, and skin lesions became disappeared. Therefore, the chest CT has done again. In chest CT scans, low-intensity pleural effusions on both sides with greater severity on the right, brief dilatation of the pulmonary artery, bilateral perianal perforation, and Ground-glass opacity (GGO) in the peripheral parts of both lungs reported. Due to the prevalence of COVID-19, PCR testing of the nasopharyngeal sample was performed, which was positive for Coronavirus. Therefore, the patient transferred to the intensive care unit of Coronavirus patients, treated with chloroquine and Kaletra for five days and Meropenem and Clindamycin. The patient's respiratory distress decreased two days after the start of the above treatments, and the vital signs became stable. Skin lesions completely disappeared on day 4 of hospitalization.

On day 4 of hospitalization, echocardiography performed again, and cardiomyopathy in the context of viral infection and EF=10%, were reported. Therefore, the patient underwent treatment with dopamine and dobutamine for five days. She also received one pack-cell unit on the fifth day of hospitalization due to a drop in hemoglobin (Hb=9.9 g / dL).

Laboratory findings on the day 10 of hospitalization were: Hb=12 g / dl, Plt=232000 μ l, WBC=8300 μ l, Cr=0.4 mg / dL, and LDH=297 U / L.

Finally, ten days after hospitalization and treatment, she was discharged with a good general condition and a follow-up order of echocardiography again ten days later.

The follow-up echocardiography was done ten days after discharge, and it was completely normal with normal ejection fraction.

3. Discussion

Our study described erythematous maculopapular skin lesions and thrombocytopenia as the first sign of a 7-year-old girl with COVID-19 hospitalization in an Iranian hospital. In addition to skin lesions, our patients had other symptoms include fever, gastrointestinal symptoms (vomiting, loss of appetite, and diarrhea), respiratory distress, and cardiomyopathy. The skin manifestations were appeared at the same time as the fever in the patient and lasted for seven days. Respiratory distress and cardiomyopathy observed after the lesions disappeared. Also, abnormal laboratory findings included leukocytosis, moderate thrombocytopenia, positive CRP, decreased hemoglobin, increased liver enzymes, and LDH has seen in this patient.

The initial diagnosis included Kawasaki disease, which ruled out due to thrombocytopenia, no evidence of echocardiography, and the process of the disease.

COVID-19 disease in children might occur with different symptoms and less severe (fewer experience fever, cough, or shortness of breath) than adults and might hospitalized less than adults [5].

Coronavirus can cause thrombocytopenia by three mechanisms, one of the mechanisms is direct infection of bone marrow cells and inhibition of platelet synthesis, the other way is the destruction of platelets by the immune system, and the last mechanism is the aggregation of platelets in the lungs, resulting in microthrombi and platelet consumption [6]. Magdi et al. reported a 24-year-old healthy man with severe ITP complicated by intracranial hemorrhage following upper respiratory tract infection, so they illustrated that Coronavirus might be a cause of severe ITP [7]. A recent study showed that low platelet count is associated with increased risk of severe disease and mortality in patients with COVID-19 [8].

Recently Joob et al. raised the possibility of skin manifestations in coronaviruses infection by reporting a case with skin lesion in Thailand, so they illustrated that COVID-19 might initially present with a skin rash [9]. Sachdeva et al. resulted that the most common cutaneous manifestation of COVID-19 was maculopapular exanthema (36.1%). The others common skin manifestations were papulovesicular rash (34.7%), urticaria (9.7%), painful acral red, purple papules (15.3%) of patients, livedo reticularis lesions (2.8%) and petechiae (1.4%) and they occurred before the onset of respiratory symptoms in COVID-19 disease [10].

Only the study, Genovese et al. [11], reported COVID-19 skin lesions in children until today. Genovese et al. reported a case of COVID-19-associated varicella-like exanthema from 3 days before referring to the clinic in an 8-year-old girl with mild systemic symptoms in Milan, Italy, who had a 6-day history of mild cough and a history of varicella infection a year earlier. They only founded the abnormal laboratory in this case report was mild thrombocytopenia (platelet count: 105,000 / μ L). Within seven days, the patient's skin lesions and systemic symptoms improved without any treatment, and the number of platelets returned to normal [11].

4. Conclusion

According to our study, we can conclude that skin urticaria, like lesions and thrombocytopenia in children, could be one of the first symptoms of COVID-19 disease. Therefore, if skin manifestation or thrombocytopenia appeared in children, we recommended doing diagnostic tests to rule out COVID-19 disease to prevent the spread of the infection and to monitor the progress of the disease with early diagnosis. On the other hand, to better understand the clinical features of COVID-19 in children, it is necessary to gather more information about the causes of infection in children.

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