

Clinical Case a Rare Complication of Primary Infectious Thromboendocarditis in a 10-Year-Old Child

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ABSTRACT

This article presents a clinical case of a patient with a diagnosis of "Transferred coronavirus infection, multisystem inflammatory syndrome". The clinical diagnosis was made on the basis of a prolonged fever and the determination of a blood clot in the left ventricle of the heart during EchoCG. The underlying disease led to thromboendocarditis.

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Relevance:

It is assumed that COVID-19 (a disease caused by a new coronavirus called SAR-CoV-2) will affect all countries of the world. Coronavirus challenges the global health system from time to time [3, 8].

The key fact of COVID-19 is that the vast majority of infections go away with mild symptoms or their complete absence. Not everyone is at risk of developing serious diseases. Elderly people and children with existing respiratory, cardiac and/or metabolic disorders and immunodeficiency have higher risks of developing moderate or severe diseases [3, 15, 17].

The widespread and very rapid spread of a new coronavirus infection among children has posed a number of problems for practical healthcare and science that require immediate solutions in the practice of a neonatologist and pediatrician [8, 9].

Local or generalized infectious and inflammatory processes account for up to 50% of all cases of fever of unknown origin. One of the formidable and rare causes is infectious endocarditis (IE) [10,13,14].

IE is an infectious and inflammatory disease of the endocardium of valvular structures, parietal endocardium, caused by invasion by microorganisms, and with the development of polypous-ulcerative lesions of the heart structures, which proceeds with systemic inflammation as well as progressive heart failure, thrombohemorrhagic and immunocomplex extra-cardiac manifestations [1,2,4].

One of the first in 1646, when Lozare Riviere drew attention to endocardial damage in "malignant fever"[12]. In Russia, the disease was first described in 1884 by A.P. Langov [11].

Despite the fact that the disease has been described for so long, IE still remains a disease difficult to diagnose and unpredictable in outcomes [1]. IE is registered in all countries of the world, but it does not

depend on the climatogeographic zone. In recent years, the incidence of IE has increased up to 4 times and the growth is observed even in developed countries. In the USA and European countries, the incidence of IE ranges from 25 to 93 per 1 million populations [1, 7]. IE in children (unlike adults) is very rare, the frequency of which is 3.0–4.3 cases per 1 million populations per year [1, 5, 6].

The cause of IE is gram-positive cocci: staphylococci *S. aureus*, CoNS (27.1–67.9%), streptococci, including greening (11.8–29%), enterococci (10.0-21.4%), gram-negative (Gr-) representatives of the HACEK group 2-10% of cases (*Haemophilus*, *Eikenella corrodens*, *Kingella*). Less often, IE is caused by Gr-non-HACEK bacteria (3.1-10.2%), anaerobic bacteria (0.9–1.2%) and fungi (2-3%) [7.11].

In some highly virulent types of microorganisms, as well as in fungal IE, the mortality rate reaches up to 70-98% [1, 7]. Correct and timely diagnosis of the disease allows you to prescribe adequate therapy in time and thereby improves the prognosis.

The clinical picture of IE is polymorphic and creates great difficulties in diagnosing the disease. The history of the disease in IE is important, varying widely depending on the microorganism that caused it and the presence or absence of previous heart disease, as well as the form of clinical manifestation [11].

The main symptom of IE is an increase in body temperature to 37.5–39.5 ° C with chills and torrential sweats. Prolonged fever occurs in 90% of patients and is accompanied by chills, poor appetite, and weight loss. Heart murmurs in IE are heard in 85% of patients. Symptoms of heart failure at the onset of the disease are detected in 7.5% of patients [12].

The prognosis of IE is influenced by four main factors: the characteristics of the patient, the presence or absence of cardiac and non-cardiac complications, the etiology of IE and EchoCG criteria. When there are three factors, the risk reaches 79%. All patients with complicated IE are recommended to be transferred to reference centers with the possibility of cardiac surgery [12, 14, and 16].

Results of own clinical observation:

A clinical case of IE in a child with thromboendocarditis is described. A girl, 10 years old, was admitted to the department of pediatric cardiorheumatology of the BODMC on 01.02.2022 with complaints of fever, pronounced weakness, shortness of breath, cough, swelling in the legs, decreased appetite. According to my mother, he has been ill since April 2021, when a rise in temperature was noted against the background of full health. Then the district pediatrician diagnosed "acute respiratory disease" and prescribed treatment. In May, 2021, the patient was in the children's intensive care unit of the Bukhara branch of the Russian Academy of Medical Sciences with a diagnosis of ORI and TORCH infection. Received Er. mass, blood transfusion and antibacterial therapy. In June, 2021, he was in the Tashkent Infectious Diseases Hospital, where he was diagnosed with Brucellosis. The child was admitted to the Department of hematology with a diagnosis of severe anemia in October 2021 and blast cells were found in blood tests. But the Research Institute of Hematology excluded blood diseases.

On 14.01.2021, the patient was diagnosed with COVID-19 and hospitalized in the Bukhara DIB and a cardiologist's consultation was organized according to the testimony. Upon further examination, infectious endocarditis is suspected. Taking into account the severity of the child's condition, the complexity of further diagnosis, after treatment of COVID infection (14 days), he was transferred to the Department of cardiorheumatology of the BODMC. During the echocardiography, a blood clot was detected in the left ventricle of the heart.

Anamnesis of life:

A child from the IV pregnancy, which took place against the background of toxicosis in the first trimester and anemia. Delivery IV on time. The body weight at birth was 3600.0 g. The newborn period proceeded without waterlogging. Breastfed up to 5 years. Vaccinated according to the calendar of preventive vaccinations. He was not ill with children's infectious diseases. The child is not from a related marriage. Parents exclude food allergies. A history of frequent acute respiratory infections, COVID-19, Brucellosis.

Objective status:

Asthenic physique, low nutrition. Physical development is average. The pallor of the skin is pronounced, when the load appears "cyanosis" of the nasolabial triangle. The subcutaneous fat layer is thinned. The

skin is dry. The oral mucosa is pink, the tongue is overlaid with a white coating. The back wall of the pharynx is granular, the palatine tonsils are loosened. Peripheral lymph nodes are enlarged. Breathing through the nose is not difficult.

Above the lower parts of the lungs, a dulling of the percussion sound is determined, auscultative – lower parts of various-sized wet wheezes. The boundaries of the heart: on the right – +1.0 cm from the border of the right midclavicular line, the upper – III rib, on the left – 1.5 cm to the outside of the left parasternal line. The heart tones are rhythmic. Systolic noise of medium intensity above the apex of the heart. The tongue is covered with a greenish coating. The abdomen is noticeably collateral. The abdomen is soft, the liver is +2.0 +3.0 cm below the costal arch along the midclavicular line. Irregular stool is prone to constipation. The urine is light.

Exam:

Clinical blood test: erythrocytes $2.6 \times 10^{12}/l$, Nv-84 g/l, Tr-260 000, CP – 0.9 L-5, $2 \times 10^9/l$, P.-5, S.-65, L.-30, ESR -4 mm/h, VSK 4-05-4 20

Biochemical blood test: total bilirubin – 12.0 mmol/l; direct bilirubin abs.; indirect bilirubin – 12 mmol/l; AST – 44 E/g, ALT – 49 E/g; total protein – 61.0 g/l, urea - 5.0 mmol/l, Creatinine – 78.0 mmol/l, Urea - 5.0 mmol/l, Blood glucose – 3.0 mmol/l.

Hemostasis indicators: PTI-52%; fibrinogen- 9 g/l; PV-21sec; INR-1.64; ACTV-34 sec.

Procalcitonin in the blood-0.95

Clinical analysis of urine.: light yellow, transparent, specific gravity -low, acid reaction, sugar – no, protein – no, L.3-4b.p/zr, uric acid crystals.

ECG: sinus rhythm with a heart rate of 94 beats per minute, voltage reduction.

EchoCG: Dividing cardiomyopathy in the left ventricle is determined by thrombi d. 25.4 x 3.4 mm.

Ultrasound of internal organs: Diffuse liver change.

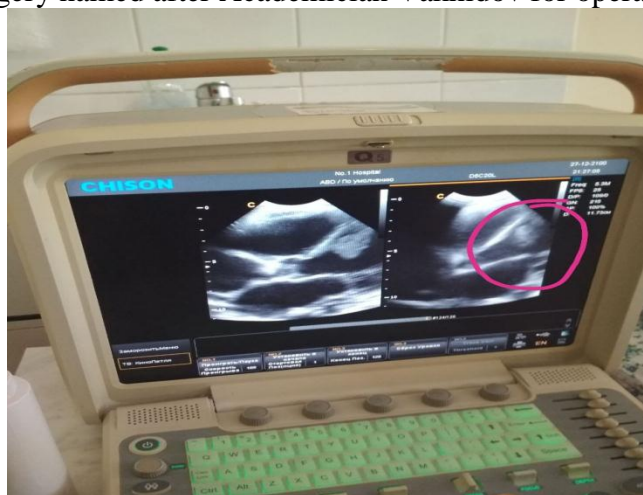
Overview chest X-ray: Expansion of the heart border

All of the above made it possible to establish a clinical diagnosis:

Transferred coronavirus infection, multisystem inflammatory syndrome.

Complications: Primary infectious endocarditis, acute course, complicated form, thromboendocarditis, NC 2B degree, total form.

After determining the diagnosis, the child was sent to the Republican Specialized Practical Medical Center of Surgery named after Academician Vakhidov for operative treatment.



Determination of a blood clot in the left ventricle of the heart

The observed case is an example of an atypical course of infectious endocarditis, as a complication of coronavirus infection. This observation suggests the need to include infectious endocarditis in the

differential diagnostic search in a child with systemic inflammation syndrome after undergoing coronavirus инфекции.

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