

Report a Rare Case of Kawasaki Disease Following the Herpetic Encephalitis Type 1

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ABSTRACT

BACKGROUND AND OBJECTIVE: Kawasaki disease is an acute febrile vasculitis of childhood. Infection is probably considered as a predisposing factor. According to low incidence of Kawasaki disease following the herpes simplex virus and to reduce mortality by early diagnosis and treatment of disease, a rare case of a patient with this disease will be introduced.

CASE REPORT: A 6-year-old male patient with fever, vomiting, decreased level of consciousness referred to the Tehran Children Medical Center. The patient had gradually loss of consciousness responding to painful stimuli and fever has been significant. He was treated with vancomycin and cefotaxime and acyclovir. After three days, the patient experienced partial recovery and lumbar puncture was done. PCR was done on cerebrospinal fluid which was positive for herpes virus type 1. During treatment the patient was suffered from scaling in the end of the fingers. Kawasaki disease was diagnosed and treated by measuring the levels of troponin, and echocardiography.

CONCLUSION: Due to the unusual symptoms of the kawasaki disease, taking into account the differential diagnosis of patients with febrile and non-febrile patients, even in the convalescent phase of infectious diseases is essential for early diagnosis and treatment.

KEY WORDS: *Kawasaki Disease, Herpes Simplex Virus, Vasculitis.*

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Introduction

Kawasaki disease is an acute febrile vasculitis of childhood which was described as a cutaneous and mucocutaneous lymph node syndrome or as Infantile Polyarthritits Nodosa in 1967 in Japan by doctor Kawasaki (1-3). The cause of the disease remains unknown but the clinical and epidemiological documents supports infectious source of disease (1,2,4,5). In 2016, one case of relationship between Kawasaki disease and meningococcal meningitis was reported (6). In addition, retro pharyngeal abscess with infectious origin and Kawasaki disease have also been reported (7,8). Other evidence suggests frequent source of infection afflicted with the disease in the stage of infancy due to its rare incidence of maternal antibodies in adults may be due to previous safety (1,2,9). The role of Infectious factors not to be fully ruled out yet, but the infectious agent and its presentation as Kawasaki disease has not been demonstrated (1,2,10,11).

The relation of this disease with viruses, such as Coxsackie virus, has been demonstrated (10). Atypical Kawasaki is detected as two or three clinical symptoms and laboratory evidence and patients are more susceptible to develop coronary artery disease (1,2,12). Therefore, echocardiography of children who have long suffered from an unexplained febrile illness with dimensional scaling is recommended (1,2,12,13). Because the delay in diagnosis and treatment can be at least partly responsible for the increased incidence of coronary artery aneurysms in children with incomplete Kawasaki disease and may lead to death of the patient (1,2,14), and unusual presentation of disease and no report of certain diseases associated with herpes simplex virus with Kawasaki disease and only by organ scaling in the patient, we decided to report this patient.

Case Report

6-year-old male patient who presented with fever and vomiting and loss of consciousness for about four days ago, was admitted to Children's Medical Center in Tehran. The patient alertness became gradually declined and experienced a tonic-clonic seizures once before admission. The patient had behavioral disorders and mental status changes for the screw drowsiness. In history growth and development was normal. Patient did not mention consumption of certain drugs except cefixime syrup and acetaminophen. There is no history

of trauma and head trauma. The patient is the third child of Family that other children do not have a particular disease. Once admitted in 3-years-old due to gastroenteritis and fever.

On arrival, there is a loss of consciousness and response to painful stimulation is given. There is no signs of meningeal irritation. Vital signs were as follows:

PR:110 RR:25 T:39 BP:110/80

Patients treated with phenytoin and was cephataxime and vancomycin. Water and electrolyte correction was performed. Lab test on admission were as follow:

**WBC:23000 Hb:10.9 Plt:161000 PMN:80%
LYMPH:16% EO:2% MON:2%
PT:14 PTT:30 INR:1.2 BS:95 BUN:30 Cr:0.7
AST:42 Alt:47 Alk:299 Na:138 K:3.8
CRP:34 ESR:9
UA: WBC:0-1 RBC:0-1 SG:1008**

In father of patient, there was a history of herpes labialis and patient had herpes simplex and herpes virus effects in the mouth. According to suspected lesions intravenous acyclovir was started and to rule out acute cerebral events, a CT scan was performed, which was normal. Patients had a partial recovery after three days and an increase in the level of consciousness that lumbar puncture was performed and PCR for herpes and enteroviruses have been submitted. The patient's EEG showed evidence of encephalitis. Fever after five days was discontinued, and the patient was relatively better.

The first PCR for patients was negative. According to high suspicious to herpes encephalitis, lumbar puncture was performed for patient and was sent for the analysis of herpes. In brain MRI, specific point was not visible. Antibiotic treatment was cut a week later and intravenous acyclovir was continued. In the third week of hospitalization, the patient's fingers were scaled and ESR series were increased in lab tests.

ESR:9.....25.....85

Last CBC of patient is as follows:

**WBC:10500 Hb:9.8 Plt:667000
CRP:34.....20.....15.....2.4**

Emergency echocardiography was performed for patients which was normal and cardiac troponin was checked. Increased troponin was observed and echocardiography was performed again that LCA artery aneurysm with the size of 4 mm was observed and was diagnosed with Kawasaki and treated with IVIG and methylprednisolone. The second PCR for the herpes simplex virus was positive. Therefore, patient was discharged with good outcome and dipyridamole and was followed 2 weeks after.

Discussion

Typical scaling of organs following Kawasaki disease and lack of Kawasaki disease report following herpes infection and lack of prolonged fever in the patient are important points of this report. Mentioned patient is classified as unusual cases or incomplete disease. The imperfect mainly occurs in infancy or above 5 years of age and has a higher risk of coronary artery involvement (1,2,15). Hence, mentioned patient according to age of six is classified as less common. Diagnosed is considered by awareness of clinical symptoms and the high doubt. In case of false detection, there is probability of sudden death due to myocardial infarction or rupture arterial aneurysm (13,16,17) timely detection, timely check of troponin in patients and physical examination were appropriate action that was performed. Attention to the typical symptoms of the diseases is important point in diagnosis. Meningococcal sepsis associated with

Kawasaki disease in a 10-month-old infant was reported that the difference in age of our patients is interesting, however, both are in an age of uncommon presentation of disease. The observed difference in presentation may be due to viral or bacterial cause of any disease that requires more reviews (18,19).

In 2012, a case of Kawasaki disease associated with *Mycoplasma pneumonia* and its infection was described (20), association of Kawasaki disease with RMSF in the United States was reported in a 4-year-old girl following the RMSF and a prolonged fever that Kawasaki disease is clinically appeared and was diagnosed clinically (21). Many researchers have tried to express the relationship between infections, including *Streptococcus* and Kawasaki (22).

The cases of Kawasaki has been reported following UTI, but most cases were infants and as atypical (23). Our Patient has been impressive due to age and pretend scaling without fever and the viral agent. CMV and herpes viruses are associated with arteriosclerosis in the coronary arteries in adults and acute infection with CMV was reported in a handful of Kawasaki disease that validates the association of HSV virus and Kawasaki disease, but need to more be investigated (24-27). Due to the increasing cases of Kawasaki disease and increased risk of infection, considering the unusual symptoms of the disease and considering disease as the differential diagnosis of febrile patients or non-febrile is necessary. Diagnosis and treatment of this disease can help prevent certain death and it reduces cardiac complications.

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