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Kawasaki Disease in a Four-Month-Old Infant with Unusual Clinical Presentations

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Abstract

This paper presents the clinical case of a four-month-old male infant diagnosed with Kawasaki Disease (KD), notable for unusual clinical presentations such as urinary tract infection and brachial artery involvement, and briefly reviews the current medical literature on this subject.

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Keywords: Mucocutaneous lymph node syndrome; Rare diseases; Coronary aneurysm.

Keypoints: What is known:

- Kawasaki Disease (KD) is rare disease which usually affects children under five and can lead to coronary artery aneurysms.
- KD's primary treatment involves intravenous immunoglobulin and acetylsalicylic acid (ASA).
- KD can mimic common pediatric conditions, potentially causing diagnostic delays.

What is added:

- KD can present with symptoms suggestive of less serious conditions like urinary tract infection.
- Brachial artery aneurysm was identified, an unusual finding for KD (typically seen in 2% of cases).
- Successful treatment outcome with a combination of therapies, including captopril and clopidogrel, in the presence of coronary aneurysms.

Introduction

Kawasaki Disease (KD), also known as Mucocutaneous Lymph Node Syndrome, is a rare pediatric vasculitis, usually affecting children under five years old. The etiology remains unknown; however, it is characterized by systemic inflammation of medium-sized arteries, most notably the coronary arteries, leading to coronary artery aneurysms in severe cases [1].

Case Report

The patient, a four-month-old male infant, was brought to the emergency department of a secondary hospital due to a short febrile illness. Apart from a clavicle fracture, the patient had no significant medical history. He was appropriately vaccinated and was on artificial formula feeding. He was initially discharged with a diagnosis of upper respiratory tract infection.

In the following two days, the family returned to the hospital due to the persistence of fever. A diagnosis of urinary tract infection was made based on urine sample obtained via catheterization, with a leukocyte count not exceeding 10,000 Units per

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field. Antibiotic therapy was initiated, but it was discontinued after a negative urine culture result. The fever subsided, yet the infant started to show symptoms of exanthema, lethargy, conjunctival hyperemia, and erythematous oral mucosa. The family decided to take him to a tertiary hospital on the fifth day due to the persistence of symptoms and the general condition's deterioration.

Blood tests were performed, revealing elevated levels of leukocytes, platelets, D-dimer, C-Reactive Protein (CRP), and Erythrocyte Sedimentation Rate (ESR) (values provided in the following (**Table 1**). The clinical picture and laboratory data led to a presumptive diagnosis of Kawasaki Disease, and the patient was referred to cardiology.

Table 1: Comprehensive blood panel.

Patient blood tests analytics	
10.7 g/dL	Anemia (adjusted for age)
18.5 cells/µL	Leukocytosis
801 platelets/µL	Thrombocytopenia
40 mg/L	Elevated CRP (C-Reactive Protein)
95 mm/hr	Elevated ESR (Erythrocyte Sedimentation Rate)

Further echocardiographic studies revealed the presence of three coronary aneurysms, which is a known complication of KD. Additionally, the patient appeared to experience pain upon mobilization and exhibited hypotonia of the upper limbs. An echo-Doppler was requested, revealing a fusiform dilatation of the right brachial artery, an unusual finding in KD.

With the confirmation of Kawasaki Disease, treatment was initiated with intravenous immunoglobulin (octagamoceta 10% - 2 g/kg) and corticosteroid therapy (methyl prednisolone 60 mg/kg in several fractions), along with Acetylsalicylic Acid (ASA) (50 mg/kg/day). The ASA dose was later reduced to an antiplatelet dose, and oral corticosteroids (dexamethas one 2 mg/kg/day) were added.

The infant was discharged on ASA, captopril, and clopidogrel. Follow-up echocardiographic examinations showed normalization of vascular alterations, indicating a favorable response to the treatment regimen.

Discussion

The described case illustrates an unusual presentation of Kawasaki Disease in an infant. The initial symptoms mimicked common pediatric conditions like upper respiratory tract and urinary tract infections, leading to delayed diagnosis [2]. This highlights the importance of considering KD in the differential diagnosis of persistent fever in infants.

The presence of a brachial artery aneurysm is another unusual feature in this case. KD predominantly affects coronary arteries, with peripheral artery involvement being rare [3]. This emphasizes the importance of performing a thorough vascular examination in suspected KD patients.

Treatment of KD primarily involves intravenous immunoglobulin and Acetylsalicylic Acid (ASA), as was utilized in this case. This regimen is the standard first-line treatment and is effective in reducing the risk of coronary artery aneurysms[4]. The introduction of methylprednisolone as an adjunct to immunoglobulin treatment has been found to improve coronary artery outcomes[5]. This supports the successful outcome in our patient who received the same treatment.

A crucial aspect of our case was the initial misdiagnosis leading to a delay in starting the appropriate therapy. KD can mimic many common pediatric conditions, leading to a delay in diagnosis [2]. This case underscores the importance of considering KD in the differential diagnosis of persistent fever in infants, even when symptoms might suggest a less serious condition.

KD's unusual feature in our case was the involvement of the brachial artery. While KD is known for affecting the coronary arteries, peripheral artery involvement is relatively rare, reported in only about 2% of patients [3]. Recognizing such atypical presentations is critical for timely diagnosis and management.

The case also demonstrated an effective therapeutic response to a combination of immunoglobulin, corticosteroids, ASA, and antiplatelet therapy. The use of captopril and clopidogrel, which are not typically part of the standard treatment, was likely initiated due to the presence of coronary aneurysms [6]. This approach appears to have been effective, given the normalization of the patient's vascular alterations in follow-up echocardiographic examinations.

Conclusion

This case report highlights the importance of a high index of suspicion for Kawasaki Disease in infants presenting with persistent fever, even in the presence of misleading symptoms such as urinary tract infection. The case also underscores the significance of a thorough vascular examination in suspected KD cases, given the potential for atypical involvement of peripheral arteries. Finally, it demonstrates a successful outcome following a combination of immunoglobulin, corticosteroids, ASA, and anti platelet therapy.

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