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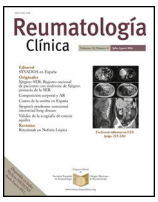

Case report

Acute Kidney Injury and Cholestasis Associated With Kawasaki Disease in a 9-year-old: Case Report☆

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ABSTRACT

Kawasaki disease (KD) is a systemic vasculitis frequent in children younger than 5 years of age. It involves coronary arteries and other medium-sized vessels. There also exists evidence of inflammatory and proliferative changes affecting the biliary tract and lymphocyte infiltration of the renal interstitial. We describe the case of a 9-year-old girl who developed high-grade fever, bilateral non-purulent conjunctivitis, "strawberry" tongue, desquamation of the fingers and toes, cholestatic syndrome, oedema and elevated serum creatinine. KD is a diagnostic challenge for the paediatrician. In every patient with high-grade fever, cholestasis and acute kidney injury, KD should be included in the differential diagnosis, even though more research is necessary to evaluate this atypical association.

Daño renal agudo y colestasis asociados a la enfermedad de Kawasaki en una paciente de 9 años; reporte de caso

Palabras clave:
Daño renal agudo
Colestasis
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RESUMEN

La enfermedad de Kawasaki (EK) es una vasculitis sistémica frecuente en niños menores de 5 años, involucra arterias coronarias y otros vasos de mediano calibre, además existe evidencia de lesión inflamatoria y proliferativa de la vía biliar e infiltración linfocitaria en el intersticio renal. Se presenta el caso de una niña de 9 años con fiebre de alto grado; desarrollando inyección conjuntival bilateral no purulenta, lengua «aframbuesada», eritema y descamación en dedos de manos y pies, síndrome colestásico, así como edema e incremento de azoados. La EK continúa siendo un reto diagnóstico para el pediatra. En todo paciente con síndrome febril, colestasis y daño renal agudo la EK debe considerarse como diagnóstico diferencial, aunque es necesario realizar más estudios para evaluar esta atípica asociación.

Introduction

Kawasaki's disease (KD)is a frequent systemic vasculitis in children under the age of 5 years old. It affects medium-calibre vessels, and most specifically the coronary arteries.[1,2] Some factors such as age, especially those younger than 6 months and older than 9 years old, male sex and Hispanic ethnicity have been associated with more severe presentations of the disease.[2] The inflammatory lesion also involves arteries at an abdominal level, and there is evidence for an inflammatory and proliferative lesion of the bile duct, so that liver dysfunction and cholestasis have also been described.[3] There is lymphocytic infiltration in hte renal interstitium, and high levels of nitrates have been described, although renal involvement is usually silent.[4]

The case of a 9 year-old girl is presented. She developed acute kidney injury and cholestasis associated with KD.

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Table 1
Laboratory Tests.

	TB (mg/dl)	DB (mg/dl)	Crea (mg/dl)	Urea (mg/dl)	AST (U/l)	ALT (U/l)
Admission	7.1	5.4	1.4	126	80	60
24 h	10.4	8.2	3.0	194	64	49
48 h	4.5	2.2	1.1	169.1	77	49
Discharge	1.8	.3	.4	51.4	41	55

ALT: alanine aminotransferase; AST: aspartate aminotransferase; DB: direct bilirubin; TB: total bilirubin; Crea: serum creatinin.

Clinical Observation

A 9 year-old girl was admitted to the emergency department due to 5 days of evolution with high fever and poor general health, developing ictericia 24 h prior to admission. She was feverish, with generalised ictericia, bilateral non-purulent conjunctival injection, left cervical adenomegalia, a "raspberry" tongue, erythema and flaking of the skin on the hands and feet. No hepatomegalia was detected and her neurological and cardiorespiratory state was without alterations, her heart rate was 85 bpm and arterial pressure was 90/60 mmHg. Laboratory data showed 27,330 cells/μl leukocytes, with 26,000 cells/μl neutrophyls and 400 cells/μl lyphocytes, 364,000 cells/μl platelets, erythrocyte sedimentation rate 57 mm/h and reactive C protein 65 mg/l; creatinin 1.4 mg/dl, urea 126 mg/dl, aspartate-aminotransferase 80 U/l, alanine-aminotransferase 60 U/l, total bilirubin 7.1 mg/dl (direct 5.4 mg/dl) and general urine examination with leukocyturia.

The diagnosis of KD was made on the basis of American Heart Association criteria. In the first 24 h the patient had oliguria, oedema and increase nitrates (creatinin 3 mg/dl, urea 194 mg/dl). An echocardiogram showed aneurism in the right coronary artery of 5.8 mm and 8.3 mm in the left coronary artery, as well as signs of ischaemia in the side wall of the myocardium. Intravenous immunoglobuli commenced at 2 g/kg/dose with pulses of methylprednisolone in 3 doses. She progressed favourably, and after 2 days of treatment had 1.1 mg/dl creatinin, total bilirubin 4.5 mg/dl (direct 2.2 mg/dl) and reactive C protein at 65 mg/l. She was discharged sympotm-free after 7 days of hospitalisation, without alterations in analytical parameters (Table 1).

Discussion

KD is still a challenge for paediatricians, as only clinical criteria are available, without a specific diagnostic test.[5,6] The atypical and incomplete forms of the disease are present in approximately 20% of patients, and they are associated with a higher risk of developing coronary aneurisms and a poorer prognosis.[7] Gastrointestinal symptoms do not form a part of the classical criteria, and cholestasis and a rise in transaminases are occasionally reported.[8] The most common urinary sign is sterile piuria, although acute kidney damage has been reported with pre-renal as well as intrinsic aetiology.[9] In the case of our patient we believe the cause to have been interstitial nephritis, although we have no renal biopsy.

To date no cases have been reported in hte literature that associate cholestasis and acute kidney injury in a single patient with KD. Nevertheless, there is a significant relationship between acute kidney injury, age and transaminase levels.[10]

Conclusions

KD should be considered in the differential diagnosis of all patients with a syndrome of fever, cholestasis and acute kidney injury. More studies are necessary to discover the clinical implications of this association, such as the lack of response to immunoglobulin and a poorer prognosis.

Conflict of Interests

The authors have no conflict of interests to declare.

Ethical Disclosures

None.

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