6. Aalto-Korte K, Lauerma A, Alanko K. Occupational allergic contact dermatitis from lichens in present-day Finland. Contact Dermat. 2005;52:36–8.
7. Thune PO, Solberg YJ. Photosensitivity and allergy to aromatic lichen acids. Compositae oleoresins and other plant substances. Contact Dermat. 1980;6:81–7.
8. Gonçalo S. Contact sensitivity to lichens and compositae in Frullania dermatitis. Contact Dermat. 1987;16:84–6.
9. Domingues J, Gonçalo M. Dermatites de contacto aerotransportadas. Revisão de 5 anos (1986–1990). Med Cut I L A. 1992;XXII/94:251–6.

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VI nerve palsy after intravenous immunoglobulin in Kawasaki disease

To the Editor,

Kawasaki disease (KD) is an acute panvasculitis with special affinity for the coronary arteries. Diagnosis requires unexplained fever and at least four of five additional features.[1] These features include: bilateral conjunctival injection; red, dry, fissured lips, injected oropharynx or cervical lymphadenopathy; and oedema, erythema and desquamation of the digits and of palmar and plantar surfaces of hands and feet.[1] The most common ophthalmologic manifestations of KD are bilateral conjunctival injection and non-granulomatous iridocyclitis.[2,3] Sixth nerve palsy is a recognized yet uncommon manifestation reported in KD. Interestingly, all the cases to date have been associated after IVIG infusion. We report a case of a patient with KD who presented VI nerve palsy after IVIG infusion and review the literature.

Case report

A six-year-old Mexican boy was admitted to the emergency department with a five-day history of fever and a maculopapular rash. The rash began on his back and thighs and later spread to cover the entire body. He also presented abdominal pain, vomiting and diarrhoea. On physical examination the patient presented bilateral non-exudative conjunctivitis, dry red lips, injected pharynx, and confluent, erythematous, papular rashes over the face, trunk, and limbs. There were no hepatosplenomegaly, lymphadenopathy or extremity changes. Neurologic examination was unremarkable.

Laboratory tests showed Hb 11 g/dl, white blood cell count was 3700 mm^{-3}, 90% segmented neutrophils, 6% lymphocytes, and 148,000 mm^{-3} platelets. Erythrocyte sedimentation rate was 18 mm/h with a normal urinalysis.

He was hospitalized with a diagnosis of incomplete Kawasaki disease (fever and three of the five criteria: conjunctivitis, change in mucous membranes and rash) and an echocardiography was performed, which was reported normal. The patient was treated with intravenous immunoglobulin (2 g/kg) and aspirin. Fever subsided one day after the initiation of immunoglobulin. On day 6 the patient started with bilateral skin peeling of his hands and feet. At this point, the patient fulfilled the AHA 2004 classic clinical criteria. The ophthalmologic evaluation showed normal pupillary light reactions, with visual acuities in the right eye 20/50 and in the left eye 20/50, with tortuosity of the retinal vessels consistent with bilateral ocular vasculitis.

On day 5 the patient complained of double vision. Neurological examination revealed a right sixth cranial nerve palsy. Cerebral magnetic resonance was performed which did not show abnormal findings. A fluorescein angiography was performed which showed mild leakage suggestive of vasculitis. The patient's condition improved but cranial nerve palsy persisted. Oral corticosteroids were added (oral prednisone 0.5 mg/kg/day) with improvement of the ocular symptomatology and the patient was discharged on the 18th day.

Discussion

Kawasaki disease is one of the most common types of pediatric vasculitis. Neurological manifestations of KD are common and diverse with irritability, lethargy, and aseptic meningitis being the most frequent.[1] Acute and subacute encephalopathy, seizures, cerebral infarction, ataxia, myositis, and lower motor neuron facial nerve palsy have also been described.[1] Facial nerve palsy has been associated with increased mortality.[4] The most common ophthalmologic manifestations of KD are bilateral conjunctival injection and non-granulomatous iridocyclitis. Ocular evaluation with slit-lamp examination has been suggested as a part of the work-up in doubtful cases. Other ocular manifestations that have been described include punctate keratitis, vitreous opacities, optic disc swelling, retinal ischemia, vascular occlusion, orbital myositis, and periorbital vasculitis.[5–9]

Two previous cases of KD and VI nerve palsy have been described.[10,11] Guven et al. report a 12-year-old female with KD and sixth-nerve palsy who was treated with steroids and aspirin.[10] Wurzburger et al. reported a seven-year-old female who presented with fever, rash, neck pain, conjunctival injection and dry red lips.[11] She presented with vomiting, headache and Brudzinski's sign suggestive of aseptic meningitis. Slit examination was normal. Wurzburger hypothesized that the findings of the sixth cranial nerve palsy could be secondary to a vasculopathic phenomenon.[11] Although in our case ocular vasculitis was documented, the development of

VI nerve palsy cannot be explained by this finding alone. It is important to note that all the cases reported so far of KD complicated with VI nerve palsy have presented after IVIG infusion. Of note is one previous case of abducens nerve palsy following IVIG administration reported in a patient without KD. Wright et al. describe a 42-year-old female who received IVIG after renal transplantation for humoral rejection. She developed aseptic meningitis and VI nerve palsy.[12] The authors hypothesize that perineuritis due to adjacent meningeal inflammatory reaction was the mechanism behind the abducens nerve palsy.[12] Abducens nerve palsy has also been reported as a result of pachymeningitis in Wegener granulomatosis.[13] We cannot rule out that this complication could be related to the IVIG infusion. Oral corticosteroids were used by Guven and us with subsequent tapering without complications. The cases reported so far have recovered without sequelae. It is essential for clinicians to be aware of the full spectrum of ocular involvement when assessing patients with KD and consider VI nerve palsy as a possible complication of IVIG.

Ethical disclosures

Patients' data protection. The authors declare that they have followed the protocols of their work centre on the publication of patient data and that all the patients included in the study have received sufficient information and have given their informed consent in writing to participate in that study.

Right to privacy and informed consent. The authors declare that no patient data appear in this article.

Protection of human subjects and animals in research. The authors declare that no experiments were performed on humans or animals for this investigation.

References

1. Newburger JW, Takahashi M, Gerber MA, Gewitz MH, Tani LY, Burns JC, et al. Diagnosis, treatment, and long-term management of Kawasaki disease: a statement for health professionals from the Committee on Rheumatic fever, Endocarditis and Kawasaki disease, Council on Cardiovascular Disease in the Young, American Heart Association. Circulation. 2004;110:2742–71.
2. Ohno S, Miyajima T, Higuchi M, Yoshida A, Matsuda H, Saheki Y, et al. Ocular manifestations of Kawasaki disease. Am J Ophthalmol. 1982;93:713–7.
3. Blatt AN, Vogler L, Tychsen L. Incomplete presentations in a series of 37 children with Kawasaki disease: the role of the pediatric ophtalmologist. J Pediatr Ophthalmol Strabismus. 1996;33:114–9.
4. Wright H, Waddington C, Geddes J, Newburger JW, Burgner D. Facial nerve palsy complicating Kawasaki disease. Pediatrics. 2008;122:e783.
5. Farvardin M, Kashef S, Aleyasin S, Hesameddin Nabavizadeh S, Sajjadi M, Safari M. Sudden unilateral blindness in a girl with Kawasaki disease. J Pediatr Ophthalmol Strabismus. 2007;44:303–4.
6. Anand S, Yang YC. Optic disc changes in Kawasaki disease. J Pediatr Ophthalmol Strabismus. 2004;41:177–9.
7. Lin H, Burton EW, Felz MW. Orbital myositis due to Kawasaki's disease. Pediatr Radiol. 1999;29:634–6.
8. Kadayan A, Choi J, Headan MP. Disciform keratitis and optic disc swelling in Kawasaki disease: an unusual presentation. Eye. 2006;20:976–7.
9. Purvin V, Kawasaki A, Jacobson DM. Optic perineuritis: clinical and radiographic features. Arch Ophtalmol. 2001:1299–306.
10. Wurzburger BJ, Avner JR. Lateral rectus palsy in Kawasaki disease. Pediatr Infect Dis J. 1999;18:1029–31.
11. Guven B, Tavli V, Mese T, Yilmazer MM, Aydogan M. Isolated abducens palsy in adolescent girl with Kawasaki disease. Pediatr Int. 2010;52:334.
12. Wright SE, Shaikh ZHA, Castillo-Lugo JA, Tanriover B. Aseptic meningitis and abducens nerve palsy as a serious side effect of high dose intravenous immunoglobulin used in a patient with renal transplantation. Transpl Infect Dis. 2008;10:294–7.
13. Kamimura T, Shimazaki H, Morita M, Nakano I, Okazaki H, Minota S. Limited Wegener's granulomatosis manifested by abducens nerve palsy resulting from pachymeningitis. J Clin Rheumatol. 2006;12:259–60.

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Tau protein levels in children do not increase during severe asthma attack-induced hypoxic conditions

To the Editor,

Children who experience bronchial asthma attacks also experience hypoxic conditions, especially after severe attacks or respiratory failure. Hypoxic conditions during severe asthma attacks may induce neural damage such as axonal damage and neurodegeneration. However, to our knowledge, no studies have been published in this regard. The tau protein plays an important role in the assembly of tubulin monomers into microtubules to form the neuronal microtubule network, maintain microtubule structure and stability, and establish links between microtubules and other cytoskeletal filaments.[1] The tau protein is mainly produced in the central nervous system (CNS). Brain injuries introduce the tau protein into the cerebrospinal fluid (CSF) and blood;