

Eur J Pediatr (2006) 165: 140
DOI 10.1007/s00431-005-0026-7

SHORT REPORT

Claudia Colomba · Laura Saporito ·
Salvatore Giordano · Laura Infurnari ·
Patrizia Ajovalasit · Lucina Titone

Visceral leishmaniasis in a patient with Down syndrome

Received: 20 June 2005 / Accepted: 20 September 2005 / Published online: 22 November 2005
© Springer-Verlag 2005

Visceral leishmaniasis (VL) due to *Leishmania infantum* is a vector-borne zoonotic disease endemic in Sicily. We report on a case of VL that occurred in a child with a cardiopathic condition and Down syndrome.

In January 2005 a 6-month-old child with Down syndrome underwent a surgical intervention for congenital cardiopathy. Two months later the child returned to the paediatric cardiosurgery department with a 5-day history of fever. At admission, the patient was febrile, pale, with rare petechial lesions. A greatly enlarged and hard spleen was observed. Laboratory examination revealed pancytopenia and high gammaglobulin value. An immuno-fluorescence antibody test (IFAT) for *Leishmania* spp. detected the presence of anti-*Leishmania* antibodies. Bone marrow microscopy and polymerase chain reaction (PCR) revealed the presence of *Leishmania* parasites. Treatment with intravenous liposomal amphotericin B at a dose of 3 mg/kg per day was administered for 10 consecutive days. Deferescence was obtained after 3 days of treatment.

At the end of therapy splenomegaly and hepatomegaly were reduced, haematological values were improved and anti-*Leishmania* antibodies (by IFAT) were undetectable.

To our knowledge this is the first reported case of VL in a patient with chromosome 21 trisomy. Down syndrome is associated with different immune dysfunctions, which have been correlated to a general predisposition to infection [2,

4, 6]. Moreover, our patient was convalescent from major surgery, and this might have lead to further immuno-deficiency. In spite of these aggravating factors the patient showed a typical clinical presentation and recovered in a way that any child with immuno-competence would normally recover. Undoubtedly, early diagnosis had an important role in the good outcome of the disease in our patient. The proven efficacy of liposomal amphotericin B in immunodeficient subjects [3, 5] and the lack of cardiac side effects, already reported in a patient with Down syndrome treated with meglumine antimoniate [1], are the most important advantages of this therapy, especially in a patient with a cardiopathic condition. In conclusion, we stress the need for the paediatrician to consider VL in Down syndrome children living in endemic areas so as to avoid misdiagnosis (immunological or neoplastic diseases) and, consequently, the wrong treatment, such as steroid therapy, which would make worse the clinical course of leishmanial infection.

References

1. Ferrel C, Atzori L, Zucca M, Pistis P, Aste N (2004) Leishmaniasis of the lip in a patient with Down's syndrome. *J Eur Acad Dermatol Venereol* 18:599–602
2. Loh RK, Harth SC, Thong YH, Ferrante A (1990) Immunoglobulin G subclass deficiency and predisposition to infection in Down's syndrome. *Pediatr Infect Dis J* 9:547–551
3. Montana M, Chochoi N, Monges P, Ravaux I, Faraut F, Gensollen S, Bongrand MC, Timon-David P, Gallais H (2004) Liposomal amphotericin B in secondary prophylaxis of visceral leishmaniasis in HIV-infected patients: report of five clinical cases. *Pathol Biol (Paris)* 52:66–75
4. Tanaka S, Teraguchi M, Hasui M, Taniuchi S, Ikemoto Y, Kobayashi Y (2004) Idiopathic CD4+ T-lymphocytopenia in a boy with Down syndrome. Report of a patient and a review of the literature. *Eur J Pediatr* 163:122–123
5. Torre-Cisneros J, Villanueva JL, Kindelan JM, Jurado R, Sanchez-Guijo P (1993) Successful treatment of antimony-resistant visceral leishmaniasis with liposomal amphotericin B in patients infected with human immunodeficiency virus. *Clin Infect Dis* 17:625–627
6. Ugazio AG (1981) Down's syndrome: problems of immuno-deficiency. *Hum Genet Suppl* 2:33–39

C. Colomba (✉) · L. Saporito · S. Giordano · L. Infurnari ·
L. Titone

Istituto di Patologia Infettiva e Virologia,
Università di Palermo,
Piazza Porta Montalto,
8-90134 Palermo, Italy
e-mail: claudia.colomba@libero.it
Tel.: +39-091-6666071
Fax: +39-091-6514634

P. Ajovalasit
U.O. Cardiochirurgia Pediatrica, ARNAS Civico,
Palermo, Italy