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Case report

Loeffler's syndrome: unusual symptoms and signs of ascariasis: a case report

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Abstract

Ascariasis can be found in temperate and tropical areas but is more prevalent in most of the inter tropical zone due to local socio-economic conditions. Loeffler's syndrome, also known as eosinophilic pulmonary syndrome is due to the trans-alveolar migration of ascaris larvae about 2 weeks after initial oral contamination. In this article, the case of a 10-year old child referred by his pediatrician for isolated eosinophilia, who was finally diagnosed with to have Loeffler's syndrome is presented and discussed.

Keywords: Loeffler's syndrome; ascariasis

CASE REPORT

L. H. is a 10-year old child referred by his pediatrician for isolated eosinophilia. He came back to France from Gabon 2 weeks earlier with his parents. His past medical history reveals 1) chirurgically, an appendectomy at age 6 and 2) medically, childhood viral diseases. His family history includes a type II diabetes in his maternal grand-father. In the history of the disease, the patient had a chest X-Ray a few days before this consultation to join a sport club. It showed a mild infiltration of the right lung lower lobe. Clinically, L. H. was asymptomatic and his physical exam normal. The biological check-up confirms the eosinophilia (0.55 of 15×10^9/L). In the parasitological screening, the larval ascariasis serology was positive (using electrosyneresis). His parasitological stool exam (PSE) only evidences eggs of *Trichuris trichiura*. The diagnoses of ascariasis in its larval stage and trichiuriasis were established. A second PSE was performed 45 days later and showed some eggs of *Ascaris lumbricoides*. Another chest-X-Ray and a CBC performed at that time came back within normal limits. A treatment by flubendazole was prescribed: 100mg tab twice a day for 3 days.

DISCUSSION

Roundworm ascariasis can be found in temperate and tropical areas but is more prevalent in most of the inter tropical zone due to local socio-economic conditions. Loeffler's syndrome, also known as eosinophilic pulmonary syndrome[1] is due to the trans-alveolar migration of ascaris larvae about 2 weeks after initial oral contamination. Clinically, it is often asymptomatic. Rarely, the following symptoms can be observed: Low grade fever, dry or productive cough seldom hemoptoic and allergic reactions (urticaria, demographism, for example). The chest X-Ray shows multiple types of infiltration: Vague, mottled, nodular or miliary opacities. All of these are always transient [2].

The minimum incubation period before positivation of the PSE is 60 days. The eosinophila is always high in Loeffler's syndrome, which suggests an hel-

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minthic infestation. Other more tropical nematodes (ancylostomiasis, strongyloidiasis) have a cycle similar to ascariasis. However, many arguments can point to the diagnosis of ascariasis: 1) The geographical origin of contamination of ascariasis when someone has never left a temperate climate environment, and 2) The serology, performed with a *Toxocara canis* antigen, cross-reacts with toxocarosis (visceral larva migrans). To rule out the latter, 45 days after the Loeffler´s syndrome the eosinophilia returns to normal following the Lavier´s curve and the PSE exhibits eggs of *A. lumbricoides*. In toxocarosis, the eosinophilia remains high and the PSE stays negative. After day 60, the PSE result also eliminates other intestinal nematodoses [3].

Because of this patient stays in a tropical country, another differential diagnosis is the eosinophilic pulmonary syndrome caused by filariasis. It is ruled out by the absence of prominent and longer lasting pulmonary alterations coupled with a highly positive filariasis serology[4]. The intensity of the Loeffler´s syndrome does not predict the severity of symptoms in the adult phase of ascariasis (if any) such as digestive disturbances, abdominal pain, nausea, vomiting and weight loss[5]. Besides individual allergic reactions, radiological signs are probably linked to the number of larvae crossing the capillary alveolar wall, which can anticipate the final worm load[6]. If it is high, complications of ascariasis may appear such as intestinal obstruction by a pack of adult worms, volvulus, invagination or strangulation, for example. A heavy infestation also makes erratic migrations of an adult worm more likely. It can happen in the common bile duct, cystic canal, ampulla of Vater, Wirsung canal and appendix causing inflammation and infection in the corresponding organs[7-11]. Exceptionally, a parasite can cross the abdominal wall and cause peritonitis or the blood brain barrier and induce meningitis[12].

The mode of contamination and geographical distribution of ascariasis and trichuriasis are similar. Ascariasis treatment includes many drugs such as mebendazole, flubendazole, albendazole, piperazine derivates, levamisole or pyrantel pamoate. None are active on *A. lumbricoides larvae*. Only flubendazole and albendazole are active on both *Ascaris lumbricoides* and *Trichuris trichiura*. They are well tolerated. For ascariasis, albendazole is given in a single dose of 400mg[13,14]. *At the collective level, prophy*laxis consists of mass treatment, fecal and alimentary hygiene, construction of latrines and water treatment. In poor rural areas, human feces should not be used as fertilizers[15]. At the individual level, one must make sure that salads, raw vegetables and hands are properly washed before meals.

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