A case of Toxocariasis diagnosed as bronchiolitis obliterans with organizing pneumonia

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• **Background.** Toxocariasis is a zoonosis caused by a nematode belonging to the order of Ascaridae commonly infecting dogs and cats. Humans are transport hosts, in whom the larvae do not develop to adult worms, but may migrate in various tissues and organs, and survive for several years, giving rise to several clinical symptoms. Also, clinical manifestations are different: *ocular larva migrans* involves only the eyes, while *visceral larva migrans* affect the major organs, resulting in fever, malaise, asthenia, urticaria, nodules, cough, wheeze, and other symptoms.

• **The case.** Here we report the case of a patient diagnosed with bronchiolitis obliterans with organizing pneumonia (BOOP). He referred to us when he was 57 years-old because of dermatitis at upper and lower limbs persisting from more than two years, but had had repeated hospitalizations because of cough and dyspnea with radiographic infiltrates. In the year 2000 a chest TC showed “bronchiolitis with evolution to organizing pneumonia and micronodules at right base” which suggested a diagnosis of BOOP. In 2002 there was a further hospitalization with the same diagnosis, with concomitant findings of dilatative cardio-miopathy by echocardiogram and of asthma-like obstructive respiratory deficit by spirometry. A treatment by fluticasone, salmeterol and oxytropium by inhalation, and enalapril, digoxin, and furosemide by oral assumption was prescribed.

• **The patient referred to us for allergy evaluation in February 2004.** Prick tests with inhalant and food extracts gave negative results, and a complete blood examination with parasitologic testing was suggested. During a check-up in April 2004, all results were negative including ELISA for *Toxocara canis*, but Western blotting (WB) was positive. Antiparasitic treatment with mebendazole 100 mg one tablet b.i.d. for three days, repeated for three courses at monthly intervals resulted in remission of skin symptoms and significant improvement of lung symptoms and spirometric values. In March 2005 a relapse of dermatitis, but not of lung symptoms, along with a persistent positive result of WB required further three cycles of mebendazole, which resulted in a complete remission. During the last check-up in October 2007 the patient was asymptomatic and WB was negative.

• **Conclusion:** The present case suggests to consider the possible responsibility of *Toxocara canis* in patients with complex lung symptoms and signs. This is already known for asthma from several publications, but should include also BOOP, thus far unreported.

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**Toxocara IgG - Enzyme Immunoassay**

Purified antigens from *Toxocara canis* are immobilized on a solid surface; antibodies, if present in patient’s serum, link to the antigens; such link is detected by a peroxidase-protein conjugate with high affinity to Fc fragment of human IgG. The subsequent addition of a chromogen substrate allows to assess, by photometric reading, the development of the reaction.

**Toxocara - Western Blotting**

IgG

Antibodies present in patient’s serum link to *Toxocara canis* antigens transferred by immunoblotting onto a nitrocellulose membrane. The bands identified on the strip must be evaluated according to their molecular weight.