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Human toxocariasis as a possible cause of eosinophilic arthritis

Sir. We have read with great interest the article by Tay [1], in which he reported 10 cases of eosinophilic arthritis possibly associated with parasitic diseases or caused by an unknown allergen. Treatment with diethylcarbamazine or levamisole in four corticosteroid-resistant patients resulted in complete resolution of the symptoms and disappearance of eosinophilia.

Here we report a similar case. A 39-yr-old man was well until 1 month before admission, when he presented with arthritis involving both ankle joints. There was no report of fever, cough or other constitutional symptoms. He reported contact with pet dogs at home. His clinical examination was remarkable only for swelling, erythema and an increase in the local temperature of both ankle joints. His laboratory work-up revealed eosinophilia of 2300/mm³. An ELISA for *Toxocara canis* using toxocara excretory–secretory antigen [2, 3] was highly positive. The patient was treated with a 15-day course of indomethacin, and showed incomplete resolution of his symptoms. When serology for toxocariasis was shown to be positive, he received a single dose of ivermectin (12 mg), which has recently been reported to be effective against human toxocariasis [4]. There has been no recurrence of the symptoms 3 months after his discharge.

In a murine model of toxocariasis we have observed the presence of joint swelling in mice infected with *T. canis*, but we did not perform histopathological analysis. In clinical studies, arthritis has been reported in patients with *T. canis* infection [5].

Toxocariasis may have been responsible for arthritis in some of the cases reported by Tay [1], as high serum IgE levels, oedema of the feet and skin rash were observed in his patients. Such findings have been described in association with *T. canis* infection [5, 6], and treatment with diethylcarbamazine, a drug commonly used for visceral larva migrans syndrome, resulted in the resolution of symptoms in steroid-resistant cases [1].

Only two of his seven patients had an increased serum IgE level, a finding that is not expected in toxocarial disease; eosinophilia, another manifestation of parasitic diseases, may be absent in up to 27% of patients with toxocariasis [7].

The basic mechanism of arthritis in visceral larva migrans syndrome is not well understood, but immunological alterations have been reported in the form of positivity for rheumatoid factor [6] and sterile pericardial effusion that resolved with specific treatment for *T. canis* infection [8].

Further work is needed to define this possible association, and especially the role of repeated infection with *T. canis*, as reinfestation would stimulate a stronger immune response in an already sensitized host. This hypothesis is being considered and pursued by our research group.

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Reply

I thank Drs Rayes and Lambertucci for their interest in and comment on my article on eosinophilic arthritis (EA) [1]. Their report on human toxocariasis as a possible cause of eosinophilic arthritis in one patient highlights the possible presence of occult parasitic infestation in those presenting with hyper eosinophilia. Toxocariasis is rare in our country (M. Singh, personal communication) and patients in our series did not have close contact with pets and had no clinical or laboratory findings suggestive of visceral larva migrans [2]. Other occult allergens or agents might have been responsible. Since the publication on EA, three more cases have been studied. They responded promptly to a cysteinyi leukotriene receptor antagonist (montelukast...
sodium) (two cases) and to a short course of prednisolone (one case), without antihelmintic drugs, suggesting different aetiologies of EA. Further studies are needed.

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