Febrile Exanthema Revealing Toxocariasis: A Case Report

Celine Bernardeschi[1], Gentiane Monsel[1], Camille Frances[2], François Bricaire[1], Luc Paris[3] and Eric Caumes[1]*
*[1]Tropical and Infectious Diseases and [3]Parasitology-Mycology Departments, Pitie-Salpetriere Hospital, 47-83 Boulevard de l'Hôpital, FR-75013 Paris, and [2]Department of Dermatology, Hôpital Tenon, Université Pierre et Marie Curie-Paris 6, Paris, France. *E-mail: eric.caumes@psl.aphp.fr*
Accepted September 27, 2010.

Toxocariasis is a helminthic disease due to the migration of either *Toxocara canis* or *T. cati* larvae through the human organism. The clinical manifestations of human toxocariasis are miscellaneous. Cutaneous manifestations typically include urticaria, chronic prurigo and eczematic rashes. We report here a case of human toxocariasis revealed by febrile exanthema. Diagnosis relied on serological testing. The patient healed spontaneously.

CASE STUDY

A 32-year-old Afro-Caribbean man, employed as a dustman, who had been living in France for more than 20 years, was admitted for febrile exanthema that had developed 8 days previously, together with fever, cough and myalgia. He did not report any contact with animals or medication, except for paracetamol after the eruption started. On admission he presented a widespread erythematous, maculo-papular and vesicular, eruption involving the abdomen (Fig. 1), thighs, and upper arms (Fig. 2) and palms. No mucosal involvement was noted and there was no sign of urticaria. The remainder of the physical examination was normal, with the exception of bilateral conjunctivitis. The results of biological examination (full blood cell count including eosinophils, electrolytogram, hepatic enzymes and immunological profile) were within normal limits at admission. Serologies for HIV, hepatitis B and C viruses, HTLV-1, measles, rubella and treponema were negative, as were blood PCR for cytomegalovirus, Epstein-Barr virus, enterovirus and HIV. Histopathological examination of a skin biopsy showed vesicular spongiosis compatible with an eczematous lesion, although no topical drug was given.

The patient returned spontaneously to apyrexia within 5 days after admission, and the cough and myalgia also disappeared. The dermatological presentation changed from the initial vesicular and macular rash into papular plaques and finally disappeared within 5 days with mild desquamation. While the rash was disappearing the patient developed multiple arthralgias without arthritis. In the same time, blood eosinophilia increased up to 1500/mm^3 8 days after admission. An extensive evaluation for parasitic infection, including repeated stool tests, urinary analysis, and serologies for helminthic infections, was negative, except for an enzyme-linked immunoassay (ELISA) that was positive for excretory-secretory antigens of *Toxocara* (TES-ELISA). This finding was then confirmed by Western blot. Since the patient was making a spontaneous recovery, no anti-parasitic treatment was given. The arthralgias disappeared within 15 days. The eosinophilic count returned within normal limits by 10 days.

DISCUSSION

This observation illustrates the broad spectrum of the cutaneous manifestations of toxocariasis, showing that the disease may also cause febrile exanthema.

Toxocariasis is a widespread zoonotic parasite. Humans become infected by ingesting either embryonated

Fig. 1. Erythematous and vesicular abdominal rash during toxocariasis.

Fig. 2. Erythematous and vesicular rash of the left side of the trunk and left upper arm during toxocariasis.

eggs from soil, dirty hands or raw vegetables, or larvae from undercooked giblets, meats or offal. The ova hatch in the intestine, releasing the second-stage larvae, which migrate throughout the soft tissues of the body for long periods of time.

The presence of the larvae of the genus *Toxocara* in human tissues causes the manifestations of human toxocariasis, including the syndrome of visceral larva migrans, ocular toxocariasis, covert toxocariasis, as well as signs of liver, lungs or central nervous system involvement (1). The most frequent clinical manifestations are asthenia (77%), abdominal pain (37%), cough (27%), conjunctivitis (20%), myalgia (20%), arthralgia (10%) and rhinitis (29%) (2).

Cutaneous manifestations can occur and may be the only sign of the disease. The cutaneous signs clearly linked to human toxocariasis in case-control studies are chronic prurigo, pruritus, and urticaria (3, 4). Other cutaneous manifestations reported in the literature include miscellaneous eczema, vasculitis, and hypodermitis, Wells syndrome and eosinophilic folliculitis, together with resistance to anti-histamine drugs (5–9). According to this case, febrile exanthema can be added to the cutaneous manifestations of toxocariasis. The presence of vesicles and the association with cough, conjunctivitis, eosinophilia and positive toxocariasis serology without any other aetiology led us to diagnose toxocariasis. Indeed laboratory diagnosis of toxocariasis relies on ELISA, whose results should be confirmed by Western blot, both methods using *T. canis* excretory-secretory antigens (10). Anti-*Toxocara* antibodies can persist for several years without pathological significance. Thus it is important to rule out other helminthic diseases, as we did here.

Patient care depends on clinical presentation. Spontaneous remissions occur among patients with common Toxocariasis, as in our case. Treatment is indicated only in focal forms and in case of persistency of the symptoms after one month, which was not our patient's case. When necessary, albendazole or diethylcarbamazine are used (11).

Toxocariasis must be added to the causes of febrile exanthema, especially when the cutaneous lesions are widespread vesicles.

The authors declare no conflict of interest.

REFERENCES

1. Magnaval JF, Galindo V, Glickman LT, Clanet M. Human Toxocara infection of the central nervous system and neurological disorders: a case-control study. Parasitology 1997; 115: 537–543.
2. Magnaval JF, Glickman LT, Domanski LM. La toxocarose, une zoonose helminthique majeure. Rev Med Vet 1994; 145: 611–627.
3. Humbert P, Niezborala M, Salembier R, Aubin F, Piarroux R, Buchet S, et al. Skin manifestations associated with toxocariasis: a case-control study. Dermatology 2000; 20: 230–234.
4. Wolfrom E, Chene G, Lejoly-Boisseau H, Beylot C, Geniaux M, Taieb A. Chronic urticaria and Toxocara canis infection: a case-control study. Ann Dermatol Venerol 1996; 123: 240–246.
5. Afifi Y, Aubun F, Puzenat E, Degouy A, Aubrion D, Hassam B, et al. Pruritus sine materia: a prospective study of 95 patients. Rev Med Interne 2004; 25: 490–493.
6. Wolfrom E, Chene G, Boisseau H, Beylot C, Geniaux M, Taieb A. Chronic urticaria and Toxocara canis. Lancet 1995; 345: 196.
7. Gavignet B, Pharm D, Piarroux R, Millon L, Humbert P. Cutaneous manifestations of toxocariasis. J Am Acad Dermatol 2008; 59: 1031–1042.
8. Brain R, Allan B. Encephalitis due to infection with toxocara canis. Lancet 1964; 1: 1355–1357.
9. Hurni MA, Gerbig AW, Braathen LR, Hunziker T. Toxocariasis and Well's syndrome: a causal relationship? Dermatology 1997; 195: 325–328.
10. Magnaval J-F, Fabre R, Maurieres P, Charlet JP, de Larrard B. Application of the western-blotting procedure for the immunodiagnosis of human toxocariasis. Parasitol Res 1991; 77: 697–702.
11. Magnaval JF, Glickman LT, Dorchies P, Morassin B. Highlights of human toxocariasis. Korean J Parasitol 2001; 39: 1–11.