Transient wrist and ankle edema secondary to loiasis

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ABSTRACT

We present the case of a 40-year-old French woman with transient wrist and ankle edema and erratic skin lesions. Complete blood count revealed high eosinophilia. Based on the epidemiology, symptomatology, and eosinophilia, the diagnosis of loiasis was established. Treatment with ivermectin eliminated all signs and symptoms.

Key words: Loiasis, ankle edema, skin lesions, eosinophilia, Cameroon

INTRODUCTION

We present the case of a 40-year-old French woman with transient wrist and ankle edema and erratic skin lesions. Complete blood count revealed high eosinophilia. Based on the epidemiology, symptomatology, and eosinophilia, the diagnosis of loiasis was established. Treatment with ivermectin eliminated all signs and symptoms.

CASE REPORT

The patient is a 40-year-old French woman. She is a housewife and mother of two children born vaginally. Her past surgical history is significant for an appendectomy at age 15. She presents to our outpatient clinic with transient wrist and ankle edema and erratic skin lesions. These symptoms began six months earlier in Edea, Cameroon where she lived for three years. The patient first noticed that the watch bracelet on her left wrist was becoming tight on some days without pain or itching. This feeling would last only a few hours. Over time, she observed the same phenomenon on her right wrist and on both ankles. She also noticed erratic skin lesions that she described as round red spots measuring 1-2cm in diameter appearing in any part of her body. The patient denies any pruritus and never saw any worms in her eyes. She notes neither abdominal pain nor abnormal bowel movements.
The physical exam reveals an overweight woman. Her blood pressure is within normal limits, and the remainder of the physical exam is insignificant. Laboratories reveal the following:

- Eosinophilia (16% of 6,200 WBCs)
- ESR: within normal limits
- Negative parasitological stool exam
- Weakly positive filariasis serology with low level of antibodies (1/200 in indirect immunofluorescence)
- Negative leucoconcentration
- Negative skin snips

Based on the epidemiology, symptomatology, and eosinophilia, the diagnosis of loiasis is established. Treatment with ivermectin is initiated at 200 micrograms/kg for a single intake. In three weeks, symptoms subside completely and eosinophilia disappears.

**DISCUSSION**

Loiasis is a filariasis caused by *Loa loa*, a parasite endemic to 11 countries in Western and Central Africa. Parasite transmission is by Chrysops fly bites during high temperatures of day time. The incubation period of *Loa loa* varies from a few weeks to several months.

Loiasis is almost always a benign disease. Its only arguable complications are linked to high parasitemia and include retina central artery thrombosis, Loeffler’s parietal endocarditis, and glomerulonephritis. The sub-conjunctival passage of an adult *Loa loa* is more frequent as parasitemia increases. Cutaneous lesions are manifestations of the sub-cutaneous passage of an adult worm. The edema described by our patient is known as “Calabar Edema.” This edema is elastic, transient, cold, painless, and migratory.

Loiasis does not provoke pruritus in most cases. Eosinophilia is frequently high in patients with loiasis, strongyloidiasis and onchocerciasis. A parasitological stool exam with Baermann concentration method is needed to rule out strongyloidiasis. Skin snips are required to rule out onchocerciasis where this disease can co-exist with loiasis.

The treatment of choice for loiasis is ivermectin via single intake (200 microgram/kg). In countries where only diethylcarbamazine (DEC) is available, the following precautions should be taken:

1. Slowly increase DEC doses by doubling them on a daily basis: 1/16 of a 100mg tablet twice-a-day on the first day, 1/8 of 100mg tablet twice-a-day on the second day, etc. until reaching two tablets twice-a-day (400mg/day). The 400mg/day dose must then be taken for three weeks consecutively and the first ten days of the next three months.

2. When leucoconcentration shows microfilaremia above 50/mm³, DEC treatment should be either (a) postponed until the count is under 50/mm³, or (b) given with corticoids post-admittance to a hospital for monitoring.

3. In extreme cases, exanguinotransfusion can filter and eliminate micofilariae.
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Eosinophilia and filarial antibodies surge post-ivermectin treatment. Levels peak around day 30 and are followed by a gradual return to normal limits in months7. Iatrogenic encephalitis is a major complication of loiasis secondary to ivermectin treatment. Ivermectin causes the lysis of microfilariae. Such encephalitis can lead to coma, neurological deficit, or death8-9. Prophylaxis is nearly impossible at the individual level10. At the collective level, however, eradicating Chrysops flies at their adult or larval phase may prove effective in breaking the parasitological cycle. Studies investigating mass treatment for loaisis show mixed results11.

REFERENCES