Short communication

Ocular loiasis in a patient with chronic hypereosinophilia

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Abstract

Case report: We present a case of ocular loiasis with a subconjunctival filaria, 5.5 cm long, and a severe microfilaremia, 1 microfilaria/ml, on a previously asymptomatic woman from Equatorial Guinea, with a past medical history of hypereosinophilia of unknown origin. Discussion: Ocular loiasis is an imported infestation with a very low rate in our country. Nevertheless, chronic infestation in immigrants coming from endemic areas of Africa may increase the rate of this disease in our country.

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Loiasis ocular en paciente con hipereosinofilia crónica

Resumen

Caso clínico: Se presenta un caso de loiasis ocular con una filaria subconjuntival de 5,5 cm de longitud y una microfilaremia grave de una microfilaria/ml, en una paciente previamente asintomática, procedente de Guinea Ecuatorial, con antecedente de hipereosinofilia crónica en estudio.

Discusión: La loiasis ocular es una infestación importada y poco frecuente en nuestro medio. No obstante, las parasitaciones crónicas procedentes de inmigrantes de zonas endémicas de África, pueden convertir la loiasis en una enfermedad emergente en nuestro medio.

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Introduction

Loa loa is a nematode from equatorial Africa that causes cutaneous filariasis. Approximately 3–13,000,000 people are affected all over the world. In endemic regions, the loiasis rate is of about 40%. Sporadic cases have been described outside Africa in African immigrants and travelers. In Spain, in the past 5 years no cases with ocular involvement have been reported.

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Females of the Chrysops tabanid flies sting during the day and absorb blood with microfilariae of infected subjects. The larvae become infecting agents within the tabanid, penetrate healthy people through the cutaneous sting and migrate to the subcutaneous tissue, where they become adult nematodes. Mating is performed in the skin and pregnant females release microfilariae which access peripheral blood.\textsuperscript{1,3}

This paper presents the case of a female with chronic hypereosinophilia of unknown cause prior to the appearance of subconjunctival loiasis.

**Clinic case**

A female, 22 years, from Equatorial Guinea and residing in Spain, visited the Emergency Service after experiencing a moving foreign body in the left eye. She referred feeling the same symptoms the day before although it disappeared spontaneously. In addition, she reported seeing “a worm” in said eye.

In what concerns general antecedents, she referred visiting Equatorial Guinea 4 months before, slight hypereosinophilia (1000/\(\mu\)l) with 3 years evolution under study and edema episodes in lower limbs together with subcutaneous moving foreign body during childhood.

Left eye anterior segment biomicroscopic exploration revealed a nasal subconjunctival worm-shaped parasite which described a reptilian movement away from the incoming light (Fig. 1). The rest of the ophthalmological examination was normal for both eyes.

Subsequently, the parasite was extracted after instilling 5% topical lidocaine, using tweezers through a conjunctival incision which did not require stitching. Tobramycin and dexamethasone eyedrops were prescribed, 4 times a day during 7 days.

The microbiological study identified the extracted subconjunctival parasite as a 5.5 cm long female *Loa loa* (Fig. 2). Bodily inspection enabled the identification of a subcutaneous filaria in the left thigh. Blood analysis revealed relative and absolute hypereosinophilia (23.9% eosinophiles and overall eosinophiles 2000/\(\mu\)l). Blood sample revealed one microfilaria per milliliter (Fig. 3).

The diagnosis of left conjunctival filariasis was done and, after consulting with the Internal Medicine Service, treatment with diethylcarbamazine was established at increasing dosage to reach 200 mg/8 h maintained during 2 weeks, methylprednisolone 16 mg/24 h during 6 days and hydroxyzine 25 mg/12 h.

**Fig. 1** – Photograph of the subconjunctival filaria.

**Fig. 2** – Photograph of the filaria (5.5 cm length) after being extracted from the subconjunctival space.

**Fig. 3** – Photograph of a microfilaria present in peripheral blood stained with: (A) giemsa 400\(\times\) and (B) hematoxylin–eosine 200\(\times\).
Discussion

Loiasis is infestation by Loa loa, a nematode belonging to the Spirurida order, superfamily Filarioidea. This group includes 3 species that can cause ocular involvement: Loa loa, Onchocerca volvulus and Mansonia perstans. Differential diagnosis can be made through clinic and epidemiology, although it requires microbiological confirmation.1

Onchocerca volvulus (onchocerciasis) can cause progressive sclerosing keratitis, chronic uveitis, chorioretinitis or optic neuropathy, without the adult subconjunctival larvae being observable. Mansonia perstans produces clinic which is very similar to that of Loa loa, while both can present the larvae in the subconjunctival space, anterior chamber, vitreous, choroids and even the retina.1,2,4 Retinopathy due to microfilariaemia caused by embolization of parasites toward choroidal and retinal vessels has been described.5 The case presented herein only exhibited subconjunctival involvement.

Natives who become infested in endemic regions usually do not exhibit symptoms, as in the present case, probably due to the development of tolerance to sustained parasitism despite exhibiting high levels of microfilariaemia. In these patients, the presence of subconjunctival larvae could be the only clinical expression, as in the present case. In contrast, infested visitors exhibit significant allergic symptomatology (itching and angioedema in limbs).2,4,5

Loa loa can remain up to 15 years in the host before migrating2,5 and must spend between 6 and 12 months before females can reproduce.5 It can be said that the patient of this case, who is from Equatorial Guinea, a country with a loiasis prevalence of 27.1%,5 was already infested before her last visit to the endemic region, confirmed with a higher rate of microfilaraemia (1 microfilaria per ml) and her history of moving nodules and edema in lower limbs during childhood.

The surgical extraction of filaria from the subconjunctival space must be combined with systemic treatment for eradicating microfilaraemia and possible loci of filariae such as that exhibited by the patient as well as for reducing infectivity. Concomitant use of oral corticoids diminishes the probability of allergic reaction and encephalopathy induced by the rapid mortality of microfilaria in the blood in cases with high microfilaraemia,3,5 as in the present case.

Finally, it should be pointed out that chronic parasitism in immigrant populations could make loiasis an emerging disease in our environment.5

Conflict of interests

No conflict of interests has been declared by the authors.

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