LOIASIS. APPROACH TO A FORM OF OCULAR PARASITOSIS

LOIASIS. APROXIMACIÓN A UNA FORMA DE PARASITOSIS OCULAR

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ABSTRACT

Case report: We present the case of a man from Cameroon who was referred because of the presence of a worm in both eyes, intermittently, over a five-year period. Slit-lamp examination revealed a creeping worm under the conjunctiva. Its surgical removal enabled microbiologic confirmation of a mature form of Loa-Loa.

Discussion: Loiasis is a parasitic disease endemic in Africa. Because of the increase of African emigration to Spain, the possibility of this condition must be considered in Spain (Arch Soc Esp Oftalmol 2007; 82: 55-58).

Key words: Loa-Loa, Loiasis, ocular parasitosis.

INTRODUCTION

Loiasis is a filariasis which, until now, has been limited to African countries. The increase of African emigration to other countries like Spain entails increased possibilities for the disease to grow beyond the regions in which it is endemic. This short communication presents a case of ocular loiasis with direct identification of the worm which allowed for confirmation of the disease.

CASE REPORT

A 24 year-old male from Cameroon, resident in Spain for 6 years, who visits his country once a year, attended the urgency service referring a feeling of a strange body in movement in his right eye. In addition, the patient referred the intermittent presence of a worm in both eyes since 5 years ago, sometimes visible under the palpebral skin. For this reason he attended the general urgency service on several occasions.
The anterior pole assessment revealed the existence of a mobile cord-shaped structure which moved under the upper bulbar conjunctiva of the patient’s right eye (fig. 1). In accordance with this finding, we proceeded to surgical extraction under local anesthesia of a whole 5 cm long worm (fig. 2).

The microbiological study confirmed the diagnostic of adult female Loa Loa worm.

**DISCUSSION**

Loiasis is a parasitic disease which is endemic in West and Central Africa (Nigeria, Cameroon, Congo). It is estimated that the number of individuals affected ranges between 3 and 13 million and that about 30% of long-term visitors become parasited by this organism.

Loa-Loa, also known as African eye worm, is a thin-bodied filarial nematode of the human species. Males reach 2-4 cm length and 0.3-0.4 mm width and females 5-7 cm by 0.5 mm.

The biological vital cycle requires the participation of a vector arthropod, the female of the Chrysops species (deer fly). The fly bites a contaminated human and ingests blood containing microfilariae. In the fly, the microfilariae progress through several stages to reach the infectious larvae stage after 10-12 days. It is transmitted to humans through the fly's bite. From the skin, the larvae migrate to the subcutaneous cellular tissue wherein, after 3 months, they reach the adult stage. The microfilariae couple under the skin, with females segregating microfilariae into the peripheral blood after 6-12 months of parasitation, during the daylight period with peak activity at noon (1).

After a 3-month incubation period typical expressions appear which are usually well tolerated, resulting from the subcutaneous migration of adult vermin and immunoallergic responses:

- **Pruritus:** in upper limbs, chest, back and face.
- **Subcutaneous reptation of adults:** a disagreeable itching appears while an undulating chord moves under the skin at a rate of 1 cm per minute. Subconjunctival migration is pathognomic for Loa-Loa and produces the feeling of a foreign body, conjunctival injection, crying and palpebral/conjunctival edema.
- **Calabar edema:** the most common albeit not pathognomic sign, as it can appear in other filariasis. This edema is characterized by its appearance in limbs (wrists, ankles) or painful face, pruritus or urticaria followed a few hours later by a migrating, transient angioedema lasting between 1 and 3 days.

Late complications may appear involving the kidneys (interstitial nephritis), heart (right cardiac insufficiency) or neurological expressions (meningoencephalitis), associated to hypersensitivity or to patients with high microfilaremia (2).

Due to the increased amount of people traveling through highly endemic areas and to the increased emigration of inhabitants of said areas to our country, we believe awareness about this pathology and being alert to patients at risk will prevent the mor-

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*Fig. 1: Subconjunctival Loa-Loa.*

*Fig. 2: Female Loa-Loa in adult form after subconjunctival extraction.*
bidity associated to ocular loiasis. Once recognized, this disease has a simple and efficient treatment.

The diagnostic is mainly clinical, suspecting patients who have been in the endemic area and exhibit symptoms suggesting loiasis (3) although in cases such as the present one, the subcutaneous or subconjunctival migration add certainty to the diagnostic with the identification of the worm after surgical removal. In most cases, the diagnostic is established by microscopic observation of microfilariae in vivo or after coloring hematic preparations, together with an assessment of the supplementary analytical finding (eosinophilia, PCR, quantified IgE).

The surgical removal of the complete worm after topical or subconjunctival anesthesia (sometimes paralyzing the worm with 4% cocaine) is simple and effective. The literature describes cases in which the worm was paralyzed with cryode for subsequent extraction (4).

The drug of choice is diethylcarbamazine (DEC), efficient against the adult and microfilaria forms of the worm, to be administered in several cycles. This treatment is not free of undesirable effects such as worsening of symptoms and kidney or encephalic complications, particularly in patients with high microfilaremia. In these cases, treatment must begin at low dosage to be progressively increased, and associating antihistaminic and corticoids the first 4 days (treatment pattern with DEC: day 1: 1 mg/kg in a single take; day 2: 2 mg/kg in two takes; day 3: 4 mg/kg in two takes; day 4-21: 6-9 mg/kg in 3 takes).

Other drugs which are utilized are ivermectine, with a single 150 ug/kg dosage for reducing the microfilaremia in cases where DEC may have adverse side effects, as well as mebendazole and albendazole (5).

As the human is the only known host for Loa-Loa and the infection is transmitted by the deer fly, it is advisable to carry out chemical prophylaxis for people who live for some time in endemic regions, utilizing DEC orally at a single weekly 300 mg take (or one dosage of 5 mg/kg/day for 3 days every month), together with personal protection means such as use of insecticides and repellants (dimethylphthalate), the use of long trousers and protection during sleep.

REFERENCES