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Albendazole-related *Loa Loa* encephalopathy

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A 47-year-old Cameroonian man without past medical history was incidentally diagnosed with loiasis (*Loa loa*; 2,700 microfilaria/mL of blood). He lived in France but traveled frequently to Cameroon. Four years later, ocular loiasis and Calabar edema associated with high microfilarial loads (35,000 microfilaria/mL of blood) appeared, prompting initiation of albendazole therapy (400 mg/day). The treatment was initiated at the hospital with no adverse events and the patient was discharged home three days later.

Six days after treatment initiation, the patient presented asthenia, anorexia and myalgia without fever. Blood analyses showed hyperleukocytosis (10,600/μL), hypereosinophilia (1,540μ/L), and increased CPK levels (358 IU/L). Fever and confusion without meningeal syndrome appeared eight days after treatment initiation and rapidly evolved to a coma (Glasgow coma scale four). Cerebrospinal fluid analysis showed five lymphocytes/μL and 60 microfilaria/mL (Fig. 1, arrow). Magnetic resonance imaging showed hyperintensity of the basal ganglia and the splenium of the corpus callosum on T2-weighted sequences. A diagnosis of treatment-related *Loa loa* encephalopathy induced by albendazole was made after ruling out other etiologies of coma. Albendazole was discontinued nine days after initiation and corticosteroids were administered. Microfilaremia decreased to 8,000-10,000 microfilaria/mL. The patient whose condition did not improve after albendazole discontinuation died after 36 days of coma.

Loiasis is an endemic vector-borne parasitic infection in sub-Saharan Africa [1]. The nematode *Loa loa* is transmitted by the tabanid vector from the genre *Chrysops*. Acute infection is usually asymptomatic. Chronic infection presents a wide range of manifestations, from pruritis, evanescent episodic angioedema (Calabar swelling) or subconjunctival migration of the worm (eyeworm), to severe renal, cardiac, and neurological complications [2,3]. Chronicity of the disease has been associated with excess mortality [4]. *Loa loa* encephalopathy is a life-threatening condition that may occur as a severe adverse event of filaricidal drugs or, rarely (if ever), spontaneously. Survivors may have neurological or psychiatric sequelae. Patients with high microfilaremia (> 30,000 microfilaria/mL) have a higher risk of developing serious adverse events after treatment. In case of high microfilaremia, current recommendations are to administer albendazole to slowly reduce the parasitic load before introducing a curative treatment such as ivermectin. However, albendazole may also induce worm migration from the blood to other compartments such as the central nervous system (CNS). The encephalopathy may result from the death of the microfilaria in the CNS and the ensuing inflammation [5]. The rapid release of antigens can lead to severe immune-mediated reactions.

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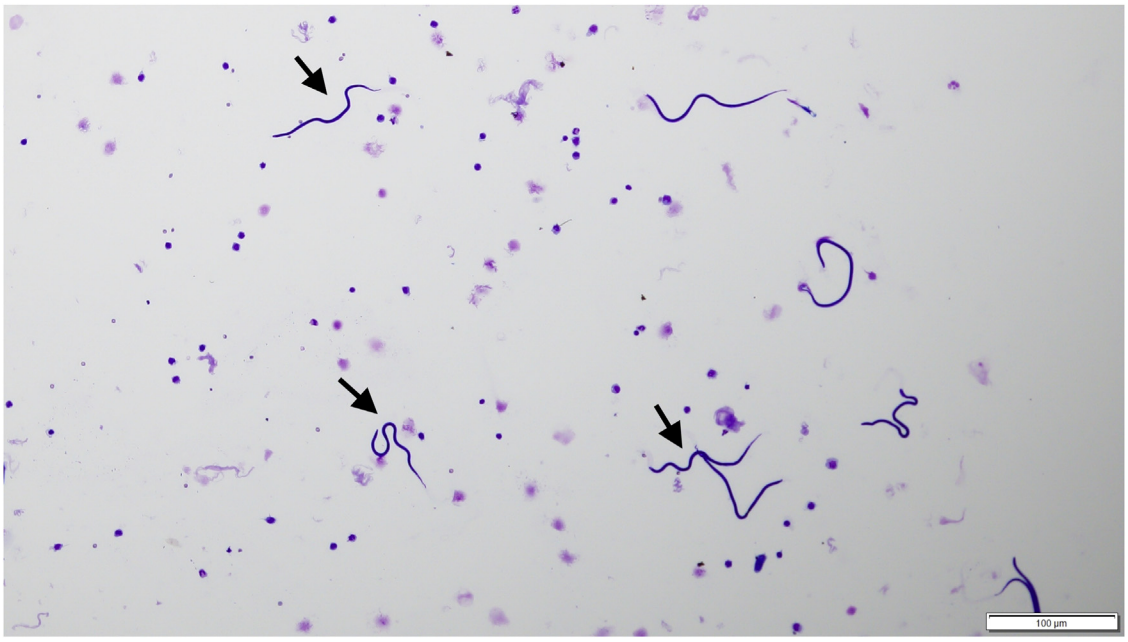

Fig. 1. Cerebrospinal fluid cytological examination showed microfilaria (arrow) in a background of lymphocytes, macrophages and neutrophils (May-Grünwald-Giemsa stain, X100 magnification).

CRediT authorship contribution statement

Alice Métais: Writing - original draft, Writing - review & editing, Visualization. **Sophie Michalak:** Writing - original draft, Writing - review & editing, Visualization. **Audrey Rousseau:** Writing - original draft, Writing - review & editing, Visualization, Supervision.

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