Impacted microfilaria in the lens capsule

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Filariae are threadworms belonging to the class Nematodes. Their immediate hosts are certain species of mosquitoes and flies, which are found mainly in Asia, Africa, and Central America. When transferred to man the parasites settle in one particular organ of the body, which varies according to the variety of filaria. There they produce larvae known as microfilaria which, in certain species, pass into the blood and may be readily detected in thick-drop preparations (Sandoz, 1952).

In equatorial Africa, it has been reported that there are half a million filarial patients who are blind (Choyce, 1964). With the exception of trachoma, filariasis is responsible for more loss of sight than any other infection (Ridley, 1963).

Living adult worms of *Wuchereria bancrofti* (*F. bancrofti*), which may be as much as one inch long, have been observed in the vitreous (Nayar and Pillai, 1932) and in the anterior chamber of the eye (Nayar and Pillai, 1932; Wright, 1934; Fernando, 1935; Tawara, 1936). In most cases there was associated iridocyclitis. In addition, *Microfilaria bancrofti*, which are only about 280 μ long, have been seen actively moving in the anterior chamber (Sun, 1958; Desprez, 1959; Subramanian and Ram Mohan, 1966). According to Choyce (1964), *Microfilaria volvulus* has been reported attached to the lens capsule by only two writers (Torroella, 1962; Gunders and Neumann, 1963). The last-named authors claimed that they detected living embryos within the lens capsule.

Case report

A male Indian doctor aged 39, attended the eye department as out-patient on May 27, 1969. His main complaints were blurred vision together with redness of the left eye of 3 day's duration.

He gave a history of two episodes of acute iritis in the left eye, the first in 1964 in India; the second in 1968 in the United Kingdom. The latter episode was complicated by raised intraocular tension, which was controlled with Diamox tablets, and topical Atropine and Betnesol.

He had enjoyed reasonably good health until the beginning of 1968, when he began to experience increasing lassitude and lethargy.

Physical examination

The patient was healthy looking, well nourished, but slightly obese. Lymph nodes were not palpable. The liver was palpable two fingers' breadth below the right costal margin. There was no subcutaneous nodule and no evidence of elephantiasis of the lower limbs or scrota. Radiology of the chest showed no abnormality. Urine and stool examinations were negative. Tests for liver function were within normal limits.

Total serum protein 7.9 g./100 ml.; serum albumin 4.7 g./100 ml.; serum globulin 3.2 g./100 ml.; serum bilirubin 1.0 mg./100 ml.; alkaline phosphatase 6.5 K.A. units; zinc sulphate turbidity 10.4 units; SGOT 30 units.

Ocular examination

The visual acuity was 6/6 and N.5 unaided in the right eye, and 6/6 partly and N.5 unaided in the left. The left eye showed slight circumcorneal ciliary injection. The pupil was transversely oval in shape. Slit-lamp microscopy revealed a slight aqueous flare in the anterior chamber. No cells

or keratic precipitates could be detected. There were a few patches of iridic pigment on the anterior lens capsule. Situated above one of the patches in the 7 o'clock position was a minute, whitish, thread-like organism with one end adherent to the anterior lens capsule and the free end showing active continuous, wriggling movements in the anterior chamber (Figs 1 and 2). Ophthalmoscopic examination revealed no abnormality. The ocular tension was normal.

FIG. 1 *Microfilaria* on anterior lens capsule (arrow) $\times 20$

FIG. 2 Higher-power view of same. $\times 85$

Laboratory investigations

The report of the full blood investigation was as follows:

Haemoglobin 17 g per cent.

White cells 6,100/c.mm; differential: neutrophils 3,360/c. mm (55 per cent.), lymphocytes 2,074/c.mm (34 per cent.), eosinophils 310/c.mm (5 per cent.), monocytes 366/c.mm (6 per cent.), basophils nil.

Red cells normochromic and normocytic. Platelets adequate. No evidence of eosinophilia.

Examination of the midnight sample of peripheral blood revealed *Microfilariae bancrofti* in small numbers in the ordinary specimen of peripheral blood, and numerous in the formalized concentrated peripheral blood specimen (Fig. 3).

FIG. 3 *Microfilaria* in peripheral blood. $\times 580$

Treatment

A 3 week-course of diethylcarbamazine (Banocide) tablets 2 mg./kg. body weight three times a day was given, after which the midnight peripheral blood examination was repeated, and some microfilariae were still present. Slit-lamp examination of the left eye showed that the microfilaria was still actively motile on the anterior lens capsule.

According to Duke-Elder and Perkins (1966), atropine may restrict the movements and kill the worm (López, 1891; Schnaudigel, 1922), but pilocarpine apparently irritates it and makes it burrow deeper into the tissues (Gabriélidès, 1938). On June 22, 1969, Atropine 1 per cent. eyedrops were instilled into the left eye, and on the following day the microfilaria was found to be lifeless and immobile. As a prophylactic measure Betnesol eyedrops were instilled four times a day, and after one week, no trace of the organism could be seen, and the eye remained quiet.

Follow-up

Another two courses of Banocide tablets were subsequently given, and when the patient was last examined (in May, 1970) there was no inflammation in the eye, but the peripheral blood still showed a small number of microfilariae in the concentrated specimen.

Discussion

Gunders and Neumann (1963) appear to be the only authorities to have observed motile microfilaria within the lens capsule. We present photographic evidence of a similar case showing the microfilaria of *W. bancrofti* adherent to the lens of a 39-year-old man. The lens capsule seems to be an impassable barrier to the microfilaria in most instances (Choyce, 1964), but partial penetration had occurred in this case. The lethal effect of atropine on the microfilaria was confirmed.

Summary

A 39-year-old man presented with a microfilaria attached to the anterior lens capsule of the left eye. The management of the case is described.

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