OCULAR ONCHOCERCIASIS

Case Report

J.A. COLEIRO

Senior Registrar,
Princess Alexandra Eye Pavilion,
The Royal Infirmary, Edinburgh.
Clinical Tutor in Ophthalmology,
University of Edinburgh

Onchocerca volvulus is a threadworm first recognised in 1891 in African natives. It is found in two continents, in Central and West Africa along the 20° meridian, and in parts of Central America, Columbia, Ecuador, Peru and Guatemala. The worms are white and filiform, the male measuring 4 cm. in length and 0.2 mm. in diameter, the female up to 40 cms. in length by 0.4 mm. They live in fibrous subcutaneous nodules above or below the shoulders, depending on the biting habits of the flies which serve as intermediate hosts. The female discharges millions of tiny microfilariae into the nodules, whence they are ingested by the insect vector, the black fly of the genus Simulium which breeds in and close to shallow, rapidly flowing, well oxygenated streams. Live microfilariae migrating in the subcutaneous tissues, give rise to little reaction; the damaging agent is the toxin derived from dead microfilariae. The worm does not enter the blood stream.

Clinical features

The patient, a female, M.W., aged 47, was admitted to the City Hospital, Edinburgh in September 1974 while on vacation from Ibadan, Nigeria where she had resided for the past 22 years. She had been feeling generally unwell for the past month, and for several months had had transient acute ocular symptoms such as photophobia and watering and itching of both eyes. She also gave a history of painful itching episodes in the skin of her legs. General examination revealed two small subcutaneous nodules at the back of the neck. Routine blood examination showed a marked eosinophilia.

Ocular findings

Visual acuity 6/5, N.5 in either eye. The conjunctiva of both eyes was injected and chemotic. The cornea of both eyes first examined by a X 10 hand loop and subsequently confirmed by slit-lamp examination, showed the characteristic limbitis. Lesions resembling 'broken ice' and 'snowflake' patterns were defined in the superficial stroma, particularly in the inter-palpebral area close to the limbus. No discoid or nummular forms were seen. Keratitis occurs in practically every case and is due to the presence of dead microfilariae which enter the cornea from the limbus. No pannus was observed. The anterior chambers showed a very faint aqueous flare with an occasional microfilaria seen swimming in the aqueous on the right side only. There was no abnormality of the sclera, iris or fundus. The diagnosis was suggested by the typical ocular lesions in a person from an endemic area, supported by the characteristic eosinophilia. A Mazzotti test, administering a small test dose of Diethylcarbamazine, was positive in that ocular symptoms were exacerbated. This drug kills microfilariae in large numbers, but has no effect on adult worms. The patient was therefore treated with Suramin (Bayer) 1 gram intravenously every fifth day. However, following the second dose, the patient showed early signs of nephrotoxicity with protein and casts in the urine. This drug was therefore withdrawn and substituted by Diethylcarbamazine (Banocide) 1.5 mgs. per kilogram body-weight, three times daily for three weeks. Ocular symptoms were suppressed by topical betamethasone. One month later, all corneal lesions

appeared inactive and no microfilariae were detected.

This patient appears to have had a relatively mild form of the disease; this conforms with the accepted view that the degree and extent of ocular involvement depends directly on the density of infestation in the skin, and the distance from the nearest nodule to the eye.

I am grateful to Dr. P. Ball, who invited me to give an ophthalmological opinion