

Endophthalmitis in a Child with Meningococcal Meningitis

BA Wills, S Lewallen

CASE REPORT

An eleven year old girl was admitted to the paediatric ward with a twenty four hour history of fever, headache, vomiting and, latterly, convulsions. On examination she was febrile and unrousable with a Blantyre coma score of zero¹, but with no meningism or neurological signs. The most obvious abnormality was that the left eye, entirely normal six hours previously, was completely opaque and appeared to be filled with thick white material. A lumbar puncture was performed, yielding cloudy CSF and, based on the microscopy and Gram stain appearance, a diagnosis of meningococcal meningitis was made. She was commenced on intravenous Benzylpenicillin and Chloramphenicol as well as anticonvulsant medication.

An ophthalmological opinion was obtained. Examination of the left eye (by torch) showed slight to moderate injection of the conjunctiva without discharge, and a clear cornea. The anterior chamber was full of white material which appeared stiff and did not layer as a hypopyon would, nor did it have the yellow colour characteristic of hypopyon. The pupil and much of the iris were entirely obscured by this infiltrate, which was judged to represent a primarily fibrinous, rather than purulent, reaction for the reasons noted above. The right eye, including the fundus and optic nerve, was entirely normal. Visual acuity could not be assessed due to the patient's impaired consciousness. The left eye was treated with topical steroids (1% hydrocortisone every two hours) and topical atropine twice daily.

The patient's general condition slowly improved over the next four days and she became able to distinguish hand motion with the left eye. The right eye continued to be normal except that she developed a transient right sixth nerve palsy about one week after admission. This had resolved by the time of discharge. On the second day she developed two unusual skin lesions on her neck. They initially appeared as slightly raised purplish macules about two centimetres in diameter and progressed to necrotic ulcers over the course of several days. The lesions were not over pressure points and were considered to be vasculitic in nature.

By the seventh day there was a dramatic improvement in the inflammation in the left eye; the fibrin resolved and the pupil dilated well, leaving a ring of pigment and a fibrin plaque on the lens. The vitreous was still hazy but visual acuity had improved to finger counting at two metres. She remained on topical steroids and atropine and completed a two week course of antibiotics. When examined nearly four weeks after the first presentation she was still weak and a little ataxic but otherwise there was no significant neurological deficit. The anterior chamber and vitreous were clear; there was still a pigment ring on the lens capsule and the posterior pole was normal. Vision was 6/36.

DISCUSSION

The occurrence of endophthalmitis or uveitis with meningococcal meningitis is rare². Cases of bilateral bacterial endophthalmitis associated with meningitis have been reported³. Septicaemia is usually present and it is likely that most cases are due to blood-borne metastasis, but the possibility of direct spread down the optic nerve cannot be ruled out. An admission blood culture was negative but as we had no intraocular cultures we cannot state that our patient did not have bacterial endophthalmitis. However we feel that this patient had an immunologically mediated endophthalmitis because the appearance of the infiltrate was most consistent with a fibrin reaction and because the eye showed dramatic improvement on steroid therapy alone. Additional topical or intravitreal antibiotics are usually considered essential for the successful treatment of bacterial endophthalmitis. In addition the vasculitic skin lesions were probably an immunologically mediated reaction.

Whether bacterial, immunologic or a combination of both, early, aggressive use of topical steroids is mandatory in treating severe intraocular inflammations such as this one³. If there is a question of bacterial endophthalmitis, topical and subconjunctival antibiotics should be used and can safely be administered at the district level by ophthalmic medical assistants.

References:

1. Molyneux ME, Taylor TE, Wirima JJ, Borgstein A. Clinical Features and Prognostic Indicators in Paediatric Cerebral Malaria: A Study of 131 Comatose Malawian Children. *Q J Med* 1989; 265:441-459.
2. Williams DN, Geddes AM. Meningococcal Meningitis Complicated by Pericarditis, Panophthalmitis, and Arthritis. *BMJ* 1970; 2:93.
3. Jenson AD, Naidoff MA. Bilateral Meningococcal Endophthalmitis. *Arch Ophthalmol* 1973; 90:396-398.
4. Aronson SB, Sussman SJ, Moore TE, Williams FC, Goodner EK. Corticosteroid Therapy in Metastatic Endophthalmitis. *Arch Ophthalmol* 1971; 85:61-70.

Departments of Paediatrics and Ophthalmology,
Queen Elizabeth Central Hospital, Blantyre, Malawi

B Wills and S Lewallen

Correspondence to:
Dr B Wills,
Queen Elizabeth Central Hospital,
P O Box 95,
Blantyre,
Malawi.