Metastatic endophthalmitis: a rare complication of meningococcal meningitis

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Summary

A bacteriologically proved case of meningococcal meningitis developed metastatic endophthalmitis, a rare complication of this disease and responded satisfactorily to antibiotic therapy with complete recovery.

MENINGOCOCCAL meningitis remains the most common form of bacterial pyogenic meningitis. A recent epidemiological survey in the *British Medical Journal* (1971) shows an increase in the annual notification of meningococcal meningitis, with 554 cases reported in 1970.

Case report

An 18-year-old girl previously healthy was admitted on 25 March 1971 with 2 days' history of headache, sore throat, pyrexia and vomiting. On examination she was conscious, coherent, had a temperature of 103°F, bilateral conjunctival redness, more marked in the right eye, photophobia, marked neck stiffness and a positive Kernig's sign. Throat was mildly congested. Cardiovascular system, chest and abdomen were normal. Blood pressure was 120/80. Neurological examination did not reveal any deficit.

Investigations. CSF turbid, WCC 1000/mm³ with predominantly polymorphonuclear leucocytes, protein 300 mg/100 ml and sugar 30 g/100 ml. Gram stain showed Gram-negative diplococci both extra and intracellular, culture yielded *N. meningitidis*. Two blood cultures also grew *N. meningitidis*. Organisms were identified belonging to group C and were sensitive to penicillin and sulphonamides. Nose, throat and conjunctival swabs yielded no growth of *N. meningitidis*. Hb 11.9 g/100 ml, WCC 12000/mm³, 87% polymorphonuclear leucocytes. Blood urea, electrolytes, X-ray chest and electrocardiogram were within normal limits.

Treatment and progress. The patient was given 30 mega units of penicillin G in half strength Hartman's solution intravenously/24 hr. On 26 March she developed pain and loss of vision in her right eye. She was seen by the consultant ophthalmologist who noted signs of severe uveitis with considerable

exudation into the anterior chamber and diagnosed metastatic endophthalmitis.

Her therapy was changed to 20 mega units of penicillin G and sodium sulphadimidine 8 g intravenously/24 hr with local instillation of gutt. penicillin BPC and gutt. atropine 1% every 4 hr. Vision in the right eye and signs of meningitis improved gradually. This therapy was continued for 14 days. On 30 March she developed herpes labialis which responded satisfactorily to local application of 5% idoxuridine in dimethyl sulphoxide solution. At the time of discharge on 22 April her vision in the right eye was 6/6 with some degree of residual posterior uveitis and she had no neurological deficit.

Comment

Ocular complications in meningococcal infection are rare. Irido-choroiditis was noted in seven out of 706 patients (1%) by Banks 1951. Beeson & Westerman (1943) recorded eye involvement in 0.5% of their cases.

The case presented here is of interest in that the meningitis was associated with conjunctival chemosis due to uveitis and exudation in the anterior chamber and not a meningococcal conjunctivitis. Local antibiotic therapy is preferred in such cases as penicillins in therapeutic levels do not penetrate the intact blood-aqueous-humour barrier in adequate amounts to combat severe intra-ocular infection. Free plasma penicillin levels have to be above 21 µg/ml before any intraocular penetration takes place.

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References

- BRITISH MEDICAL JOURNAL (1971) Epidemiology, bacterial meningitis, based on the report by the Public Health Laboratory Service, U.K. *British Medical Journal*, 2, 230.
- BANKS, H.S. (1951) *Modern Practice in Infectious Fevers*, Vol. I, p. 323. Butterworth, London.
- BEESON, P. & WESTERMAN, E. (1943) Cerebro-spinal fever. Analysis of 3575 case reports, with special reference to sulphonamide therapy. *British Medical Journal*, 1, 497.