Pneumato-ophthalmitis

A case of *E. coli* panophthalmitis

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Air in the anterior chamber is rare except after surgery. Recently two new cases of gas gangrene panophthalmitis have been reported (Bhargava and Chopdar, 1971; Bristow, Kassir, and Sevel, 1971), bringing the total to 63. The hallmark of such cases is the presence of air bubbles in the anterior chamber after a perforating wound, and usually with a retained intraocular foreign body. In the following case it was not possible to find any gas gangrene organisms, but only *E. coli*.

Case report

A 64-year-old man was referred by his general practitioner at 6 p.m. October 15, 1970, with a perforating injury. He had been chiselling wood 26 hours previously and was found on admission to have a 3-mm. hypopyon and a small laceration 3 mm. behind the limbus near the medial rectus insertion.

Examination

The visual acuity was only perception of light with doubtful projection. The cornea was hazy and showed superficial abrasions. The anterior chamber appeared to be of normal depth. There was a slight pyrexia of 37.8°C. Urine analysis showed a trace of albumin. He had had a herpetic lesion of the upper lip for the previous 3 days and generally he was somewhat unkempt.

Radiology confirmed the presence of an intraocular foreign body.

Treatment

On admission 1 m.u. soluble penicillin was given intramuscularly and also tetanus toxoid. A subconjunctival injection of mydracaine and penicillin was given at 8.30 p.m. He then had ampicillin 250 mg. four times a day and gutt. atropine 1 per cent. three times a day; gutt. polymixin B, gutt. Albucid 10 per cent., and gutt. penicillin forte were given hourly throughout the night.

Progress

The following morning there was a marked oedema of both lids, and an air bubble was present in the anterior chamber (Figure, opposite). The possibility of gas gangrene was considered, and the senior bacteriologist consulted. Conjunctival swabs grew only *N. catarrhalis*; ear swabs grew only *Staph. albus*; nasal swabs showed a *Staph. pyogenes* which was sensitive to penicillin, tetracycline, and all other medicaments used. The patient's temperature had fallen to 36.5°C. and he was not 'toxic' although he was in great pain.

Operation

Since this eye was obviously rapidly deteriorating and was already blind, evisceration was completed by 7.20 p.m. on October 16, 1970, procaine penicillin (900,000 units) being given preoperatively.

FIGURE Air bubble in anterior chamber

Culture of the eviscerated contents grew *E. coli* resistant to penicillin, ampicillin, cloxacillin, and erythromycin, but sensitive to cephaloridine, sulphamethoprim, tetracycline, framycetin, gentamicin, and polymyxin B.

The histological report on material from the evisceration was as follows: "Material consists of necrotic ocular tissue with acute inflammation. No evidence of bacteria in tissues."

Result

The patient made an excellent recovery and has been fitted with a satisfactory prosthesis.

Discussion

The diagnosis of gas gangrene panophthalmitis requires the identification of the organism. The appearance of air bubbles in the eye, while suggestive, is not proof. Many other organisms can produce gas, among which is *E. coli*—particularly if glucose is available. This patient was not diabetic. It was imperative to treat with high levels of antibiotics and one cannot refute the suggestion that the clostridia may have been present initially although they were not found on culture.

The possibility was, however, actively considered, and the normal operating theatre was not used for fear of contamination.

The term pneumato-ophthalmitis is offered as a descriptive term for these cases of air in the anterior chamber associated with bacterial infection. A more correct term might be pneo-ophthalmocace—from the Greek 'pneo' or 'pneumato' = air, breath or spirit, and ophthalmocace—a gangrenous inflammation of the whole eye (New Standard Dictionary, 1946).

References

- BHARGAVA, S. K., and CHOPDAR, A. (1971) *Brit. J. Ophthalm.*, **55**, 136
 BRISTOW, H. J., KASSAR, B., and SEVEL, D. (1971) *Ibid.*, **55**, 139
 "New Standard Dictionary of the English Language". Funk and Wagnalls, New York; Waverley Book Co., London