

LETTERS TO THE EDITOR

Research into quinine ocular toxicity

EDITOR,—Quinine ocular toxicity presents a major clinical problem in which, after the initial amaurosis, central vision recovers at least partially after a number of days in most cases, but a characteristic constriction of the peripheral fields remains permanently.¹ The mechanisms are disputed but may include an early toxic effect on retinal ganglion cells and a late toxic effect on retinal arteries.¹⁻³ Methods of reversal are unsatisfactory: for example, stellate ganglion blockade may be dangerous and is of doubtful efficacy.^{4,5} Retrobulbar injection of vasodilator drugs is also unproved.

Recently we have advised the use of intravenous nitrates in cases presenting to the National Poisons Information Service and preliminary experience suggests that it may be beneficial. We here report two examples. Case 1 was a 16-month-old child who, following accidental ingestion of quinine sulphate tablets, had a quinine plasma concentration of 32.5 mg/l. Intravenous nitrates were used in treatment. Amaurosis was detected on admission but had resolved completely on review 6 weeks later. Case 2 (male 36 years), an attempted suicide, presented with total blindness, 8–10 hours after ingestion. A plasma quinine concentration of 5.28 mg/l was found on admission. Intravenous nitrates were commenced and there was evidence of recovery within 1–2 hours, which was eventually total. We would be pleased to hear of further cases, and we can advise on the regimen on a 24 hour basis.

This treatment is safe and non-invasive and its effectiveness may be secondary to a preferential increase in the retinal vascular bed flow which supplies the ganglion cells as opposed to the choroidal bed which supplies the remainder of the retinal layers.

We are also setting up research into the mechanisms of quinine toxicity and would be pleased to see acute cases in the Department of Ophthalmology, St Thomas's Hospital for scanning laser ophthalmoscopy within 36 hours of overdose. Patients can be reassured that the investigation is non-invasive.

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- 1 *Grant's toxicology of the eye*, 3rd ed. Springfield, IL: Thomas, 1986.
- 2 Buchanan TA, Lyness RW, Collins AD, Gardiner TA, Archer DB. An experimental study of quinine blindness. *Eye* 1987; 1: 522–4.
- 3 Yospaiboon Y, Lawtiantong T, Chotitubru S. Clinical observations of ocular quinine intoxication. *Jpn J Ophthalmol* 1984; 28: 409–15.
- 4 Dyson EH, Proudfoot AT, Prescott LF, Heyworth R. Death and blindness due to overdose of quinine. *BMJ* 1985; 291: 31–3.
- 5 Boland ME, Brennan-Roper SM, Henry JA. Complications of quinine poisoning. *Lancet* 1985; i: 384–5.

Eye injuries in children caused by aerosols and sprays

EDITOR,—In compiling a district profile of childhood accidents, we investigated eye injuries to children attending the emergency outpatient clinic of the ophthalmology department at Darlington Memorial Hospital. Eye injuries caused by aerosols and other sprays were identified as a potential area for prevention.

The ophthalmology emergency outpatient register for 1990 was analysed for children aged 16 years and under who presented with a new episode of eye injury. The clinical records of those suffering injuries caused by sprays were reviewed to determine type of spray and outcome. During the year 1990 there were 90 new attendances owing to accidental eye injuries in children reported at Darlington Memorial Hospital. Of these, five (6%) were explicitly caused by sprays (Table 1). Three children

Table 1 Age, sex, type of spray, and clinical findings of children presenting with aerosol or spray related eye injuries at the emergency ophthalmology outpatient clinic during 1990

Age	Sex	Type of spray/aerosol	Clinical findings
2	M	Polish	Dermatic reaction
3	M	Perfume	Superficial keratitis
14	M	Perfume	Corneal erosion
16	M	Fire extinguisher	Red eye
16	F	Deodorant spray	None recorded

were discharged from the clinic without follow up following emergency assessment and appropriate treatment. One child with superficial punctate keratitis and one with corneal erosion were discharged following a review in clinic after 1 and 5 days respectively. The estimated cost of treating these patients for the seven outpatient assessments was £266.

A computerised literature search using Medline has revealed no epidemiological literature on the subject and only one reference (non UK) which related to an ocular injury in children caused by an artificial snow spray.¹ Furthermore, the Childhood Accident Prevention Trust library knew of no reference to aerosol or spray injuries to children's eyes (personal correspondence). This perceived lack of interest may be because of a high level of under reporting of such injuries.

The Department of Trade and Industry, National Home Accident Surveillance System (HASS) database for 1989 revealed only eight cases of childhood eye injuries as a result of sprays or aerosols. Types of spray included car paint, polish, silicone waterproofing, and toilet aerosol. If an annual figure of five new cases in one district general hospital ophthalmology outpatient clinic holds nationally, the level of under reporting is profound and the cost to the NHS is high.

In conclusion we would like to say that childhood eye accidents caused by aerosols or sprays are a potentially preventable cause of morbidity to children. Many of the injuries may be mild but could be potentially very serious. Their epidemiology is unresearched. At present they may be seriously under reported, giving rise to a lack of awareness of the problem. Certainly the above highlights a gap in the literature which requires filling through further research.

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- 1 Ben-Nissan D, Savir H. Ocular injury by artificial snow spray. *Harefuah* 1990; 119: 370.

BOOK REVIEWS

Colour Atlas/Text of Ophthalmic Parasitology. By B H Kean, Tsieh Sun, Robert M Ellsworth. Pp 234. US\$ 110.00. Igaku-Shoin: New York, 1991.

This colour atlas and text on eye diseases caused by parasites fills a gap in the ophthalmic literature. The text is complemented by colour and black-and-white photographs. Pictures include clinical appearances, gross pathology, and photomicrographs.

Over 30 parasites are described, classified as protozoa, nematodes, cestodes, trematodes, and arthropods. Chapters have sections on epidemiology, parasitology, clinical features of the systemic diseases, ocular manifestations, pathology, laboratory diagnosis, and treatment. Each chapter concludes with a list of references and appropriate illustrations.

The lead author (B H Kean) originally determined to write this book 30 years ago. Together with his coauthors a most welcome text has been published. Well illustrated, well referenced, the text draws together the complexities of parasitology with what have been 'obscure' clinical ophthalmic findings for the vast majority of ophthalmologists.

It is a relief to have such a book at hand, for reference in the western world where ocular disease may not present in recognised form and for obvious practical application in the developing countries of the world where a low-cost edition could become required reading.

D D MURRAY McGAVIN

Manual of Systematic Corneal Surgery. By Arthur D McG Steele, Colin M Kirkness. Pp 104. £40. Churchill Livingstone: Edinburgh, 1992.

In times when even small subjects are covered in large multi-authored texts a small effective book on a large subject is a welcome change. It is aimed 'as an aid to corneal surgery for the surgeon who does not regularly perform this type of work, whether he' (and presumably she) 'is a junior doctor in training or an established practitioner.' The two authors are well known for their experience in corneal surgery and their strongly held views; both of these attributes are put to good use in the book. It is at its best when describing the stepwise procedures to the surgeon reader who has already decided to undertake a particular operation. The authors describe how to do the procedures which have worked well for them. They do this without oblique discussion and without hint of uncertainty and only the occasional need to consider alternatives. The surgical methods are clearly described and the illustrations are appropriate and helpful. The clarity of the text and the conviction with which issues are presented have resulted in a commendable, tree-sparing size with fewer than 90 pages of text. Despite the brevity, the aims of the authors have been achieved admirably. The book is an ideal resource for surgeons who need to carry out surgical procedures on the cornea, and therefore should be of interest to the majority of ophthalmologists.

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