Correspondence

Hyoscine butylbromide and the oculo-cardiac reflex

TO THE EDITOR *British Journal of Ophthalmology*

SIR, Deacock and Oker (1962) found that the oculo-cardiac reflex occurred in 100 per cent of the squint operations studied by them, Bosomworth, Ziegler, and Jacoby (1958) in 80 per cent, and Katz and Biggar (1970) in 72 per cent. The most serious consequence of the reflex is cardiac arrest, which Kirsch, Samet, Kugel, and Axelrod (1957) showed to occur in one in 3500 operations for squint, and Bietti (1966) in one in 2200. Mendelblatt, Kirsch, and Lemberg (1962) and Berler (1963) have used retrobulbar block to suppress the reflex, but Pontinen (1966) did not confirm this action and found that the block may itself produce the reflex. Bosomworth and others (1958) and Katz and Biggar (1970) used intravenous atropine both to treat an established reflex and prophylactically. Bosomworth reduced the incidence of the reflex in his squint cases to 6 per cent and Katz and Biggar to 30 per cent, but both found that intravenous atropine increased the incidence of cardiac arrhythmias.

The authors have used intravenous hyoscine butylbromide (Buscopan) to suppress the reflex. They have so far studied 74 patients undergoing squint operations. They were consecutive cases taken from one weekly operation list; 61 were less than 12 years old and 40 less than 7 years. There were 54 recessions of one medial rectus, three of both medial rectus muscles, and twelve of one lateral rectus. Three patients had inferior oblique myectomy performed and two had recession of the medial rectus and resection of the lateral rectus in the same eye.

Patients weighing less than 31.8 kg were premedicated with trimeprazine tartrate 3 mg/kg body weight. If they were 31.8 kg in weight they were premedicated with pethidine 50 mg, or morphine sulphate 10 mg and cyclizine 50 mg. If trimeprazine had been given, anaesthesia was induced with nitrous oxide, oxygen, and halothane, and if pethidine or morphine, with methohexitone 50 to 100 mg. Before the injection of methohexitone, or if inhalational induction was used, as soon as unconsciousness was produced, hyoscine butylbromide was injected intravenously, 20 mg if the patient was over 12 years old, 15 mg if under 12, and 10 mg if under 4 years. After oral endotracheal intuba-

tion, anaesthesia was maintained by nitrous oxide, oxygen, and halothane. The pulse rate was counted and the electrocardiogram wave watched throughout the operation on a cardiotor lead two.

No reduction in the heart rate was observed in any of the 74 cases during the operation on the first eye or muscle. In one case, a child aged 6 years having a bilateral medial rectus recession, a nodal bradycardia with the heart rate slowing by 40 beats/min was seen when the second medial rectus muscle was retracted. This happened 20 minutes after the injection of hyoscine butylbromide. It would therefore seem that, if an operation on a second muscle is begun 20 minutes or more after the injection of hyoscine butylbromide, a second intravenous injection should be given of half the first dose. At no time during any of the operations or during extubation following them were any cardiac arrhythmias seen other than the above.

The authors suggest that hyoscine hydrobromide given intravenously during induction of anaesthesia is a safe and effective way of reducing the incidence of oculo-cardiac reflexes and associated cardiac arrhythmias during operations for squint; they believe that their technique may reduce the small but tragic incidence of fatal cardiac arrest during ophthalmic operations.

Yours faithfully,

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