SECONDARY TRAUMATIC HYPHAEMA*†

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THE occurrence of secondary haemorrhage after a contusion with a blunt instrument is fortunately not too common, but its association with intractable glaucoma and possible blood-staining of the cornea makes its treatment necessary to prevent blindness.

The purpose of this short account of two cases is to confirm the value of the hypotensive method described by Kenny (1959) and Werner (1959), which has two main objects:

- (1) Removal of the haemorrhage and organized blood clot from the anterior chamber.
- (2) Prevention of further bleeding.

A method of removing the haemorrhage and clot was suggested by Pierse (1964) and Heath (1966), who recommended irrigation of the anterior chamber with urokinase; this treatment will liquefy the clot but cannot help to arrest the bleeding, and was not used in either of our cases.

Case Reports

Case 1, a boy aged 8, was admitted to hospital on November 11, 1966, having received a blow on the left eye with a small rubber ball the same afternoon. There was a small hyphaema of about 1 mm. but the pupil was reacting to light. The retina showed commotio at 6 o'clock but was otherwise normal. The visual acuity was 6/36.

On the night of November 13 the patient complained of sudden severe pain; examination revealed a total hyphaema and the eye was in an extreme state of glaucoma. The intra-ocular pressure was not reduced by miotics and Diamox and an operation was performed the following day. The systolic blood pressure was 120 mm. Hg, which is high for a child, a point that has already been emphasized (Kenny, 1959).

Operation.—Under general anaesthesia the anterior chamber was opened by a large *ab externo* incision with a pre-placed corneoscleral suture in a groove. An iris repositor was passed into the anterior chamber and an attempt was made to break up the clot. This was only partly successful but, by continuous irrigation with an anterior chamber washout cannula, it was gradually broken up until a very large mass of insoluble clot was removed with an intracapsular forceps. This process took some time (about 10 minutes), but it completely cleared the anterior chamber until details of the iris were visible.

It was now seen that, although the anterior chamber was clear, there was a bleeding point at 6 o'clock where blood was gushing in bursts coincidental with the pulse. There appeared to be a small iridodialysis which could well have been the origin of the haemorrhage.

Anaesthetic Management.—After premedication with pethidine 25 mg., promethazine 12.5 mg., and atropine 0.4 mg., general anaesthesia was induced with thiopentone sodium, and topical analgesia to the larynx with 4 per cent. lignocaine with an endotracheal tube and N₂O/O₂ and halothane. Intravenous hexamethonium bromide 37.5 mg. reduced the systolic blood pressure from 125 to 85 mm. Hg. The bleeding into the anterior chamber was dramatically reduced by further raising the head of the operating table.

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Post-operatively the patient was nursed in a sitting position and the systolic blood pressure remained between 85 and 100 mm. for the next 3 hours.

A further intravenous injection of hexamethonium bromide 25 mg. maintained the systolic blood pressure at 80 mm. for a further 3 hours.

Sedation was then continued with three intramuscular injections of chlorpromazine 12·5 mg. promethazine 12·5 mg. at 4-hourly intervals.

Result.—On December 15, 1966, although there was a tendency for slight anterior synechia formation at 12 and 6 o'clock and some consequent but slight up-drawing of the pupil, the retina was healthy and the visual acuity 6/9. There was no sign of the iridodialysis observed at operation.

Case 2, a boy aged 6, was admitted on November 22, 1966, having been struck in the left eye with an airgun pellet. 4 days later there was total hyphaema with glaucoma. The treatment was identical with that given in Case 1 and the eventual visual acuity was 6/9.

Summary

Two cases of traumatic hyphaema with secondary glaucoma have recently been treated with the aid of hypotensive therapy. A judgement cannot be made on two cases alone, but as the treatment of this condition is sight-saving, it is worthwhile considering hypotensive therapy at the time of operation in order to prevent further bleeding after removal of the clot.

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