LETTERS TO THE EDITOR

Aspirin is a hazard for vitreoretinal surgery

EDITOR,—Aspirin is known to have a significant effect on platelet function. Seven days are required to reverse its effects completely.¹ Whereas it is easy to discontinue aspirin in advance of elective surgery, this is not possible for emergency procedures.² There have been no reports of increased morbidity relating to the use of aspirin in vitreoretinal surgery.³ We observed significant intraoperative haemorrhages in three patients undergoing emergency vitreoretinal surgery while on aspirin. One required subsequent vitrectomy, one cleared without further intervention, and one developed severe proliferative vitreoretinopathy.

CASE REPORTS

Case 1

A 59-year-old man presented with a retinal detachment. He claimed he was on no medication. During urgent conventional repair of his retinal detachment he suffered a suprachoroidal haemorrhage. This progressed to a dense vitreous haemorrhage within 24 hours. On subsequent questioning, he stated that he was taking one aspirin a day as recommended by his doctor but he had forgotten to mention this preoperatively. One week postoperatively he developed increased intraocular pressure which failed to respond to maximal medical therapy but returned to normal after a vitrectomy procedure.

Case 2

A 65-year-old man underwent conventional retinal detachment surgery with external drainage of subretinal fluid. He suffered an intraoperative haemorrhage which took 2 months to clear. On direct questioning subsequently, he admitted to taking one aspirin a day as self-medication for his circulation but had failed to mention this preoperatively.

Case 3

A 70-year-old man underwent cataract extraction by phacoemulsification with local anaesthesia. This was complicated by a dropped lens nucleus. Two weeks postoperatively, the intraocular pressure remained elevated on maximal medical therapy with residual lens material in the vitreous cavity and severe intraocular inflammation. He therefore underwent a vitrectomy with removal of the residual lens material complicated by severe intraoperative haemorrhage. Postoperatively on direct questioning, the patient admitted to using one aspirin a day to thin his blood but had not informed anyone of its use before either of his surgical procedures. The haemorrhage persisted for a further 2 weeks but the retina remained attached on ultrasound. At a subsequent visit, the haemorrhage had begun to clear but the retina was detached with severe proliferative vitreoretinopathy (grade C2). It was felt that the visual potential for this eye was poor and further surgical intervention was not pursued.

COMMENT

These cases illustrate the potential for significant haemorrhagic complications in patients

undergoing emergency vitreoretinal surgery who are routinely using aspirin. None of our patients considered aspirin a significant drug and did not inform anyone of its use during their preoperative assessment. Since aspirin is becoming a widely used drug, often on a routine basis and without formal medical prescription, specific questioning should be undertaken regarding its use in patients undergoing vitreoretinal surgery.

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- 2 McCormack P, Simcock PR, Tullo AB. Management of the anticoagulated patient for ophthalmic surgery. *Eye* 1993; 7: 749-50.
- 3 Flach AJ. Cyclo-oxygenase inhibitors in ophthalmology. *Surv Ophthalmol* 1992; 36: 259-83.

The 'pupil snap' sign of posterior capsule rupture with hydrodissection in phacoemulsification

EDITOR,—Hydrodissection till the nucleus rotates freely is one of the most critical manoeuvres during phacoemulsification. Fluid is injected firmly under the anterior capsular rim to separate the nucleus from the capsular bag. Three cases of complications arising from hydrodissection are presented. All were recorded on videotape and analysed critically.

CASE REPORTS

Three patients, aged 55-65 with 2-3+ nuclear sclerosis underwent hydrodissection in the presence of intact, 5-6 mm capsulorhexes before phacoemulsification. In two patients, hydrodissection was done through the main incision and in one, through the side port. In each case, sudden marked pupillary constriction of about 30% was noted during hydrodissection, the 'pupil snap' sign. In all three, as phacoemulsification proceeded, the nucleus started tilting backwards and posterior capsular ruptures were suspected. Phacoemulsification was then abandoned, the wound enlarged, and the nucleus delivered with an irrigating vectis in each case. Large posterior capsular ruptures which spared the anterior capsular rim were confirmed. Limited anterior vitrectomies were performed and posterior chamber implants successfully implanted into the ciliary sulci.

COMMENT

In these three patients, sudden marked pupillary constriction was noted during hydrodissection. I have called this the 'pupil snap' sign to describe the abruptness of the moment when the posterior capsule ruptures and the pupil constricts with a sudden jerk. The patients were all found to have large posterior capsular ruptures with intact anterior capsular rims implying that the ruptures occurred in

the posterior capsule and were not zonular dehiscences.

The ruptures possibly occurred as a result of overvigorous hydrodissection. The canulas used were 27 gauge, syringes were 5 ml, and firm pressure was used during hydrodissection. In the first patient, it was felt that doing hydrodissection through the side port contributed significantly to the rupture as the anterior chamber was largely watertight. I no longer hydrodissect through the side port. In the next two cases, however, the ruptures occurred even with hydrodissection through the main ports.

The sudden pupillary constriction probably represents the moment of posterior capsular rupture at which time the fluid injection bursts through the posterior capsular rent with posterior displacement of the lens diaphragm. This manner of sudden rupture may be related to the strong equatorial cortical adhesions in the lens which cause a build up of fluid and pressure until such time as the adhesions break or the capsule tears. Howard Fine's description of cortical cleavage dissection in which the anterior capsule is slightly tented up before injection followed by depression of the nucleus to break these adhesions may prevent this complication.¹

The complications of hydrodissection are not well documented. In a large cataract surgery review, Powe *et al* reported that the incidence of posterior capsular rupture associated with phacoemulsification ranged from 0.46% to 3.9%.² Posterior capsular rupture usually occurred during phacoemulsification and irrigation/aspiration. In the *Atlas of complications in ophthalmic surgery*,³ the risk of posterior capsule rupture during vigorous hydrodissection is acknowledged but it says that the rupture is usually recognised during nuclear removal. In *Mastering phacoemulsification*,¹ various techniques of hydrodissection are highlighted. However, no mention is made of potential complications. In the book *Phacodynamics*,⁴ again complications of hydrodissection are not mentioned.

Hydrodissection is crucial to successful phacoemulsification. It should, however, be done carefully to minimise the possibility of posterior capsular rupture. I have described an early sign of posterior capsular rupture during hydrodissection, the 'pupil snap' sign. Recognition of this sign and its significance may alter the management of a case and avoid the potentially disastrous complication of a dropped nucleus.

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- 3 Kruff C, Kruff M. Cataract surgery. In: Krupin T, Kolker AE, eds. *Atlas of complications in ophthalmic surgery*. London: Wolfe, 1993: 4.8.
- 4 Seibel BS. *Phacodynamics*. 2nd ed. New Jersey: Slack Inc, 1995: 122-3.