
LETTERS TO THE JOURNAL

Complications of 5-fluorouracil after trabeculectomy

Sir,

We read with great interest the report by Franks and Hitchings¹ of complications after 5-fluorouracil use in patients judged to be at high risk of failure of trabeculectomy. Subconjunctival 5-fluorouracil was started on the first post-operative day anteriorly, a total of 50 mg in divided doses was injected over the following 14 days. Although control of IOP > 21 mm Hg (without additional topical medication) was achieved in 90% of patients, a high complication rate was reported.

This report has prompted us to review our experience of adjunctive 5-fluorouracil, in patients with similar risk factors, where only a single dose of 10 mg of 5-fluorouracil is injected into the conjunctival flap at the time of surgery.

Between August 1988 and July 1991, 15 eyes of 12 patients underwent trabeculectomy with 5-fluorouracil injection. Indications for 5-fluorouracil use were, previous filtration surgery (4 eyes), aphakia (4 eyes), uveitis (2 eyes), age < 45 yrs (4 eyes) and pigmentary glaucoma (1 eye). Mean pre-operative IOP was 28.4 mm Hg (SD 6.14). No patient underwent simultaneous cataract surgery.

Trabeculectomy was performed using a fornix based conjunctival flap and a triangular limbal based scleral flap. The scleral flap was closed with a single 8/0 vicryl suture at the flap's apex. Then 10 mg (0.4ml) 5-fluorouracil was injected into the potential space between Tenon's capsule and conjunctiva. The conjunctival flap was then closed with 8/0 vicryl.

Complications were: choroidal effusion in two eyes and bleb dehiscence (requiring resuture) in one eye. Intraocular pressure was not controlled in two eyes, (one aphakic and one that had undergone previous surgery) both of whom subsequently required tube drainage. In the remaining 13 eyes mean IOP at six months follow-up was 12.15 mm Hg (SD, 4.04).

The results of surgery in our patients is similar to those of Franks and Hitchings but with a much lower complication rate. The rationale for use of 5-fluorouracil is accepted and its use in glaucoma drainage surgery is increasing. There is however concern as to the optimum dosage schedule. Ball has reported favourable results injecting a single dose of fluorouracil directly into the bleb at the time

of surgery.² Mitomycin (an antitumour antibiotic with a greater antiproliferative effect than fluorouracil) has been used by a single application of a soaked swab to the sclera intraoperatively³ producing fewer complications than fluorouracil. We believe other surgeons have used 5-fluorouracil in a similar fashion with good results. Reducing the dose of 5-fluorouracil failed to inhibit fibroblasts proliferation in experimental rabbits⁴ our results would suggest that this does not necessarily apply to man. We agree with Ball² that the peak concentration of 5-fluorouracil may be of greater relevance than total dose in determining the outcome of drainage surgery. Adjunctive 5-fluorouracil therapy has been successfully used in uncomplicated glaucoma surgery⁵ with a complication rate similar to that reported by Franks and Hitchings.¹ We suggest the lower complication rate of a single 10 mg intrableb injection may make this regime acceptable as an adjunct to uncomplicated glaucoma surgery.

J.C. Caballero, L.G. Clearkin

Dept Ophthalmology

Barnsley District General Hospital

Gawber Road

Barnsley

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A Complication of Orbital Emphysema

Sir,

The complications of orbital trauma include perforating eye injury and orbital emphysema. We report a case in which surgical repair of the globe following trauma was complicated by expansion of orbital gas by the nitrous