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Sir,

Reverse self-sealing sclerostomies

We read with interest the article by Misra and Goble,[1] which evaluated preoperative complications of self-sealing sclerostomies in pars plana vitrectomy. We agree it is advantageous as it allows stable intraocular pressure without the use of scleral plugs, reduces the need for infusion flow manipulation, reduces operating time and suture complications.

We would like to report our results of a modification of the technique, the reverse self-sealing sclerostomies. A total of 80 reverse self-sealing sclerostomies were done on 40 eyes of 40 consecutive patients between January 2002 and December 2003 (single surgeon RAHS). Only primary vitrectomies were included in our study.

The indications for surgery included macular epiretinal membrane (13), macular hole (10), rhegmatogenous retinal detachment (five), uveitis with chronic cystoid macular oedema (six), diabetic vitreous haemorrhage (four), and choroidal nonvascular membrane (two). Intraoperative interventions included epiretinal membrane peel (13), gas injection with or without platelets (15), silicone oil injection (two), and use of endolaser (four).

Our technique was used for the superior sclerostomies that are used for the introduction of the surgical instruments. The inferior temporal sclerotomy for the infusion was a conventional stab incision, which was sutured with 7.0 vicryl.

The technique used was as described by Assi *et al*,[2] with our modification of conjunctival closure with diathermy instead of sutures. A fornix-based conjunctival and tenons flap recessed by 4 mm was performed. A partial thickness (1/2–2/3 depth) scleral incision $\sim$2–3 mm in length was made 2.0 mm from the limbus (Figure 1a). An angled bevel up crescent blade (Sharpoint) was used to create a 2.0 mm scleral pocket posteriorly (Figure 1b). This approximated the entry into the eye at 4 mm from the limbus. The micro-vitreo retinal (MVR) blade was passed through the scleral pocket, rotated to $\sim 60^\circ$ before entering the vitreous cavity (Figure 1c). Conjunctiva was approximated and diathermied at the end of the operation. Follow-up was done on day 1, 2 weeks, and 3 months postoperatively.

Intraoperative scleral flap tear requiring suturing occurred in 2.5% (2/80), both cases involving epiretinal membrane peel. Two patients required conjunctival suturing. Postoperatively, all the sclerostomies healed well (Figure 2). No patients had postoperative hypotony, choroidal detachments, conjunctival blebs or raised intraocular pressure. Intraocular gas tamponade was well maintained in all cases. There were no instances of scleral flap necrosis or infection, late haemorrhage associated with the sclerotomies, vitreal nor retinal incarceration nor endophthalmitis.

The self-sealing sclerostomies and the subsequent modifications offer numerous advantages over the traditional stab sclerostomies. Chen's[3] original technique was technically difficult in eyes with small palpebral fissures. Kwok *et al*[4] modified the technique by rotating the scleral tunnels by 90° (tunnel was parallel to limbus) with its radial entry site away from the surgeon. Further, this technique allowed easier access in eyes with small interpalpebral space.

Van Kuijk *et al*[5] described a technique similar to Kwok *et al*[4] but the entrance of the scleral pocket was towards the surgeon. They claimed that their modification facilitates the entry of instruments and avoids interference with the nose or cannula. Their success rate reported was 90%. However, they noted that there was a higher rate of leakage in patients younger than 40 years. Self-sealing pars plana

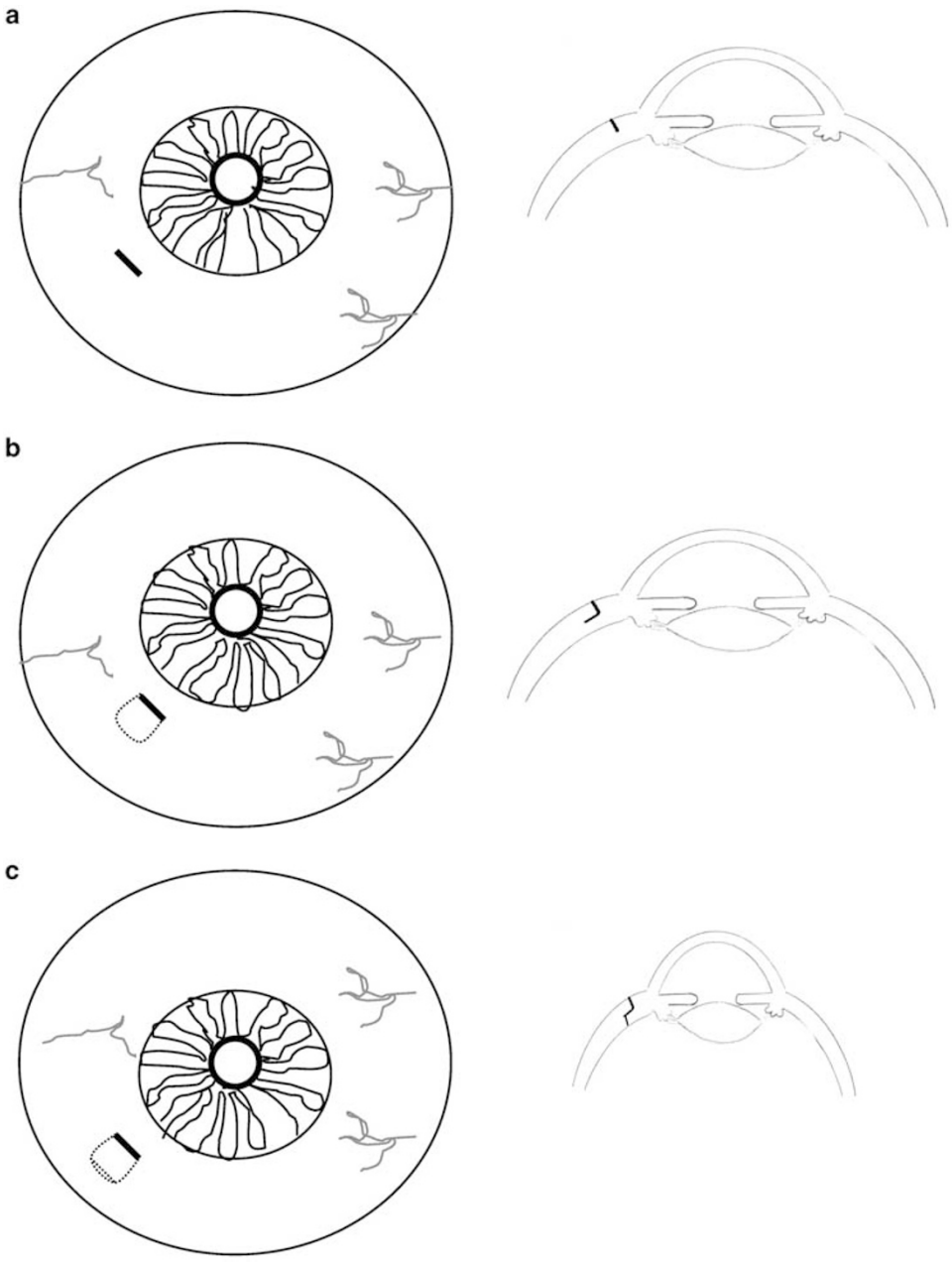

Figure 1 Schematic diagram of reverse self-sealing sclerostomy. (a) Perpendicular groove made into the sclera, 2 mm from the limbus with crescent blade. (b) Scleral pocket is made with the crescent blade. (c) MVR blade is placed into the scleral pocket and entry then rotated to allow a perpendicular entry into the eye.

sclerostomies have been shown to be safe to use in paediatric cases.[6]

Our modification overcomes the problems of a tight orbit, sunken eye, and small palpebral fissures, as the initial incision is 2 mm instead of 6 mm from the limbus. Because of the anteroposterior direction of the scleral pocket, the reversed sclerostomies offer the added benefits of smoother and better access to the posterior segment, less likelihood of damage to the lens and zonules on entry, less globe distortion, easier insertion, exchange and manipulation of instruments, and minimal conjunctival recession.

It is also advantageous in the removal of choroidal neovascular membranes as high intraocular pressures can be maintained. Our technique was well tolerated with local anaesthesia and the conjunctival

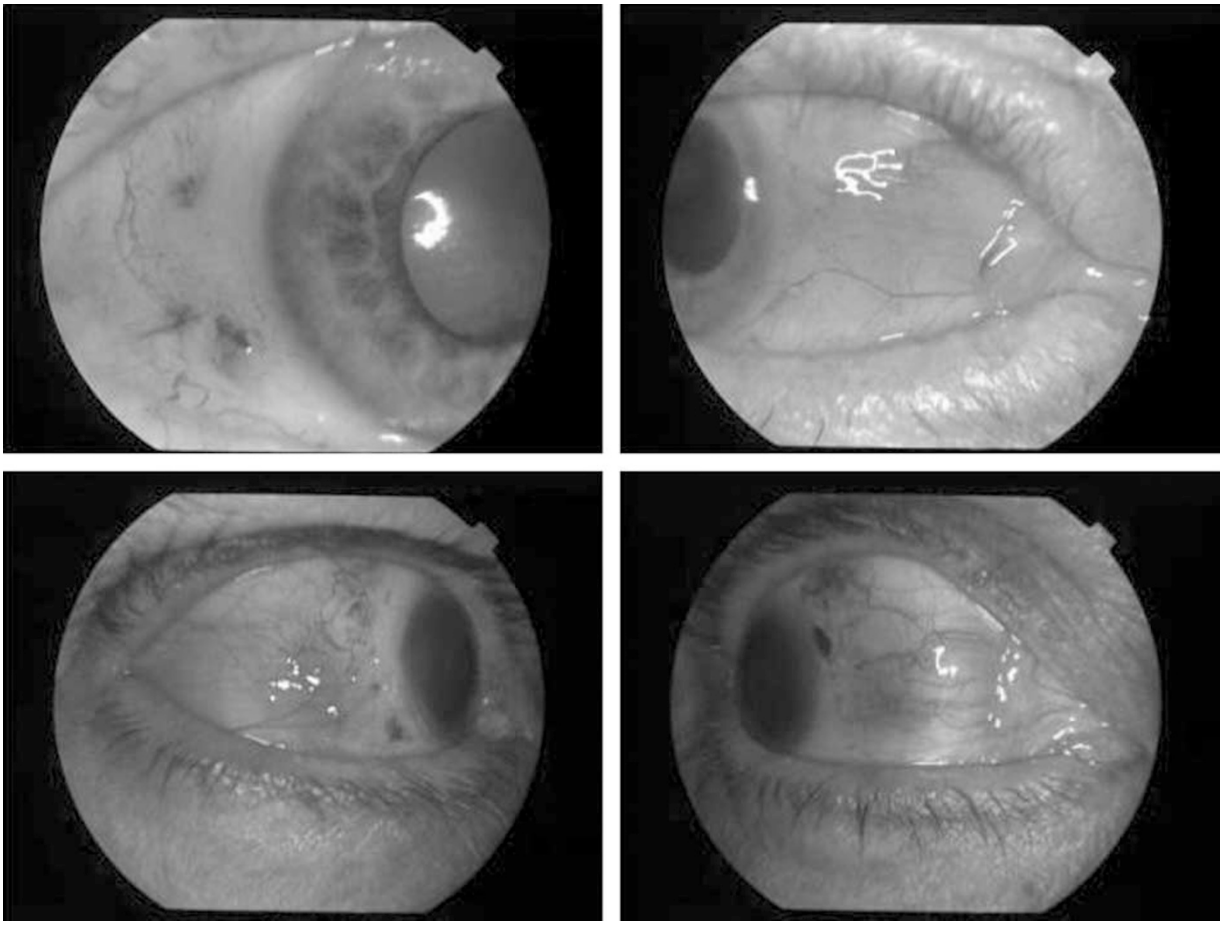

Figure 2 Appearance at 2 week post-op.

closure has cosmetic advantages. Suture-related problems of loosening, granuloma, and cysts are avoided. In conclusion, our series confirms the safety and efficacy of the reversed self-sealing sclerotomies.

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