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Sir,

New retinal detachment following removal of a scleral explant

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The indications for removal of a scleral explant include extrusion, migration, infection, excessive height, pain, diplopia and visual disturbance. The frequency of explant removal in published series varies from 1.2 to 24.4%,[1–7] and the retinal redetachment rate following this varies from 3.2 to 47%[2–9] (follow-up ranging from 6 months to 4 years). Reopening of the original tear is the cause of retinal redetachment in most cases.

Following explant removal, it is rare for a new retinal tear to open, and when this happens, the break is usually close to the original break. We report a patient who developed a new retinal tear (and retinal detachment) 6 clock hours away from the original retinal tear.

Case report

A 48-year-old myopic patient ($-5.75/-3.50 \times 15$ right and $-3.75/-4.00 \times 167$ left) presented with an acutely symptomatic retinal detachment (RD) in his right eye. The retina was detached from 1 to 5 o'clockbecause a peripheral U-shaped tear at 1 o'clock. The macula was attached, and corrected visual acuity was 6/6 in the right eye and 6/5 in the left.

A diagnosis of pigment dispersion syndrome had been made 6 years ago, and at that time bilateral posterior vitreous detachments (PVD) were also noted.

The RD was repaired on the day of presentation under general anaesthetic. Subretinal fluid was drained, cryotherapy was applied, and 20% sulphur hexafluoride gas was injected. A ♯276 segmental circumferential silicone explant was then sutured to the sclera in the supero-nasal quadrant. Early postoperative progress was satisfactory, with a flat retina and high indent. However, 2 months following surgery he complained of foreign body sensation and irritation at the site of the explant, which was found to be extruding. After 1 month, the explant was removed under general anaesthetic.

At a routine clinic visit 6 weeks later, a new and peripheral RD was found infero-temporally in the right eye. A peripheral U-shaped tear was identified at the 7 o'clock position, 6 clock hours away from the sealed original tear.

A three-port pars plana vitrectomy was carried out, with internal drainage of subretinal fluid, 30% sulphur hexafluoride exchange, and indirect laser photocoagulation around the tear. The retina has since remained attached.

Comment

The rate of retinal redetachment following scleral explant removal in published series varies from 3.2 to 47% (follow-up ranging from 6 months to 4 years). Several of these are summarised in Table 1.

Lindsey *et al*[8] reported recurrence of RD in 20 of 53 patients (47%), with a follow-up period of 4 years. Three of these cases had new tears, although their location is not mentioned. Deutsch *et al*[7] reported 61 cases of explant removal, five of whom (8%) subsequently redetached. In two of these cases, the redetachment was a result of new inferior breaks. In the first case, the original surgery was performed for a localised upper-half RD with no identifiable break. After explant removal, the eye developed a new RD of the lower retina, with an apparently new U-shaped tear at the 6 o'clock retinal periphery. In the second case, the new break was inferior and 6 clock hours away from the original group of round breaks.

In contrast to the above reports, new retinal breaks are well described following pneumatic retinopexy.[10,11] In

Table 1 Results of published series of retinal detachment following explant removal

Author	*Number of eyes having RD surgery with explant*	*Number of eyes undergoing explant removal*	*Number of eyes with recurrent RD after explant removal*	*Location of opened break(s) after explant removal*	*Follow-up after explant removal*
Russo and Ruiz[2]	127	31 (24.4%)	1 (3.2%)	? Original break	6 months
Stratford[3]	940	46 (4.9%)	12 (26%)	Area of original break	1–10 years
Schwartz and Pruett[4]	Not mentioned	152	22 (14.5)	Original tear One PVR	6 months
Hilton and Wallyn[5]	600	23 (3.8%)	1 (4%)	Original tear	6 months
Lindsey *et al*[8]	Not stated	53	20 (47%)	Three new breaks	4 years
Ulrich and Burton[6]	878	37 (4%)	8 (22%)	? Original breaks	6 months
Smiddy *et al*[9]	3000	45 (1.5%) 14 with RD at presentation	9 (29%)	? Original break	1–40 months
Deutsch *et al*[7]	1898	61 (3.2%)	5 (8%)	Two new breaks	6 months–9 years

the Poliner *et al*[12] series of 13 cases of RD treated with pneumatic retinopexy, two cases had new retinal breaks adjacent to the original tears and two cases had new retinal breaks 5–6 clock hours away from the original tears. They postulated that the buoyant gas bubble created vitreous traction on the inferior retina in the meridian of the involved tears. Snead[13] has suggested that a gas bubble expanding behind a detached posterior hyaloid membrane may be particularly likely to cause such breaks. In our patient, a new U-shaped tear 6 clock hours away from the original tear caused a second RD. This suggests that the original explant had been relieving trans-vitreous traction, and following explant removal the recurrence of this vitreous traction caused a new tear. It is tempting to speculate that the PVD 6 years previously was incomplete, accounting for both the delayed presentation of the original RD, and also the persistent vitreo-retinal traction leading to a new RD after explant removal.

New retinal detachment following scleral explant removal is rare, and is likely to be at the area of maximal vitreous traction either around the original hole or approximately 180° away from it.

References

1 Wiznia RA. Removal of solid silicone rubber explants after retinal detachment surgery. *Am J Ophthalmol* 1983; **95**(4): 495–497.
2 Russo CE, Ruiz RS. Silicone sponge rejection: early and late complications in retinal detachment surgery. *Arch Ophthalmol* 1971; **85**(6): 647–650.
3 Stratford TP. Fate of the reattached retina following removal of silicone elements. In: Pruett RC, Regan CDJ (eds). *Retina Congress*. Appleton-Century-Crofts: New York, 1972, pp 623–628.
4 Schwartz PL, Pruett RC. Factors influencing retinal redetachment after removal of buckling elements. *Arch Ophthalmol* 1977; **95**(5): 804–807.
5 Hilton G, Wallyn R. The removal of scleral buckles. *Arch Ophthalmol* 1978; **96**(11): 2061–2063.
6 Ulrich RA, Burton TC. Infections following scleral buckling procedures. *Arch Ophthalmol* 1974; **92**(3): 213–215.
7 Deutsch J, Aggarwal RK, Eagling EM. Removal of scleral explant elements: a 10-year retrospective study. *Eye* 1992; **6**(Part 6): 570–573.
8 Lindsey P, Pierce L, Welch R. Removal of scleral buckling elements. Causes and complications. *Arch Ophthalmol* 1983; **101**(4): 570–573.
9 Smiddy WE, Miller D, Flynn HW. Scleral buckle removal following retinal reattachment surgery: clinical and microbiologic aspects. *Ophthalmic Surg* 1993; **24**(7): 450–455.
10 Grizzard WS, Hilton GF, Hammer ME, Taren D, Brinton DA. Pneumatic retinopexy failures: cause, prevention, timing and management. *Ophthalmology* 1995; **102**(6): 929–936.
11 Abecia E, Pinilla I, Olivan JM, Larrosa JM, Polo V, Honrubia FM. Anatomic results and complications in a long-term follow-up of pneumatic retinopexy cases. *Retina* 2000; **20**(2): 156–161.
12 Poliner LS, Grand MG, Schoch LH, Olk RJ, Johnston GP, Okun E *et al*. New retinal detachment after pneumatic retinopexy. *Ophthalmology* 1987; **94**(4): 315–318.
13 Snead M. Pneumatic retinopexy: new breaks for old? *Eye* 1999; **13**(Part 6): 709–710.

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Sir,

Unilateral pellucid marginal degeneration

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Pellucid marginal degeneration (PMD) is a rare bilateral corneal disorder characterised by thinning in the peripheral portion of the inferior cornea with marked steepening just superior to the thinned zone.[1] It is differentiated from other peripheral corneal thinning disorders such as Terrien's marginal degeneration and Mooren's ulcer by the absence of vascularisation, lipid infiltration, or corneal ulceration.

Unilateral isolated PMD is extremely unusual, and corneal topography provides valuable clues in suspected cases. Described here is such a case, in which the other eye was normal.

Case report

A 46-year-old healthy Indian man presented with painless progressive diminution of vision in the right eye for 6 years. There was no history of redness, pain, or use of ophthalmic medication during this time. He was otherwise healthy.

Ophthalmic examination revealed best-corrected visual acuities of 6/18 OD with $-1.0/-13.50\,\mathrm{D} \times 110^\circ$ and 6/6 OS unaided. On slit-lamp biomicroscopy, the cornea in the right eye showed an irregular contour with a thin band inferiorly, approximately 1.5 mm in width and 2 mm from the limbus, with bulging above the thinned zone (Figure 1, top). The portion between the thinned area and limbus was normal in thickness. There