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Sir,

Uveal Effusion Syndrome as a complication of cyclodiode therapy in nanophthalmos glaucoma

Case description

A 46-year-old woman with nanophthalmos (Table 1) presented with progressive angle closure, pain, and raised intraocular pressure (IOP) in her left eye. She was intolerant of topical antihypertensive agents. She had small, tilted optic discs, and repeated automated Humphrey visual field testing confirmed a left nasal step visual field defect. Bilateral Nd:YAG peripheral iridotomies were performed, which resulted in deepening of the anterior chambers, however, the left IOP continued to remain elevated (25–30 mm Hg).

In view of the risks of uveal effusion and aqueous misdirection syndrome following intraocular procedures in nanophthalmic eyes,[1] trans-scleral diode laser cycloablation was carried out on the left eye. In all, 24 burns of 2000 mW and 2000 ms duration were applied. Topical 0.1% dexamethasone drops were used postoperatively.

One week postoperatively the IOP was well controlled (16 mm Hg), however, the visual acuity had deteriorated significantly to 1/60 with only temporal visual field remaining. There was no associated anterior chamber shallowing. Dilated fundoscopy revealed widespread exudative retinal detachment with shifting fluid, suggestive of uveal effusion syndrome (UES). (Figure 1a). Examination of the contralateral (right) fundus revealed a small annular cilio-choroidal detachment in the far periphery (Figure 1b).

Initial management consisted of upright posturing and a 6 week reducing dose of oral Prednisolone 1 mg/kg.

Table 1 Nanophthalmic biometry with characteristic hypermetropia, short axial length and thickened sclerae

	Right eye	*Left eye*
Corrected visual acuity	6/24	6/24
Refraction, D	+14.00	+14.00
Axial length, mm	15.64	15.86
Posterior scleral thickness, mm	2.2	2.0

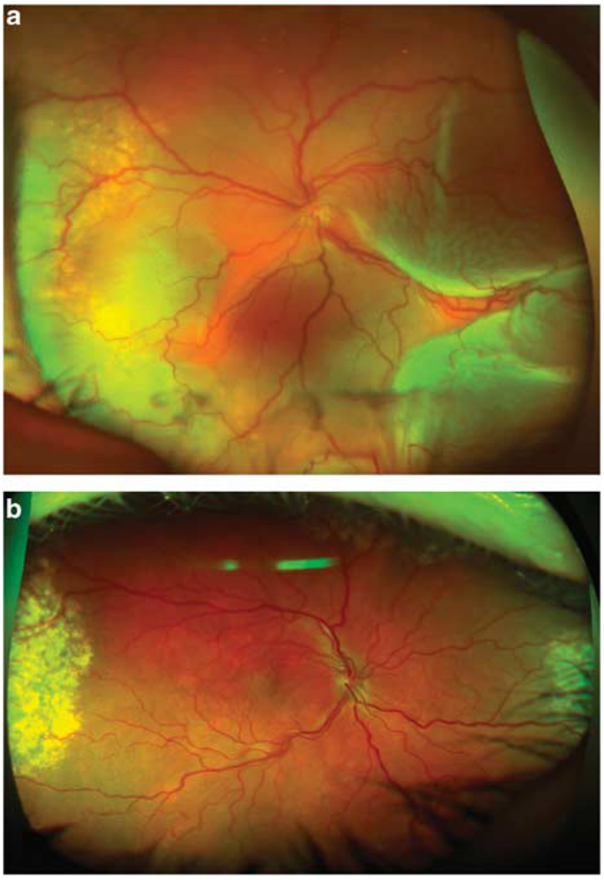

Figure 1 (a) Optomap image of uveal effusion syndrome in the left eye following cyclodiode laser, with extensive serous retinal detachment and shifting subretinal fluid affecting the macula. (b) Optomap image of the right (contralateral) eye demonstrating nasal and temporal exudation as a result of annular cilio-choroidal detachment in the periphery.

Two weeks thereafter, the macula had reattached and the visual acuity had returned to baseline (6/24), with IOP controlled at 15 mm Hg. Complete re-attachment was confirmed by 3 months, and her visual acuity, intraocular pressure and fields remain stable at 1 year.

Comment

Idiopathic UES is the topic of a current British Ophthalmic Surveillance Unit (BOSU) study and primary scleral abnormality has been identified as the underlying cause.[2] Abnormal deposition of glycosaminoglycans result in scleral thickening and impeded trans-scleral flow of fluid and protein.[3]

Cyclodiode appears at first an attractive option to reduce intraocular pressure in this condition. However, in this case, resultant inflammation and increased extravasation of protein compromised an already tenuous diffusion of protein and fluid across the abnormal sclera. It has been postulated that protein accumulation in the choroid with elevated colloid osmotic pressure causes fluid to accumulate, subsequently choroidal detachment, retinal pigment epithelium (RPE) decompensation and extensive serous

retinal detachment follow.[4] The delicate balance of trans-scleral fluid dynamics that exists in people with nanophthalmic biometry and thick sclera is evidenced by the presence of subclinical choroidal detachments with subretinal fluid in the contralateral eye. As we are not aware of any reports of the association between cyclodiode and UES, we would advise careful peripheral fundal examination of both eyes before treatment to rule out pre-existing choroidal detachment. If suprachoroidal effusion is suspected, we would advise instead one of the current scleral procedures described in several small case series, including sclerectomy, full-thickness unsutured sclerostomy and subscleral sclerectomy.[5] Fortunately, in our case, conservative management with oral steroids resulted in rapid resolution of the effusions, and surgical intervention was not required.

Conflict of interest
The authors declare no conflict of interest.

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