Table 2 Complication rates

	No.	*Percentage of total no. of eyes operated*
Retinal incarceration	0	0
Retinal tears at entry site	4	1.4
Iatrogenic retinal dialysis	0	0
Infusion initially under retina	8	2.7
Lens touch	7	2.4
Endophthalmitis	0	0
Conjunctival draining blebs	0	0

In all, 8% of patients were younger than 40 years but had the highest suture rate, 33.3%; 43% were aged 41–69 years with a rate of 19.3%. The remainder were over 70 years, with the lowest suture rate of 14.9%.

To our knowledge, this is the largest reported series of self-sealing sclerotomies in primary vitrectomy. We have not found a high incidence of complications. The indication for surgery appears to be directly related to the incidence of sclerotomies requiring sutures.

Sutureless sclerotomies are simple to perform, save operative time, and reduce the risk of peroperative hypotony. We therefore recommend learning and persevering with this technique.

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Sir,

Extrafoveal seafan neovascularization associated with unilateral Recurrent retinal capillary haemangiomas: a known association or a mere coincidence

To report an unusual case a of 30-year-old Caucasian male presenting with left unilateral retinal capillary haemangioma who developed an inferior extrafoveal haemangioma in the form of seafan neovascularization and superior extrafoveal posterior pole angioma in addition to retinal capillary haemangioma elsewhere.

Case report

A 23-year-old white man was referred in June 1995 by an optician for evaluation of floaters in the left eye. The patient's ocular history was unremarkable except for the left persistent mild floaters of about 9 months duration. The patient was employed in an office with a negative medical history except for the frequency of urine with dysuria, as well as with a past history of plastic surgery on the nose and tonsillectomy. His routine urinalysis was showing protein +2, WBC 10, RBC 30, and his blood pressure was 120/80 mmHg.

Unaided visual acuity was 6/4 in the right unaffected eye and 6/6 in the left affected eye. His intraocular pressure in both eyes was normal. The external and, slit-lamp examination for the right eye was normal, but the left-eye examination revealed a few small old pigmented keratic precipitates with anterior chamber cells +1. The right fundus examination was unremarkable; however, the left fundus examination revealed vitreous cells +2, inferior large size, pre-equatorial haemangioma with a dilated feeder artery, and a dilated, engorged, tortuous draining vein, inferior exudative retinal detachment extending to the inferior vascular arcade (Figure1b).

The patient received his first triple freeze–thaw cryotherapy to the inferior, pre-equatorial haemangioma on 31.08.1995, followed by a focal argon laser around the same haemangioma on 22.11.1995, and two subsequent, final sessions of triple freeze–thaw cryotherapy to the same eye on 27.09.1996 and 09.04.1998. He was last reviewed at the eye clinic on 30.08.2000; the right-eye examination was unremarkable as before, and the left-eye examination revealed a sclerotic feeder arterial wall

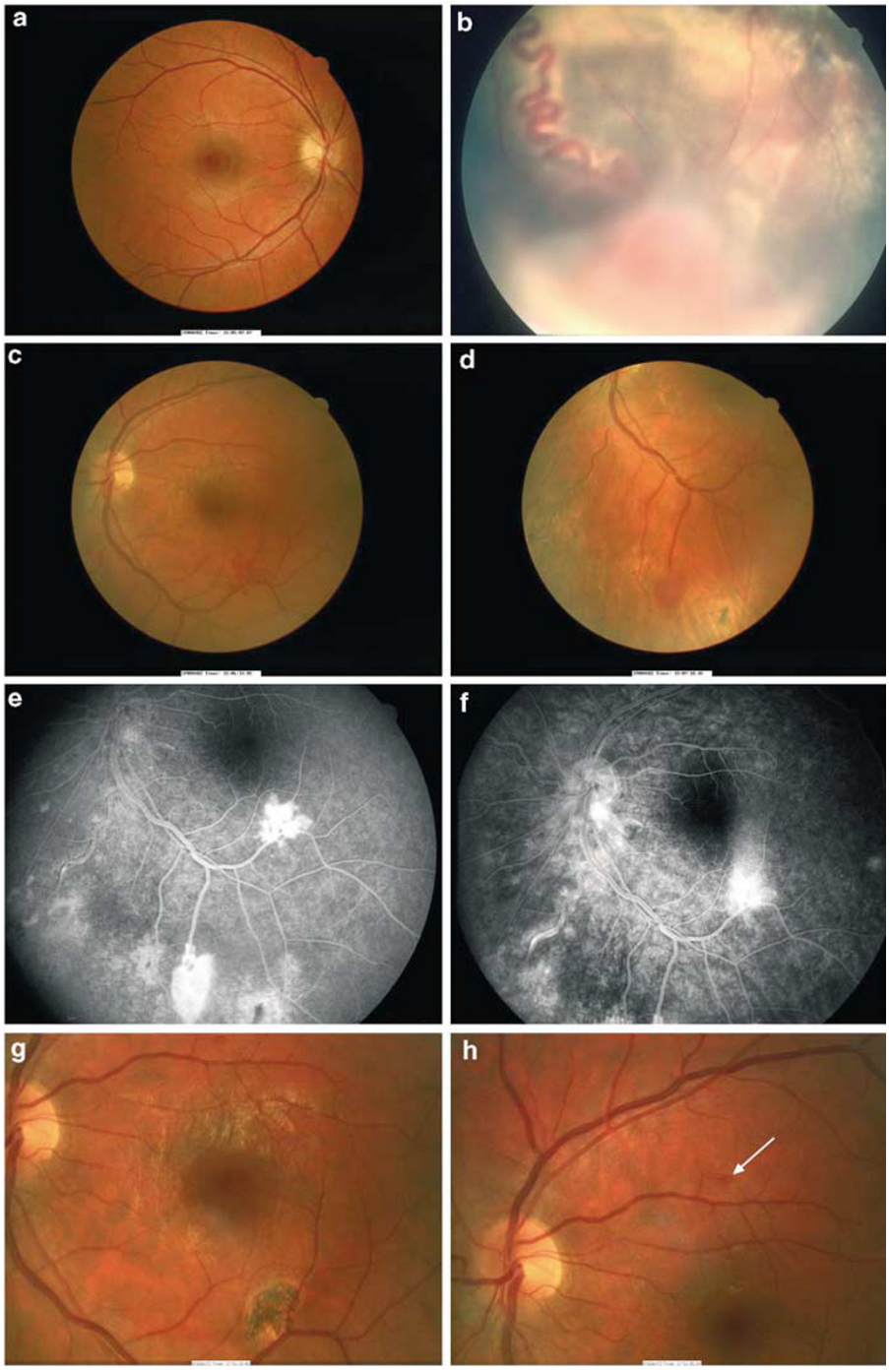

Figure 1 (a) Right normal fundus, with normal calibre blood vessels. (b) Fundus photograph of the left eye showing large-size inferior angioma with a prominent feeding arteriole and a draining venule is present in the infreronasal quadrant. (c) Fundus photograph of the left eye showing angioma like seafan neovascularization inferior to the fovea. (d) A fusiform, midperipheral retinal lesion suggestive of recurrent retinal capillary hemangioma with prominent feeder vessels. This is one of the nest of recurrent angiomas at the previously heavily treated site. There are retinal pigment epithelial as well as retinal degenerative changes due to previous cryotherapy and laser treatment for inferior, peripheral, large-size primary retinal capillary haemangioma, not shown. (e) Fluorescein angiography in venous phase showing a prominent filling of tumours. Relatively delayed filling of vessels occurs further superiorly, compared with high flow haemangiomas, and if treatment is delayed it may result in the 'steal' phenomenon. (f) Late stage of the angiogram showing leakage from juxtafoveal angioma. Also note the leakage from the inferior disc margin, suggesting inferior juxtapapillary hemangioma. (g) After laser treatment, the inferior extrafoveal angioma has disappeard completely, leaving retinal pigment alterations. Early shrinkage of internal limiting membrane over the macular area is also evident. (h) A tiny retinal capillary haemangioma appearing above the fovea (white arrow).

and significant reduction in the calibre of draining vein to the inferior, pre-equatorial haemangioma, with no evidence of any other primary or secondary retinal haemangiomas. The inferior retina had become flat.

He was then lost to subsequent eye clinics follow-up, but remained under the surveillance of an internist, geneticist, etc. on a regular basis. So far genetic analysis of the patient and his first-degree relatives has been negative. Patient systemic evaluation has not revealed any systemic disorder associated with von Hippel–Lindau disease, and the diagnosis of this syndrome in his case is solely based on the left recurrent, multiple, retinal capillary haemangioma formations,[1–4] and may be partially due to the fact that he has developed angioma lately in the macular region, which has never been recorded in the past in the sporadic cases of angiomatosus retinae.[4]

When the patient was subsequently reviewed in February 2002, his right-eye examination was unremarkable as before, but the left-eye external and slit-lamp examination revealed a few old pigmented keratic precipitates with a quiet anterior chamber; the fundus examination showed an inferior, midperipheral fusiform secondary haemangioma with a moderately dilated feeder artery and a draining vein (Figure 1d) as well as inferior extrafoveal neovascularization along the inferotemporal vascular arcade and blurring of the inferior disc margin (Figure 1c). The original inferior, pre-equatorial haemangioma remained inactive, with no sign of active feeder vessels, although due to its peripheral location it was extremely difficult to be photographed. Hyperfluorescence associated with leakage from inferior secondary angioma at the previously treated fundus site, extrafoveal neovascularization as well as from the inferior disc margin in the midvenous phase of angiography was observed. The patient subsequently had laser treatment to the secondary inferior angioma (Figure 1e).

The patient developed severe recurrent vitreous haemorrhage in the left eye on 24.04.02, resulting in reduced vision down to counting fingers (Figure 1f). The source of this recurrent vitreous haemorrhage could not be established, but it cleared to a reasonable extent in due course of time, and he had argon laser photocoagulation to the inferior extrafoveal neovascularization on 15.05.02 followed by the same procedure to the inferior midperipheral secondary angioma on 19.06.02.

The patient has been followed up closely since then and follow-up examination on 19 December 2002 revealed mild shrinkage of the internal limiting membrane at the posterior pole of the left eye, centred around the foveal region, with evidence of a tiny, superior extrafoveal, posterior pole haemangioma (Figure 1h).

Comment

Retinal neovascularization is a known complication of RCH/VHL, which can be related to vitreous traction, tumours themselves or their treatment, or as a complication of long-standing exudative retinal detachment. Although the retinal neovascularization developed separate from the tumour and some after successful treatment,[5,6] it could have arisen as a complication of vitreous traction, which could have also played a role in the subsequent dense vitreous haemorrhage that developed in this case. Thus, it is likely that the neovascularization in this patient was indeed related to his underlying retinal condition and not a mere coincidence.

Interestingly, this patient also developed a solitary, tiny RCH at the posterior pole and only 1% of angiomas have been found to occur at the posterior pole.

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