recovered with systemic immunosuppression. The correct diagnosis was important with regard to long-term treatment and prognosis.

Optic neuropathy may be the manifesting sign of small-vessel vasculitis-like MPA. Treatment with a high dose of corticosteroid and immunosuppression may improve the visual outcome.

References

1 Kaufman AH, Niles JL, Foster CS. ANCA test in ophthalmic inflammatory disease. *Int Ophthalmol Clinics* 1994; **34**(3): 215–227.
2 Ara J. Relationship between ANCA and disease activity in small vessel vasculitis patients with anti MPO ANCA. *Nephrol Dial Transplant* 1999; **14**(7): 1667–1672.
3 Bakkaloglu A, Ozen S, Baskin E, Tinazetepel BN. The significance of antineutrophil cytoplasmic antibody in microscopic polyangitis and classic polyarteritis nodosa. *Arch Dis Childhood* 2001; **85**(5): 427–430.
4 Throne JE, Jabs DA. Ocular manifestation of vasculitis. *Rheum Dis Clin North Am* 2001; **27**(4): 1–12.
5 Pulido JS, Goeken JA, Nerad JA, Sobol WM, Folberg R. Ocular manifestations of patients with circulating antineutrophil cytoplasmic antibodies. *Arch Ophthalmol* 1990; **108**: 845–850.

R Altaie[1], F Ditizio[2] and GT Fahy[2]

[1]Galway Regional Hospital
Department of Ophthalmology
Galway, Ireland

[2]University College Hospital
Newcastle Road, Galway, Ireland

Correspondence: R Altaie
Tel: 00353 51 842258
Fax: 00353 51 842128
E-mail: raltaie2003@yahoo.com

Eye (2005) **19,** 363–365. doi:10.1038/sj.eye.6701479
Published online 23 July 2004

Sir,

Photodynamic Therapy of Choroidal Haemangioma Associated with Sturge–Weber Syndrome

Choroidal haemangioma is an uncommon benign vascular tumour of the choroid that can be either circumscribed or diffuse.[1] Diffuse choroidal haemangioma is usually part of neuro-oculo-cutaneous haemangiomatosis (Sturge–Weber syndrome). The diffuse choroidal haemangioma of Sturge–Weber syndrome may have localized areas of excessive thickening simulating a circumscribed choroidal haemangioma.[2]

Diffuse choroidal haemangioma can lead to visual loss due to refractive errors, foveal distortion, and exudative retinal detachment.[1] Tumour regression and resolution of subretinal fluid can be induced with low-dose radiotherapy[3] or proton beam radiotherapy.[4] Photodynamic therapy (PDT) is currently being advocated for circumscribed choroidal haemangioma with good short-term results.[5] In this report we present our initial experience of treating a choroidal haemangioma with PDT in the setting of Sturge–Weber syndrome.

A 31-year-old female who was 15 weeks pregnant and was known to have Sturge–Weber syndrome, presented with reduced vision in the left eye of 6 weeks duration (Figure 1a). On examination the uncorrected visual acuity was 6/5 in the right eye and 6/120 in the left eye. The right eye was normal. Anterior segment examination of the left eye showed prominent episcleral vessels with normal intraocular pressure. Fundus examination revealed diffuse choroidal thickening with a more prominent localized thickening in the temporal quadrant (Figure 1b). The localized component was about 12 mm in basal dimension and its posterior margin involved the foveola. There was minimal exudative retinal detachment but no cystoid macular oedema. On B-scan ultrasonography the haemangioma had a maximal thickness of 5.6 mm (Figure 1c).

Following detailed discussions regarding various therapeutic options, it was elected to cautiously observe because of pregnancy. She remained unchanged on clinical and ultrasonographic examination without any spontaneous improvement 4 months following delivery.[6] Because of concerns for long-term visual loss and encouraged by the response of circumscribed choroidal haemangioma to PDT,[7–9] she was treated with PDT. A standard dose of verteporfin (6 mg/m^2) was given as an intravenous infusion over 5 min immediately followed by diode laser (690 nm) applications of 2500 μm size, intensity of 600 mW/cm^2, and exposure of 83 s (50 mJ/cm^2). Altered haemodynamics with high flow through the haemangioma led us to infuse verteporfin over a shorter period (5 min as compared to 10 min) and perform PDT soon thereafter instead of waiting for 5 min after completion of the infusion.

In total, five contiguous spots were applied to the posterior half of the circumscribed portion in a single setting with a Volk PDT lens. On the following day she noted a reduction of vision to hand motions which was recorded on examination a week later. It was attributed to exudative retinal detachment that involved the lower half of the retina and extended up to the foveola. The corrected visual acuity gradually improved over 6 months to 6/6 with complete resolution of subretinal fluid (Figure 1d). Moderate prominence of retinal pigmentation

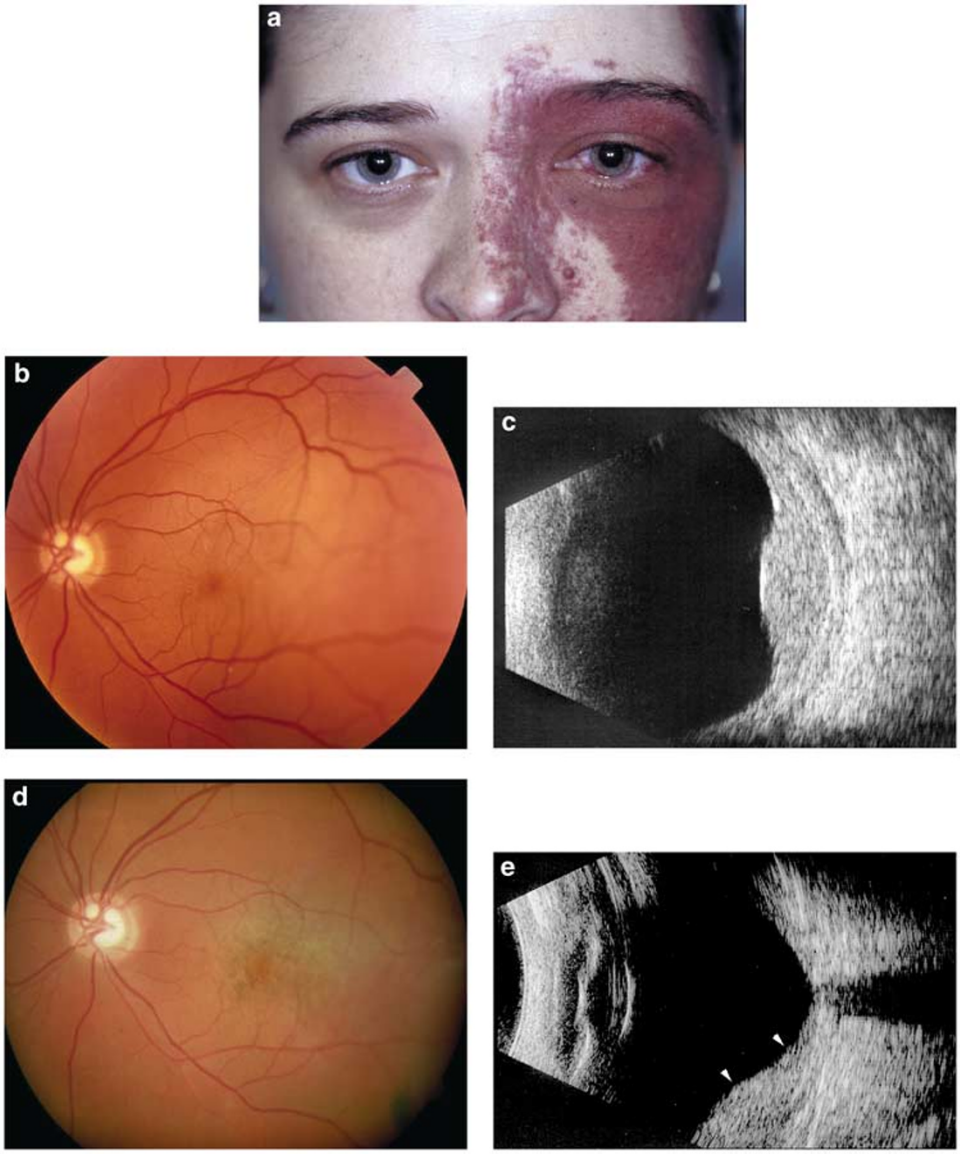

Figure 1 (a) External photograph showing haemangioma distribution typical of Sturge–Weber syndrome. (b) Fundus photograph showing diffuse choroidal thickening with a more prominent localized thickening in the temporal quadrant. (c) B-scan ultrasonograph. Note the dome-shaped choroidal mass that blends with the diffusely thickened choroid. (d) Fundus photograph showing prominence of retinal pigmentation at the treatment site with corresponding flattening of the choroidal haemangioma. (e) B-scan ultrasonograph. Note the flattening of the posterior aspect of choroidal haemangioma (between arrow heads).

at the treatment site with corresponding flattening of the choroidal haemangioma was evident (Figure 1e).

The decision to treat diffuse choroidal haemangioma should be individualized based upon the extent of symptoms, visual loss, and potential for visual recovery. The aim of the treatment is to induce tumour atrophy, resolution of subretinal fluid, and minimize tumor induced foveal distortion. As compared to various forms of radiotherapy, PDT has the advantage of avoiding radiation, ease of delivery, and minimal side effects. Our case illustrates that in addition to circumscribed choroidal haemangioma, selected cases of diffuse choroidal haemangioma are amenable to treatment with PDT. Long-term observations on treated patients are necessary to fully evaluate the efficacy of PDT.

References

1 Witschel H, Font RL. Hemangioma of the choroid. A clinicopathologic study of 71 cases and a review of the literature. *Surv Ophthalmol* 1976; **20**: 415–431.
2 Scott IU, Alexandrakis G, Cordahi GJ, Murray TG. Diffuse and circumscribed choroidal hemangionas in a patient with Sturge–Weber syndrome. *Arch Ophthalmol* 1999; **117**: 406–407.

3 Schilling H, Sauerwein W, Lommatzsch A *et al*. Long-term results after low dose ocular irradiation for choroidal hemangiomas. *Br J Ophthalmol* 1997; **81**: 267–273.
4 Zografos L, Egger E, Bercher L, Chamot L, Munkel G. Proton beam irradiation of choroidal hemangiomas. *Am J Ophthalmol* 1998; **126**: 261–268.
5 Madreperla SA. Choroidal hemangioma treated with photodynamic therapy using verteporfin. *Arch Ophthalmol* 2000; **119**: 1606–1610.
6 Cohen VM, Rundle PA, Rennie IG. Choroidal hemangiomas with exudative retinal detachments during pregnancy. *Arch Ophthalmol* 2002; **120**: 862–864.
7 Gupta M, Singh AD, Rundle PA, Rennie IG. Efficacy of photodynamic therapy in circumscribed choroidal hemangioma. *Eye* 2004; **18**: 139–142.
8 Robertson DM. Photodynamic therapy for choroidal hemangioma associated with serous retinal detachment. *Arch Ophthalmol* 2002; **120**: 1155–1161.
9 Schmidt-Erfurth UM, Michels S, Kusserow C, Jurklies B, Augustin AJ. Photodynamic therapy for symptomatic choroidal hemangioma: visual and anatomic results. *Ophthalmology* 2002; **109**: 2284–2294.

AD Singh[1,2], PA Rundle[1], SJ Vardy[3] and IG Rennie[1,4]

[1]Department of Ophthalmic Oncology
Cole Eye Institute (i3-129)
Cleveland Clinic Foundation, Cleveland USA

[2]Department of Ophthalmology
Royal Hallamshire Hospital, UK

[3]Peterborough District Hospital, Peterborough, UK

[4]Department of Ophthalmology,
University of Sheffield, UK

Correspondence: AD Singh
Tel: +1 216 444 0430
Fax: +1 216 445 7654
E-mail: ArunSingh@Eyetumors.Com

Eye (2005) **19,** 365–367. doi:10.1038/sj.eye.6701474
Published online 30 July 2004

Sir,

Severe bilateral posterior ischemic optic neuropathy as a complication of spinal surgery

Posterior ischemic optic neuropathy (PION) is a rare but visually devastating complication of surgery. PION has been reported following many different procedures, including spinal surgery, liver transplantation, hip replacement, and peritoneal dialysis.[1–4] We report a case of severe bilateral PION following spinal surgery.

Case report

A 55-year-old white female underwent spinal fusion surgery for spondylosis at the level of L4–L5 and L5–S1 vertebrae for severe persistent back and leg pain. Her past medical history was significant for osteoarthritis and mitral valve prolapse with no significant ophthalmic problem. The procedure was performed in the prone position with her head supported by a rest designed to avoid direct pressure on the face. The operative course was complicated and longer than expected, lasting $11\frac{1}{2}$ hours. Intraoperatively her haematocrit fell from 42.1 to 27.3. The mean arterial pressure during the case was maintained between 60 and 100 mmHg, with the majority of time being between 65 and 75 mm of Hg.

Upon recovery from surgery, the patient reported an inability to see with either eye. Initial examination revealed no light perception (NLP) in both eyes. Pupils were symmetric at 6 mm with poor reaction bilaterally. There was a slight left afferent pupillary defect (APD). External exam was unremarkable except for mild bilateral periorbital oedema. Dilated examination revealed a normal fundus bilaterally. No disc swelling, haemorrhages, or pallor was detected. High-dose IV dexamethasone was administered, and immediate CT scan of her head and subsequent MRI/MRA of the head with and without contrast were unremarkable. The patient was started on IV Solumedrol.

She had recovered light perception (LP) in her right eye but remained NLP in her left eye 36 h after surgery. Serial examinations over the following months revealed progressive pallor to both optic nerves. At 2 months after the initial episode, the Goldmann visual field revealed only a small island of vision in the superotemporal quadrant of her right eye (Figure 1 inset).

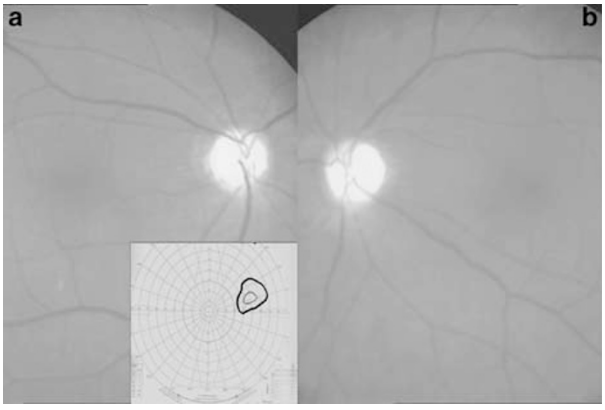

Figure 1 Fundus photograph after 12 months postoperative reveals marked optic nerve pallor in both eyes. (**inset**) Goldmann visual field chart after 2 months of the right eye showing a small island in the superotemporal quadrant.