Correspondence: G Holmstrom,
Tel.: +46 18 6115180;
Fax +46 18 507455.
E-mail: gerd.holmstrom@ogon.uu.se

Eye (2006) **20,** 1472–1474. doi:10.1038/sj.eye.6702363;
published online 28 April 2006

Sir,

Rapid regression of disc neovascularization in a patient with proliferative diabetic retinopathy following adjunctive intravitreal bevacizumab

Bevacizumab (Avastin, Genentech Inc., San Francisco, CA, USA) is a recombinant humanized monoclonal IgG1 antibody that inhibits human vascular endothelial growth factor (VEGF). It has been administered intravitreally in VEGF-mediated diseases such as choroidal neovascularization[1] and central retinal vein occlusion.[2] VEGF plays a major role in mediating neovascularization in eyes with proliferative diabetic retinopathy (PDR).[3] We describe a patient who had dramatic regression of retinal neovascularization 1 week following adjunctive intravitreal bevacizumab.

Case report

A 29-year-old insulin-dependent diabetic male patient had recurrent vitreous hemorrhage (VH) OD for 8 months, despite pan-retinal photocoagulation (PRP). On presentation, his vision was 20/25-2 OD and 20/20-1 OS. Fundus examination showed intraretinal hemorrhages in four quadrants, moderate PRP, and no macular oedema OU. There was mild VH, and florid new vessels on the disc (NVD) OD. There was $\frac{1}{2}$ disc area of NVD, and NVE OS. Over the next 2 weeks, further PRP was performed OU, the VH cleared, and vision improved to 20/20 OD.

Five weeks after PRP, vision decreased to 20/40 OD. The examination OD showed florid NVD, new preretinal haemorrhage and VH, with PRP from the arcades to the ora. The NVD OS had regressed and vision was stable. Fluorescein angiography (Figure 1) showed extensive leakage from NVD OD.

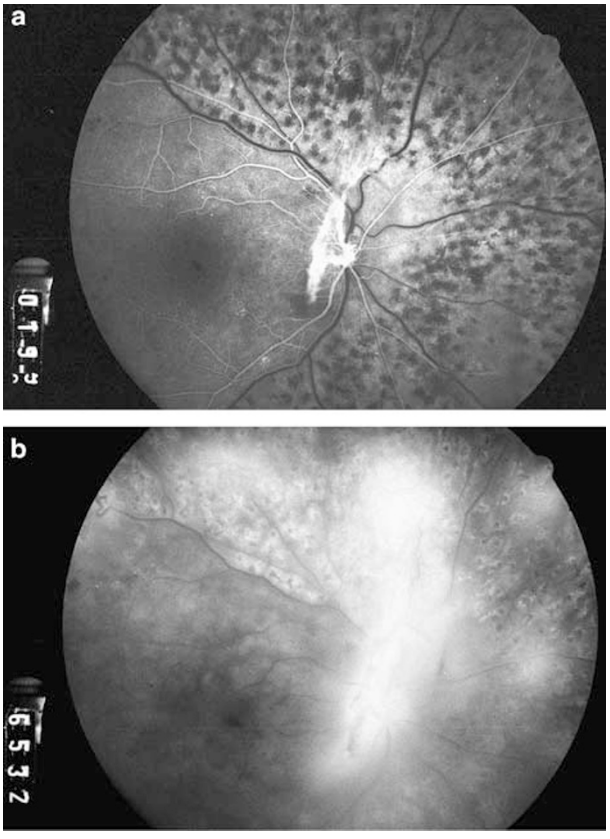

Figure 1 Fluorescein angiogram OD showing leakage from neovascularization of the disc. There is a full PRP. (a) Early phase, (b) late phase.

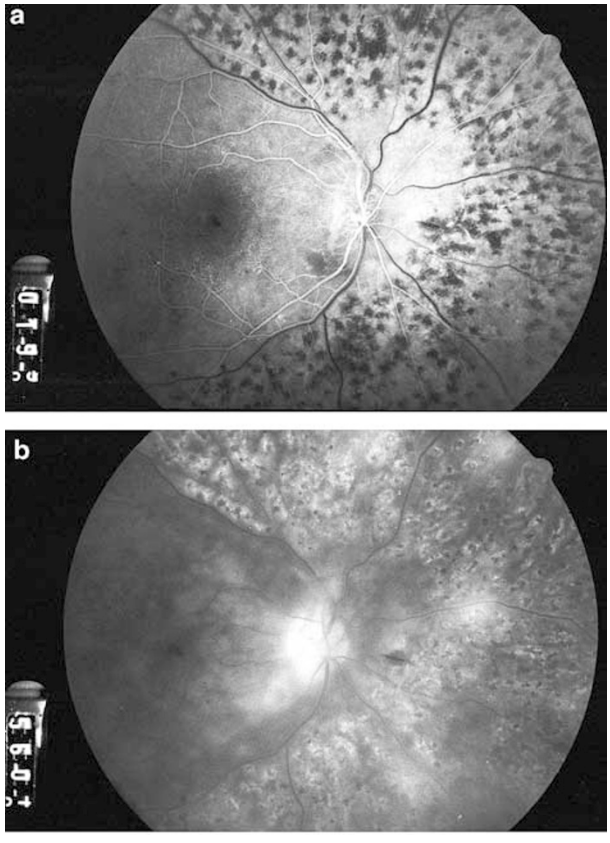

Figure 2 Fluorescein angiogram OD showing regression and cessation of leakage from neovascularization of the disc, 1 week after intravitreal bevacizumab. (a) Early phase, (b) late phase.

As the patient had new VH and persistent leakage from NVD after aggressive PRP, he was offered intravitreal bevacizumab OD, after a full discussion of its off-label nature and potential risks. Using a sterile protocol,[4] 0.05 cc (1.25 mg) of bevacizumab was injected intravitreally OD.

One week later, vision measured 20/25 + 2 OD, the VH had cleared, and the NVD appeared fibrotic OD. Fluorescein angiography (Figure 2) showed dramatic regression and cessation of leakage from NVD.

Comment

This case illustrates rapid cessation of leakage from NVD 1 week following adjunctive intravitreal bevacizumab. Although it may be argued that PRP caused regression of NVD, examination and fluorescein angiography 5 weeks after PRP showed new VH and persistent leaking NVD, which stopped leaking 1 week after intravitreal bevacizumab. As PRP is the standard of care for high-risk PDR,[5] it was only after maximal PRP that we offered the patient off-label adjunctive treatment. Further studies are needed to determine the role of bevacizumab in the management of PDR.

References

1 Rosenfeld PJ, Moshfeghi AA, Puliafito CA. Optical coherence tomography findings after an intravitreal injection of bevacizumab (avastin) for neovascular age-related macular degeneration. *Ophthalmic Surg Lasers Imaging* 2005; **36**: 331–335.
2 Rosenfeld PJ, Fung AE, Puliafito CA. Optical coherence tomography findings after an intravitreal injection of bevacizumab (avastin) for macular edema from central retinal vein occlusion. *Ophthalmic Surg Lasers Imaging* 2005; **36**: 336–339.
3 Aiello LP, Avery RL, Arrigg PG, Keyt BA, Jampel HD, Shah ST *et al*. Vascular endothelial growth factor in ocular fluid of patients with diabetic retinopathy and other retinal disorders. *N Engl J Med* 1994; **331**: 1480–1487.
4 Aiello LP, Brucker AJ, Chang S, Cunningham Jr ET, D'Amico DJ, Flynn Jr HW *et al*. Evolving guidelines for intravitreous injections. *Retina* 2004; **24**(5 Suppl): S3–S19.
5 Early treatment diabetic retinopathy study research group. Early photocoagulation for diabetic retinopathy. ETDRS report number 9. *Ophthalmology* 1991; **98**(5 Suppl): 766–785.

SJ Bakri, MJ Donaldson and TP Link

Department of Ophthalmology, Vitreoretinal Diseases and Surgery, Mayo Clinic, 200 First St SW, Rochester, MN 55905, USA

Correspondence: SJ Bakri,
Tel: + 507 284 3736;
Fax: + 507 284 4612.
E-mail: bakri.sophie@mayo.edu

Eye (2006) **20,** 1474–1475. doi:10.1038/sj.eye.6702364; published online 5 May 2006

Sir,

Epipapillary isolated astrocytoma associated with branch retinal artery occlusion in a single eye

Astrocytomas are congenital glial tumours of the sensory retina that are usually seen in patients with tuberous sclerosis with well-described characteristic features.[1–4] Various ocular complications, including vitreous haemorrhage and seeding,[1–4] subretinal

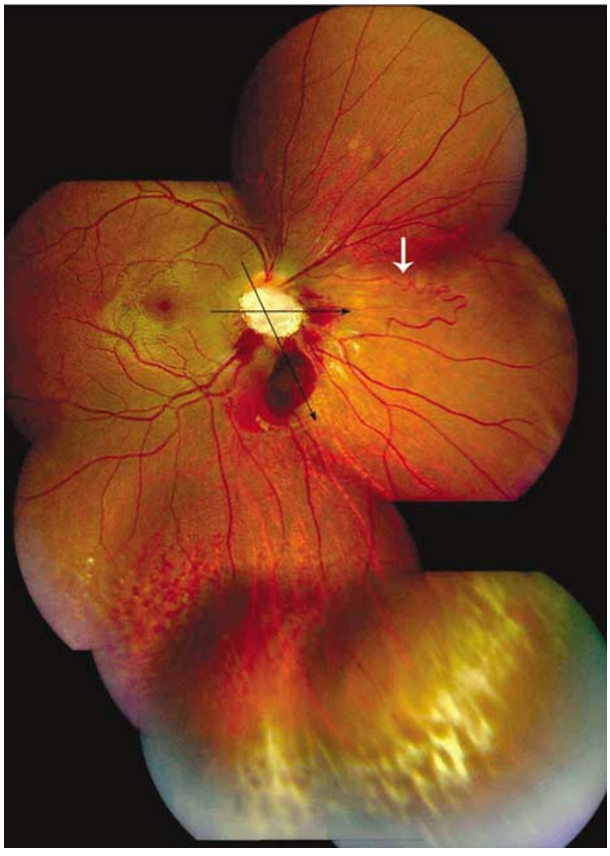

Figure 1 Colour fundus photograph (montage) of the right eye of the patient showing the epipapillary astrocytoma, with a blotch of sub-ILM haemorrhage inferiorly. Also seen are the surrounding superficial retinal haemorrhages and vitreous haemorrhage inferiorly. The collateral between the superonasal and inferonasal branch retinal arteries (white arrow) is also seen. The horizontal and oblique black arrows correspond to the direction of the line scans of Figures 3a and b, respectively.