Sir,
Exudative retinal astrocytic hamartoma diagnosed and treated with pars plana vitrectomy and intravitreal bevacizumab

We report an unusual case of retinal astrocytoma with acute enlargement, initially treated with intravitreal injection of the anti-vascular endothelial growth factor

(VEGF) antibody bevacizumab, and that subsequently underwent diagnostic and therapeutic pars plana vitrectomy (PPV).

Case report

A 24-year-old man was referred for decreased vision OD. On examination, corrected visual acuities (VAs) were 0.8

Figure 1 Clinical images of the right eye. (a) Retinal vascular engorgement around a hemorrhagic retinal and subretinal mass in the inferior macula with tracking of subretinal fluid into the fovea. (b) Fundus image 3 months after initial presentation. Exudative retinal detachment progressed with retinal neovascularization. (c) B-mode ultrasonography showed high reflectivity corresponding to the retinal detachment in the posterior segment with no calcification. (d) OCT image showed elevation of disorganized retina with no view of deeper layers due to shadowing. (e) Fluorescein angiography demonstrated hyperfluorescence corresponding to retinal neovascularization. (f) Fundus image 4 months after intravitreal injection of bevacizumab. Retinal vascularization and subretinal exudation were decreased. (g) Fundus image 12 month after pars plana vitrectomy. The retina remained flat without recurrence of exudation or tumor.

OD and 1.2 OS, and the intraocular pressures were normal OU. Funduscopy of the right eye revealed retinal vascular engorgement around a hemorrhagic retinal and subretinal mass in the inferior macula (Figure 1a). Magnetic resonance imaging of the brain showed calcified nodules in the lateral ventricle consistent with tuberous sclerosis. Laboratory investigations revealed normal chemistries and blood counts. As tuberculin skin test was strongly positive, subretinal granuloma due to tuberculosis was considered a possibility, and therefore anti-tuberculous treatment was initiated. After 2 months, the VA declined further to 0.05 OD, with progressive exudative retinal detachment and development of retinal neovascularization (Figure 1b). B-mode ultrasonography showed high reflectivity corresponding to the retinal detachment in the posterior segment with no calcification (Figure 1c). OCT image showed elevation of disorganized retina with no view of deeper layers due to shadowing (Figure 1d). As fluorescein angiography demonstrated hyperfluorescence corresponding to the retinal neovascularization with exudation (Figure 1e), we considered two possibilities: retinal astrocytic

Figure 2 Histopathological images. (a) The tumor was composed of spindle-shaped glial cell with eosinophilic cytoplasm, consistent with astrocytes. Hematoxylin-eosin staining. (b) Tumor cells were intensely immunoreactive for glial fibrillary acidic protein.

hamartoma or retinal capillary haemangioma.¹ After informed consent, bevacizumab was injected intravitreally and repeated at 1 month. Although retinal exudation and vascularity of the retinal mass decreased after bevacizumab injection (Figure 1f), severe exudative retinal detachment remained. Therefore, 4 months after the first bevacizumab injection, PPV was performed for diagnostic and therapeutic purposes. Histopathological examination showed that the tumor was composed of spindle-shaped glial cells (Figure 2a) intensively immunoreactive for glial fibrillary acidic protein (Figure 2b). Postoperatively, there was no recurrence of tumor and the corrected VA was 0.15 at 1 year (Figure 1g).

Comment

Retinal astrocytoma typically remains stable throughout life, but may also exhibit acute growth and cause retinal exudates and neovascularization.^{2,3} In this case, intravitreal anti-VEGF therapy was used to reduce the subretinal fluid and retinal vascularization before performing PPV. A recent report suggests that intravitreal bevacizumab may be effective for macula edema secondary to tuberous sclerosis.⁴ Although retinal astrocytoma in tuberous sclerosis is usually a stationary lesion, vitrectomy may be useful for the diagnosis and management of a progressive retinal tumor in such patients. Furthermore, intravitreal bevacizumab provides a useful adjunctive therapy.

Conflict of interest

The authors declare no conflict of interest.

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