**Sir,
Live *Brugia malayi* in the anterior chamber: a case report from India**

Brugia malayi is a filarial parasite endemic in southern China, India, and throughout south-east Asia. It is responsible for ~10% of lymphatic filariasis cases in the region.¹ A few occurrences with ophthalmic involvement have been reported previously.^{2–4} We present a case of intraocular *B. malayi* from Kerala, a state in southwestern India.

Case report

A 14-year-old female presented with redness in the right eye for 1 month. Her right eye visual acuity tested on Snellen's chart was 20/40 for distance and 20/30 for near. On examining under a slit lamp, a live mobile worm was seen in the anterior chamber (Figure 1). There was 1+ flare and 1+ cells. There was no posterior segment signs of inflammation or presence of worm. The patient has not taken any treatment previously. Total leukocyte count was 11 500 cells/mm³, differential leukocyte counts did not show any eosinophilia and ESR was 35 mm/h. Circulating filarial antigen test was negative. No systemic involvement was noted.

The worm was removed under topical anesthesia under aseptic precautions.

The patient was treated with oral diethylcarbamazine 50 mg BD and levocetirizine 10 mg for 10 days, prednisolone 40 mg, and topical betamethasone every 2 h tapering over 2 weeks. Postoperatively there was no inflammation or raised IOP. The patient's vision recovered to 20/20 for distance and near.

The worm was examined under a Carl Zeiss microscope with measurement facility. The taxonomy was done based on standard keys. Immunoassays could not be done as the specimen was formalin preserved. We identified a subadult female worm of *Brugia* sp with the reproductive tract at the head end.

Comment

Filariasis is transmitted by a mosquito.¹ Lymphatic filariasis caused by *B. malayi* occurs in southwest India, China, Indonesia, Malaysia, Korea, the Philippines, and Vietnam.² The ocular manifestations of filariasis are

elephantiasis of the eyelids, iritis, retinal hemorrhages, or the presence of microfilaria in the lacrimal gland secretion.³

We made a diagnosis of live *B. malayi* in the anterior chamber; however, owing to the lack of systemic involvement, this could be a new species *B. phangi*.⁵ Molecular techniques need to be used to identify this.

Diethylcarbamazine clears microfilaria from the blood and has a limited but definite effect on adult parasites.² Our patient responded extremely well to treatment. Appropriate examination, identification, and prompt treatment are of paramount importance. Control is by mosquito eradication. *Mansonia* species are the major vectors in rural areas.²

Conflict of interest

The authors declare no conflict of interest.

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Figure 1 Color microscope photo of the right eye in diffuse illumination showing the presence of live worm in the anterior chamber.

**Sir,
The anatomical and functional benefit of bevacizumab in the treatment of macular edema associated with Purtscher-like retinopathy**

We read the article by Miguel *et al*¹ regarding Purtscher's and Purtscher-like retinopathies with great interest. As the authors well describe, 'Purtscher-like retinopathy' is diagnosed in patients with fundus findings similar to Purtscher's retinopathy, without a history of trauma but

Figure 1 Dilated fundus examination at presentation. (a) Mosaic color fundus photo OD demonstrating multiple cotton wool spots, superficial retinal hemorrhages surrounding the optic nerve, macular edema, and scattered intraretinal hemorrhages. (b) Mosaic color fundus photo OS demonstrating similar but milder retinal pathology.

Figure 2 Heidelberg high-definition OCT images at presentation and 3-month follow-up. (a) OD at presentation demonstrating severe macular edema. (b) OD at 3-month follow-up with significantly improved macular edema after treatment with intravitreal bevacizumab. (c) OS at presentation with milder macular edema. (d) OS at 3-month follow-up with resolved macular edema.

with known systemic associations.¹ Current proposed mechanisms for the underlying pathogenesis include leukocyte aggregation by activated complement factor 5 (C5a).² As noted by the authors' systematic review, there is currently no established treatment for Purtscher-like retinopathy, although the literature consists of several case reports of treatment with corticosteroids, without certainty as to effect on the clinical course.¹ Herein, we report for the first time a case of Purtscher-like retinopathy treated successfully with intravitreal bevacizumab injection.

Case report

A 51-year-old man presented to the Retina Service at the University of Louisville with sudden nontraumatic loss of vision OD. The patient's medical history included hepatitis C, with chronic pancreatitis and cirrhosis. Best-corrected visual acuity (BCVA) was finger counting OD and 20/30 OS. Fundoscopy revealed cotton wool spots and intraretinal hemorrhages surrounding normal optic discs bilaterally (Figure 1). Optical coherence tomography (OCT) showed macular edema more severe on the right eye (Figure 2). Complete blood count with differential, kidney function tests, CRP, cryoglobulin, and amylase were normal. Serum C5a was elevated at 12.9 ng/ml (normal range 4.7–9.5 ng/ml).

The patient received an intravitreal injection of bevacizumab (1.25 mg/0.05 ml) (Genentech, South San Francisco, CA, USA) OU for the treatment of macular

edema. At 3-month follow-up BCVA OD improved to 20/160 with resolution of macular edema in both eyes (Figure 2).

Comment

Purtscher-like retinopathy is an uncommon disease associated with various conditions.³ Treatment with corticosteroids has been proposed, but its effectiveness is still controversial.¹ This is the first case to describe the beneficial anatomical and functional effects of intravitreal bevacizumab for the management of macular edema associated with Purtscher-like retinopathy. We suggest this treatment be considered in similar cases.

Conflict of interest

The authors declare no conflict of interest.

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Sir, Response to Nesmith *et al*

We thank Nesmith *et al*¹ for their interesting report of anatomical and functional benefit of intravitreal bevacizumab in the treatment of macular edema in a probable case of Purtscher-like retinopathy. The case reported respects the majority of the diagnostic criteria of Purtscher or Purtscher-like retinopathies suggested by Agrawal² and adapted by us,³ namely:

- Retinal hemorrhages, in the posterior pole, in small number (1–10).
- Cotton wool spots restricted to the posterior pole.
- Probable or plausible explanatory etiology (chronic pancreatitis, hepatitis C, cirrhosis, and typical presentation).
- Compatible complementary investigation (characteristic funduscopy, OCT revealing macular edema, and increased C5a).
- The presence of Purtscher flecken⁴ is another diagnostic criterion (in this case there were none visible). Purtscher flecken are considered pathognomonic⁴ and occur in 63% of Purtscher and Purtscher-like retinopathies (PuR).³

Nesmith *et al* report the first case of PuR with improvement of visual acuity, fundoscopic signs, and macular edema after the injection of intravitreal bevacizumab. Anti-VEGF agents may be of value considering PuR's proposed pathological mechanisms, namely in endothelial dysregulation⁵ and in precapillary arterioles' occlusion with altered retinal microvascular permeability.⁶

However, there must be caution before concluding that bevacizumab is useful in PuR because spontaneous improvement is frequent. In a systematic review regarding Purtscher and Purtscher-like retinopathies,³ we identified improvement of visual acuity in PuR

patients without treatment (there was no statistically significant difference between visual acuity improvement in patients receiving corticosteroids *vs* no corticosteroids), as well as improvement in OCT findings in 63% of the patients, as normalization of the fundoscopic signs in 40% of the patients with PuR. Observation and treatment of the underlying etiology may continue to be the most reasonable therapeutic option at the moment.

In conclusion, further studies should be performed to ascertain whether there is real benefit in performing a treatment with intravitreal bevacizumab. In fact, an international multicentered trial (given the low incidence of this pathology⁷) with different treatment arm groups should be initiated, comparing sham injection, intravitreal bevacizumab injection, corticosteroid use, and observation alone.

Conflict of interest

The authors declare no conflict of interest.

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