Eye (2010) 24, 1825–1829
© 2010 Macmillan Publishers Limited All rights reserved 0950-222X/10 $32.00
www.nature.com/eye

Sir,

Short-term changes of visual hallucinations after intravitreal injection of ranibizumab in neovascular age-related macular degeneration

Visual hallucinations are frequently reported by patients with severe forms of age-related macular degeneration (AMD). The phenomena, which are also known by the eponym Charles–Bonnet syndrome,[1] have also been described in AMD patients after treatment including macular photocoagulation,[2] photodynamic therapy,[3] limited macular translocation,[4] and intravitreal Bevacizumab (Avastin) injection.[5] Our study aims to describe the occurrence and course of visual hallucinations after intravitreal Ranibizumab (Lucentis) injection.

Case report

One hundred consecutive patients with AMD were interviewed 1 h before Lucentis injection and 2 weeks after administering a standardized questionnaire. Exclusion criteria were score ≤ 8 on Abbreviated Mental Test and corrected LogMAR visual acuity (VA) ≥ 1.0 in the better eye. At 1 h before and 2 weeks after the injection, each patient was asked whether they observed any luminous or coloured visual phenomena or experienced any visual hallucinations.

Patients with unstructured visual phenomena such as coloured, white, or dark patches, lights, stars, or other unstructured shapes were classified into group I. Patients with structured hallucinations such as faces, flowers, and people were classified into group II and those without visual hallucinations into group III. (See Table 1 for the results.) One of the patients from group III who developed unstructured visual hallucinations for the first time, an 86-year-old woman, described seeing green and pink unstructured shapes occurring every half an hour since the injection. Her VA was 0.78 pre- and 0.98 post-injection in the treated eye, and 0.78 unchanged in the non-treated eye. The second patient, an 84-year-old woman, started seeing cloudy black spots with flashes of lights a few times every day since the injection. Her VA was the same pre- and post-injection: 0.54 in the treated eye and 2.0 in the non-treated eye. All patients were aware of the unreality of the events.

Table 1 Visual hallucinations during the first 2 weeks after the injection

	Group I	*Group II*	*Group III*
Number of all patients in each group	11	4	85
Patients with no change in visual hallucinations	6	2	N/A
Patients with decrease in the intensity of visual phenomena	3	2	N/A
Patients who stopped experiencing visual hallucinations	2	0	N/A
Patients who reported unstructured visual phenomena for the first time	N/A	N/A	2

Comments

Our preliminary results demonstrated that Ranibizumab treatment may improve or at least prevent worsening of visual hallucination in patients with wet AMD in the short term. We recommend further work to define the long-term results.

Conflict of interest

The authors declare no conflict of interest.

Acknowledgements

This study was funded by the Medical University of Edinburgh.

References

1 Menon GJ, Rahman I, Menon SJ, Dutton GN. Complex visual hallucinations in the visually impaired: the Charles Bonet Syndrome. *Surv Ophthalmol* 2003; **48**(1): 58–72.
2 Cohen SY, Safran AB, Tadayoni R, Quentel G, Guiberteau B, Delahaye-Mazza C. Visual hallucinations immediately after macular photocoagulation. *Am J Ophthalmol* 2000; **129**(6): 815–816.
3 Cohen SY, Bulik A, Tadayoni R, Quentel G. Visual hallucinations and Charles Bonnet syndrome after photodynamic therapy for age related macular degeneration. *Br J Ophthalmol* 2003; **87**(8): 977–979.
4 Au Eong KG, Fujii GY, Ng EW, Humayun MS, Pieramici DJ, de Juan Jr E. Transient formed visual hallucination following macular translocation for subfoveal choroidal neovascularization secondary to age-related macular degeneration. *Am J Ophthalmol* 2001; **131**(5): 664–666.
5 Meyer CH, Mennel S, Hörle S, Schmidt JC. Visual hallucination after intravitreal injection of Bevacizumab in vascular age related macular degeneration. *Am J Ophthalmol* 2007; **143**(1): 169–170.

I Mitrut[1], P Chua[2], T Aslam[1], A Vani[1], AM Ambrecht[1] and B Dhillon[1]

[1]The Princess Alexandra Eye Pavilion, Edinburgh, UK
[2]Aberdeen Royal Infirmary, Aberdeen, UK
E-mail: izabelamitrut@yahoo.co.uk

Presentations: Scottish Ophthalmological Club Meeting.

Eye (2010) **24,** 1825; doi:10.1038/eye.2010.148; published online 22 October 2010

Sir,

Intraocular filarial infection

Filarial infestation by genus *Dunnifilaria* has been reported only in animals.

Case report
An 80-year-old woman complained of left eye pain associated with blurring of vision for 3 days. On examination, her left eye vision was 6/60, not improving with pin hole. The left eye was injected and pupil was 3 mm with posterior synechiae. There was a localized cornea oedema inferiorly near the limbus. The most striking feature was the presence of a worm in the anterior chamber (Figure 1). It measured approximately 4 mm, was white in colour, semitransparent, and photosensitive. One end was rounded, while the other end was pointed. There was moderate anterior chamber reaction. Funduscopy of the left fundus was normal.

The patient was started on topical Bethamethasone 0.1% drops on a 2-hourly basis and Cyclopentolate 0.5% tds. Surgical evacuation of the worm was done and the specimen was sent for examination.

The parasitologist identified the worm from the genus *Dunnifilaria*, with the features closest to *Dunnifilaria ramachandrani* (Figure 2).

Peripheral blood film, stool, and urine examinations were negative for parasite infestation. Blood differential count did not show eosinophilia. Post surgical evacuation of the parasite, the patient had uneventful recovery.

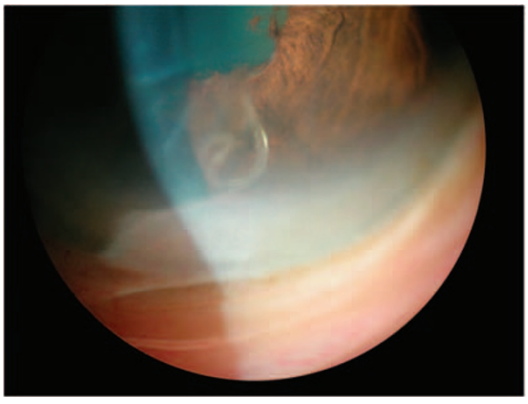

Figure 1 Worm in anterior chamber.

Figure 2 Microscopic feature of the filarial.

Comment
Intraocular worm infestation is an uncommon phenomenon. Live nematodes that have been found to affect the eye include *Loa loa*, Onchocerca, Gnathostoma, Angiostrongylus, Toxocara (visceral larva migrans), *Wuchereria bancrofti*, Ascaris, *Brugia malayi*, and Thelazia.[1]

The most common infections in man with filariae of animal origin are caused by members of the genus *Dirofilaria*.[2] The infestation by the *Dunnifilaria* genus has not been reported in humans.

There are only three known species in this genus, which comprises *D. dilli*, *D. ramachandrani* and *D. meningica*.[3] The primary host of *Dunnifilaria* is rodent.

Conflict of interest
The authors declare no conflict of interest.

References
1 Parveen K, Jyotirmay B, Lingam G, Tarun S, Rajat A, Badrinath S. Live intraocular nematode causing uveitis-analysis of six cases. 64th Annual Conference of the All Indian Ophthalmological Society 2006.
2 Orihel TC, Eberhard ML. Zoonotic filariasis. *Clin Microbiol Rev* 1998; **11**: 366–381.
3 Gutierrez-Pena EJ. Dunnifilaria meningica sp.n. (Filarioidea: Onchocercidae) from the central nervous system of the wood-rat (Neotoma micropus) in Mexico. *Trop Med Parasitol* 1987; **38**: 292–298.

HH Lam, V Subrayan and G Khaw

Department of Ophthalmology, University of Malaya, Kuala Lumpur, Malaysia
E-mail: lamheehong@yahoo.com.my

Eye (2010) **24,** 1825–1826; doi:10.1038/eye.2010.141; published online 8 October 2010

Sir,
Quinine-induced coagulopathy: a risk factor for suprachoroidal haemorrhage

Quinine is widely used to treat leg cramps in the elderly.[1] Its use has long been associated with thrombocytopenia.[2] We report a case of quinine-induced thrombocytopenia manifesting with a suprachoroidal haemorrhage during cataract surgery.

Case report
A 75-year-old man underwent left cataract surgery. Visual acuity was 6/12 in both eyes. He took quinine sulphate 300 mg OD for leg cramps. His past medical and drug history was otherwise unremarkable. Peribulbar anaesthesia was given uneventfully. During phacoemulsification and removal of the final quadrant of the lens nucleus, the eye became tense, the red reflex reduced, and an anterior capsule tear extended posteriorly causing vitreous loss. Intravenous acetazolamide (500 mg) was given immediately, an anterior vitrectomy completed, a sulcus intraocular lens inserted, and the wound sutured.