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CORRESPONDENCE

Sir,

Visual hallucinations after intravitreal injection of ranibizumab in neovascular age-related macular degeneration

I read with interest the report by Mitrut *et al*[1] describing the changes in visual hallucinations after intravitreal injection of ranibizumab for neovascular age-related macular degeneration (AMD). The authors mention early in the article the term Charles Bonnet syndrome (CBS). I feel it is important to point out that not all of the visual experiences described in this series should be described with this term. CBS occurs in patients with poor vision secondary to various ophthalmic conditions, not just AMD,[2,3] and its definition includes the presence of formed, complex visual hallucinations.[2,3] Hence, colours, patches, spots, or lights may not be manifestations of CBS. In particular, the experiences of the two patients in group III who developed 'hallucinations' after the intravitreal injection could be explained by alternative mechanisms, such as visualization of the injected drug and vitreous traction on the retina following the injection. It would be interesting to know the time of onset of these phenomena and whether they persisted.

Regardless of whether the hallucinations constitute actual CBS, there are other interesting points that merit discussion. The authors do not mention a possible increase in intensity of visual hallucinations in Table 1, and it would be interesting to know whether this was investigated. It has been shown that visual hallucinations may increase in frequency or even begin for the first time following a change in the patient's ocular condition.[4,5] The dynamic change in visual acuity may be more important in precipitating hallucinations rather than the absolute visual acuity.[4]

One of the difficulties of describing the characteristics of hallucinations is their rarity, and it would be difficult to draw any definitive conclusions based on the small numbers in this series. Of the four patients in group II, only two experienced a decrease in intensity of the visual phenomenon. However, it has been shown that the frequency of visual hallucinations changes with time,[4,5] and may decrease or cease spontaneously.

I agree with the authors that this is an important symptom to enquire about, as patients are often reluctant to discuss their hallucinations.[2,3] A long-term study will be required, probably including a larger baseline population, in order to determine the course of hallucinations following intravitreal injections.

Conflict of interest

The author declares no conflict of interest.

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Sir,

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

We thank Tan[1] for his interest and the response to our letter. Tan is correct in pointing out that the term Charles Bonnet Syndrome that we used early in our report[2] relates just to the complex or structured visual hallucinations that some of our patients had experienced. Visual hallucinations in our patients may be compounded by iatrogenic entoptic phenomena. We did investigate the possibility of increase of visual hallucinations after the intravitreal injection of rabimizumab in our patients and found that it was not a notable phenomenon in this small series; therefore we did not mention this in Table 1. We agree that it is difficult to draw any definite conclusions about the change of visual experiences that had already existed in the small number (15) of our patients, but our results are valid for the 85 patients that we described in group III. Visual hallucinations are an under-investigated area given the widespread use of intravitreal therapy world-wide. A recent study published in this journal showed that the visual perceptions experienced following 15% of intravitreal injection of therapeutic agents gave cause for concern to the patient and more than half of the patients believed that preoperative counselling would have averted the concern.[3]

Conflict of interest

The authors declare no conflict of interest.

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Sir,

Recurrent intradialytic elevation of intraocular pressure in a case of neovascular glaucoma

We report a case of elevated intraocular pressure (IOP) during haemodialysis (HD), the commonest treatment for end-stage renal failure.

Case report

A 48-year-old male presented with recurrent right ocular pain and nausea during regular HD for post-kidney transplant failure. He was diagnosed with right central retinal vein occlusion 10 weeks previously. He developed rubeotic glaucoma 4 weeks earlier, with 360°-angle neovascularisation (Shaffer Grade 4 all quadrants on gonioscopy) and visual acuities (VA) of hand movements (HM), right and 6/6 left. IOPs were 39 mm Hg right and 11 mm Hg left. Treatment included pan-retinal photocoagulation, cyclodiode and topical IOP-lowering drugs. IOP reduced to 19 mm Hg and rubeosis regressed.

At presentation, 10-min post-dialysis, VAs were barely HM right and 6/6 left with IOPs of 62 and 10 mm Hg, respectively. Intravenous acetazolamide and topical agents lowered IOP to 20 mm Hg. He presented with further intradialytic symptoms and IOPs of 60 and 55 mm Hg two further times. The eye was comfortable between HD with IOP consistently 19–24 mm Hg. We initiated oral acetazolamide 250 mg SR the evening before and on the day of HD. After 5 months, he remains comfortable during HD, with IOPs immediately post-HD, consistently between 22–25 mm Hg.

Comment

The effect of HD on IOP has been widely studied, with conflicting reports. A systematic review concluded that the relationship was not clear.[1] Reports of IOP rise during HD in neovascular[2,3] and pseudo-exfoliative glaucoma are extremely limited.[4,5] Mechanisms for elevated IOP during HD are unclear; some authors propose that reduced plasma osmolality causes increased aqueous humour production and potential to elevate IOP.[3] Normal eyes may increase outflow to compensate.

In our patient, we suggest that raised IOP resulted from imbalance between aqueous outflow, due to obstruction by angle neovascularisation and aqueous production. The higher IOP in the affected eye between dialysis sessions supports a theory of outflow obstruction; the drainage system could not compensate for increased aqueous during HD.

Regular acetazolamide, an interim measure until renal transplant, has successfully prevented IOP surges without causing side effects in our patient, particularly metabolic acidosis. Other reported strategies include cyclodiode,[3] filtration surgery,[2] adjusted HD including a hyperosmotic agent[5] or eviscerating treatment-resistant cases.[2]

Clinicians must recognise that IOP may rise intolerably during HD in glaucoma patients. We suggest that acetazolamide, with close systemic monitoring, is an effective and safe strategy.

Conflict of interest

The authors declare no conflict of interest.

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Sir,

Acute lymphocytic leukemia relapsing as bilateral serous retinal detachment: a case report

We report a case of bilateral serous retinal detachment (SRD) as an initial sign of relapse of acute lymphocytic leukemia. A 31-year-old woman with acute pre B-cell lymphocytic leukemia in complete remission, who presented with symptoms of visual blurring, was found to have bilateral SRD. A bone marrow aspirate revealed relapse of the disease. Her maculopathy completely resolved following systemic chemotherapy.