

Sir,  
**Phacoemulsification and intraocular lens implantation following pars plana vitrectomy: a prospective study**

I read with special interest the article by Ahfat *et al*<sup>1</sup> about the various aspects of phacoemulsification surgery in patients who have had pars plana vitrectomy (PPV) in the past.

It is quite a well-conducted study and I would like to extend my appreciation to all the authors. The authors have noted that postoperatively the improvement in the visual acuity was the least (57.1%) in the diabetic retinopathy group. It would be interesting to know if the improvement was compromised by the worsening of the diabetic retinopathy after the surgery, as is known to happen.<sup>2</sup> I was involved with similar such studies where we studied the challenges of phacoemulsification in a group of patients who had retinitis pigmentosa (RP) and another group of patients who had PPV. Both groups were similar as the vitreous support was inadequate, vitreous being very fluid in RP. We applied different hydrodissection procedures during the phacoemulsification surgery. In one group we only performed hydrodelineation and the other group was subjected to standard hydrodissection. We had significantly more complications (posterior capsular rupture) in the hydrodissection group as compared to the hydrodelineation.

Hydrodelineation helps by supporting the posterior capsule during the surgery without any increase in the risk of zonular dialysis. The results were similar in both the groups, that is, RP and PPV. We think this was because the posterior capsule was unstable and support from the vitreous was insufficient in these patients, and therefore hydrodelineation was a safer technique. I quite agree with the authors about the 'infusion deviation syndrome', and a lower infusion bottle height keeps the anterior chamber reasonably stable and prevents surgical surprises.

#### References

- 1 Ahfat FG, Yuen CHW, Groenewald CP. Phacoemulsification and intraocular lens implantation following pars plana vitrectomy: a prospective study. *Eye* 2003; **17**(1): 16–20.
- 2 Bresnick GH. Background diabetic Retinopathy. In Ryan SJ *Medical Retina Vol II*. St Louis, Mosby, 1989; 353.

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Sir,  
**Reply**

We thank Dr Raj for his interest in our paper. Cataract surgery in diabetic patients can indeed be associated with an increased risk of macular oedema and lead to a poor visual outcome. Dowler *et al*<sup>1</sup> carried out intraoperative and postoperative fundus fluorescein angiograms in diabetic patients undergoing cataract surgery. They found that the presence or absence of pre-existing macular oedema was the single most significant predictor of postoperative visual outcome. In all, 56% of their patients developed new macular oedema after cataract surgery. 50% of these, had resolved after 6 months and 75% after 1 year. In patients who had pre-existing macular oedema, only 25% achieved a final acuity of 6/12 or better, compared with 85% in patients who had no pre-existing macular oedema.

We agree that hydrodissection can be hazardous in the vitrectomised eye. In our experience, hydrodelineation is a safer technique, especially in vitrectomised eyes that have posterior capsular plaques. It is well recognised that cataracts can develop as a result of lens touch from vitrectomy instruments. We have also seen instances of chips or defects in the posterior capsule or zonules caused by vitreous cutters. We advise that all eyes with postvitrectomy cataracts undergo a careful preoperative slit-lamp assessment to determine the possible presence of capsular defects. In these eyes, hydrodissection should be avoided. Instead, hydrodelineation should be performed with care to prevent capsular blow-out, and phacoemulsification carried out with minimal cracking, with the epinucleus acting as a protective shell.

However, it is worth noting that in many presbyopic patients, pars plana vitrectomy is now increasingly being combined with phacoemulsification and intraocular implant to reduce the need for further surgery.

#### References

- 1 Dowler J, Sehmi K, Hykin P, Hamilton P. The natural history of macular oedema after cataract surgery in diabetes. *Ophthalmology* 1999; **106**(4): 663–668.

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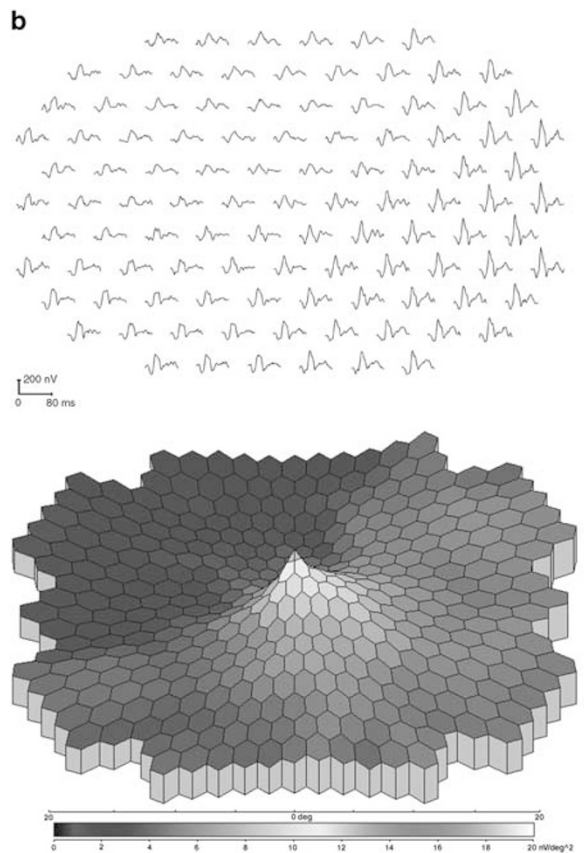
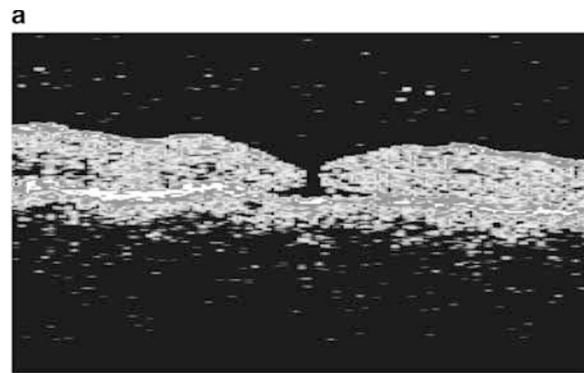
Sir,  
**Multifocal electroretinogram and optical coherence tomography of commotio retinae and traumatic macular hole**

Blunt trauma like football injury may result in commotio retinae and traumatic macular hole.<sup>1,2</sup> Persistent visual impairment may occur in severe cases of commotio retinae due to damage to the photoreceptors or retinal pigment epithelia. We report the use of multifocal electroretinogram (mfERG) and optical coherence tomography (OCT) in a patient with commotio retinae and traumatic macular hole following blunt ocular injury. To our knowledge, there has been no previous report in the literature on the mfERG findings following commotio retinae.

#### Case report

A 24-year-old man presented with left eye visual loss after blunt injury by a football. On examination, his visual acuity was 6/6 for the right eye and hand movement for the left eye. There was 2 mm hyphema with mild vitreous haemorrhage in the left eye. Fundus examination showed a localised area of commotio retinae at the superionasal part of the macula. At 2 weeks after the injury, the hyphema and vitreous haemorrhage resolved, and his left eye visual acuity improved to 6/36. He noted a relative scotoma at the inferiortemporal visual field. Fundus examination showed an area of mild retinal pigment epithelial atrophy at the site of the commotio retinae. OCT imaging revealed a 100  $\mu\text{m}$  full thickness traumatic macular hole (Figure 1a).

Automated visual field testing detected a relative inferionasal scotoma. MfERG demonstrated reduction in retinal response density at the central macula with a well-demarcated area of depressed retinal response density in the superionasal part of the macula (Figure 1b).



**Figure 1** (a) Optical coherence tomography of the left eye 3 weeks after injury showing a full thickness macular hole of 100  $\mu\text{m}$  in size. (b) Trace array and three-dimensional topography of the multifocal electroretinogram of the left eye showing reduced retinal response density at the central macula due to the traumatic macular hole. There was also a well-demarcated area of reduced retinal response density at the superionasal part of the macula corresponding to the area of commotio retinae.