

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.