in the treatment of cardiac arrhythmias. *J Am Coll Cardiol* 1983; **2**(6): 1114–1128.
2 Cote P, Bourassa MG, Delaye J, Janin A, Froment R, David P. Effects of amiodarone on cardiac and coronary hemodynamics and on myocardial metabolism in patients with coronary artery disease. *Circulation* 1979; **59**(6): 1165–1172.
3 Mantyjarvi M, Tuppurainen K, Ikaheimo K. Ocular side effects of amiodarone. *Surv Ophthalmol* 1998; **42**(4): 360–366.
4 Duff GR, Fraser AG. Impairment of colour vision associated with amiodarone keratopathy. *Acta Ophthalmol (Copenhagen)* 1987; **65**(1): 48–52.
5 Pollak PT. Clinical organ toxicity of antiarrhythmic compounds: ocular and pulmonary manifestations. *Am J Cardiol* 1999; **84**(9A): 37R–45R.
6 Orlando RG, Dangel ME, Schaal SF. Clinical experience and grading of amiodarone keratopathy. *Ophthalmology* 1984; **91**(10): 1184–1187.
7 D'Amico DJ, Kenyon KR, Ruskin JN. Amiodarone keratopathy: drug-induced lipid storage disease. *Arch Ophthalmol* 1981; **99**(2): 257–261.
8 Feiler-Ofry V, Lazar M, Solomon A, Godel V. Amiodarone keratopathy. *Ophthalmologica* 1980; **180**(5): 257–261.
9 Kaplan LJ, Cappaert WE. Amiodarone keratopathy. Correlation to dosage and duration. *Arch Ophthalmol* 1982; **100**(4): 601–602.
10 Ciancaglini M, Carpineto P, Zuppardi E, Nubile M, Doronzo E, Mastropasqua L. *In vivo* confocal microscopy of patients with amiodarone-induced keratopathy. *Cornea* 2001; **20**(4): 368–373.

PR Bhatt and K Ramaesh

Tennent Institute of Ophthalmology, Gartnavel General Hospital, Great Western Road, Glasgow, G12 OYN, Scotland

Correspondence: PR Bhatt,
Tennent Institute of Ophthalmology,
Gartnavel General Hospital,
Great Western Road,
Glasgow G12 OYN, Scotland
Tel: +44 141 211 1039;
Fax: +44 141 211 2054.
E-mail: priyarbhatt@hotmail.com

Eye (2007) **21,** 296–298. doi:10.1038/sj.eye.6702553; published online 1 September 2006

Sir,

Successful retrieval of internal limiting membrane specimens

Internal limiting membrane (ILM) peel is undertaken during pars plana vitrectomy for diabetic macular oedema,[1,2] as an adjuvant to epiretinal membrane peel[3,4] and in macular hole surgery.[5,6] There is some controversy concerning the benefits of the procedure, and histological investigations are often required in the course of attempts to establish the usefulness of ILM peel. For example, histopathological assessment of the tissue removed is important to ascertain surgical cleavage planes and the presence or absence of neural tissue on the retinal side of the peeled ILM, as well as to confirm the nature of the excised tissue.

It is notoriously difficult to retrieve ILM tissue specimens for histology because of their small size and transparent character. These features render the tissue easily lost between removal from the eye and embedding within a histological medium such as wax.[7,8] Many methods have been employed to improve the recovery rate of these tiny specimens, including retrieval into small volumes of fixative, the application of tiny amounts of ink or dye to the specimen-containing fluid (in order to stain and hence visualise the ILM) and 'sandwiching' the specimen in folded paper.[7,8]

We have recently adopted two further modifications to these methods that we have found has increased our rate of successful retrieval of ILM specimens to approaching 100% of excised ILM specimens. The first modification involves placing the specimen on a 1×1 cm wet instrument gauze (BD Visiwipe, USA) directly from the retinal forceps that were used to peel the ILM. The microporous nature of the wet instrument gauze tends to 'suck' the specimen to it's surface, thereby keeping it secure and flat as can be seen in the case of ILM removed with the aid of Indocyanine Green (ICG) (Figure 1a and b). Then the gauze with attached specimen is transferred to a specimen bottle containing 20 ml of 10% formalin. It is important to transfer the specimen to the specimen bottle containing formalin quickly as the microporous nature of tissue gauze tends to withdraw water from the specimen and could make it brittle.

The second modification is conducted in the laboratory. Even when such intra-operative dyes as ICG or Trypan blue have been employed to remove the tissue, by the time the specimen reaches the laboratory it has usually regained its transparency. Therefore, in the laboratory, 1–2 drops of 1% alcian blue in 3% of acetic acid (1:10 diluted, pH 2.5) are added to the specimen bottle and left for 2 h to re-stain the specimen. Alcian blue is a group of polyvalent dyes that are water soluble. The blue colour is due to the presence of copper molecules and it stains mucopolysccharide of epithelial cells and connective tissue mucins, although it will stain every tissue component over a larger period of time. The contents of the bottle are then poured in a boat dish and the now intensely blue stained specimen is easily retrieved to a tissue wrap and processed further for light or electron microscopy (Figure 1b).

In our experience, the histology of the peeled ILM is unaltered by these modifications to their retrieval

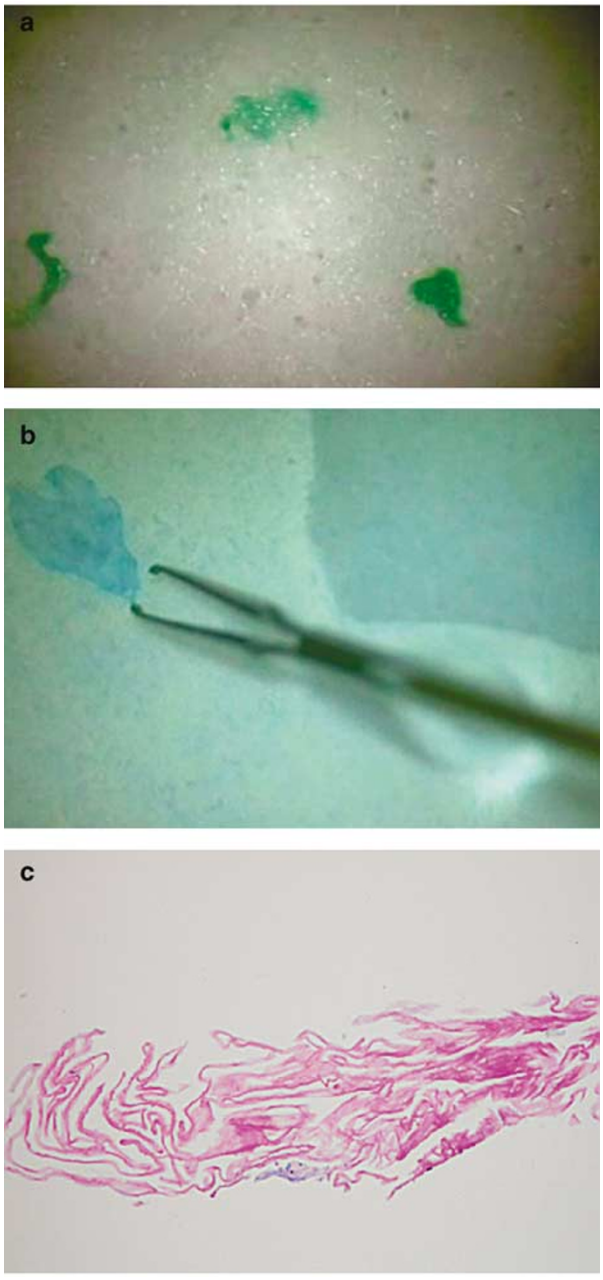

Figure 1 (a) Three pieces of ICG-stained ILM on a wet instrument guaze. (b) Alcian blue-stained ILM specimen. (c) Histological assessment of ILM.

(Figure 1c). We are currently evaluating the procedure to determine whether the modifications change the immunohistochemical properties of the ILM.

References

1 Recchia FM, Ruby AJ, Carvalho Recchia CA. Pars plana vitrectomy with removal of the internal limiting membrane in the treatment of persistent diabetic macular edema. *Am J Ophthalmol* 2005; **139**: 447–454.
2 Patel JI, Hykin PG, Schadt M, Luong V, Fitzke F, Gregor ZJ. Pars plana vitrectomy with and without peeling of the inner limiting membrane for diabetic macular edema. *Retina* 2006; **26**: 5–13.
3 Kwok AKh, Lai TY, Yuen KS. Epiretinal membrane surgery with or without internal limiting membrane peeling. *Clin Exp Ophthalmol* 2005; **33**: 379–385.
4 Kwok AK, Lai TY, Li WW, Woo DC, Chan NR. Indocyanine green-assisted internal limiting membrane removal in epiretinal membrane surgery: a clinical and histologic study. *Am J Ophthalmol* 2004; **138**: 194–199.
5 Kwok AK, Lai TY, Wong VW. Idiopathic macular hole surgery in Chinese patients: a randomised study to compare indocyanine green-assisted internal limiting membrane peeling with no internal limiting membrane peeling. *Hong Kong Med J* 2005; **11**: 259–266.
6 Da Mata AP, Burk SE, Foster RE, Riemann CD, Petersen MR, Nehemy MB, Augsburger JJ. Long-term follow-up of indocyanine green-assisted peeling of the retinal internal limiting membrane during vitrectomy surgery for idiopathic macular hole repair. *Ophthalmology* 2004; **111**: 2246–2253.
7 Hiscott P. Vitreous biopsy pathology: new kid on the block. *Curr Diagn Pathol* 2001; **7**: 45–55.
8 Ford AL, Madhar HS, Farr R, Parsons MA. The ophthalmic pathology cut-up-Part2. *Curr Diagn Pathol* 2005; **11**: 340–348.

SK Gibran, W Prime, J Cazabon, T Stappler, H Heimann, I Pearce, C Groenewald, D Wong, P Hiscott

St Paul's Eye Unit, Royal Liverpool Hospital, Liverpool, UK

Correspondence:
SK Gibran,
St Paul's Eye Unit,
Royal Liverpool Hospital,
Liverpool L7 8XP, UK
Tel: +44 151 7062000;
Fax: +44 151 7067781.
E-mail: syedgibran@yahoo.com

Research funding and proprietary interests: none

Eye (2007) **21,** 298–299. doi:10.1038/sj.eye.6702554; published online 15 September 2006

Sir,

Dye-assisted small incision cataract surgery in an eye with cataract and coexisting corneal scarring and epithelial disease

We read with interest the article by Titiyal *et al*[1] on 'Dye-assisted small incision cataract surgery (SICS) in eyes with cataract and coexisting corneal opacity'. The authors describe the use of trypan blue to aid visualisation of the anterior lens capsule in the presence