

Conflict of interest

The authors declare no conflict of interest.

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Eye (2015) **29**, 982–984; doi:10.1038/eye.2015.45; published online 1 May 2015

**Sir,
Intraocular lens calcification following endothelial keratoplasty: a message for all cataract surgeons**

We read with interest the UK case series recently reported in *Eye* detailing four cases of intraocular lens (IOL) opacification following Descemet's stripping automated endothelial keratoplasty (DSAEK).¹ This is a serious complication that causes visual loss and may necessitate IOL exchange that can adversely affect the long-term survival the corneal transplant.

All of the cases in the report involved Rayner (Hove, UK) hydrophilic acrylic IOL's and all involved rebubbling (repeat injection of intracameral air to achieve graft attachment). This series supports previous observations that such opacification appears to be almost unique to hydrophilic acrylic IOL's, and furthermore, having air or gas in the anterior chamber appears to be a risk factor.^{2,3}

However, it is certainly possible for this complication to occur without rebubbling. Although all four cases had rebubbling in this series,¹ in our recently published UK series only two of the five cases had rebubbling.⁴ In our series, all five cases were also hydrophilic acrylic IOL's, although only one was a Rayner implant highlighting that this problem relates to hydrophilic acrylic material regardless of the manufacturer (other IOL's that opacified included Zeiss, STABIBAG; Lenstec, LH 3000; Bausch and Lomb, MI60 and Bausch and Lomb, Akreos).⁴

We agree with the authors that patients requiring cataract surgery who are at risk of corneal endothelial failure (typically those with Fuchs' endothelial dystrophy)

should not have a hydrophilic acrylic IOL inserted regardless of the manufacturer, in order to avoid the risk of IOL opacification. Although rebubbling may be a risk factor, our series demonstrates the complication can occur after DSAEK without rebubbling.

The number of corneal transplants in the UK has increased significantly in the last decade (2206 in 2002 rising to 3455 in 2011).⁵ The proportion of endothelial transplants has risen markedly (0% in 2002 to 33% in 2011) and this is now almost as common as penetrating keratoplasty (33% vs 38%, respectively).⁵ In the future, a significant number of patients may develop the serious complication of IOL opacification following DSAEK, and this could be reduced if cataract surgeons avoid hydrophilic acrylic IOL insertion in patients at risk of corneal endothelial failure.

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Eye (2015) **29**, 984; doi:10.1038/eye.2015.49; published online 10 April 2015

**Sir,
Reply to 'Intraocular lens calcification following endothelial keratoplasty: a message for all cataract surgeons'**

We thank Park *et al* for their interest in our correspondence regarding the calcification of Rayner hydrophilic acrylic intraocular lens (IOL) implants following Descemet's stripping endothelial keratoplasty (DSAEK).¹

We agree that this phenomenon can occur after uncomplicated DSAEK without the need for a rebubble as described in their recent article² as well as that of Werner *et al.*³ We have not seen this in any of our patients but have also heard anecdotal reports (unpublished) of such occurrences.

Ample clinicopathological evidence now exists of post-endothelial keratoplasty calcification being confined to the central IOL optic not covered by the iris. A change in ionic concentrations of the aqueous due to blood aqueous barrier (BAB) breakdown is likely to have a role in these cases, and so too is the use of intracameral air. The localization of the IOL opacification suggests air contact with the IOL is germane possibly through dessication or physical disruption of the IOL surface. Although both BAB breakdown and IOL surface change can occur with a single injection of air during standard DSAEK surgery, repeat injections post-operatively (rebubbling) will only intensify these processes and thereby increase the likelihood of calcification.

We also agree that this phenomenon is in no way unique to Rayner IOLs. It has been documented with hydrophilic IOLs from various manufacturers and we fully support Park *et al.*² in spreading the important message that patients who may require endothelial keratoplasty at some stage should receive hydrophobic lens implants.

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Eye (2015) **29**, 984–985; doi:10.1038/eye.2015.50; published
online 10 April 2015