common part of the implant affected appears to be just beneath the anterior and posterior surfaces of the lens. Less commonly the central substance of the lens is affected. There were no surface deposits found on the implants. We also found no benefit from topical steroids.

Clouding of acrylic implants (AcrySof) has been reported in the past,[2] and in these cases it was postulated that excessive warming of the implants prior to implantation accounted for the changes. It was thought that as the increased temperature of the implant material exceeded the glass transition temperature, microvacuoles were formed and subsequently became hydrated by the aqueous fluid. In our cases, however, none of the implants were preheated (the lenses folding easily at room temperature) and therefore this postulated mechanism for clouding is unlikely to be responsible in our patients.

We are currently performing a review of all 140 patients with this implant to assess both the scale of the problem with regard to the prevalence of lens haze and the impact of any haze on visual function. So far we have looked at 64 eyes with this lens. Twenty-one (33%) had no lens haze and 43 (67%) had lens haze. We graded the haze as mild in 34 (53%) and moderate in 9 (14%). Of the 34 with mild haze, 22 were asymptomatic and 12 were symptomatic. In the patients with moderate lens haze 4 were asymptomatic and 5 were symptomatic. Overall, therefore, 67% had lens haze, but only 27% had symptomatic lens haze. However, 3 patients (5%) had symptoms severe enough to warrant listing for lens exchange. The exchanged implants will then be analysed appropriately. When we have completed our review we hope to publish the data. Our findings, however, suggest that this is not an isolated or insignificant problem.

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Sir,

We read with great interest an article by Chang *et al.*[1] entitled 'Late clouding on an acrylic intraocular lens following routine phacoemulisfication'.

The authors have reported clouding of a foldable acrylic intraocular lens (IOL) made from poly-2-hydroxyethyl methacrylate polymer and discussed various possible mechanisms. Physical damage to foldable acrylic IOLs during folding has been reported to range from microtrauma to stress fractures. We speculate whether intralenticular protein deposition, calcium deposition or biofilm formation may have been responsible for late opacification of the acrylic IOL.

Proteins have been reported to bind to IOLs and change their biochemical properties on adsorption by denaturation or polarisation.[2] Protein deposition has been shown to vary depending upon the protein composition and concentration in the aqueous.[2,3] Proteinaceous biofilm has been demonstrated to occur in the surface of an IOL within hours of surgery.[4] In experimental studies on biofilm formation in rabbit eyes, protein disposition has been reported to vary on different IOL materials.[2,5] A biofilm is a dynamic structure with protein turnover through desorption and adsorption.[3] Physical changes during folding of an acrylic IOL may facilitate intralenticular protein deposition or biofilm formation. Calcium deposition in the foldable acrylic IOL may be another possible cause of cloudiness. Calcification of hydrogel IOLs and crystallisation on the IOL surface have been reported in the recent literature.[6,7] Protein deposition, calcium deposition and biofilm formation have been described to occur in contact lenses made from 2-hydroxyethyl methacrylate.[8] A possible defect in design or manufacturing as suggested by the authors may also contribute to the biochemical processes occurring in the IOL.

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Sir,

We are grateful for the interest shown by Sharma *et al.* We are not sure as to the aetiology of the clouding. Protein deposition could well be the cause but it would be unusual to have deposition just in the centre portion of the lens, as in this case. Therefore a defect in the design or manufacture still remains a good possibility.

As an update to our patient, she has since had a successful lens exchange with 6/9 aided vision. When explanted, the lens remained cloudy. The lens is now back in the hands of the manufacturer for analysis, as instructed by the Medical Devices Agency.

Further to our report to the Medical Devices Agency, they have received 27 reports of a similar problem of lens opacification with this particular lens type in the UK and 4 cases in France. As a result, use of this lens has been withdrawn from these two countries pending investigation.

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