

Sir,

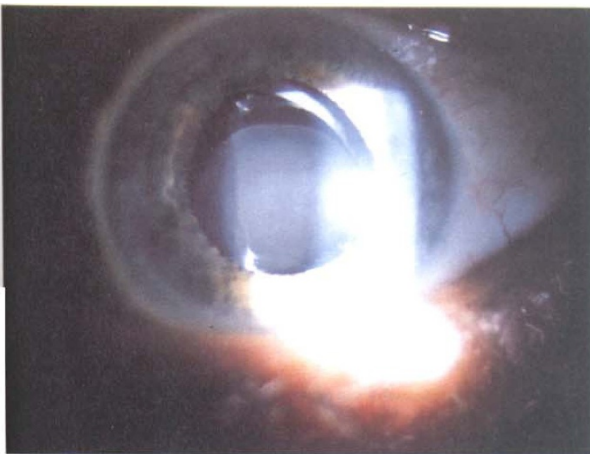
### The opalescence of hydrogel intraocular lens

With the advances in biomaterial sciences, the last decade has seen the development of a variety of foldable intraocular lens (IOL) materials. Hydrogel, soft acrylic and silicone IOLs allow smaller incisions to be used than with polymethylmethacrylate lenses,<sup>1</sup> but their long-term safety has not been established.

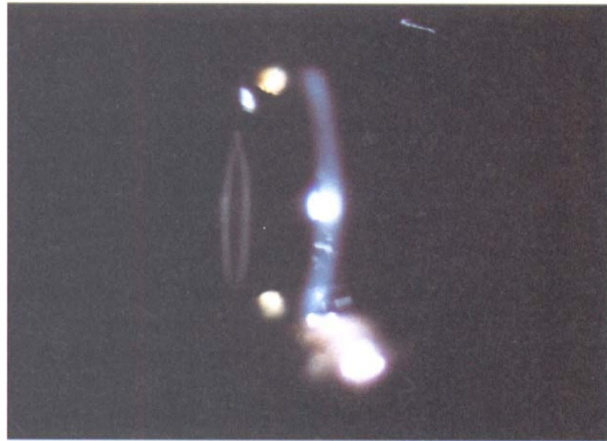
Hydrogel lenses are generally manufactured from poly-hydroxy-ethyl-methacrylate (Poly-HEMA).<sup>2</sup> Various studies<sup>3</sup> suggest that hydrogel lenses are very biocompatible and resistant to YAG laser damage and have better biological tolerance. We have recently encountered seven cases of IOL opalescence (Fig. 1) appearing at or after 6 months post-operatively. All these patients had uncomplicated phacoemulsification with an uneventful post-operative period until this opalescence appeared. All patients with IOL opalescence had only one common factor: the IOL implanted was a hydrogel IOL. One of these seven patients showed a drop in visual acuity and this case is reported here.

#### Case report

Phacoemulsification was performed on the right eye of an 87-year-old woman. A 3.5 mm temporal clear corneal section was used. The surgery was performed using sodium hyaluronate as viscoelastic and an Alcon phacoemulsifier. The lens was inspected and noted to be clear before implantation. No irrigating solutions were used to rinse the lens before implantation. The immediate post-operative period was uneventful. The best corrected visual acuity in the operated eye at the 2 week post-operative visit was 6/12. When the patient was reviewed in clinic after 6 months, lens opalescence (Fig. 1) was noticed for the first time. On slit-lamp



**Fig. 1.** Anterior segment photograph showing opalescence of the intraocular lens implant.

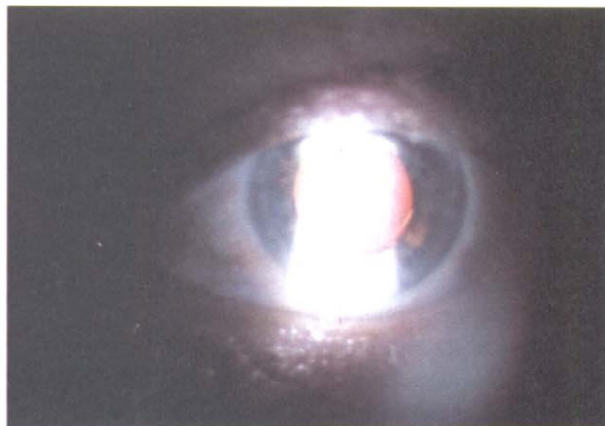


**Fig. 2.** Optical section of the IOL showing opalescence on both anterior and posterior surfaces.

examination the optical section revealed that the opalescence involved both the anterior and posterior surfaces of the IOL (Fig. 2). On retroillumination the red glow had a whitish tinge with loss of sharpness (Fig. 3). The patient had a best-corrected visual acuity of 6/36. There was early posterior capsular opacification. The fundus examination did not reveal any abnormality to explain the loss in visual acuity. A YAG capsulotomy was done with no improvement in visual acuity. The cause of decrease in visual acuity in this case has been opalescence of the IOL. The option of explanation and IOL exchange has been considered and is being discussed with the patient.

#### Comment

This is amongst the first reports of opalescence of hydrogel IOLs in literature. Previously opalescence has been reported with silicone IOLs. Mazzocco<sup>2</sup> has reported the slight opalescence with original STAAR silicon polymer (RMX-1). He stated that this does not



**Fig. 3.** Retroillumination photograph showing the white tinge of the red glow with loss of sharpness.

harm the eye. However, this opalescence had made YAG capsulotomy more difficult for some investigators.<sup>5</sup> Mehta *et al.*<sup>2</sup> observed discoloration of hydrogel IOLs following the use of fluorescein for corneal staining, although Epstein *et al.*<sup>2</sup> have not noticed any discoloration in their series of hydrogel IOLs. Soft acrylic IOLs can show glistening, probably because of microvacuole formation and warming before folding the IOL.<sup>6</sup>

Many of the polymers used nowadays are made by minor alteration of the side-chain component of the acrylate/methacrylate polymer backbone, resulting in materials with differing physical and biological properties. The IOL used in the present case was a hydrogel IOL, which is composed of ultrapure Poly-HEMA, methylmethacrylate (MMA) and an ultraviolet absorber.<sup>4</sup> At present we are unable to relate the opalescence to any clinical event. It seems that the physical properties of the polymer are responsible for it. A large number of patients in our series have this opalescence and might ultimately present with a decrease in visual acuity and require explanation. We have taken up an audit of all patients in whom this particular type of hydrogel IOL has been implanted. The present case may be an isolated example of an adverse event in hydrogel's material history (which is very short) but long-term follow-up clinical studies are lacking. This case emphasises the need for careful long-term follow-up of all the patients receiving this particular IOL material.

#### References

1. Chehade M, Elder MJ. Intraocular lens materials and styles: a review. *Aust N Z J Ophthalmol* 1997;25:255-63.
2. Allarakhia L, Knoll RL, Lindstrom RL. Soft intraocular lens. *J Cataract Refract Surg* 1987;13:607-20.
3. Amon M, Menapace R. *In vivo* documentation of cellular reactions on lens surfaces for assessing the biocompatibility of different intraocular implants. *Eye* 1994;8:649-56.
4. Product Information, Kestrel Healthcare Limited, Hampshire SO23 7DR, UK.
5. Neumann AC, McCarty GR, Osher RH. Complications associated with STAAR silicone implants. *J Cataract Refract Surg* 1987;13:653-6.
6. Omar O, Pirayesh A, Mamalis N, Olson RJ. *In vitro* analysis of AcrySof intraocular lens glistening in AcryPak and Wagon Wheel packaging. *J Cataract Refract Surg* 1998;24:107-13.

Tarun K. Sharma  
S. Chawdhary  
Queen's Hospital  
Burton on Trent, UK  
S. Chawdhary ✉  
Department of Ophthalmology  
Queen's Hospital  
Burton on Trent DE13 0RB, UK

Sir,

#### Are elderly people being screened for visual impairment in general practice?

Visual impairment is common among elderly people and is associated with falls, hip fracture and reductions in functional ability and quality of life.<sup>1</sup> A recent survey in

London found 30% of people aged 65 years and over to have a visual acuity of less than 6/12, which in 72% of cases could potentially be improved.<sup>2</sup>

Since 1990, general practitioners have been required to offer annual screening to all patients aged 75 years or over, including an assessment of vision. A recent report for the Department of Health recommended that further research was needed to clarify the use of 'over-75 checks' as an outcome measure for the quality of cataract services.<sup>3</sup>

The aim of this study was to determine current practice with regard to systematic screening for visual impairment as part of the over-75 checks.

#### Participants, method and results

In August 1999 an anonymous postal questionnaire was sent to the practice nurse (or to the general practitioner if the practice had no nurse) in all 122 practices in Brent and Harrow and all 117 practices in Berkshire Health Authorities (Fig. 1).

The overall response rate was 72% (172/240). There were no significant differences between the replies of practices in Brent and Harrow or Berkshire. Eighty per cent (139/172) of practices carry out annual systematic screening for patients aged 75 years and over. Only 52% (90/172) of practices specifically screen for visual impairment. Of these 52%, 80% (72/90) screen for visual impairment by asking questions relating to vision, such as 'Do you have any problems with your eyes?', 'Have you seen an optometrist recently?' The remaining 20%

1. Does your practice carry out over 75 checks?  
(i.e. a systematic screening programme of the over 75 elderly population)  Yes  No

Any additional comments:

If **you** do not do over 75 checks, do you think the patients in your practice receive over 75 checks from anyone else?  Yes  No

If so, who (health visitor, district nurse etc)?

If you do undertake over 75 checks:  Yes  No

2. Do you screen for problems with vision?  Yes  No

Any additional comments:

3. If yes:  Yes  No

a) Do you ask a question or questions about vision?  Yes  No

If so, what question or questions do you use?

b) Do you use a chart?  Yes  No

If so, do you know what sort of chart it is?

4. What do you do if you find someone has problems with their vision?  Yes  No

Any other comments:

Please complete this questionnaire and return it in the envelope provided:  
You do not need to attach a stamp.

Thank you for your help.

Fig. 1. Over-75 checks: postal questionnaire.