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Sir,

Patient, surgical, and lens-related factors, and their association with Hydroview intraocular lens opacification

We read with interest Rimmer *et al*'s letter[1] published in January suggesting a higher incidence of Hydroview lens (Bausch and Lomb) calcification in those implanted between late 2000 and mid-2001. The main cause of opacification was thought to be silicone in the lens packaging.[2,3] As the packaging did not change between 1997 and 2001,[2] Rimmer *et al*'s observations suggest that other aetiological factors might be involved.

A study set up at Bristol assessed the impact of Hydroview opacification on vision (Central and South Bristol Research Ethics Committee Ref 05/Q2006/163).[4] We re-evaluated the data from this study to investigate the associations of opacification with patient, surgical, and lens-related factors. Data were gathered through a review of medical records, patient interview, and examination.

Data from 215 patients who had Hydroview lenses implanted in Bristol were analysed: 125 had clear lenses, 89 had evidence of opacification, and 1 lens could not be assessed. No statistically significant association was demonstrated between opacification and any of the patient- (Tables 1 and 2) or surgery-related factors (Table 3) tested. However, this is likely to be a result of the small number of patients at subgroup analysis level.

There was a marked association of opacification with certain runs of consecutive lens serial numbers (Table 4). Serial numbers relate only to the order in which the lenses are manufactured and are sequential. Our study will have selection bias, as all patients had surgery over a similar time period and those symptomatic would be more likely to enrol. There will be a high number of certain runs of serial numbers and a high number of opacified lenses. However, variation in the proportion of lenses opacified (3–79%) across the serial numbers tested strongly suggests an association between opacity and certain runs of serial numbers.

Although these data must be viewed with respect to the context, ie, as a retrospective observation rather than as prospective evidence, they do question the supposition that the sole cause for opacification was the

Table 1 Association between lens opacification and ocular pathology

	IOL opacified			
	No (n = *125*)	*Yes* (n = *89*)	*Total* (n = *214*)	P-*value*[a]
Diabetic retinopathy in the study eye				
No	117 (58.8%)	82 (41.2%)	199 (100%)	0.89
Yes	8 (53.3%)	7 (46.7%)	15 (100%)	
Glaucoma in the study eye				
No	109 (57.4%)	81 (42.6%)	190 (100%)	0.52
Yes	16 (66.7%)	8 (33.3%)	24 (100%)	
Uveitis in the study eye				
No	123 (58.3%)	88 (41.7%)	211 (100%)	>0.99
Yes	2	1	3[b]	
Vitrectomy in the study eye				
No	119 (59.5%)	81 (40.5%)	200 (100%)	0.35
Yes	6 (42.9%)	8 (57.1%)	14 (100%)	

[a]Continuity-corrected χ^2-test or two-tailed Fisher's exact test was used if frequencies were small.
[b]Too few for percentage calculation.

Table 2 Association between lens opacification and systemic pathology

	IOL opacified			
	No	*Yes*	*Total*	P-*value*[a]
Hypertension				
No	51 (60.7%)	33 (39.3%)	84 (100%)	
Yes	74 (56.9%)	56 (43.1%)	130 (100%)	0.684
Total	125 (58.4%)	89 (41.6%)	214 (100%)	
Ischaemic heart disease				
No	100 (61.0%)	64 (39.0%)	164 (100%)	
Yes	25 (50.0%)	25 (50.0%)	50 (100%)	0.225
Total	125 (58.4%)	89 (41.6%)	214 (100%)	
Cerebrovascular event				
No	120 (58.3%)	86 (41.7%)	206 (100%)	
Yes	5 (62.5%)	3 (37.5%)	8 (100%)	1.000
Total	125 (58.4%)	89 (41.6%)	214 (100%)	
Inflammatory condition				
No	122 (58.1%)	88 (41.9%)	210 (100%)	
Yes	3 (75.0%)	1 (25.0%)	4 (100%)	0.867
Total	125 (58.4%)	89 (41.6%)	214 (100%)	
Cancer				
No	121 (58.5%)	86 (41.5%)	207 (100%)	
Yes	4 (57.1%)	3 (42.9%)	7 (100%)	1.000
Total	125 (58.4%)	89 (41.6%)	214 (100%)	
Gender				
Male	48 (55.8%)	38 (44.2%)	86 (100%)	
Female	77 (60.2%)	51 (39.8%)	128 (100%)	0.624
Total	125 (58.4%)	89 (41.6%)	214 (100%)	

[a]χ^2-test was performed with continuity correction asymptotic significance two-sided.

Table 3 Association between lens opacification and surgical factors

	IOL opacified			
	No	*Yes*	*Total*	P-*value*[a]
Surgery type				
Routine	121 (58.2%)	87 (41.8%)	208 (100%)	
Combined procedure	3	2	5[b]	>0.99
	($n=124$)	($n=89$)	($n=213$)	
Intra-operational complications				
No	121 (59.0%)	84 (41.0%)	205 (100%)	
Yes	4	3	7[b]	>0.99
	($n=125$)	($n=87$)	($n=212$)	
Complications post-operation				
No	114 (59.1%)	79 (40.9%)	193 (100%)	
Yes	11 (57.9%)	8 (42.1%)	19 (100%)	>0.99
	($n=125$)	($n=87$)	($n=212$)	
Viscoelastic				
Provisc	54 (60.7%)	35 (39.3%)	89 (100%)	
Other	10 (66.7%)	5 (33.3%)	15 (100%)	0.88
	($n=64$)	($n=40$)	($n=104$)	
Anaesthesia				
General	11 (40.7%)	16 (59.3%)	27 (100%)	
Local	113 (61.1%)	72 (38.9%)	185 (100%)	0.07
	($n=124$)	($n=88$)	($n=212$)	

[a]Continuity-corrected χ^2-test or two-tailed Fisher's exact test was used if frequencies were small.
[b]Too few for percentage calculation.

Table 4 Association between lens opacification and serial number

Serial number	*Number of eyes examined*	*Number of eyes opacified*	*Opacification rate (95% CI)*
4JAA00-4N9999	2	0	3% (0–17%)
4PAA00-4T9999	4	0	
4UAA00-4Y9999	11	1	
4ZAA00-439999	0	0	
44AA00-489999	1[a]	0	
49AA00-5D9999	2	0	
5EAA00-5I9999	10	0	
5JAA00-5N9999	25	1	4% (0–20%)
5PAA00-5T9999	24	2	8% (1–27%)
5UAA00-5Y9999	70	55	79% (67–88%)
5ZAA00-539999	35	19	54% (37–71%)
54AA00-589999	26	8	33% (17–53%)
59AA00-6D9999	4	2	
Total	214[a]	88	41% (35–48%)

[a]The total number includes one lens of which the opacity could not be assessed and also another lens of which serial number was unknown.

silicon gasket. The findings support a manufacture-related cause over a patient- or surgical-related cause for opacification. Although no conclusions can be drawn about the nature of this unknown aetiological factor, our data pinpoint it within a narrow time frame of manufacture.

Conflict of interest

The authors declare no conflict of interest.

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Sir,

Effect of lyophilization on the *in vitro* biological activity of bevacizumab

Intravitreal bevacizumab has been effective for vascular endothelial growth factor (VEGF)-mediated diseases of the retina and choroids.[1,2,3] However, repeated injections may be required. An alternative mode of administration would be a biodegradable intravitreal implant[4] of lyophilized bevacizumab, which has not been previously reported.

In an effort to assess the viability of a biodegradable intravitreal implant of lyophilized bevacizumab, we