

Editorial: How safe are intraocular lenses?

One of the most important questions from the clinician's (not to mention the patient's) point of view is whether intraocular lenses (IOLs) are more likely to lead to serious complications (and ultimately enucleation) than cataract extraction without implantation. If an extra risk were to be demonstrated, it would then be necessary to put the obvious and unparalleled advantages of IOLs over other methods of correcting the aphakic eye into a 'risk-benefit' equation.

In the absence of epidemiological evidence the solutions of such equations tend to appear gradually, rather as public opinion comes to favour a particular political party, holiday destination, or even brand of sliced bread. However, if one could show that there was no extra risk from a properly performed cataract extraction with an IOL, such concepts as risk-benefit ratios would be irrelevant.

In the article by Professor Garner in this issue the full range of possible complications leading to enucleation in IOL cases is described (and there are in addition valuable histopathological data on successful cases). In 1956, when the previous histopathological report on eyes enucleated following IOL operations was published from the same laboratory as the present study,¹ only a few surgeons were performing the implant operation in the UK, namely, the inventor Harold Ridley and a small band of dedicated pioneers. Most surgeons did not carry out the procedure, at any rate on a significant number of cases, for fear of complications, partly because of unfamiliarity with the technique, which was widely and probably not quite correctly thought to be difficult, but mainly because the method was thought at that time to be inherently dangerous.

An example of what was possibly a widespread opinion at the time was a remark attributed to Paufique, who had already inserted a considerable number of IOLs. 'We are no longer justified in performing this type of operation because of the too frequent loss of the eye which follows'.² He was certainly not alone in his opinion, and in 1959 the first ominous reports^{3,4} were made of keratopathy. This condition was to cast a shadow over the scene for almost another 20 years until the vital role of the endothelium and its terrible vulnerability to 'touch' with the acrylic material became clearly recognised.⁵ Several workers had warned of the dangers of possible endothelial damage previously but without the dramatically convincing evidence provided by

Kaufman and Katz's scanning electron microscopic photographs showing the posterior walls of the corneal endothelial cells literally ripped off and the nuclei lying bare like eggs in egg boxes. None of those who attended that momentous Oxford Congress in 1977 is likely to have forgotten those pictures.

The much improved safety record of modern IOL surgery is based chiefly therefore on the avoidance of endothelial contact, with, as another important subsidiary factor arising out of earlier evidence of damage to the eye by chemical antiseptics used in sterilising the lenses,¹ sterilisation of the lenses by non-chemical means. Professor Garner's paper gives us a salutary reminder, however, that certain complications do still arise, the commonest of which is still keratopathy.

It is an old surgical saying that the only surgeon who gets no complications is the one who does no operations. What we need to know therefore is not the number of complications occurring but the rate, and in the context of IOLs we really ought to know the comparative rates for IOLs versus simple extractions. Clearly an epidemiological study is required, but it is obviously going to be impossible to carry this out on a prospective basis in any of the developed countries of the world because the patients would not tolerate it.

However, public opinion has already taken a hand, and there must be very few ophthalmologists working where the facilities are available, who do not now practice IOL implantation on the majority of their cataract patients. The possibility of extra risk seems largely to be ignored, and indeed it has to be admitted that there is no certain evidence that the total risks are greater. There is even evidence that for some conditions the risks are less, for example that of retinal detachment.⁶

So although the present article by Professor Garner should encourage us to exercise the greatest care in order to avoid complications so far as is possible, it is not likely that significantly fewer IOLs will be implanted as a result of nervousness by surgeons after reading it.

REDMOND SMITH

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R Smith

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