Eye (2002) 16, 687–688

www.nature.com/eye

EDITORIAL

Instrumental debris

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Abstract

Eye (2002) **16,** 687–688. doi:10.1038/sj.eye.6700183

Dinakaran and Kayarkar[1] remind us of the need to continue to be vigilant with regard to the maintenance of microsurgical, ophthalmic instruments. National Health Service economics have dictated that very few Eye Departments now sterilise, or even clean their own microsurgical instruments before they are sterilised. Centralised sterilising departments are often overworked and can rarely provide the sort of expertise required in dealing with fine ophthalmic instruments that once existed. Pressures to increase surgical throughput can result in staff at all levels being inadvertently less observant or less critical than they might wish. Surgeons should always remember that they are the last link in the quality assurance chain for instrument cleanliness.

The above authors rightly highlight problems specific to phacoemulsification which has become the commonest performed surgical procedure. Both soft lens matter and visco-elastics, especially Healon™ may dry on or within instruments if not washed immediately. Delay in ultrasonic washing may promote this greatly. Sutphin and Papadimus[2] highlighted that visco-elastics can undergo chemical change at temperatures used for sterilisation and if incompletely removed, particularly from hollow instruments where residual debris may be overlooked, the degradation by-products may be discharged into the eye when next the instrument is used. Some of these by-products are toxic and may cause both endothelial damage and intraocular inflammation.

It is worthwhile remembering that although equipment has been sterilised, it is not necessarily pyrogen-free. Pyrogenic material is capable of causing as destructive intraocular inflammation as an infective endophthalmitis.[3] Moreover the inflammation may be left untreated initially while the presumed, infective endophthalmitis is investigated and treated. Intraocular steroids are by no means universally used in treating endophthalmitis.

There is also the question of the magnitude of the contamination and tissue susceptibility. A small amount of extraneous material in abdominal surgery may only result in an adhesion where a similar amount within the eye may produce sufficient inflammation to overwhelm all visual function. In is important that all who handle the instruments appreciate this.

Woven materials whether swabs or drapes may shed fibres readily. Retained cotton and linen fibres can produce a vigorous inflammatory reaction. Dinakaran and Kayarkar[1] point out that intraocular implants may attract such materials by electrostatic forces. With PMMA lenses this risk is relatively small but even so they may pick up bacteria from the ocular surface. Foldable lenses pose additional problems simply from the additional manipulation that is needed before the lens can be inserted. Any loose particles, on any surface with which the lenses are in contact, no matter how transiently, are likely to adhere to the lens surface and be introduced to the eye.

Disposable drapes do not entirely remove this risk although it is probably reduced since larger free fibres are less common with single use paper drapes. Surgeon should remember the potential for any instrument to transfer foreign material to the eye *each* time it is taken from the trolley.

Although Dinakaran and Kayarkar's[1] data arise from a relatively small series, the surprisingly large number of inadequately processed instruments strongly suggests that it is a common problem. Although they present no evidence either way, it seems probable that this is not an isolated experience. There is no reason to believe that their unit's protocols are unique. The problems highlighted in this brief paper are real and of relevance to every patient undergoing eye surgery. Hospital authorities should take note and should review their practices in order to reduce the risk of sterile post-operative endophthalmitis.

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