



Figure 2 Giemsa staining of multinucleate cells in an air-dried sample of aqueous ($\times 400$; (a)). Flow cytometric dot plot of CD38 vs CD138 showing gated population of CD38+ and CD138+ cells (b). Further analysis of the gated population showing the lack of expression of CD19 and CD45 (c). Similar analysis of the gated population against CD56 and CD45 show that the cells have a high expression of CD56 but low expression of CD45 (d).

aqueous samples, and may be useful in resolving the cause of hypopyon in these rare cases.

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Sir,
Endophthalmitis following phacoemulsification

I read with great interest the article by Leslie *et al*,¹ on 'Residual debris as a potential cause of post phacoemulsification endophthalmitis' emphasising the importance of meticulous cleaning of the phaco handpieces to prevent endophthalmitis.

It has been suggested that automated flushing is superior to manual flushing in preventing interpatient transmission of infection during phacoemulsification. Automated flushing with preset pressure settings for use with phaco tubings, U/S handpieces, I/A handpieces, vitreous cutters, and cannulas has the advantage of allowing for the rapid turnaround of surgical instruments. In addition, it is being touted to have standardized the postsurgical rinsing procedures. It is significant that the study has shown that although a decrease in contamination followed automated flushing, contamination was not completely eliminated.

Significantly, studies in other branches of medicine other than ophthalmology on effective sterilization of solid surgical instruments too, stress the importance of adequate cleaning/processing of the instruments (particularly the ones with narrow lumina) prior to

disinfection/sterilization.²⁻⁴ Medline search revealed the abstract of a study² (no authors listed) evaluating the efficacy of liquid disinfecting flexible endoscope reprocessors primarily for high-level disinfection. The authors noted that although the evaluated liquid disinfecting units provided detergent-flushing, postdetergent water-rinse, and postdetergent water-rinse-removal phases, manual cleaning of endoscopes before automatic reprocessing was essential in order to effect adequate sterilization.

The potential for contamination of single-use biopsy forceps at various stages of colonoscope reprocessing was prospectively evaluated by Kinney *et al.*³ The authors concluded that proper endoscope reprocessing may be the most important factor in preventing biopsy forceps-related interpatient infection and that passage of even a sterile forceps through the accessory channel of the endoscope may lead to contamination if the endoscope has been inadequately processed (inefficient or no manual cleaning prior to disinfection).

Chaufour *et al.*⁴ evaluated the efficacy of disinfection and sterilization of reusable angioscopes to prevent transmission of Duck Hepatitis B virus (DHBV) with the duck hepatitis B model. It was found that there was no disease transmission after reuse of disposable angioscopes that were adequately cleaned before disinfection or sterilization. However, if the angioscopes were inadequately cleaned, DHBV was found to survive despite glutaraldehyde disinfection or ethylene oxide sterilization. The authors postulated that the presence of a narrow lumen or residual protein shielding within the lumen might compromise effective inactivation of hepadnaviruses on angioscopes, with the potential risk for patient-to-patient transmission.

It seems therefore reasonable to conclude that perhaps the most important step to prevent debris-related endophthalmitis following phacoemulsification is the preparatory cleaning and flushing of the handpiece prior to sterilization.

References

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Sir, Residual debris as a potential cause of postphacoemulsification endophthalmitis

After reading this excellent article (*Eye* 2003; **17**: 506-512), it is quite clear that 'sterile endophthalmitis' could be due to these residual debris, but it is not clear that the high incidence of postsurgical endophthalmitis (PE) in 1999 is only due to residual debris.

If the sterilising procedures were correct and the rate of phacoemulsification surgeries were similar in 1998 and 1999 (although having different PE annual incidence), the proven infectious PE of 1999 could be due, for instance, to an insufficient surgical prophylaxis (data about the hospitals' prophylaxis protocols are not provided), or to an accumulation of patients with a higher risk of a bad outcome¹, or/and to some specific factor associated with the end of 1999.

On the other hand, it is difficult to keep on accepting as 'current PE incidence' that given in 1991 for Kattan² and Javitt *et al.*³ for the following reasons:

- (1) Their PE incidences refer to cataract surgery using extracapsular technique.
- (2) The Kattan *et al.* incidence excludes those PE cases not proven by culture. However, 5 years later the Endophthalmitis Vitrectomy Study⁴ described 69% of PE cases proven by culture among their 420 intraocular biopsies.