

of corneal opacities. We raise a specific issue that may limit the benefits of this technique.

An 83-year-old Caucasian female with visual acuity of 6/60 consented for left cataract extraction and lens implant. She had a history of left herpes zoster ophthalmicus, with secondary keratouveitis. Her left corneal sensitivity was reduced and she had diffuse stromal scarring. Severe superficial punctate keratitis persisted following maximisation of her topical lubricants. We were advised by the Corneal subspecialist that the cornea was unlikely to improve any further. A guarded visual prognosis was explained to the patient.

Trypan blue 0.06% was employed to enhance visualisation of the capsule; the dye was injected onto the anterior lens capsule under an air bubble. Following wash out of the dye with balanced salt solution, diffuse uptake of the dye by the corneal epithelium was noted. Although the stained anterior capsule was more visible and continuous curvilinear capsulorrhexis facilitated, visualisation of the whole procedure was significantly reduced by the diffuse staining of the corneal epithelium with trypan blue.

Trypan blue selectively stains connective tissue structures in the human eye.² It is commonly used during cataract extraction, to aid capsulorrhexis in mature, traumatic, or white cataracts, when the red reflex is absent.^{3,4} Norn⁵ studied vital staining in cadaveric eyes in the first 46 h after death, showing that Trypan blue staining of the cornea increased progressively, demonstrating that loss of epithelial integrity through cell death resulted in corresponding corneal staining.

In cases where corneal opacification is not extensive enough to justify the use of a corneal triple procedure, the use of trypan blue significantly facilitates cataract extraction. However, caution must be employed in the presence of corneal epithelial breakdown. Efforts should be made to reduce staining of the epithelium with trypan blue. The application of viscoelastic to the surface of the cornea before anterior chamber washout reduces contact of trypan blue with the corneal epithelium. The quantity of dye used can be reduced by instilling one or two drops of the dye directly onto the anterior lens capsule under viscoelastic rather than an air bubble.³

We hope these practical hints will enhance the benefit of the technique described by Titiyal *et al* when performing SICS in patients with coexisting corneal opacities and epithelial disease.

References

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ME Gregory and K Bibby

Department of Ophthalmology, Leicester Royal Infirmary, Leicester, UK

Correspondence:

ME Gregory,
Ophthalmology Department,
Windsor Building,
Leicester Royal Infirmary,
Infirmary Square,
Leicester LE1 5WW, UK
Tel: +44 116 224 5159;
Fax: +44 116 258 5927.
E-mail: greg.me@ntlworld.com

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Sir,
Reply to Dr Gregory and Dr Bibby

We would like to thank Dr Gregory and Dr Bibby for the valuable inputs from their side in order to make the technique of dye-assisted small incision cataract surgery more effective in eyes with corneal opacity.

Persistent severe superficial punctate keratitis in an eye means that the ocular surface is not stable. No surgery is acceptable in such a situation. This eye requires intensive preservative-free lubricant drops and gel and, if needed, an amniotic membrane graft. Cataract surgery should be performed only when the ocular surface becomes stable. However, if the ocular surface does not improve despite all efforts and cataract surgery is very essential for the patient owing to visual handicap or maturity of the cataract as was the present case, care should be taken while injecting the trypan blue dye for staining the anterior capsule. A small amount of dye

should be directly applied onto the anterior capsule, so that there is minimal extra dye in the anterior chamber thereby preventing a large spill over during dye washout. This is a sort of painting the anterior capsule. We do it under the air bubble, however, as suggested it can be performed under viscoelastic to prevent further spill over.

There was an uptake of trypan blue dye by the corneal epithelium because of the presence of severe punctate keratitis in the present case. To avoid this, it is a novel idea to put viscoelastic over the corneal epithelium before dye washout. We prefer keeping a layer of viscoelastic on wet cornea throughout the procedure instead of continuously wetting the cornea with saline even in eyes with stable ocular surface as it also improves visualization. We did not mention this point in the paper by mistake and it has been rightly pointed out by Dr Gregory and Dr Bibby and we fully agree with them.

Postoperatively, these patients should be put on intensive lubricants and less frequent topical steroids in order to minimize drug-related epithelial toxicity and corneal melting.

JS Titiyal, R Sinha, N Sharma and RB Vajpayee

Rajendra Prasad Centre for Ophthalmic Sciences,
All India Institute of Medical Sciences (AIIMS), 492,
R.P. Centre, Ansari Nagar, New Delhi,
Delhi 110029, India

Correspondence: JS Titiyal,
Tel: +91 11 26593146;
Fax: +91 11 26588919.
E-mail: titiyal@rediffmail.com

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Sir,
Alcon response to BSS article

We have read with interest the article published in a recent version of 'Eye' regarding 'A Fungal ball in the irrigating solutions during phacoemulsification' which makes reference to Alcon's 500 ml Balanced Salt Solution (BSS), and would like the chance to both comment on the article and to correct some information contained within it.

Alcon would like to emphasise their total commitment to the production of high-quality products. Alcon's products are produced under strictly controlled and inspected conditions, and all manufacturing sites adhere to the principles of Good Manufacturing and Distribution Practice (GMP/GDP), as well as to any additional local

legislation covering these activities. A full Quality Assurance Inspection of each batch is conducted by the manufacturing facility before release of the product to the market, and extreme care is taken in every stage of the distribution chain to ensure that product is delivered to a customer in the best possible condition.

Alcon, as manufacturer was notified of this complaint on the 27th November 2002. Although the complaint sample was not returned for evaluation and confirmation of the defect, Alcon immediately performed a full and thorough investigation using the information available at the time, the results of which are listed below.

There were 17 500 other units manufactured in this lot, and review of our complaint records showed that there were no other reported or associated incidents with any other unit in this lot.

As additional assurance, we also reviewed the manufacturing batch records for this lot, which found no sterility problems associated with its production; and inspected retention samples, which showed no evidence of fungal growth.

The directions for use associated with this product, recommend 'Do not use unless product is clear, seal is intact, vacuum is present and the container is undamaged'. As the author reports '...a hairline crack measuring 6.5 cm in circumference was noted...'. This emphasises the need, as pointed out in the letter, to visually inspect all products supplied before use to ensure that nothing untoward has happened during transportation.

The sentence 'The supplier was notified and all bottles of BSS from the same batch were recalled' is not correct. There was no 'product recall' associated with this product as the tests reported above showed no other defects. The hospital voluntarily exchanged all other units of this lot number held by them, and were provided with replacement units with a different lot number the next day.

We would appreciate your help in ensuring that this information is brought to the attention of your readers.

N Smith

Alcon Laboratories UK Limited, Pentagon Park,
Boundary Way, Hemel Hempstead, Hertfordshire
Hp2 7UD, UK

Correspondence: N Smith,
Tel: +44 1442 341234;
Fax: +44 1442 341280.
E-mail: niven.smith@alconlabs.com

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