

Sir,
**Precipitation of vital dyes with topical anaesthetics:
a potential pitfall**

Vital dyes, such as fluorescein (F), rose bengal (RB), and lissamine green B (LGB) are important in clinical ophthalmology in the diagnosis and evaluation of various ocular surface disorders.¹ Although RB and LG stain dead and degenerating cells, F shows epithelial defects because of its binding potency to expose collagen layers.² Vision blue stains the lens capsule and has become an invaluable tool during phacoemulsification surgery.³ Some of these dyes, especially RB, can produce a stinging sensation when instilled into the conjunctival sac, hence one tends to use an anaesthetic drop before instillation of the dye.^{1,2} Precipitations or colour changes can occur when some vital dyes and topical local anaesthetics are mixed. This can lead to a false clinical interpretation. We aimed to show and identify those dyes that formed precipitates when mixed with local anaesthetics.

One drop each of RB, F, LGB, and vision blue were mixed with one drop of local anaesthetic agents (benoxinate, tetracaine, proxymetacaine, and lignocaine) on glass slides and examined for changes. RB precipitated with all of the local anaesthetics, vision blue precipitated with benoxinate, LG did not precipitate with any of the anaesthetics, and F did not precipitate, but showed intense colour changes with two of the local anaesthetics, amethocaine and tetracaine (see Figure 1). They are, therefore, unlikely to interfere with clinical interpretation. Vision blue, although not used for

ocular diagnosis, is used during surgery. It precipitated with amethocaine, but there is no chance of this reaction taking place during surgery. Intraocularly, it is lignocaine 1% that is used during phacoemulsification surgery. The mixing of vision blue and lignocaine is unlikely to interfere with the surgical procedure.

It may be advisable to wash the conjunctival surface with normal saline before instilling vital dyes.

References

- 1 Kim J. The use of vital dyes in corneal disease. *Curr Opin Ophthalmol* 2000; **11**(4): 241–247.
- 2 Passmore JW, King Jr JH. Vital staining of conjunctiva and cornea; review of literature and critical study of certain dyes. *AMA Arch Ophthalmol* 1954; **53**(4): 568–574.
- 3 Rossiter J, Morris A. Trypan blue vital staining of the anterior lens capsule in the management of cataract in true exfoliation of the lens capsule. *Eye* 2005; **19**(7): 809–810.

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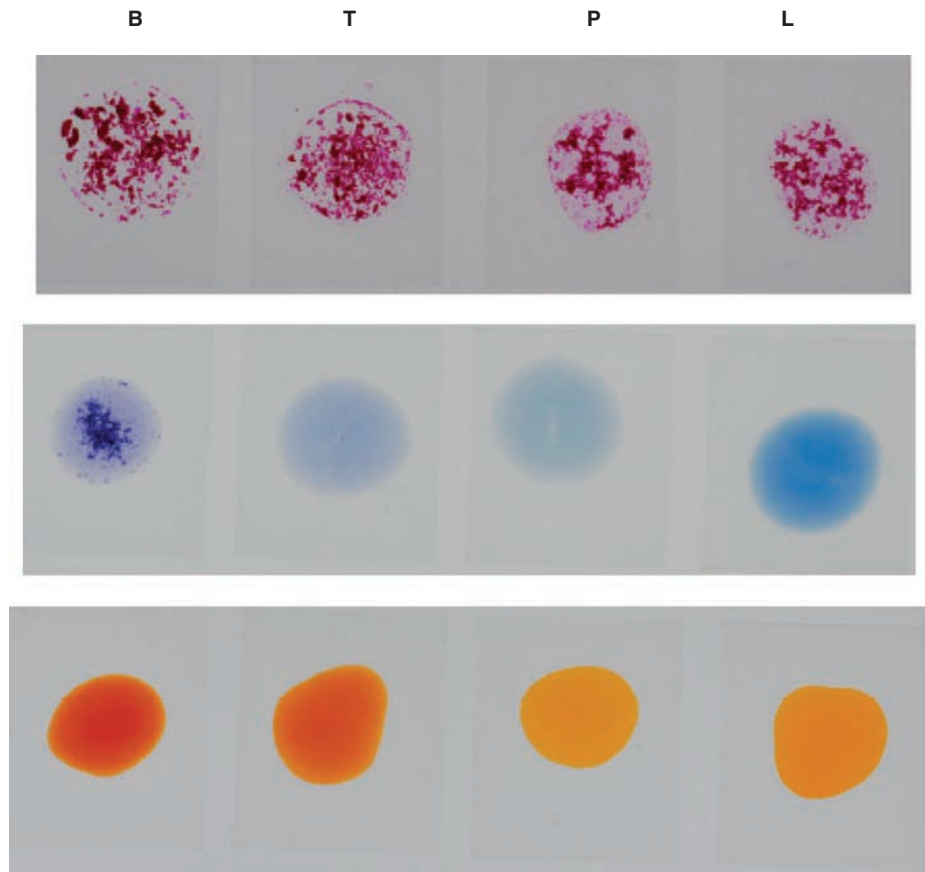


Figure 1 Rose bengal precipitates with all four anaesthetics, vision blue precipitates with benoxinate, whereas fluorescein showed colour changes with proxymetacaine and lignocaine. B = bupivocaine, T = tetracaine, P = proxymetacaine, L = lignocaine.