# LETTERS TO THE JOURNAL

Sir,

**Demonstrating Astigmatism**

I have found that medical students, GPs, nursing staff, etc., have great difficulty with the concept of astigmatism, its correction, and optical aberrations from correcting spectacles. It is difficult to demonstrate unless individuals have access to cylindrical lenses. I used the following method to demonstrate astigmatism at a lecture to about 100 non-ophthalmic personnel.

Place a transparency of typed text onto an overhead projector and focus the image on the screen/wall. Over this put a tube, long axis vertical, 10 cm wide at its base tapering to 2.5 cm at the top and about 20 cm long. The ideal apparatus is already in most eye departments, being the outer sleeve of a spring-loaded cotton wool dispenser. The taper at the top allows cylindrical lenses to be rested on the top of the tube.

Put a +6 dioptre cylindrical lens on the tube. This distorts the projected image which is then corrected by a −6 DC lens correctly aligned. Rotating the cylindrical lenses with respect to each other demonstrates the image degradation and distortion typically experienced by astigmatic patients.

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Sir,

**Generalised Urticaria Induced by Topical Cyclopentolate**

Cyclopentolate is a widely used mydriatic and cycloplegic agent. Systemic adverse reactions are uncommon, mostly comprising central nervous system disturbances. These include confusion, psychosis, cerebellar dysfunction and seizures.[1] Gastrointestinal disturbance may also occur in neonates.[2] We report a case of generalised urticaria induced by topical cyclopentolate.

*Case Report*

A 20-year-old woman presented with a paracentral scotoma in her left eye. During the course of her assessment, the left pupil was dilated using one drop of Minims cyclopentolate hydrochloride 1% (Chauvin Pharmaceuticals). Thirty minutes later she developed generalised pruritus, rapidly followed by the appearance of a widespread urticarial rash involving the face, trunk and limbs. No other features of anaphylaxis developed. She was treated with intravenous hydrocortisone and a 3 day course of oral chlorpheniramine. The rash resolved within a few hours, but recurred in a milder form the following day. The paracentral scotoma was found to result from a long-standing parafoveal retinal lesion of uncertain aetiology.

This generalised urticarial rash appeared to have been precipitated by topical administration of cyclopentolate. Minims cyclopentolate hydrochloride 1% contains only the active drug (Chauvin Pharmaceuticals, personal communication) and the patient had not been exposed to any other potential allergens immediately preceding this reaction. There was no personal or family history of atopy or allergic reactions. Her only known previous exposure to an antimuscarinic agent was during childhood when she took hyoscine for motion sickness. The patient was not rechallenged with cyclopentolate because of the risk of a more severe reaction.

*Discussion*

It is well recognised that systemic adverse reactions may follow topical administration of an ophthalmic drug. Systemic absorption occurs readily through the conjunctiva and, after passage down the nasolacrimal duct, through the nasal mucosa and gastrointestinal tract. Topical cyclopentolate is detectable in the systemic circulation within 5 minutes and reaches a peak concentration at 15 minutes.[3]

Systemic administration of the antimuscarinic agents atropine[4,5] and hyoscine[6,7] have been reported to precipitate generalised urticaria, either in isolation or as part of an anaphylactic reaction. While contact dermatitis is not uncommon with topical administration of antimuscarinic agents, there are only two previous reports of generalised drug-induced eruptions. Guill *et al.*[8] described erythema multiforme resulting from the chronic use

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