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CORRESPONDENCE

Sir,
Direct ophthalmoscopy should be taught to undergraduate medical students

It is with great interest that we read your controversy regarding whether or not direct ophthalmoscopy should be taught to medical students.[1,2]

We feel that direct ophthalmoscopy is a fundamental skill that all doctors should be able to perform. However, the skills in ophthalmoscopy must be complemented by a complete ocular examination and not consist of ophthalmoscopy alone (particularly visual acuity measurement, examination of pupils, visual fields and basic eye movements). For example, a doctor may feel that an optic disc appears to be swollen; however, it is only after complementing this assessment by proving the presence of an RAPD that their strength of conviction would grow.

Direct ophthalmoscopy can form part of final year examination assessment at Medical School and several post-graduate membership examinations. Eye problems represent 1.5% of presentations to GPs[3] and consultation rates for GP and eye casualty have been recorded at 71.8 per 1000 population per year.[4]

Bruner[5] developed the theory of the spiral curriculum whereby complex ideas can be taught at simple levels early on and then re-visited at more complex levels later on. This idea of spiral learning underpins many medical school curriculums and encourages independent problem solving. Therefore, one can be exposed to the technique of direct ophthalmoscopy early on during medical school clinical teaching and re-visit situations when the direct ophthalmoscope would aid diagnosis and management in later clinical years. This technique currently underpins much of current clinical teaching today. For example, most medical students learn the 'nut-and-bolts' of a cardio-respiratory examination in the first year of medical school but only contextualise this in later years.

Ideally, when examining a fundus we would want to dilate the pupil and this is rarely done outside of the ophthalmology clinic, because of the fear of inducing angle closure glaucoma. Knowing that the risk of such an event occurring with Tropicamide eye drops is negligible should re-assure doctors. Guidance needs to be integrated within the curriculum allowing use of mydriatics to allow adequate examination. Not doing this would be akin to expecting detection of a murmur through multiple layers of clothing.

Conflict of interest

The authors declare no conflict of interest.

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Sir,
Direct ophthalmoscopy should be taught within the context of its limitations

I read with interest the controversy articles of Yusuf *et al* and Purbrick and Chong regarding the value of teaching direct ophthalmoscopy to undergraduate students as part of their clinical training.[1,2] Although no ophthalmologist would dispute the importance of fundus assessment *per se*, I feel most would agree that the direct ophthalmoscope is not the best instrument for the job. Indeed, it is rarely used by many ophthalmologists, myself included. Its most striking weakness that was not touched on by Purbrick and Chong, is the narrow field of view that it affords the user. This is quoted to be around two disc diameters in the emmetropic patient which approximates to 7 mm^2 of retina simultaneously in focus. This field of view becomes even smaller in the myopic patient.[3] Given that the surface area of the average human retina is 1204 mm^2,[4] the user of the direct ophthalmoscope would be required to systematically visualize 172 'fields of view' to be certain not to miss a fairly large lesion measuring up to two disc diameters in size. This is of course completely impractical and leads to the inevitable conclusion that even in the hands of the most experienced practitioner, it is simply not possible to comprehensively examine the fundus with the direct ophthalmoscope. Its high magnification, however, makes this instrument ideally suited to assessment of the optic disc for example. While I believe it is reasonable to teach students direct ophthalmoscopy and its indications, it is equally important to emphasise the significant limitations of the technique, namely narrow field of view, monocularity with consequential lack of stereopsis, lack of access to pre-equatorial retina, and poor view through media opacities. With this in mind, our future colleagues practicing in other areas of medicine may have a better understanding of when specialist ophthalmic referral for fundoscopy is appropriate.