Sir,

Patients attending eye clinic have poor left right discrimination

Problems with left right discrimination can cause medical errors including investigation or treatment of the wrong eye, which may result in potentially serious consequences.[1] The ability of doctors and medical students to correctly discriminate left and right has already been extensively explored[2] and because of varying ability to discriminate effectively, numerous safety checks exist to prevent errors. Previous studies have also demonstrated differences in ability to discriminate based on educational level[3] and sex.[4] It has not been previously explored whether language preference has any bearing on left right discrimination. It seemed that patients that attended our clinics who could correctly lateralise were less frequent than the quoted rates of between 80.5 and 73.4%.[4,5] We decided to look at the ability of patients attending our outpatient department to discriminate left and right and look for differences between sexes and language used in the consultation, Welsh or English.

Patients attending outpatient ophthalmic clinics in South West Wales were asked to 'look to their right' as part of the routine slit-lamp examination and tallies of correct responses were taken, along with details of sex and language of consultation. The language used was based on that of patient preference. A positive response was defined as the patient either immediately looking to the right, as requested, or looking to the right after some period of hesitation. Of a total of 2309 patients seen, 1417 (61.4%) correctly looked to the right when asked. There was no significant difference ($P = 0.5552$) between the sexes in correct left right discrimination, however, 285 out of 390 Welsh-speaking patients looked to the right (73.1%) *vs* 1132 out of 1919 (59%) English-speaking patients, which was statistically significant ($P = 0.0011$).

We found that rates of correct left right discrimination among clinic attendees were significantly lower than previously published rates and that the potential for medical errors is thus higher than thought. Our observed variance in ability to lateralise may be due to, among other factors, hearing problems in our population with the more vocally distinct 'Dde' and 'Chwith', for right and left, respectively, in the Welsh language, being more easily understood.

Conflict of interest

The authors declare no conflict of interest.

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Eye (2011) **25,** 1243; doi:10.1038/eye.2011.137; published online 17 June 2011

Sir,

Recent trends in the rate of trabeculectomy in England

We previously reported a sharp decline in the annual rate of trabeculectomy operations in England: from a peak of 38.7 episodes per 100 000 population in 1995/6 towards a plateau around 11 episodes per 100 000 in 2003/4[1] (where 2003/4 refers to the NHS financial year 1st April 2003 to 31st March 2004). As discussed previously,[1] this was principally due to the introduction of new topical agents with improved control of intraocular pressure, and was accompanied by similar decreases in trabeculectomy rates throughout Britain, Europe, Canada, and the United States of America. Tatham and Sarodia[2] recently described an increase of 149% in the annual number of trabeculectomy operations at Leicester Royal Infirmary, from 71 in 2005 to 177 in 2009, and suggested that the national decline in trabeculectomy may have begun to reverse.

We have used recent data to study trends in the number and rate of hospital episodes of trabeculectomy in England as a whole (Table 1 and Figure 1). Hospital

Table 1 Annual number of trabeculectomy operations, and annual rate of trabeculectomy operations per 100 000 population, in England from 1989/1990 to 2009/2010

Year	*1989*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	
No. of trabeculectomy operations	8682	10 514	12 768	15 054	17 065	17 496	18 676	17 350	14 244	11 859	
Rate of trabeculectomy (episodes/100 000 population)	18.3	22.0	26.7	31.4	35.5	36.3	38.7	35.9	29.4	24.4	
Year	*1999*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*
No. of trabeculectomy operations	8948	7407	6268	5663	5319	5289	5208	4978	5433	5281	5679
Rate of trabeculectomy (episodes/100 000 population)	18.3	15.1	12.7	11.4	10.7	10.6	10.2	9.8	10.7	10.2	11.0

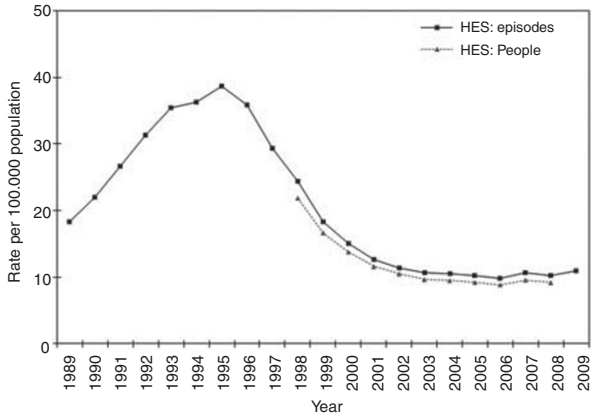

Figure 1 Hospital admission rates per 100 000 population for trabeculectomy: English national data from 1989/90 to 2008/9 measured as episodes and people per year.

episode statistics (HES) data sets were analysed using the operation code C60.1 in OPCS4, recorded in any position on the HES record. Using record linkage, we also analysed the number (and rate) of individual people who underwent trabeculectomy, as explained previously;[1] linked data were available for 1998/9–2008/9.

The annual rate of trabeculectomy has remained stable in England over the past 5 years. It actually decreased from 10.6 episodes in 2004/5 to 10.2 in 2008/9, thereafter increased slightly to 11.0 in 2009/10. Expressed as numbers, trabeculectomy operations have also remained approximately unchanged over the past 5 years at around 5300 per year, with a small upturn from 2008/9 to 2009/10.

Little evidence is seen as yet for any notable increase in the rate of patients undergoing trabeculectomy in England as a whole. A modest rise in the number of patients requiring surgery might be anticipated owing because of demographic shifts towards an older population,[3] but again no convincing evidence for a sustained increase in the number of patients undergoing surgery is evident so far.

Many factors may account for differences between national trends and those within specific geographical areas or clinical units. Disparities in population demographics (particularly age and ethnicity) may mean that the prevalence and severity of glaucoma (requiring surgery) will vary between areas. Local variation may exist in medical *vs* surgical decision making in glaucoma management; in the context of increasing subspecialisation in glaucoma detection and treatment, this may be influenced by the proportion of glaucoma patients overseen by a glaucoma specialist *vs* a general ophthalmologist. Despite the backlog of patients awaiting glaucoma review in England,[4] it is important that every suitable patient should be offered glaucoma surgery where appropriate. In addition, the range of laser and surgical therapies for glaucoma has increased in recent years, and important studies[5–8] are continuing to influence target intraocular pressures and therapeutic options. In particular, an increase in the rate of patients undergoing laser trabeculoplasty, cyclophotocoagulation, non-penetrating glaucoma surgery, and drainage tube surgery may have contributed to the decline and plateau observed in the national trabeculectomy rate in recent years. Further studies are warranted to examine national trends for all these laser and surgical interventions in concert, ideally using prospectively collected data.

Conflict of interest
The authors declare no conflict of interest.

Acknowledgements

TDLK is funded by Fight For Sight through a Clinical Fellowship. The Unit of Healthcare Epidemiology is funded to undertake research on the regional and national hospital databases by the English National Institute for Health Research. Views in this paper do not necessarily reflect those of the funding body.

Ethical approval
The data sets are anonymised. Approval to analyse them in a programme of research undertaken by the Unit of Healthcare Epidemiology, Oxford University, has been obtained through the NHS Central Office for Research Ethics Committees (reference 04/Q2006/176).

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Eye (2011) **25,** 1243–1245; doi:10.1038/eye.2011.138; published online 17 June 2011

Sir,

Anterior lens capsule has more affinity to trypan blue in patients with pseudoexfoliation

Although not necessarily needed in routine cases, capsule staining (ie, trypan blue) could be especially helpful in pseudoexfoliation syndrome (PEX).[1] Conceptually, the presence of the exfoliative material on the anterior lens capsule may interfere with staining capabilities of vital dyes.

Case series

In this unmasked prospective controlled clinical study, 26 patients with PEX and senile cataract (15 males; mean age = 73.92 ± 7.68 years) were compared with 24 healthy control subjects (14 males; mean age = 68.35 ± 10.34 years). People with a history of intraocular surgery, laser treatment, or ocular disease were excluded. Cases with white mature cataract, traumatic cataract, or subluxated lens were also eliminated. There were no statistically significant differences in sex and age between groups ($P = 0.963$ and $P = 0.084$, respectively). There was also no statistically significant difference in preoperative visual acuity (using LogMar) between groups (1.08 ± 0.29 and 1.03 ± 0.26 for PEX patients and controls, respectively; $P = 0.696$).

All participants had anterior capsule staining with 0.1 ml trypan blue 0.06% (Auroblue; Aurolab, Madurai, India) injected directly into the anterior chamber. After 10 s, the dye was washed out with 2.5 ml balanced salt solution. The staining patterns on the anterior capsule and effectiveness of the stain (graded from 0 (no staining) to 4 (excellent staining)) was assessed intraoperatively.[2] Grading was performed under a surgical microscope using uniform illumination by a single observer (HH). Nominal variables were evaluated by the χ^2-test; continuous and ordinal variables were evaluated using the *U*-test.

Most of the patients with PEX had scores of 3 or 4 (median = 4), whereas most of the controls had scores of 1 or 2 (median = 1.50) ($P < 0.001$, Figure 1a). Moreover, the staining pattern in the PEX group was more frequently uneven compared with controls (odds ratio = 84, $P < 0.001$, Figures 1b and 2).

Comment

This study shows that application of trypan blue 0.06% for only 10 s effectively stains the anterior capsule in PEX eyes, whereas it is not effective in normal patients. This outcome was achieved because PEX materials were stained more heavily than the anterior capsule itself. Thus, lower concentrations and/or exposure is required for effective staining of the anterior capsule of PEX patients.

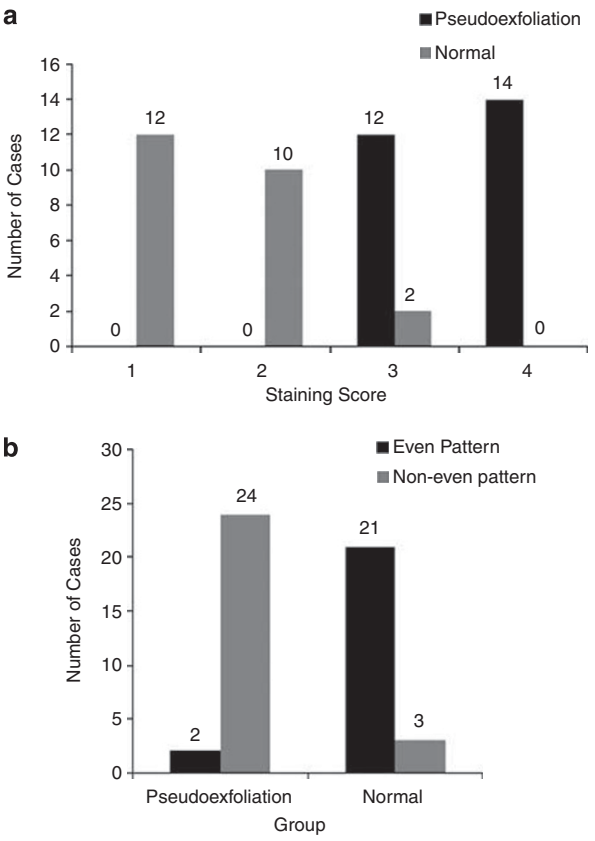

Figure 1 The effectiveness (a) and pattern (b) of anterior capsule staining with trypan blue 0.06% in pseudoexfoliation *vs* normal eyes.

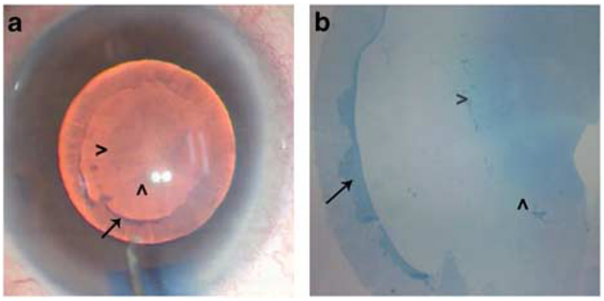

Figure 2 The typical staining pattern of the anterior lens capsule in pseudoexfoliation syndrome as demonstrated by surgical biomicroscope after staining (a) and under light microscope (b) after the anterior capsule specimen was harvested from the eye after capsulorhexis. The arrowheads delineate the well-stained central disc and the arrow marks the layered peripheral zone with utmost staining.

Conflict of interest

The authors declare no conflict of interest.

Acknowledgements

We wish to express our gratitude to Jean S Cain, Editor in the Life Sciences, AuthorAID, for helping with editing and improving the use of English in the manuscript.