

- 9 Donzis PB, Mondino BJ, Weissman BA, Bruckner DA. Microbial contamination of contact lens care systems. *Am J Ophthalmol* 1987; **104**: 325-33.
- 10 Moore MB, McCulley JP, Newton C, et al. *Acanthamoeba* keratitis. A growing problem in soft and hard contact lens wearers. *Ophthalmology* 1987; **94**: 1654-61.
- 11 Miller MJ, Wilson LA, Ahearn DG. Effects of protein, mucin and human tears on adherence of *Pseudomonas aeruginosa* to hydrophilic contact lenses. *J Clin Microbiol* 1988; **26**: 513-7.
- 12 Butrus S, Klotz SA, Misra RP. The adherence of *Pseudomonas aeruginosa* to soft contact lenses. *Ophthalmology* 1987; **94**: 1311-4.
- 13 Dart JKG, Badenoch PR. Bacterial adherence to contact lenses. *CLAO J* 1986; **12**: 220-4.
- 14 Schein OD, Glynn RJ, Poggio EC, Seddon JM, Kenyon KR. The relative risk of ulcerative keratitis among users of daily-wear and extended-wear soft contact lenses. A case-control study. *N Engl J Med* 1989; **321**: 773-8.
- 15 Dart JKG. Predisposing factors in microbial keratitis: the significance of contact lens wear. *Br J Ophthalmol* 1988; **72**: 926-30.
- 16 Ficker L, Hunter P, Seal D, Wright P. *Acanthamoeba* keratitis occurring with disposable contact lens wear. *Am J Ophthalmol* 1989; **107**: 453.
- 17 Slusher MM, Myrvik QN, Lewis JC, Gristina AG. Extended-wear lenses, biofilm, and bacterial adhesion. *Arch Ophthalmol* 1987; **105**: 110-5.
- 18 John TJ, Refojo MR, Hanninen L, Leong FL, Medina A, Kenyon KR. Adherence of viable and nonviable bacteria to soft contact lenses. *Cornea* 1989; **8**: 21-33.

## Albinism and anatomy

The average clinician going about his or her daily work may not have the time or the inclination to search for rational explanations for many phenomena the exact mechanisms of which are not apparent but which tend to be taken for granted. Examples of the sort of thing I mean would be ocular dominance, retinal rivalry, stereopsis, diplopia and confusion, and why convergent squints seem to cause amblyopia more often than divergent squints.

I have now discovered another riddle, and I am ashamed to have to admit that I did not know of its existence until I read the article in this month's issue by Russell-Eggitt and colleagues. It appears that albinos have an anomalous chiasmal crossing arrangement, something I expect every ophthalmologist knows except me. Having heard of this anatomical oddity for the first time, I was prompted to wonder what lay behind it. At first sight it appears to be just an associated condition without any obvious causal relationship. This starts to seem unlikely, however, when we learn that all albinos have the anomaly; surely it must be very closely related to the albinotic state.

Digressing for a moment, may I remind readers of the discoveries of the last few years concerning the laying down of the visual pathways during postnatal development? The general principle which has been established is that the development of the intracerebral visual pathways depends to some extent on the input of appropriate stimuli. We have been told, for example, how the anatomy of the lateral geniculate body can vary according to whether or not occlusion has been applied to one eye in experimental animals, and the same sort of thing has been suggested in the occipital cortex.

The situation in albinism, as explained and illustrated in the current article, is that in the central 20° of the field in one eye, retina stimulated by light coming from the opposite side, which would normally be expected to project to the ipsilateral cortex, does not do so but projects back to the opposite side. (I prefer to talk about the 'opposite side' rather than the 'nasal

side' because it has more meaning in the context of what comes next.) I found this revelation profoundly disturbing for the following reason. I have always thought (and taught) that everything we 'relate to' (to use a bit of slightly unpalatable but I hope in this case appropriate jargon) on one side of our world is processed on the other side of our brain. This shows itself in many ways, not least in a variety of forms when hemispheric dysfunction occurs for one reason or another. The simplest example is in the unawareness of loss in many patients with homonymous hemianopia. It is not that they cannot see on one side, but that one side from a visual point of view has ceased to exist; they cannot even think about it.

This strict concept of 'side' implies a changeover point where right gives way to left at the centre. There is probably a small area at the centre which the brain recognises as centre and where the concept of one or other side does not operate. Such is probably true of the most basic of bodily functions, eating, excreting, and reproducing. We can probably add central vision as the fourth 'centralised' function. It is possible that, whereas the right and left sides are mediated by the opposite sides of the brain, central functions are bilaterally represented (sparing of the macula might be an example of this). Perhaps therefore the peculiar chiasmal arrangements of the albino are not so difficult to understand after all. Because their central vision is poor from an early age they may have developed a much less concentrated version of the 'centre'. Putting it another way, we may say they may have an extended central zone where right and left are not perceived as such but are dissolved into a large (20°) blurred centre. If this were to be the case I should expect a wide central area to be bilaterally represented in the cortex, and this might account for the anomalous decussation found in albinos. It would be interesting to have the views of an expert on this speculative explanation.

REDMOND SMITH

## Cataract surgery

There seems little doubt of the success of modern cataract surgery. The widespread acceptance of extracapsular surgery and the routine placement of a posterior chamber intraocular

lens is encouraged by many reports and papers recording final acuity levels of 6/12 or better for over 80% of patients. For many individual surgeons this figure rises to over 90%.



## Albinism and anatomy.

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