To the Editor:

I read with interest the elegant study by Mitchell, Murphy and Kaye, entitled: “The Permanence of the Visual Recovery that Follows Reverse Occlusion of Monocular Deprived Kittens” (Invest Ophthalmol Vis Sci 25:908, 1984). The results are not only interesting but may have significant clinical relevance as the originally deprived eye loses its improved vision following removal of occlusion from the originally nondeprived eye. These results are disturbing since the improvement in visual acuity of the originally deprived eye seems to be lost fairly rapidly.

The authors mention the possibility that this loss of improved acuity in the originally deprived eye could be due to strabismus. They then refute this consideration with the explanation that the visual axes must have a convergent misalignment since strabismic amblyopia is rarely observed otherwise. In humans, esotropia is generally seen more frequently than exotropia, but the development of amblyopia depends not on the presence of esotropia or exotropia but whether the deviation is monocular or alternating. A constant exotrope can be amblyopic just as well as a constant esotrope. Two animals in the study exhibited a possible esotropia on casual inspection. One animal had a quantitative measurement with normal eye alignment. It would be interesting to know just how this quantitative measurement was made. In addition, clinicians recognize that casual inspection is not sufficient to rule out a strabismus, as small angle deviations are just as likely to lead to amblyopia as larger, more prominent degrees of deviation. Although I agree with the authors that these animals may not have been strabismic, I do not believe their studies ruled this out. The authors also mentioned that the time course was against the reduced vision being due to strabismic amblyopia, since decreased vision was seen to develop as late as 6 months of age in one animal. This was different than what might be expected on the basis of current knowledge of experimentally induced strabismus in cats. The critical period for the development of strabismic amblyopia in humans is probably at least up to the age of 6 years and amblyopia developing in accommodative esotropes as late as age 5 or 6 has certainly been documented. It would be difficult to be certain that a kitten could not develop amblyopia at 6 months of age, since the literature on the production of strabismus in animals often describes a noncomitant deviation, not the type of strabismus that might have been produced in these kittens by occlusion. Ophthalmologists frequently see strabismus develop in infants and young children with monocular cataracts, both in patients who have had surgery at an early age with patching of the normal eye and in those patients who have not had surgery. Unless the authors could document that strabismus was not present in their animals, it would have to be a consideration.

The type of occlusion used in these kittens should be reviewed. Lid suturing produces deprivation amblyopia that would be similar to the presence of a congenital cataract, vitreous opacities, corneal opacification, etc, and this might be a good model for producing deprivation amblyopia. However, occlusion to treat amblyopia is carried out by patching which essentially eliminates both light and form vision from reaching the eye. Lid occlusion eliminates form but considerable light can still reach the eye and might have a different effect upon the eye behind the lid closure than would be produced by a patch. The concern about acuity in the formerly nondeprived eye not reaching normal levels after lid occlusion was removed may therefore be due to a different type of deprivation than is usually produced by clinical patching therapy.

I believe the authors’ studies are most interesting and worthwhile but would hope that their results, based on the experimental technique described, were not interpreted to suggest that patching may do more harm than good, and would not influence clinicians to be less vigorous with their patching therapy. I agree with the authors that short periods of occlusion of the normal eye can be useful in improving vision of the deprived eye, but I think work will be necessary to more closely simulate the human clinical situation before further conclusions can be reached.

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