# Nursing of Diseases of the Eye.

By Harold Grimsdale, F.R.C.S.,
*Assistant Ophthalmic Surgeon, St. George's Hospital.*

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## AFFECTIONS OF THE MUSCLES.

Strabismus or squint is a faulty direction of one eye. To have binocular vision the visual axes of both eyes must be directed towards the object which is to be seen. If from any cause one eye does not fix the object, there is said to be a squint. This failure of direction may be due to loss of power of some particular muscle, paralytic squint, or may co-exist, with normal muscular power, concomitant squint. Where there is a definite muscular or nervous lesion the squint will be more noticeable, should the patient attempt to bring the affected parts into action. Thus if a single muscle, for example the right external rectus, be affected, the visual axes may be parallel (*i.e.*, there may be no squint) so long as the patient looks straightforward or to the left, but as soon as the gaze is directed to the right of the middle line the rotation of the right eye is less than that of the left, and a squint results.

Such a paralytic squint is much more common in adults than in children, and is almost always associated with troublesome double vision. To prevent this it is necessary for the patient to wear a shade over one eye—preferably, of course, that affected.

The common squint of children, however, does not show any difference in degree in any position. The angle between the visual axes remains constant whatever the direction of the distant gaze, and there is very rarely diplopia (double vision). It will be noticed, however, when a child thus affected is examined, that he can only see with one eye at a time, and that the visual acuity of one eye is usually greatly diminished. It is not always easy to tell at a glance which eye is squinting. It is, however, only at first sight that there is any difficulty. If the child be told to look at a distant object fixedly he will direct one eye towards it and the other will deviate. The nurse now covers one eye with her hand; if she have covered the fixing eye, the squinting eye can be seen to move and take up fixation; if the deviating eye, there will be no movement of the uncovered.

In very young children it is better to use the ophthalmoscope mirror at a distance. It is easy to attract the attention of the little patient to this, and the observer, looking through the hole, will see the reflection of the mirror falling slightly on the inner side of the pupil centre in the fixing eye and on some other part in the deviating eye.

The cause of concomitant squint is yet to some extent to seek. There can be no doubt, however, that one most effective factor in its production is hypermetropia, as was claimed first by Donders.

The association between convergence and accommodation is obvious, and the reality of the cause is shown by the fact that a large proportion, probably 50 per cent. at least, of all cases of squint which are seen early are much benefited, if not entirely cured, by the correction of any hypermetropia by suitable glasses. The proportion of success is greater also the earlier the case is seen. Further, if in a non-squinting hypermetrope one eye is from any cause excluded from vision for a considerable time, convergent squint often results.

It follows, therefore, that the chief indication in concomitant squint is to order appropriate glasses.

In children the choice of glasses is not easy, for many reasons. In the very young we cannot check our results by the use of the test type, and in the older we cannot always rely on the answers given. A certain number of children are skilful in learning the exposed letters by heart if they have heard any other patient reading them, and with a praiseworthy view of pleasing the examiner will repeat them from memory whatever glass is placed in front of the eye. But the most important source of error lies in the action of the ciliary muscle. This structure is concerned, as we have said, in the function of accommodation, and, therefore, is in constant action in hypermetropia. There is induced a tonic spasm of the muscle, which is with difficulty relaxed. The apparent degree of hypermetropia, therefore, is seldom the whole amount; a varying part is hidden by the muscular spasm. If the muscle be entirely relaxed, a greater degree will be found.

Atropine has the power of paralysing completely the ciliary muscle, and therefore relaxing the spasm. In all cases of concomitant squint in children atropin must be used freely before any attempt be made to order glasses. The best form of administration is that of an ointment—gr. ij. ad ʒj. The lower lid should be pulled away from the globe, and the ointment painted into the cul-de-sac with a little brush three times a day for several days in succession; a week is not too long. Thus alone can we ensure total relaxation. If atropine drops are used, the drug is more readily carried by the tears into the lacrymal sac, and so into the alimentary canal, producing symptoms of general poisoning.

The mydriatic, by paralysing accommodation, seriously interferes with the vision of all hypermetropes, who find even their distant acuity much reduced. It is, therefore, useless for a child who is under the influence of atropine to attend school. This acquired defect sometimes alarms the patients, if they have not been forewarned of it.

The sole objection to the use of the ointment is the difficulty in persuading the child's relatives that it is to be introduced within the lids. They are diligent in rubbing it on the outside, whence, of course, no action can follow on the ciliary muscle. Occasion

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