Nursing of Diseases of the Eye.

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GLAUCOMA.

Many cases of glaucoma run a much more insidious course. In the chronic form there is little to cause the patient alarm.

A slow, almost imperceptible, diminution of vision is the only subjective symptom.

The pupil often looks a little grey, and may lead the unwary to diagnose commencing cataract and attribute the progressive failure to this.

In earlier years, when the use of the ophthalmoscope was a rarity, many patients suffering from glaucoma were allowed to sink into incurable blindness, while the supposed cataract was becoming ripe.

No such mistake should now be made since the means of diagnosis are in everybody's hands.

If the fundus be illuminated by the ophthalmoscope, any opacity of the lens is easy to be seen; if the apparent condition is not sufficient to account for the failure of vision, it is not unlikely that we are dealing with glaucoma. Certainly we can exclude cataract.

The long-continued rise of intra-ocular pressure, though it may never reach a high degree, causes slowly advancing atrophy of the optic nerve. The lamina cribrosa where the nerve enters, the weakest part of the external capsule of the eye, is gradually driven backwards until a deep cup is formed, in the region of the papilla, against whose sharp edges the nerve fibres are compressed and die. The field of vision is diminished; most characteristic is an excessive contraction of the nasal side. Sometimes, however, it is concentrically reduced, until, although the central acuity may remain good, the transverse diameter of the field subtends only 10° or 20°, instead of about 150°.

The pupil is rather dilated and sluggish. The muscle fibres of the iris slowly atrophy as a result of the increased tension. The ciliary muscle also becomes paretic, and the resulting loss of accommodative power makes the sufferers need glasses stronger than are usually required for people of their age. If the ophthalmoscope be used, the optic papilla will be found to be depressed into a cup, and the adjacent choroid atrophied. The optic nerve is always pale in the later stages. The essential factor of the increase of tension in these chronic cases is somewhat less clear than in the acute, but the blockage of the spaces of Fontana is an important adjuvant if not the principal cause.

Treatment is, unfortunately, less satisfactory; in the very chronic forms the tension may be kept low and the danger warded off by the continued use of eserine. This, as we have seen, by contracting the pupil, drags the iris away from the cornea and keeps the filtration angle open. It is clear that atropine would, by dilating the pupil, throw the iris into folds against the edge of the cornea, and must, therefore, absolutely be forbidden in all primary glaucoma. Hence the immense importance of diagnosis between the acute forms and iritis. In iritis, atropine is the most valuable remedy we possess; but dropped into a glaucomatous eye it is likely to produce an acute attack, which may lead to total loss of the eye.

The eserine, if used for any length of time, often gives rise to irritation; but it is usually well borne if combined with cocaine in proportion of 1 grain of the former and 5 of the latter to the ounce of water.

An oily solution is still less irritating.

It produces a spasm of the ciliary muscle and blurred vision, but if used at night only (and this is often all that is necessary) will not, therefore, much interfere with the patient's comfort.

By this local means, and by free purgation from time to time, chronic glaucoma may be kept in an almost stationary condition for many months; but sooner or later the disease again advances, the optic disc becomes paler and the field of vision decreases.

It is then a question whether an operation shall be performed or not. There can be no doubt that the result of operation is much less satisfactory than in the acute cases; even though the tension be permanently lowered, the atrophic changes which have commenced in the nerve are not checked, and as a general rule progress. Further, as a sequence of the operation, one often finds an immediate and permanent reduction in the size of the visual field which cannot readily be accounted for; the cornea, also, is much flattened towards the scar, and great astigmatism results. The vision therefore is seldom as good after operation as before, and the patient must be advised of this.

The prognosis is hopeless in the case of advancing chronic glaucoma without operation, and it should be advised in most instances if the field is decreasing but has not closely approached the fixation point in any direction. Some 40 per cent. of cases are permanently stayed. The operation most commonly performed is iridectomy, of the same kind as that already described in dealing with acute glaucoma; but some operators make the scleral incision, without removing the iris, thinking that the important feature is to create a scar, which is more permeable than the normal scleral tissue.

Arguing on the assumption that glaucoma is due to hyper-secretion and vaso-dilatation, M. Abadie recommended a few years ago to attack the disease through the cervical sympathetic, in which he thought to find the origin of the increased tension. It is certain that in some instances where the sympathetic has been divided, the tension of the eye is lowered and the pupil is smaller. The operation has been performed on a considerable number of

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