INVERSION OF THE DISC AND TEMPORAL FIELD LOSS IN CHRONIC SIMPLE GLAUCOMA*†

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ALTHOUGH it has been recognized for very many years that various congenital anomalies of the optic nervehead occur, the influence of these on the progress of optic nerve disease seems to have been little studied. In particular, the influence of partial or complete inversion of the disc upon the nature of the cupping that occurs should a chronic glaucoma supervene has received little comment. The following case illustrates this.

Case Report

A woman aged 72 came under our care in December, 1967, with a history of long-standing chronic simple glaucoma. She had been supervised elsewhere and was known to have open angles in both eyes, cupped discs, and some field loss. She had been maintained on medical treatment and although never normotensive the central fields had been static. Shortly before we saw her she complained of deterioration of vision and particularly of trouble with seeing things to her right.

The left eye showed a typical chronic simple glaucoma with a cupped disc and an inferior arcuate defect of the visual field breaking through to the nasal periphery. The intra-ocular pressure could at no time be reduced to below 32 mm. Hg with medical treatment, gutt. pilocarpine 2 per cent., four times a day and gutt. Eppy 1 per cent. twice a day. The visual acuity with correction was 6/12.

The right eye showed a deeply cupped disc with a bizarre distribution of vessels, the nasal margin being most affected (Fig. 1). The visual field accorded with this and she had marked temporal loss to all sizes of targets (Fig. 2). In this eye also normalization of pressure by medical means was not possible; its visual acuity with correction was 6/9.

FIG. 1.—Right optic disc on December 2, 1967.

FIG. 2.—Right visual field on December 5, 1967, to 3 mm. white target.

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She had bilateral Scheie's filtration operations in December, 1967. The left proceeded without incident and is now filtering well. The right developed a very shallow anterior chamber for some 2 weeks post-operatively; this was due to a fistula in the conjunctival suture line, which was closed in January, 1968. The eye has settled well, and she now has a good anterior chamber and good drainage.

In both eyes the visual fields and also the visual acuity are static.

Discussion

Fuchs (1882) described a series of anomalies of the optic disc and showed some beautiful black-and-white drawings of these. They included situs inversus, inferior conus, the various crescents, some abnormal vessels, and cases which would now be regarded as colobomata. von Szily (1901) regarded cases of inferior conus with vessels emerging in the upper part of the disc as being due to partial torsion of the optic nerve during development.

It seems to have been accepted as a theoretical possibility that these odd discs would behave oddly in glaucoma, but actual case reports do not abound.

Thus Kestenbaum (1961) writes: "In cases with pre-existent partial torsion of the disc the cupping first reaches the inferior edge of the disc . . . the field loss is confined to the superior area"; also Chandler and Grant (1965): "With an inverse type disc . . . the first cupping may be nasal and the field defect temporal."

In our patient it cannot be said with any confidence what her disc looked like originally, it is however very apparent that when seen it did not look like a "normal" cupped right optic disc and the field loss also is very bizarre. It is postulated that this is a case of inversion of the optic disc and chronic simple glaucoma, and this appears to be the first report of this condition. It illustrates that control of chronic glaucoma on central fields only can be inadequate, as this patient has only "baring" of the blind spot, but extensive peripheral temporal loss. She also has in effect a right homonymous hemianopia, hence her difficulty in seeing things on her right side.

Summary

- (i) A case of inversion of the optic disc and chronic simple glaucoma is described.
- (ii) There follows a brief survey of the literature and a discussion of this.

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