Peripheral iridectomy for angle-closure glaucoma

Abstract of an interim report on a 10 year follow-up study

Ralph E. Kirsch

This study presents data concerning the relationship of uncomplicated peripheral iridectomy for angle-closure glaucoma to later formation of, or acceleration of growth of, cataract.

The author reviews 100 consecutive cases of uncomplicated peripheral iridectomy performed by him on private patients and followed postoperatively for 7 to 14 years, averaging 8.8 years. The state of the lens is studied for clarity or opacity, preoperatively and at the end of the follow-up period.

The data obtained from this study are compared with a control series of 100 non-operated eyes in nonglaucomatous patients of the same sex, identical age, and with similar lens clarity or opacity, as in the operated eyes at the time of iridectomy, and these are followed for the same length of time to observe spontaneous lens changes in these intact eyes. The methods of selection of patients for both groups are documented, and the ways in which lens opacity is delineated are described. The age range, age and sex distribution, and average age at time of iridectomy are recorded. The first data on death rate and survival rate after peripheral iridectomy are presented.

A final group of 18 asymptomatic narrow-angle-eyed patients is described, in whom a positive triple-stimulus test was found; one eye was iridectomized and the fellow eye remained intact. Comparative follow-up data on this group are presented.

The results provide no evidence to indicate that uncomplicated peripheral iridectomy is followed by more cataract formation within a 7 to 14 year follow-up period than occurs spontaneously in the control eyes. From the data presented, the author concludes that fear of cataract development, at this point in the study, is unwarranted and should not deter us from performing peripheral iridectomy when otherwise indicated, in an eye with angle-closure glaucoma or its fellow eye.

The effects of topical isoproterenol on aqueous dynamics in man

Stephen M. Drance and R. A. Ross

The effects of a single instillation into one eye of topical isoproterenol in concentrations of 5, 2½, and 1.25 per cent were studied in patients with ocular hypertension. A dose-related reduction in intraocular pressure was found, which was maximal 6 hours after the instillation and lasted for between 12 and 62 hours.
nographies, carried out at the time of maximal drug effect, showed no reduction in resistance. Fifty per cent of the patients studied showed a tachycardia with associated palpitations or weakness following prolonged use of the drug. It was concluded that isoproterenol produces a reduction in intraocular pressure in man, unaccompanied by an improvement in facility of outflow. Direct measurements of aqueous production seem to be necessary to establish the pharmacologic effects of the beta stimulator isoproterenol on aqueous dynamics in man.

Optic cup in normal and glaucomatous eyes

M. F. Armaly

Enlargement of the optic cup occurs early in the clinical course of open-angle glaucoma and results in inequality of this ratio in the 2 eyes. The enlargement, in general, parallels the magnitude of field defect. It is suggested that involvement of the visual field in eyes with ocular hypertension is related to the cup disc ratio (C/D), being more frequent in eyes with genetically large cups.

The ratio of the horizontal diameter of the optic cup to that of the optic disc (C/D), estimated to the nearest tenth by ophthalmoscopic examination, was shown to exhibit marked individual variation which was independent of age and sex. It was found to be genetically determined and separately related to two genetically determined measures, applanation pressure (P_{a}) and tonographic estimate of aqueous outflow facility (C). This relationship exhibited significant interaction, such that the highest frequency of large ratios, i.e., C/D > 0.3, occurred in eyes with high P_{a} readings and low C values, whereas in eyes with large C values this frequency did not vary with P_{a}.

In eyes with established glaucomatous field defect, marked variation in this ratio was encountered, such that it could not be used to predict the presence of field defect. These studies emphasized the difference between an acquired enlargement of the optic cup in glaucoma and the genetically large cup in the normal eye and indicated that a significant clue in this regard is that in the normal, the ratio is equal in the 2 eyes, and a difference > 0.2 occurs in less than 1 per cent of the normal samples.

This report will be concerned with the C/D ratio in individuals, free of ocular complaints, who were discovered to have glaucomatous field defect as they participated in studies involving the normal population. Such individuals constitute the earliest clinical stage of glaucoma. Findings in these subject indicate that enlargement of the optic cup is already evident at this stage of involvement and can be suspected by comparison of the 2 eyes. Ophthalmoscopic examination is important in this regard. Involvement of the visual field in eyes with high applanation pressure may be significantly related to the genetically determined size of the optic

From the Department of Ophthalmology, University Hospitals, Iowa City, Iowa.

This investigation was supported in part by research grant CD-00017 from the National Center for Health Services Research and Development Health Services and Mental Health, and NB-07328 from the National Institute of Neurological Diseases and Blindness, United States Public Health Service, Bethesda, Md.