IRIS BOMBÉ AND THE INTERMEDIATE MESODERM IN CLOSED-ANGLE GLAUCOMA*

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THERE has been a recent revival of interest in the operation of peripheral iridectomy for subacute intermittent closed-angle glaucoma. This is partly because it is an operation of small risk which is effective, if its indications are respected. Its chief value is in subacute closed-angle glaucoma before peripheral anterior synechiae have formed and as a prophylactic measure when the fellow eye has suffered from an acute congestive attack. The revival of interest is also related to present-day ideas on the aetiology of closed-angle glaucoma. Those who believe in the mechanism of relative pupillary block find in its success confirmation of their theoretical conclusions with regard to the importance of iris bombé as a factor in the aetiology of this type of glaucoma.

The operation was described by Pflüger (1893-4); it was modified and recommended in America by Curran (1920) and in Europe by Baenziger (1922). Precise indications for the operation have gradually become apparent through the work of Barkan (1938, 1939, 1954a,b), Chandler (1952), Chandler and Trotter (1955), and Haas and Scheie (1952).

Case Report

A man aged 54 suffered from occasional attacks of subacute closed-angle glaucoma in the right eye despite the regular use of miotics. An iris inclusion operation had been successfully performed upon the left eye one year previously for long-standing closed-angle glaucoma. The right eye had a shallow anterior chamber with a narrow angle. No synechiae were apparent gonioscopically. The right field of vision was full, and the optic disc normal.

Operation.—It was decided to perform a peripheral iridectomy on the right eye. A flap of conjunctiva was lowered at 12 o'clock and the limbus exposed. The eye was opened *ab externo* by a bellied knife. As the iris did not prolapse spontaneously, toothless forceps, as recommended by Chandler (1952), were introduced into the wound. A piece of peripheral iris was abscised and the flap replaced.

At first dressing the next day, it was found that only the anterior mesodermal layers of the iris had been removed and ballooning forward through the gap were the black, uninjured, posterior pigmented layers. The spherical protrusion of the unsupported ectodermal layers of the iris produced a most dramatic picture. When a drawing of the condition had been made (Figure), the iridectomy was completed. The eye recovered without incident and has been symptom-free since that time, with controlled tension and excellent corrected vision.

Discussion

Case reports in the literature (Ulbrich, 1908; Heine, 1913; Urbanek, 1922), wherein areas of thinned iris have been studied, suggest that even in the non-

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FIGURE.—The black ectodermal layer has ballooned through the peripheral gap in the mesoderm of the iris.

glaucomatous eye the pressure behind the iris is higher than in the anterior chamber. In closed-angle glaucoma the difference in pressure must be considerable to produce the clinical picture depicted in the accompanying Figure. An important factor in the maintenance of an open chamber angle in this disease would seem to be the presence of healthy anterior mesodermal layers. It is unlikely that the anterior mesodermal leaf which constantly presents some degree of atrophy—the “layer of crypts” (Streiff, 1904)—could withstand any considerable force from behind, so that we are left with the intermediate mesodermal layer as the probable site of a restraining influence and upon its integrity the prevention of frank and persistent iris bombé in closed-angle glaucoma may well depend.

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