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A SCLERAL BUCKLING PROCEDURE*

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THE past few years have seen the rapid development of scleral buckling procedures for the treatment of retinal separation (Čavka, 1959; Schepens, Okamura, and Brockhurst, 1957; Schepens, Okamura, Brockhurst, and Regan, 1960; Fison, McAuley, Meyer-Schwickerath, and Trevor-Roper, 1960).

About 6 years ago I first used the lamellar scleral flap to cover the area of resection. The flap covered the knots of the sutures and so helped the formation of a ridge. By folding the flap into the area of resection, Čavka used the sclera to form an implant. The implant was, however, too soft to form a permanent ridge and its permanency depended upon the sutures holding. Re-operation at sites of lamellar resection show that the area has in a short time resumed its spherical shape. Possibly the constant movement of the eye within the orbital fat has a spherical moulding action. Several procedures use rigid and semi-rigid (silicone) substances and in some cases the lamellar flap has been utilized to cover or retain them (Schepens and others, 1957, 1960; Regan, Schepens, Okamura, Brockhurst, and McMeel, 1962).

Disadvantages in the use of foreign bodies as scleral implants are these:

(1) Introduction of infection;
(2) Movement and dislocation of the implant;
(3) Entry of the implant into the posterior segment of the eye (Regan and others, 1962);
(4) Glaucoma, which may be caused by large implants.

The operation to be described utilizes the sclera as an implant. A portion of the sclera is formed into a twisted cord and this exerts tension in the meridian of the cord. Thus the ridge is formed by the exertion of opposing forces in the axis of the cord and at 90° to it (in longitude and latitude).

Operative Procedure

Reference to the diagrams will show that the incisions are elliptical (Fig. 1) and include the area of the retinal tear. The sclera between the two incisions is split

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with a Tooke's knife thus forming a bridge flap (Fig. 2). The sclera is split for 1 mm. on each side posterior and anterior to the flap.

The area under the flap is diathermized and the fluid is released as required. A suture is then placed in one edge of the centre of the bridge flap (Fig. 3), and the thread is wound round the flap and pulled taut. It is possible to obtain about three to four turns of the sclera to form a twisted cord (Fig. 4), which is then buried by sewing together the open lips of the incision (Figs 5 and 6). The bridge flap should be 3 mm. wide, the incisions approximately 18 mm. long, the anterior incision being 10 mm. from the limbus.

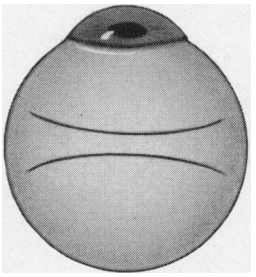

FIG. 1.— Incisions.

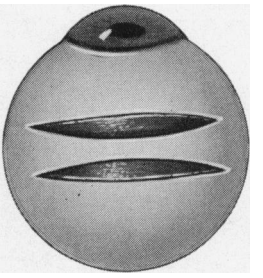

FIG. 2.—The scleral bridge prepared.

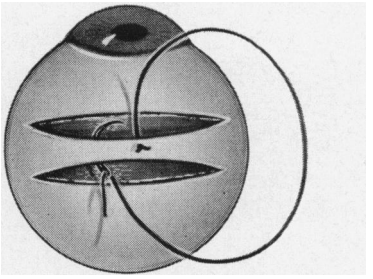

FIG. 3.—The suture attached to the bridge flap and winding in process.

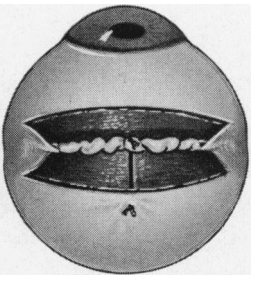

FIG. 4.—The scleral cord pulled taut.

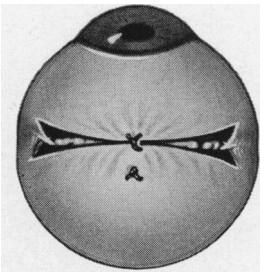

FIG. 5.—Suturing the lips of the wound.

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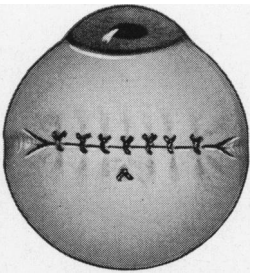

FIG. 6.—Completed suturing and burying of scleral cord.

Summary

A method is presented of producing a cord-like implant from a strip of sclera which is used in a buckling procedure in the treatment of retinal separation.

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