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6 Operations on the Ciliary Body

The ciliary body is attached to the ocular wall at the *scleral spur*. This band of attachment forms a barrier between the anterior chamber and the sclerochoroidal interspace, and any changes in that barrier will affect the intraocular pressure. Operations on the ciliary body consist either in *separating* the ciliary body from its attachment (*cyclodialysis*) or *reattaching* the ciliary body to the scleral spur (*cyclophexy*).

6.1 Cyclodialysis

Detachment of the ciliary body is accomplished with a *blunt spatula* whose shape conforms to the curved inner surface of the sclera. The spatula is introduced through a scleral incision into the sclerociliary space and passed along the inner scleral surface toward the anterior chamber. Injury to the vulnerable, vascular uvea is avoided by *pulling the sclera away from the uvea* with the spatula rather than pushing the uvea from the sclera.¹ All the manipulations in cyclodialysis, then, are accomplished essentially by outward traction. This produces a visible external bulge in the sclera which aids the operator in recognizing the position of the spatula.

Patency of the cyclodialysis can be maintained by the injection of *viscoelastic material*. However, the high resistance at the scleral spur may cause the material to flow back

beneath the choroid during the injection. Therefore, following the rule for the application of viscoelastic materials (see Fig. 2.20) the resistance at the scleral spur is overcome by first probing with the rigid cannula before injecting the material (Fig. 6.1).

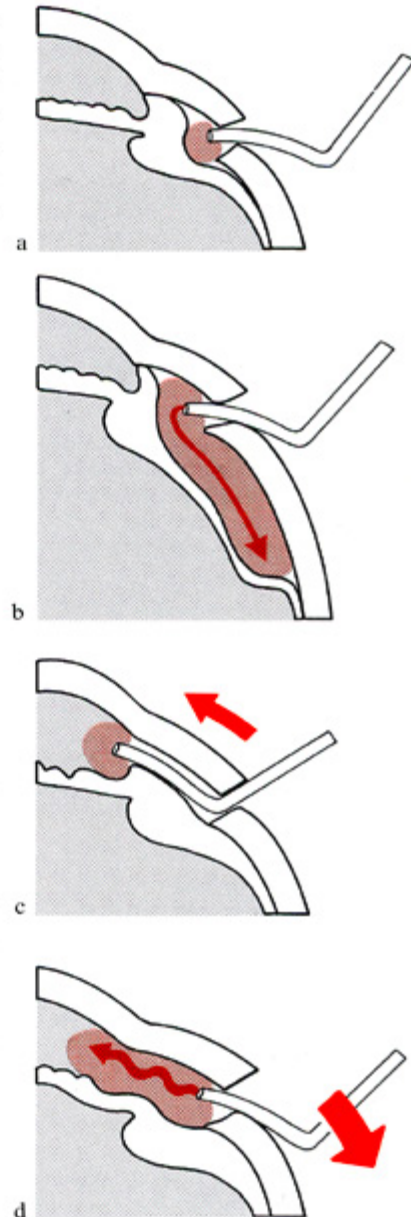


Fig. 6.1. Injection of viscoelastic material for cyclodialysis

a, b Technique leading to inadvertent filling of the sclerochoroidal space.

c, d Correct technique for maintaining separation of the ciliary body.

a If the injection is started immediately after inserting the cannula into the sclerociliary space, the resistance at the scleral spur will deflect the flow of viscoelastic material.

b The material is diverted backward into the space between the sclera and choroid.

c This is avoided by first passing the cyclodialysis cannula into the anterior chamber to dissect the ciliary body from the scleral spur.

d The viscoelastic material is injected on withdrawal of the cannula. It expands and maintains the communication formed between the anterior chamber and sclerociliary space

¹ Avoid the horizontal meridian with the long posterior ciliary arteries!

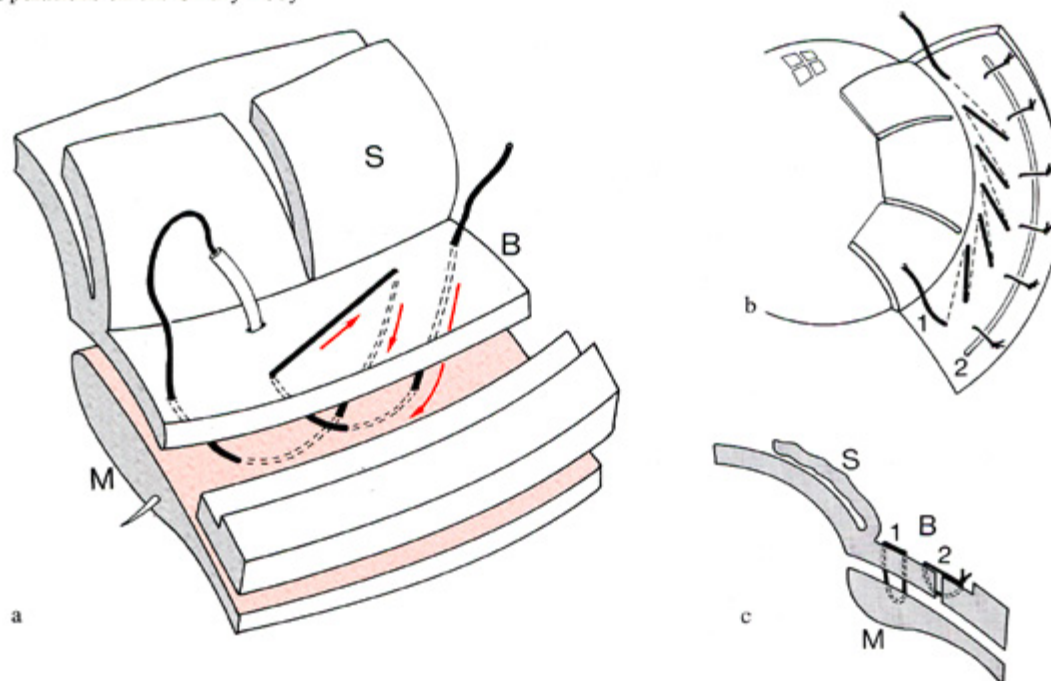


Fig. 6.2. Cyclohexy with continuous overlapping sutures. **a** Perspective view of the suture in a scleral "step" incision. **b** Overhead view, **c** cross section. A lamellar dissection of the sclera has been performed along the limbus, and the scleral flap (S)

has been divided into several segments (see Fig. 1.54) and reflected. The thinned scleral bed (B) is incised to expose the detached ciliary muscle (M). A continuous suture technique is used in which the needle is reintroduced behind the previous point of

emergence, so that the overlying segments run counter to the direction of the overall suture line. 1, continuous suture for cyclohexy; 2, single loops for closure of scleral bed

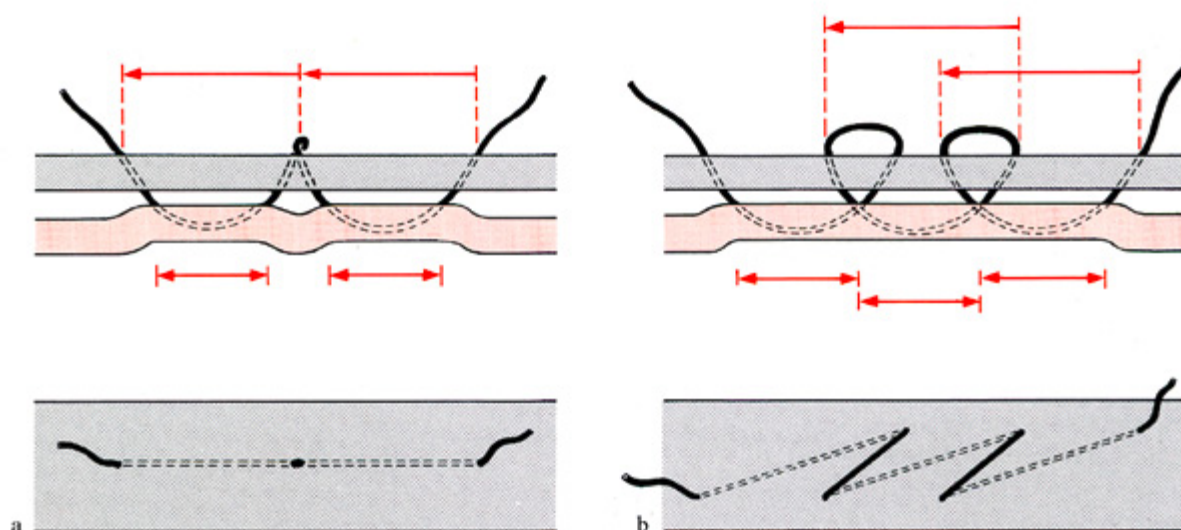


Fig. 6.3. The problem of suturing layers together with a circular needle. **Top**: Longitudinal section through the two layers. **Bottom**: Overhead view of the superficial layer.

Arrows top: Tissue of superficial layer encompassed by the suture.

Arrows bottom: Encompassed tissue of the deep layer.

a Because of the curved shape of the needle, a suture that is continuous in the superficial layer may leave discontinuities in the deep layer. The magnitude of this discrepancy for a given needle curvature depends on the thickness of the upper layer.

b If the suture that is to tack the lower layer to the upper layer without gaps, the needle must be reintroduced behind the previous point of emergence in each pass so that an oblique, overlapping suture pattern is obtained (analogous to the shingles on a roof)

6.2 Cyclopexy

A disinserted ciliary body can be surgically reattached to reestablish an effective barrier against fluid drainage from the anterior chamber.² The suture used for the cyclopexy must fix the ciliary body to the sclera without leaks so that it effectively prevents fluid seepage between the layers (Fig. 6.2). Such leaks may go undetected when the suture track is observed on the

scleral surface, because a curved suture needle passed through a tissue layer encompasses a much larger area at the surface than below the layer (Fig. 6.3a). Thus, a suturing technique for uninterrupted fixation requires that the needle be reinserted *behind* its site of emergence when each stitch is made, resulting in an overlapping suture pattern (Fig. 6.3b). Because the discrepancy between the distances spanned by the suture on the upper and lower scleral surfaces depends on

the thickness of the pierced scleral tissue, placement of the suture is facilitated by preliminary thinning of the sclera. This also lowers the tissue resistance, enabling the use of fine needles that will cause minimum trauma to the delicate tissue of the ciliary body.

² E.g., to correct the hypotensive effect of an overfunctioning surgical cyclodialysis or to repair a traumatically disinserted ciliary body.