

**Concerning the repair of corneal-scleral wounds, with prolapse of the iris /
by G. E. de Schweinitz.**

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De Schweinitz, G. E. 1858-1938.
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Publication/Creation

[Philadelphia] : [publisher not identified], [1896]

Persistent URL

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CONCERNING THE REPAIR OF CORNEO-SCLERAL WOUNDS, WITH PROLAPSE OF THE IRIS.¹

BY G. E. DE SCHWEINITZ, M.D.,

Professor of Ophthalmology in the Philadelphia Polyclinic.

FOR practical purposes prolapse of the iris occurring at the corneo-scleral junction, or its immediate neighborhood, may be divided into those varieties which result from a perforating ulcer and those which follow a wound, either accidentally inflicted or designedly placed, as, for example, in the corneal section of cataract extraction.

The treatment naturally consists of two procedures: non-operative, *i. e.*, the use of eserine and a pressure bandage; and operative, viz., abscission of the prolapse and closure of the wound. It is to the best method of dealing with these cases from the operative standpoint that I desire to call attention, in the hope of eliciting some discussion from my colleagues present to-night.

First, the method of Gama Pinto for obtaining a non-adherent cicatrix.

As is well known, this surgeon abscises the prolapsed portion of the iris, frees all adhesions to the margin of the ulcer, and covers the opening in the cornea with a flap of bulbar conjunctiva, which should be cut twice as large as the opening and pushed into the orifice with a blunt probe. A firm binocular bandage is applied and the eye not dressed until the third day. Then it will often be found that the conjunctival flap has healed into the ulcer. A flat, non-adherent cicatrix results, or, in other words, an ordinary cor-

neal scar without staphylomatous bulging, and a circular pupil.

I have employed this method several times and with gratifying success, although I have not always been able to secure non-adherence of the iris to the cicatrix.

For example, a patient now in the Philadelphia Hospital several years ago was admitted with a large marginal ulcer occupying the entire upper and outer portion of the cornea, which had perforated in one corner and permitted the prolapse of a large portion of the iris. This was abscised in the usual way and the Gama Pinto directions followed. It was an unfavorable case owing to the extent of the ulcer and the shape and character of the opening, which followed the curve of the cornea for some distance. At present, fully six years after the accident, the point of prolapse is occupied by a perfectly flat white cicatrix, to which there is slight adherence of the iris, so that the pupil is drawn upward and outward. The vision of the eye is excellent and the patient has no trouble with it, being able to sew the entire day—a result, considering the extent of the ulceration and prolapse, far better than was to be anticipated.

In another case, which I have recorded briefly in the PHILADELPHIA POLYCLINIC, the patient suffered from monolateral gonorrheal conjunctivitis, complicated with sloughing ulcer at the inferior portion of the cornea, perforation, and a large prolapse of the iris. The iris was abscised, the margins of the aperture carefully cleansed, and the iris freed

¹ Read before the Philadelphia County Medical Society, March 11, 1896.

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as much as possible. The opening was then closed with a flap of conjunctiva *transplanted from the other eye*, the size of the flap being almost that of the circumference of the cornea, or, in other words, fully three times the size of the original opening. The result was admirable; the graft became adherent, there was no bulging, or very little protrusion of the cicatrix, and although the iris was somewhat adherent and the pupil distorted. Vision was about one-seventh of normal—far better than could possibly have been expected from the serious nature of the lesion and the extensive prolapse of the iris. He returned after nearly three months and the following note was made: Graft covering lower third of cornea. Vessels from conjunctiva pass over graft. Pupil partially covered. Vision, fingers at 2 meters, without correction.

Should the method of Gama Pinto fail to secure a non-adherent cicatrix, after the healing had become firm, there would be no objection to the performance of Mr. Lang's operation of dividing the anterior synechiæ with a blunt knife-needle—a procedure which I have practised in a number of instances with almost universal success.

The advantage, then, of the Pinto flap, even if non-adherence of the iris is not secured, consists in a more rapid healing of the corneal wound, together with the prevention of staphylomatous bulging.

Second, the closure of the wound with stitches.

The report of a few cases will illustrate this method:

CASE I.—A male, aged 18 years, was admitted to the wards of the Philadelphia Hospital on May 11, 1895, with violent bilateral gonorrheal conjunctivitis. The right cornea was still clear; the left cornea had already begun to be opaque.

In spite of treatment, on the left side there was rapidly formed a large corneal abscess, and on the right side, nine days after admission, a large crescentic ulcer formed at the upper and outer corneo-scleral junction, which speedily perforated, permitting a huge prolapse of the iris. It was impossible to make pressure, owing to the inflamed con-

junctiva; eserine was tried without effect. The prolapse and staphylomatous bulging becoming greater each day.

Therefore a week after the appearance of this prolapse it was abscised (the discharge from the conjunctiva had almost ceased although the membrane was still vascular) the edges of the wound freed as much as possible, and the iris replaced with a spatula. The corneal and the scleral edges, if I may so express myself, of the wound which occupied the upper and outer third of the corneal rim, were now freshened and united with four sutures. The sutures were removed on the fourth day, and the wound found firmly united. When my term of service ended six weeks later, the vision was $\frac{20}{60}$ without correction, the media clear, the pupil slightly oval and drawn upward and outward and the eye quiet, although there was still some thickening of the papillary layer of the conjunctiva, owing to the previous conjunctivitis. The vision of the left eye was counting fingers, owing to the presence of a central corneal macula.

Although not bearing upon this topic, it is interesting to note that this patient during his attack of gonorrheal conjunctivitis successively developed synovitis of all the large joints, beginning with the left knee. With each attack of synovitis there was marked exacerbation of the corneal symptoms, and it was during the attack of synovitis in the left knee-joint that the perforating ulcer which I have described appeared. I have never before seen so extensive a case of gonorrheal synovitis.

CASE II.—A female child, aged 12 years, came for treatment to the Jefferson Medical College Hospital on December 27, 1895, presenting at that time, according to the records, a phlyctenular kerato-conjunctivitis with ulcer at the inferior margin of the cornea. This ulcer must have gone on to perforation, and when I came on duty, on the 13th of January of the present year, there was a large prolapse of the iris, with beginning staphylomatous bulging.

On the 17th of the same month the prolapsed iris was excised, the edges of the wound freshened and closed with a suture, after replacement of the iris.

The suture was removed on the third day and recovery has been uninterrupted; the eye

previously irritable and congested, rapidly became white and quiet, and now the opening is closed by a firm white cicatrix, without bulging, the pupil is nearly circular, although there is some attachment of the iris below, and the vision with the best correcting glass is $\frac{27}{40}$.

CASE III.—Kate Ingram, aged 50, an insane patient in the Philadelphia Hospital, was admitted to the Ophthalmic Wards with double cataract. Both lenses were extracted without iridectomy. In the right eye there was kind healing, without accident; in the left eye a large prolapse of the iris was found twenty-four hours after extraction. It was treated in the usual method by the instillation of eserine and a compress bandage, and somewhat lessened in size.

Three weeks after extraction the prolapse was abscised, the iris replaced as much as possible, and the wound closed with two silk sutures which were removed on the fourth day. The healing was perfectly kind; the pupil, instead of being round, is a vertical oval, and the vision on February 1st, after the correction of six diopters of astigmatism, is $\frac{6}{70}$. This astigmatism will very much decrease in the course of time, and no doubt there will be corresponding improvement in vision.

I will not occupy more time with additional clinical histories, as these are sufficient to illustrate the class of cases to which this procedure is suited, namely, wounds and ulcers at or near the corneo-scleral junction, associated with prolapse of the iris, in which, after removal of the prolapsed iris, it is possible to secure perfectly clean corneal wound-edges. I would prefer not to pass a stitch if the margin of the wound was infiltrated or gray. I would also hesitate about passing a

stitch if a wound at the same time had injured the ciliary body.

It seems to me that the method of Gama Pinto is preferable if the opening is distinctly circular, and if it is not possible to obtain a perfectly non-infiltrated wound-edge without destroying too much corneal tissue, as, for example, in the case of monolateral gonorrheal conjunctivitis, with perforating ulcer. If, after abscission of the prolapsed iris, the wound is elliptical, or follows the curve of the cornea, as, for example, in Case I, stitches seem preferable to a graft.

I have not as yet excised the ulcerated tissue of a large corneal ulcer and then stitched the edges of the wound, but I am inclined to try it. Neither have I stitched wounds situated at some distance from the edge of the cornea.

Corneal sutures are inserted as a rule by some cataract operators after the simple extraction, for example, by Kalt, in France, who is a strong advocate of this procedure. So, also, a number of operators have advocated the insertion of these sutures after the abscission of a prolapsed iris subsequent to simple extraction.

The point of this matter evidently is that we are able to insert delicate sutures in the cornea with more impunity than we would be led to believe from the ordinary textbook descriptions of these lesions. I have always used delicate silk thread and the curved needle which comes in Dr. Stevens' tenotomy case. I have not tried cat-gut, and do not believe it would be as satisfactory as the silk.

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