V-Z PROCEDURE FOR THE CORRECTION OF SENILE ECTROPION*

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OF the many methods devised for repair of senile ectropion of the relaxed type, the two most widely used are perhaps the Kuhnt-Szymanowski and the Blaskovicz techniques.

The former may be performed in two different ways, according to whether the tarso-conjunctival triangle is excised from the middle third of the lower lid (Meller, 1950), or from its outermost part, near the lateral canthus (Elschnig, 1922). The one technique requires a long intermarginal incision, thus creating the possibility of disrupting the lash roots and of producing an unevenness of the lid border; the other may give rise to some deformity of the external commissure. In each case the whole lid is drawn temporally, and an unsightly displacement of the lower lacrimal papilla and punctum can ensue, the more so when the ectropion is confined to the inner segment of the lid.

In the operation described by Blaskovicz (1922), a complete section of the lid is removed by means of two parallel incisions, and a sliding skin-flap is fashioned which, owing to the excision of a Burow triangle, serves to hold the lid in its proper position. According to whether the defect appears predominantly in the nasal or the temporal part of the lid, two variants of the same procedure are used, which differ only in that the resected triangle is located in the vicinity of the ala of the nose or in the temporal region. Although, originally, the apposition of the margins of the surgical coloboma was effected by several carefully placed border-to-border sutures, a much better result may be obtained if a Hughes tongue-and-groove joint or a Wheeler halving is used.

In any case, the fact remains that the operation requires a rather extensive dissection and that the scars do not always become as inconspicuous as might be desired. On occasions, too, an epicanthus-like fold over the internal canthus or a downward displacement of the latter may appear as a late complication when the operation is performed on the nasal side.

To overcome these difficulties, a procedure has been evolved which consists basically in the excision of a triangular full-thickness segment of the

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lid, as in the old Adams procedure, and in the subsequent transposition of the two cutaneous flaps which result from making two obliquely oriented incisions at both the upper and the lower end of the suture line closing the surgical coloboma. The technique is similar in many respects to that conceived by Schneider (1956) for the treatment of squamous-cell carcinoma of the lower lip. In view of its effectiveness and extreme simplicity, it has come to be regarded by my associates and myself as the method of choice for the correction of senile ectropion whenever the skin and the orbicularis muscle are lacking in elasticity and tone and there is a substantial lengthening of the lower lid border (Fig. 1).

FIG. 1.—Pre- and post-operative photographs of three cases of senile ectropion repaired with the V-Z procedure.

On the other hand, in cases of the so-called catarrhal type of senile ectropion, where the cause of the defect seems to lie in a retraction of the skin in the vertical sense, preference should be given to the methods of Kuhnt (1908) and of Landolt-Stallard (1885, 1948).

Technique

The operation is usually performed under local anaesthesia. Cocaine drops are instilled into the lower fornix and a 2 per cent. xylocaine solution, with epinephrine, is injected under the skin of the lower lid along the required portion of its length. As, by reason of their vasoconstrictor effect, the drops are apt to cause a transient reduction in the prevailing eversion of the lid, and as the subcutaneous infiltration, by ballooning out the skin, would make it difficult to estimate the amount of tissue to be resected, it is advisable to start by making a fold between the thumb and forefinger of the left hand, so that the approximate separation and course of the future incisions may be decided upon. The redundant area is then outlined with a sterile wooden toothpick soaked in a mercurochrome solution.

Once the anaesthesia is complete, the lid is drawn upward from its border with a fixation forceps, and a V-shaped incision is made by two straight cuts from above with strong blunt scissors (Fig. 2), thus removing a triangular fragment of both the musculo-cutaneous and the tarso-conjunctival layers of the affected lid at the point where the defect is more marked. The incisions, of an average length of some 9 mm., may be from 7 to 12 mm. distant at their starting points, according to the severity of the condition. A break in the continuity of the eyelid now appears, and this must be closed by careful approximation of the two edges.

FIG. 2.—Senile ectropion. Outline of area to be removed.

To avoid the production of a notch in the lid margin, a tongue-and-groove union is fashioned according to the directions of Hughes (1954), and a double-armed, braided, black silk suture (size 000 000) is inserted to hold the tongue into the groove. The suture is drawn up snugly and tied over a rubber peg, so that a firm anchorage is established (Fig. 3). Three extra silk sutures (not shown in the illustration) are then placed, to achieve an accurate alignment of the lid border: one, which goes immediately below the rubber peg, helps to ensure a proper apposition of the skin edges; the others are intermarginal stitches which pass just behind the lash line and prevent the upper end of the coloboma from gaping. The slight thickening which results from the overlapping of tissues at the point of junction disappears in no time, and makes, in fact, for a better continuity of the lid border.

FIG. 3.—Continuity of lid margin re-established by a tongue-and-groove union. Position of two additional skin incisions.

As simple closure of the wound along a vertical line would lead to the formation of a scar which, because of the subsequent cicatricial retraction, might exert a pull perpendicular to the palpebral fissure, the suture line must be broken up by additional incisions. Two parallel, oblique cuts are therefore made to form an angle of 60° with the main wound, being of the same length as that part of the main wound which they enclose. The lower cut starts at the bottom of the main wound and runs upwards and to one side, and the other begins just under the most inferiorly placed appositional suture and goes downward and to the opposite side.

The resulting triangular skin flaps are then dissected from the underlying orbicularis fibres and transposed. If the edges of the severed muscle are united with one or two 00000 absorbable (surgical gut) sutures, the flaps created by the Z-shaped incision will fall into place. These are sewn into position with the necessary number of very fine, closely-applied silk sutures (Fig. 4, opposite).

FIG. 4.—Triangular flaps transposed and sutured.

The advantage of the transposition of the two flaps lies not only in the fact that the suture lines follow a zigzag course, but in that, being now nearly parallel to the lid border, they will become inconspicuous within a few weeks. Before the transposition of flaps, two of the three cuts which compose the Z are oblique and one is vertical. After the transposition, however, one suture line will be horizontally placed and, while still oblique, the remaining two will become almost horizontal if subjected to a sufficient degree of tension. Strong support in the form of a girth is thus provided for the weakened lower lid.

A soft antibiotic ointment is instilled into the conjunctival sac and some porphyrized sulphanilamide is applied thinly to the skin with a powder blower. A tight pressure bandage is applied and left in position for 6 days. On the twelfth day, the sutures are removed and the pressure bandage is replaced by a light dressing which remains undisturbed for a few days longer.

Discussion

Because of continued exposure the palpebral conjunctiva frequently shows infiltrative and degenerative changes and may be considerably thickened; the lid may not therefore regain its correct position at once, but may remain somewhat separated from the eyeball by the thickened membrane. Very soon, however, the conjunctiva will recover a normal quality.

Occasionally, the eyelashes will be seen to have acquired an abnormal direction, so that when the lid is brought back to its proper position they may come in contact with the cornea. This is best dealt with by cementing them down with collodion for as long as a bandage is worn.

If, after the triangular fragment of lid is resected, or even at the time when the first suture is about to be tied, undercorrection seems liable to

occur, an additional amount of lid substance may be removed until the desired effect is attained.

On the other hand, an excessive resection will make it difficult to appose the edges of the coloboma. If the tension necessary to do so is moderate, the mattress suture may be tied, for the tarsal plate will be able to stand the ensuing stress; the lid border will then usually occupy an abnormally low position during the first week, until the tissues yield in proportion to the stretch to which they are submitted. If, however, it is deemed unsafe to put the suture under the strain required to close the defect, the lateral attachment of the tarsus to the orbital margin will have to be severed subcutaneously by the technique advocated by Agnew (Blaskovicz and Kreiker, 1938).

The importance of the pressure bandage recommended by Hughes (1954) for use in reparative procedures on the lids cannot be overemphasized: the immobilization of tissues, the control of haemorrhage, and the prevention of swelling thus secured will avoid the sutures pulling out and the suture lines separating, especially in cases where the excision is extensive and the lid remains under tension. If the first suture, which re-establishes the continuity of the margin, happened to cut through the tarsal plate and skin, the chances are that an unsightly indentation will appear; yet, this would not be as large as might be expected from the fact that the surgical coloboma went originally through the whole width of the lid, for only the upper, marginal part of the wound would reopen. Of course, secondary closure of the notch may always be performed after the oedema has subsided, and this with the same tongue-and-groove method or else by means of the Wheeler (1939a, b) halving procedure; the edges of the coloboma will then have to be freshened with a narrow cataract knife.

Although the procedure described was used at first only for the repair of senile ectropion, it soon became evident that its applications might be manifold. Paralytic ectropion, fresh lacerations involving the lid margin, and colobomata of either the upper or the lower lid, whether of congenital or traumatic origin, may be satisfactorily repaired in this way. Tumours occupying a quarter or less of the entire lid may similarly be removed; this is especially indicated in older patients, where the laxity of the tissues makes it easy to approximate the edges of even larger defects.

The technique here reported has also proved valuable in the correction of senile entropion. Senile-spastic entropion can be divided into two main types according to whether a substantial elongation of the lid border is present or not. If it is not present, a successful repair may be accomplished by means of the Birch-Hirschfeld method* of dissecting and crossing two orbicularis strips (Blaskovicz and Kreiker, 1938; Imre, 1942). When, on the other hand, there is considerable lengthening of the lid border, correction can be achieved only by shortening and strengthening both lid laminae; excellent results have been obtained in cases of this kind with the V-Z

* This method has subsequently been modified by Wheeler (1939b) and by Castroviejo (1952).

excision and suture (Fig. 5), which gives good support to the lid through the horizontal traction exerted by the triangular flaps, so that the lower border of the tarsal plate is pressed against the eyeball.

Before After
FIG. 5.—Senile entropion, before and after surgery.

Summary

Senile ectropion may be successfully corrected with a V-Z plastic procedure comprising the following steps:

- (1) Excision of a base-up triangle from the whole lid thickness by means of two obliquely directed, convergent cuts;
- (2) Approximation of the edges of the resulting gap with a tongue-and-groove marginal union;
- (3) Breaking up the principal, vertical wound line with two additional skin incisions making an angle of 60° with that line;
- (4) Transposition of the flaps and proper suturing of the flaps to each other and to the adjoining skin.

This technique has also been employed with good results in other palpebral disorders, such as recent lacerations involving the margin, traumatic and congenital colobomatous indentations, small tumours needing removal, and senile-spastic entropion whenever the lower lid is distended.

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