A Simple Procedure for Aesthetic Correction of the Medial Epicanthal Fold

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Abstract. The author presents a surgical procedure for aesthetic correction of the medial epicanthal fold. The procedure consists of an asymmetrical Z-plasty of the epicanthal fold where a flap is formed from the posterior surface of the epicanthal fold itself. This procedure does not require geometric planning and produces excellent anatomical and functional results, with inconspicuous scars.

Key words: Epicanthal fold—Blepharophimosis—Hypertelorism

We frequently encounter patients who request correction of the oriental appearance of their eyes, which derives from the presence of a more or less evident medial epicanthal fold. This fold is formed by an apparent excess of skin which lies in a vertical, semilunar orientation, located at the medial canthus and overlying the medial canthal structures. Although traditionally regarded as a redundancy of skin, actually it represents an abnormal distribution of the skin, thereby forming a fold rather than the normal anatomic concavity [12].

The presence of bilateral folds gives the appearance of shortened palpebral fissures and exaggerated intercanthal distance. This makes the nasal dorsum appear to be wide and flat and in extreme cases, gives the appearance of hypertelorism. Correction of epicanthal folds reveals the medial canthus, uncovering the medial palpebral fomix, widening the palpebral fissure and defining the nasolacrimal contour. It follows that this correction should be carried out with meticulous technique, to minimize scarring in this exposed and aesthetically important area.

The epicanthal fold was first described by Schon in 1828 [5]. In 1841, Von Ammon [15] further defined it by describing palpebral, tarsal, and orbital variants depending on how the fold interacted with the upper eyelid. Epicanthal folds may or may not accompany telecanthus, augmenting the distance between the medial canthus and the site of its bony origin. In 1992, Braun noted the association of an inverted epicanthal fold with blepharophimosis [3]. Although epicanthal folds may be congenital, posttraumatic, or postsurgical, we refer exclusively to the congenital variant in this work.

The procedures that have been advocated for correction of epicanthal folds differ widely: resection of glabellar skin [15], resection of medial canthal skin [4,1,16], V-Y advancement [14], modified Z-plasty [10], multiple Z-plasties [2,13,11,9,8], and others [7]. From our observations, the majority of these procedures yield poor results with partial correction, obvious scars, and recurrent deformity. In this article, we present our experience with the correction of the epicanthal fold for aesthetic purposes, but this technique can also be applied to surgery of the epicanthal fold for congenital deformities, surgical sequelae, or posttraumatic scarring [6].

Materials and Methods

We have treated a total of 72 patients of both sexes who sought aesthetic correction of epicanthal folds. Their ages range from 12 to 49 years. Preoperative studies included anthropometric measurements, lacrimal system evaluation, and photography.
Surgical Procedure

Our technique consists of the transposition of a flap taken from the posterior surface of the epicanthal fold, with its pedicle based on the medial canthus. We begin by marking the planned surgical incisions. The first mark is made along the entire edge of the epicanthal fold (Fig. 1a). Next, the skin of the nasal dorsum is pulled toward the facial midline, flattening the epicanthal fold. At this point, a second curved line is drawn along the inferior concavity from the inferior end of the first incision (Point A) toward the inferior palpebral border, ending at a point 2 mm below the lacrimal punctum (Fig. 1b). The third mark is horizontally drawn at the level of the medial canthus from the first incision toward the midline until point A' is encountered. This point corresponds to the location where we wish to place the tip of the flap (Fig. 1b). Point A' is located so that the length of the third incision equals the desired medial displacement of the canthal fold plus the length of the flap. This last mark may be designed in various forms: straight, curved, horizontal, or diagonal to allow the flap to conform to the particular ethnic characteristics of each patient.

This is particularly important in patients with unilateral folds or with asymmetric bilateral folds in whom we must recreate a natural symmetry. The planned incisions are then carried out, and the flap is elevated. A blunt dissection is performed to avoid injuries to the lacrimal apparatus. Its base should be made thicker to help assure flap viability. Once the flap is elevated, both the canthal tendon and the anterior lacrimal crest may be visualized directly. When necessary, the canthal tendon may be complicated through this exposure. Finally, the flap is draped over the natural concavity of the nasolacrimal fossa from posterior to anterior, bringing points A and A' together without tension. A 4-0 vicryl stitch is placed through the undersurface of the flap near its midpoint and is fixed to the peristeum, assuring that it remains in correct position following the contour of the nasal pyramid (Fig. 1c). The wounds are then closed with a 6-0 silk suture (Fig. 1d).

Results and Discussion

Our patient follow-up ranges from 3 months to 11 years (average, 5 years) with satisfactory results throughout (Figs. 2, 3). Occasionally, we have seen hypertrophic scars during the first two postoperative months, but these have uniformly resolved spontaneously without need for revision. We have not witnessed recurrence of the preoperative deformity or caused injury to the lacrimal apparatus.

This procedure produces a minimal scar which is so located as to mimic normal anatomic structures (Fig. 4). It does not leave a scar which crosses the medial canthus, thus preventing recurrent deformity and obvious scarring. It is simple to plan, intuitively carried out, and does not require extensive geometric calculations. Consistently good results may be obtained with a minimum of experience. It permits reshaping of the medial canthal region in accordance with the specified needs of the individual patient, enabling us to obtain symmetry in cases of preexisting asymmetry. We feel that this represents a significant advantage over previous methods of correcting medial epicanthal folds.
Fig. 2. (a) A 26-year-old female patient with bilateral, congenital, symmetric, tarsal epicanthal folds. (b) Postoperative appearance 10 months later.

Fig. 3. (a) A 19-year-old patient with bilateral, congenital, symmetric, tarsal epicanthal folds. (b) Postoperative results at 2 years.

Fig. 4. (a) Ciliary variant of epicanthal fold in a 28-year-old patient. (b) Postoperative appearance one year later. Note the inconspicuous scarring.

References
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