Composite Z Plasty for Cicatricial Ectropion of Tessier III Cleft

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Tessier III clefts represent one of the most difficult and challenging malformations of the face to repair. Ectropion caused by a Tessier III cleft may be secondary to a vertical loss of both the anterior and posterior lamellae of the lower eyelids.

A composite Z plasty to treat recurrence of cicatricial ectropion of the lower eyelids in Tessier III cleft is described. This is not only a technically easy and effective surgical method but also has a short operation time. To the best of the authors’ knowledge, this is the first report of the application of a composite Z plasty in the successful treatment of ectropion.

Key Words: Composite Z plasty, ectropion, Tessier III cleft

Tessier III clefts represent one of the most difficult and challenging malformations of the face to repair. Malformations of the ocular region in particular are common characteristics of Tessier III cleft, involving inferior displacement of the medial canthus and placement of the colobomas of the lower eyelid medial to the punctum. The coloboma is usually repaired by closure of the conjunctiva and Z plasty of the lid skin.1 However, ectropion caused by the Tessier III cleft frequently occurs after surgery and might be secondary to a vertical loss of both the anterior and posterior lamellae of the lower eyelid.

Described herein is the application of a composite Z plasty to treat recurrence of cicatricial ectropion of the lower eyelid in a Tessier III cleft. To the best of our knowledge, this is the first report of successful treatment of ectropions using this technique.

CASE REPORT

A 6-year-old boy had undergone three surgeries for orbital dystopia and ectropion (Fig 1A). The previously used methods were multiple Z plasties for malar cleft at 3 months of age (Fig 2A,B) and Z plasty for ectropion of the left lower eyelid at 1 year and at 6 months (Fig 3 A,B). Because of the recurrence of ectropion, Z plasty combined with a transposed flap from the upper eyelid was used for repair of the cicatricial ectropion at 4 years (Fig. 4A,B), but there was further recurrence.

Thus, 2 years after the third surgery, we performed a novel procedure based on the concept that ectropion resulted from a shortening of the posterior lamella of the lid (Fig 1B). That is, we performed a composite Z plasty involving use of the lid conjunctiva, tarsal plate, and soft tissue (Fig 5A–D). The patient had no complications such as irritation of the conjunctiva, pain, or disturbance of lid movement. Our procedure achieved satisfactory functional and cosmetic results at 4 years after surgery (Fig 1 C).

DISCUSSION

In general, the causes of ectropion are classified into horizontal tarsal laxity, medial canthal tendon laxity, punctal malposition, vertical inadequacy of the lid skin, orbicularis oculi paresis, and inferior lid retractor defect. However, in the current case of malformation resulting from facial cleft, the cause was considered most likely to be vertical inadequacy of the lid composite tissue, including the anterior and posterior lamellae of the lower eyelid, particularly the posterior lamella.

Three surgeries previously performed in this case involved Z plasty or a skin flap for vertical shortening of the lid skin.3 The decreased vertical dimension between the ala and the medial canthus...
Fig 1  (A) A 3-month-old boy with Tessier III cleft before first surgery. (B) The patient at 6 years of age, before composite Z plasty. (C) The patient at 10 years, after composite Z plasty.

Fig 2  (A) Diagram of planned first surgery for the patient shown in Figure 1. (B) Diagram after first surgery.

Fig 3  (A) Diagram of planned second surgery for the patient shown in Figure 1. (B) Diagram after second surgery.

Fig 4  (A) Diagram of planned third surgery for the patient shown in Figure 1. (B) Diagram after third surgery.
can be corrected by Z plasty, but the outcome was poor in each instance in the current case. Because the aim of the Z plasty is to correct the medial canthal dystopia and to increase the vertical height of the lid in the treatment of Tessier III cleft, the indication for such a procedure is correct. So, why did we not achieve satisfactory surgical results? From our discussions, we considered that the posterior lamella had not been corrected in these surgeries, and this might be the cause of ectropion recurrence. Thus, we decided to perform a composite Z plasty, and a good result was obtained. A composite Z plasty is a technically easy and effective surgical method, and it requires a short operation time.

Because composite Z plasty seems to be commonly and successfully used for repair of traumatic cicatrical ectropion of the lower lid in cases without Tessier cleft, we considered that it would also be effective for the repair of nostril rims and auricular helix, and we have actually applied it in such cases and achieved good results (Fig 6A,B).

In conclusion, a composite Z plasty is a convenient surgical method suitable for scar contracture of tissues with free margins, such as the eyelid, nostril rim, and auricular helix, from which support tissue and covering skin-tissue must be harvested. Composite Z plasty should be considered in treatment planning for ectropion.

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REFERENCES
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