The Tripier reverse flap for reconstruction of the upper eyelid

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INTRODUCTION: *The Tripier flap is a bipedicled bridge-shaped flap, originally designed on the upper eyelid. The classically described use was for reconstruction of split-thickness defects of the lower eyelid. In the literature no mention exists of bipedicled flaps from the lower eyelid for reconstructing the upper.*
CASE REPORT AND SURGICAL TECHNIQUE: *Authors report a case of a partial thickness defect in the upper eyelid, reconstructed through a bipedicled bridge-shaped flap from the lower eyelid. The reconstructed lid healed uneventfully and 6 months' follow up is satisfactory with regard to reconstruction.*
CONCLUSION: *The reverse Tripier flap is therefore a valid technique for the repair of the upper eyelid when other options are not feasible.*

KEY WORDS: Upper eyelid reconstruction, Tripier flap.

Introduction

The upper eyelid is an important anatomic structure since it protects the bulb. Full or partial thickness defects of this structure require an adequate and possibly aesthetic restoration of its morphology and function. Many techniques can be utilized ranging from direct closure and simple grafts, up to composite grafts or flaps[1,2]. Large upper eyelid lesions are often reconstructed with the Cutler-Beard procedure[3,4].
Scarce mention is given in the literature to the Tripier-like method[5] of a bipedicled cutaneous or myocutaneous flap, harvested from the lower eyelid to reconstruct partial-thickness defects of the upper lid. Vascular supply to the flap derives from the medial and lateral palpebral arteries, constituting the inferior palpebral arcade[6]. Authors intend to report a case of successful upper eyelid reconstruction through such method.

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Case report and surgical technique

A 65 year-old woman with a 5-6 year history of basal cell carcinoma underwent a wide excision for a huge bifocal neoplasm involving the left upper-eyelid and glabella (Fig. 1a). The two foci were joined by a neoplastic bridge extending over the medial part of the eyebrow. The eyelid posterior lamella was not included in the excision, as conjunctiva was not yet involved. In the glabellar-eyebrow region the neoplastic infiltration was limited to the subcutaneous layer. Therefore the performed excision included the anterior lamella of the upper eyelid, the skin of the medial eyebrow and glabella, down to the subcutaneous fat.
The medial eyebrow was simply closed by direct suture. The glabella was reconstructed by means of a full-thickness skin graft harvested from the sovraclavear region (Fig. 1b). For the upper lid defect a bipedicled myocutaneous flap was raised and transposed from the lower eyelid (Fig. 1c). The residual defect of the lower eyelid was repaired through a full thickness skin graft harvested from the contralateral upper eyelid (Fig. 1d). In the postoperative follow up a full healing of the flap and grafts was achieved. At 6 weeks' follow up the eyelid function of protecting and disclosing the bulb appeared

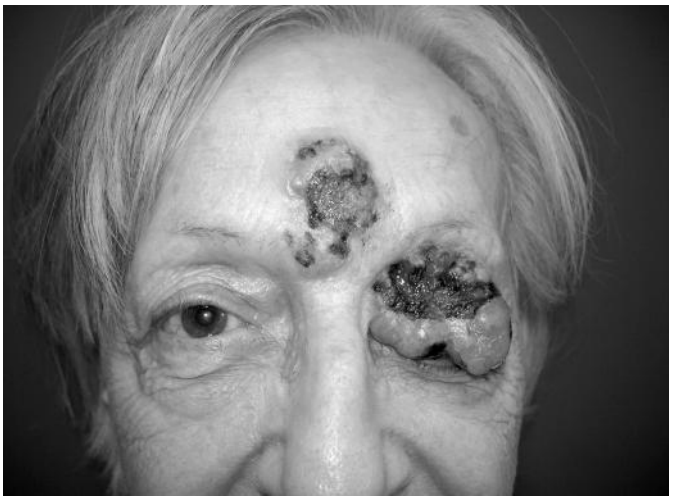

Fig. 1a: Large basal cell carcinoma extending from the upper eyelid to the glabella.

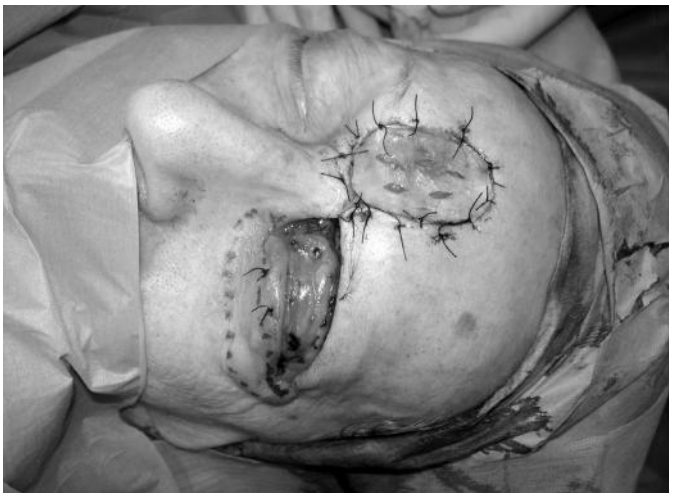

Fig. 1b: Intraoperative view: the two masses are excised and the glabellar defect is covered with a full thickness skin graft from the clavicular area.

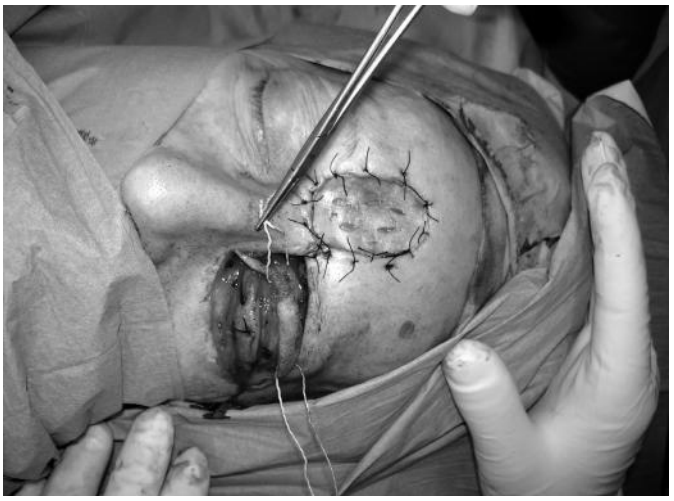

Fig. 1c: Intraoperative view: a Tripier reverse flap is transposed from the lower to the upper eyelid.

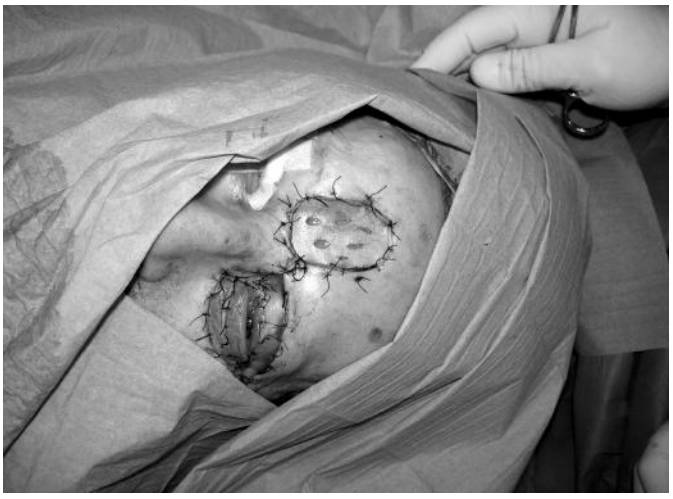

Fig. 1d: Intraoperative view: final appearance after coverage of all areas, recipient and donor sites.

to be completely restored (Fig. 2). A formal consent was received from the patient for use of her image and their personal data for scientific scopes only, in total respect of her anonymity.

Discussion

A thick defect of an eyelid needs a morphologic-functional restoring. A wide reconstruction of the upper eyelid through a skin graft is not feasible given the high risk of contracture. Therefore the use of a brow flap is a good and popularized choice. Alternatively, a possible option is the opposite, in topographic terms, of the Tripier's flap. The reported reverse Tripier flap is a double-pedicle skin paddle raised from the lower eyelid instead of the upper eyelid. Similarly to the ordinary Tripier flap, the reverse procedure allows an optimal and safe reconstruction of the eyelid with "like" tissue. This flap is a second choice option indicated whenever a large (75%) to subtotal defect of the upper eyelid has a conjunctiva-sparing depth. Differently from the traditional Tripier flap, in the reverse Tripier the donor site needs a higher degree of care, given the risk of ectropion concerning the lower eyelid. For this reason a repair through a skin graft harvested from the contralateral upper eyelid is mandatory. Alternative options for upper eyelid subtotal reconstructions are the already mentioned eyebrow flap and the Cutler-beard procedure and later modifications. The eyebrow flap is an easy and rapid option, but the disadvantage is the morbidity of the donor site, at least in terms of unaesthetic eyebrow alopecia. The Cutler-Beard flap, which is indicated for large upper eyelid lesions involving three quarters or more of the lid, is a good option even for full-thickness defects, provided that tarsal plate is restored through a graft of tarsus,

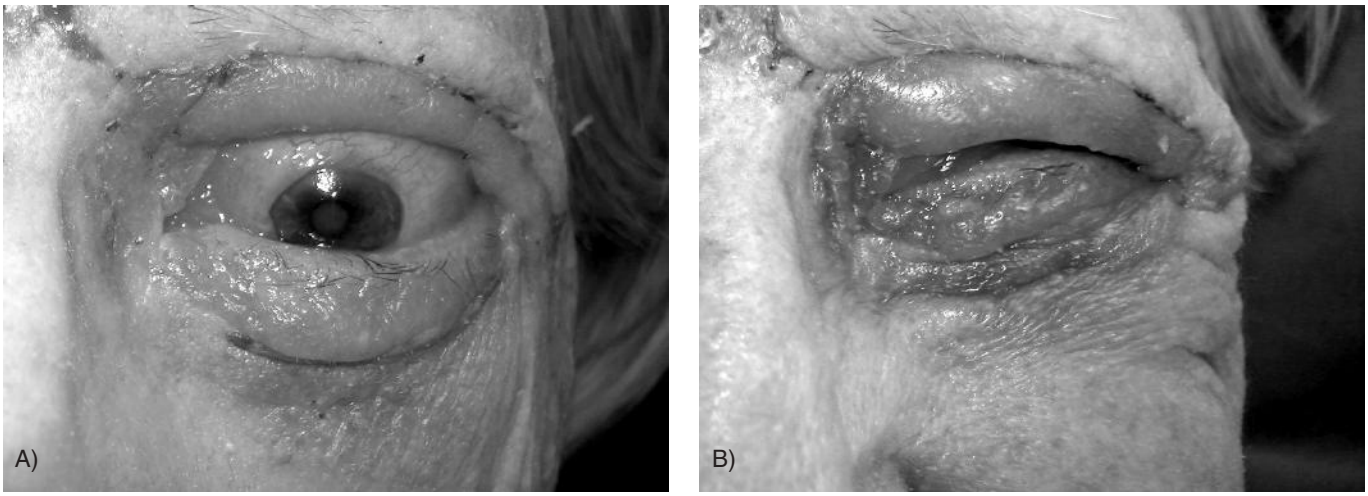

Fig. 2 a,b: Postoperative view at one month's follow up: eyelid function is preserved.

sclera or Achilles tendon. In fact the original description of this flap does not comprise a restoring of the tarsal plate, often leading to entropion and eyelid contracture . This procedure consists of a full-thickness flap from the lower eyelid, advanced under a double pedicled marginal bridge. The pedicle is cut after 2 to 4 weeks. The Cutler-Beard flap causes a high discomfort for the patient given the necessity of 2 surgeries and 2 to 4 weeks of eye occlusion between the procedures, differently from the technique we propose. Moreover, after the resection of the pedicle, a risk of lower eyelid ectropion does exist, due to the loss of tissue. The same risk, with the Tripier method dscribed, is prevented in the unique surgical procedure through the application of a skin graft from the contralateral upper eyelid. For upper eyelid defects extending up to the entire width and height of this structure and subtotally in depth (conjunctiva spared), the described reverse Tripier flap is therefore a recommendable easy, rapid and safe option.

Riassunto

INTRODUZIONE: Il lembo Tripier è una padella cutanea bipeduncolata a forma di ponte, originariamente disegnata sulla palpebra superiore. L'uso classicamente descritto per questo lembo è la ricostruzione di difetti a spessore parziale della palpebra inferiore. In letteratura non vi è invece menzione di lembi peduncolati dalla palpebra inferiore per ricostruire la superiore.

CASE REPORT E TECNICA CHIRURGICA: Gli autori riportano un caso di difetto a spessore parziale della palpebra superiore, ricostruito mediante un lembo bipeduncolato a ponte dalla palpebra inferiore. La palpebra ricostruita è guarita regolarmente, ed il controllo a sei mesi è soddisfacente per quanto riguarda il risultato ricostruttivo.

CONCLUSIONE: Il lembo Tripier inverso è quindi una tecnica valida per il riparo della palpebra superiore quando altre tecniche non siano fattibili.

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