

## SCIENTIFIC CORRESPONDENCE

## A technique for reconstruction of upper lid marginal defects

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*Br J Ophthalmol* 2003;**87**:279–281

**Background/aim:** Reconstruction of large full thickness upper lid defects that cannot be closed directly often rely on utilising the lower lid. An example is the Cutler Beard procedure. A one stage technique for repair of large horizontal upper lid defects utilising local posterior and anterior lamella advancement flaps is described and the results reported.

**Method:** Eight cases with upper lid defects repaired utilising this technique were reviewed retrospectively. The procedures were carried out by one surgeon. The upper lid lesions were removed under frozen section control. The mean follow up time was 35 months.

**Results:** All patients had a good cosmetic result. One patient had a recurrence of the upper lid lesion. Two patients complained of corneal irritation from lanugo hairs. The technique was modified to prevent this complication.

**Conclusions:** Large upper lid marginal defects can be readily repaired using the technique described with local advancement flaps with no significant complications.

Basal cell carcinomas account for approximately 90% of lid tumours.<sup>1</sup> Of these only 15% occur on the upper lid. The lower lid is the most frequently involved site followed by the medial canthus, the upper lid, and lastly the lateral canthus.<sup>2</sup>

Reconstruction of the upper lid is more complex than the lower lid and there are several techniques that can be employed.<sup>3–7</sup> We present a one stage technique with relatively simple reconstruction method and review the results.

## PATIENTS AND METHODS

## Patients

The procedure was carried out on eight patients by one surgeon. All had marginal upper lid lesions ranging from 5 mm–13 mm in length with a maximum height of 6 mm to

allow a minimal residual vertical tarsus of 3–4 mm, which is required for this technique. All lesions were diagnosed as basal cell carcinomas and were excised with 3 mm margins under frozen section control (Fig 1). All patients underwent uncomplicated surgical reconstruction from May 1992 to June 2001.

## Technique

The technique we describe is appropriate for large marginal defects. It relies on there being 3–4 mm residual upper lid tarsus (Fig 2). The advancement flap of the anterior lamella is outlined with redundant Burrow's triangles marked for excision (Fig 3A). The residual upper tarsus is mobilised on a conjunctival pedicle after releasing levator aponeurosis and Muller's muscle and moved to fill the posterior lamella defect in a similar way to mobilising a Hughes flap<sup>7</sup> (Fig 3B and 3C).

The upper lid skin and orbicularis are undermined and mobilised (Fig 4A). The redundant Burrow's triangles are excised and the skin flap advanced (Fig 4B). The skin edges are sutured.

Sutures are passed from the edge of levator palpebrae superioris through skin to reform the skin crease at the appropriate height above the lid margin and maintain the overall lid height (Fig 4C). The anterior lamella is sutured to tarsus along the lid margin (Fig 5). In the four later patients the anterior lamella was sutured in a recessed position of 1–2 mm so as to avoid the complication of lanugo hairs causing corneal irritation. Figure 6 shows the postoperative result at 6 weeks.

## RESULTS (SEE TABLE 1)

In our patient group all lesions were confirmed to be basal cell carcinomas. At operation all lesions were excised with clear margins under frozen section control.

Four patients were found to have lid oedema at 1 week after surgery. This complication had resolved in all patients by 6 weeks. Two patients had early postoperative ptosis but in both patients this had resolved by 6 weeks. Lagophthalmos was often present to a minor degree of 1–2 mm which did not produce any symptoms. The main late complication in two patients was lanugo hairs from the anterior lamella causing



**Figure 1** Upper lid basal cell carcinoma marked with 3 mm margins.



**Figure 2** Upper lid defect once lesion excised with clear margins.



**Figure 3** (A) Upper lid anterior lamella advancement flap marked including redundant Burrow's triangles. (B) Advancement of tarsoconjunctival flap. (C) Tarsus sutured in advanced position forming new posterior lamella lid margin.



**Figure 4** (A) Skin and orbicularis are undermined to form anterior lamella advancement flap. (B) Redundant skin is excised. (C) Skin edges are sutured.



**Figure 5** Sutures passed through levator and skin to form new skin crease.



**Figure 6** Postoperative result at 6 weeks.

corneal irritation and intermittent punctate epithelial keratopathy. These patients were managed successfully with topical lubricants. Following this complication with the first four patients the technique was modified as described above and subsequent patients did not develop this complication. One patient developed a recurrence of her basal cell carcinoma 6 years following her primary surgery. The recurrence was successfully managed with a similar repeat operation.

## DISCUSSION

There are particular requirements in the reconstruction of upper lid defects to restore good function and cosmesis. It is important to create a mobile upper lid with good height and contour. A well formed lid margin with absence of trichiasis and a smooth mucosal surface are essential to prevent epithelial trauma. Good eye lid closure is necessary to prevent exposure keratopathy. Also an upper lid skin crease is desirable for cosmesis.

**Table 1** Patients who underwent reconstruction of upper lid marginal defects in chronological order

Age/sex	Length of upper lid lesion (mm)	Length of follow up (years)	Early complications	Late complications
89/F	5	8	Peaked lateral lid margin	UL recurrence
85/F	10	3	Lid oedema PEK	None
45/F	8	3	Ptosis Lid oedema	Lanugo hairs, no PEK
83/F	12	2	Lid oedema Lagophthalmos	PEK from lanugo hairs
71/F	8	3	Lagophthalmos	None
85/F	5	2	None	None
67/M	7	2 months	Lid oedema	Lost to follow up
51/F	13	3 months	Lagophthalmos	None

Upper lid defects which cannot be closed directly often rely on utilising the lower eyelid. An example is the Cutler Beard approach.<sup>3</sup> It is a two stage procedure which involves mobilising a full thickness lower lid flap which remains in situ for several weeks to allow stretching. The technique may be complicated by upper lid entropion or lower lid ectropion. Other possible techniques include the Mustard technique,<sup>4</sup> or rotation flap,<sup>5</sup> or posterior lamellar graft with skin advancement.<sup>6</sup>

The technique described offers a one stage procedure with a simple surgical method providing a good cosmetic and functional result utilising local advancement flaps. Lagophthalmos is often present to a minor degree without symptoms. The minor late complication of lanugo hair irritation can be avoided with the modification of the technique described above.

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Accepted for publication 8 September 2002

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doi: 10.1136/bjo.87.3.279

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