

Less extensive reconstructive surgery for full-thickness lower eyelid defect



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INTRODUCTION

The incidence of skin cancers is on the rise due to population growth and aging.¹ The eyelid region is one of the common sites for skin cancers, the majority of which are basal cell carcinoma, followed by squamous cell carcinoma and sebaceous carcinoma.² Of note, the lower eyelid is more prone to be affected by skin cancers. The eyelid is composed of anterior and posterior lamellae, and when full-thickness lower eyelid defects cannot be directly closed, reconstruction of both the posterior and anterior lamellae, along with tarsal plate replacement, are typically performed.³ However, elderly patients with skin cancer may not be amenable to such extensive surgery. Between 1997 and 2019 at our hospital, 5 patients underwent successful reconstruction of full-thickness lower eyelid defects with the repair of only the anterior lamella while allowing the posterior lamellar portion to heal secondarily. We herein report one representative case. In addition, we discuss the clinical validity of less extensive surgery for elderly patients by allowing the posterior lamellar portions of lower eyelid defects to heal secondarily.

CASE REPORT

A 91-year-old woman underwent a full-thickness resection of a sebaceous carcinoma on the right lower eyelid under local anesthesia. The resection was performed with a 5-mm surgical margin. The acentric axis-type propeller flap from the lateral orbital area was designed (Fig 1). The propeller

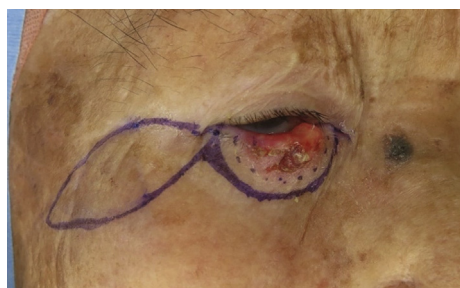


Fig 1. Sebaceous carcinoma on the right lower eyelid of a 90-year-old woman. The figure shows the design of wide local excision and acentric axis-type propeller flap from the lateral orbital area.

flap is essentially a transposition flap based on a subcutaneous pedicle that is acentric or eccentric in location. It is classified according to the nourishing pedicle and the degree of flap rotation.⁴ After the tumor was removed, the flap was rotated 180 degrees to fill the defect. The distal aspect of the flap was secured to the medial palpebral ligament, and the remainder of the anterior aspect of the defect was not secured with sutures or other means (Figs 2 and 3). No sutures were performed between the flap and the remaining palpebral conjunctiva, and no tarsal plate replacement was placed. There were no significant complications, such as lower eyelid ectropion, at 12 months postoperatively (Fig 4).

The age of the patients without posterior lamellar reconstruction ranged from 81 to 91 years (mean, 84 years). Three patients had basal cell carcinoma, 1

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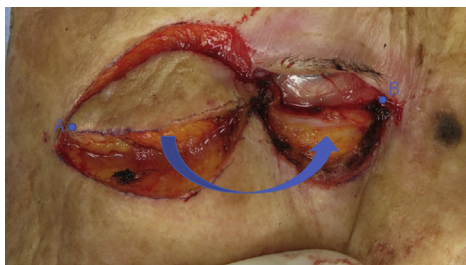


Fig 2. After resection of the tumor, the flap was elevated with its subcutaneous pedicle and rotated 180 degrees to the defect. The distal aspect of the flap at point A was secured to the medial palpebral ligament at point B.



Fig 3. The reconstructed lower eyelid.

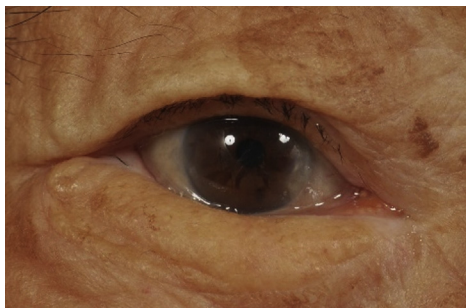


Fig 4. Results 12 months after the operation.

had sebaceous carcinoma, and 1 had melanoma. Surgery was performed under local anesthesia in 4 patients and under general anesthesia in 1 patient. Anterior lamellar reconstruction was performed with a rotation cheek flap in 2 patients, a lateral orbital flap in 2 patients, and a bilobed flap in 1 patient. Operative time ranged from 43 to 68 min (mean, 56 min). Epithelization on the back surface of the flap was observed within a few weeks, and there were no major complications except for mild epiphora observed in 1 patient. The long-term cosmetic results were excellent.

In contrast, we had 4 patients who underwent both anterior and posterior lamellar reconstruction for full-thickness lower eyelid defect in the same period. The operations under general anesthesia

required longer times (95-120 min; mean, 109 min). The 4 patients ranged in age from 43 to 82 years (mean, 64 years). Two patients had basal cell carcinoma, 1 had sebaceous carcinoma, and 1 had melanoma. Anterior lamellar reconstruction was performed with a rotation cheek flap in 3 patients and a bilobed flap in 1 patient. All patients underwent posterior lamellar reconstruction with auricular cartilage as tarsal plate substitution. One patient had a complication of corneal irritation.

DISCUSSION

Reconstruction of the posterior lamella with tarsal plate substitution has been believed to be necessary when full-thickness extensive resection is performed.³ Posterior lamellar reconstruction has its advantages and disadvantages depending on the kind of tarsal plate substitute. Of note, the auricular cartilage has a better ability of eyelid support, but it is likely to cause corneal irritation because of its stiffness. The nasal septal cartilage has a tissue structure similar to the tarsal plate, but it is more challenging to harvest and leads to prolonged operative time. The mucosa of the hard palate does not leave conspicuous scars at the harvest site, but concomitant pain and bleeding are often problematic.⁵ In those procedures, greater complexity due to surgery often under general anesthesia and prolonged operative time are common denominators.

We found that omitting posterior lamellar reconstruction reduces surgical invasiveness and can be performed safely, particularly in the elderly. This technique did not cause any significant problems with eyelid support which is the basis of the need for posterior lamellar reconstruction. The reduced need for long-term supporting strength to the eye in the elderly allows for such a simplified procedure. This is also attributed to anchoring sutures of the flap edge to the eyelid ligament for suspension. Although there were concerns about adhesions between the ocular conjunctiva and the raw back surface of the flap, we did not observe any major problems in our cases.

In conclusion, lower eyelid full-layer reconstruction may not be necessary, and omitting posterior lamellar reconstruction is acceptable for the elderly. Although there are no definite eligibility criteria for this procedure, it would be suitable for elderly patients who are not amenable to extensive surgery. The demand for such a less extensive procedure will continue to increase due to the aging of patients with skin cancer.

Conflicts of interest

None disclosed.

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