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## Indications

1. Full thickness lower eyelid margin defect
2. Defect >33% of horizontal dimension of eyelid

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## Essential Steps

### Preoperative Markings

#### First Stage

1. Markings for this procedure completed intraoperatively

#### Second Stage

1. No markings necessary

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## Intraoperative Details

### First Stage

1. Two percent lidocaine with 1:100,000 epinephrine is injected into the wound and the upper eyelid.
2. Frost suture placed on upper eyelid.
3. Upper eyelid everted over a Desmarres retractor.
4. With lower lid wound edges gently drawn towards one another, the width of flap along upper lid is marked.
5. Horizontal incision through conjunctiva and tarsus is made 4 mm above lid margin.
6. Pretarsal orbicularis is dissected off the flap.
7. Vertical cuts are made on both sides of the flap extending to superior fornix.
8. Muller's muscle dissected from conjunctiva using Westcott scissor.
9. Flap is advanced into the defect.
10. Flap is secured to the lower lid retractors inferiorly.
11. Flap is secured to the tarsal plate medially and laterally.
12. A local myocutaneous flap is created (with a horizontal vector) to cover defect.

### Second Stage

1. Local anesthesia achieved with 2% lidocaine with 100,000 epinephrine
2. Grooved director placed under the eyelids

3. Incision is made with Westcott scissor to recreate the lower lid margin
4. Upper eyelid everted and remaining excess flap tissue excised at its base

## Postoperative Care

### First Stage

1. Pressure patch left in place for 5–7 days
2. Divide flap after 4–8 weeks

### Second Stage

1. Ophthalmic antibiotic ointment three times a day for 3 days

## Note These Variations

1. The tarsus of the tarsoconjunctival flap may be sutured to a periosteal bone flap at the lateral canthus if there is no residual tarsus lateral to the defect.
2. Multiple options are available for reconstruction of the anterior lamella, including skin and muscle transposition flap from the upper eyelid or full thickness skin graft harvested from the upper eyelid, supraclavicular, or postauricular region. If a full thickness skin graft is used, then it is better to create the tarsoconjunctival flap to include Muller's muscle so as to improve blood supply to the skin graft.

## Possible Complications

1. Upper eyelid retraction
2. Lower eyelid retraction
3. Lower eyelid ectropion

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## Operative Dictation

### First Stage Operative Note

Diagnosis: Lower eyelid basal cell carcinoma s/p MOHS Excision

Procedure: First stage lower eyelid reconstruction with a tarsoconjunctival flap

## Indication

This is a \_\_\_/\_\_\_ (Age/gender) with a history of lower eyelid basal cell carcinoma. The patient previously underwent MOHS excision and now presents with a lower eyelid defect encompassing 60% of the lower eyelid margin. The vertical dimension of the resulting defect was short making the patient a good candidate for reconstruction by tarsoconjunctival flap. Risks, benefits, and alternatives are explained to the patient in detail and he/she understands and agrees to the procedure.

## Description of the Procedure

The patient was brought to the operating room and positioned in the supine position. The patient was prepped and draped in the usual sterile fashion. Time-out was completed amongst operative staff verifying the patient's identity, procedure, consent, operative side and site. A corneal protector was placed over the operative eye. The upper and lower eyelid operative sites were anesthetized through local infiltration of 2% lidocaine with 1:100,000 epinephrine in a subcutaneous fashion. Additional anesthetic was injected in a subconjunctival fashion along the upper and lower lid fornix. A 4-0 silk Frost suture was placed through the gray line of the upper eyelid which was then double everted over a Desmarres retractor.

The medial and lateral edges of the lower eyelid defect were grasped with 0.3 forceps and brought towards each other under mild tension and the horizontal extent of the defect was measured with calipers. This length was then marked onto the conjunctival surface of the everted upper eyelid. A horizontal marking 4 mm above the upper eyelid margin was then delineated corresponding to the length of the defect previously measured. Vertical markings were created along the medial and lateral margins of the horizontal marking extending to the superior fornix.

The tarsoconjunctival flap was incised along the markings with a number 15 blade. The conjunctiva and full thickness tarsal plate were included in the incision. A Westcott scissor was used to bluntly dissect the pretarsal orbicularis from the tarsal plate. Two vertical cuts were then made on either side of the flap extending to the

superior fornix using the Westcott scissors. The tarsus was found to be attached superiorly to a healthy flap consisting of Muller's muscle and conjunctiva. Anesthetic was injected between the Muller muscle and conjunctiva in an effort to hydrodissect the surgical plane. The Muller muscle was then separated from the underlying conjunctiva with Westcott scissors until an adequate amount of forniceal conjunctiva was released.

The Desmarres retractor, corneal protector, and silk margin suture were then removed. Attention was drawn to the lower lid defect. The pretarsal orbicularis along the lower 3 mm of the tarsal plate was undermined on either side of the lower lid defect so as to expose the tarsal plate. The tarsconjunctival flap was advanced inferiorly into the lower lid defect. The flap was inset such that the superior aspect of the flap containing tarsal plate was aligned with the lower lid margin. The medial and lateral borders of the tarsconjunctival flap were then secured to the medial and lateral tarsal plate, respectively, using 5-0 vicryl suture on a spatulated needle in a horizontal lamellar fashion. The lower lid retractors and conjunctiva were secured to the inferior portion of the tarsconjunctival flap using 7-0 vicryl suture in a running fashion.

The anterior lamellar defect was reconstructed via adjacent tissue rearrangement along the lower eyelid. A marking was created in a subciliary fashion extending from the lateral aspect of the original wound defect to the lateral canthus. A marking pen was then used to outline a semi-circular flap measuring 2 cm in width and 1 cm in height. Care was taken to ensure the marking took the shape of an upside down U with the marking beginning at the lateral canthus without extending beyond the lateral brow. 2% lidocaine with 1:100,000 epinephrine was injected in the area delineated by the skin markings. Incision was made using a number 15 blade. The anterior lamella including skin and muscle was carefully dissected from the underlying orbital septum using Westcott scissors. Once an adequate amount of tissue was released, the myocutaneous flap was advanced medially to cover the anterior lamellar defect. Care was taken to ensure that the flap would not induce a vertical vector of cicatrix postoperatively. The flap was trimmed accordingly

with Westcott scissors. The flap was secured to the lid margin using interrupted 7-0 vicryl sutures in a horizontal mattress fashion. The flap was also secured to the medial aspect of the wound with 7-0 vicryl suture in a running fashion. The subciliary incision was closed using 7-0 vicryl suture in a running fashion. Ophthalmic antibiotic ointment was applied to the incision sites and a pressure patch was applied to the eye.

All instrument, sponge, and needle counts were correct. The patient tolerated the procedure well. There were no intraoperative complications. The patient was then transported to the post-anesthesia care unit in stable condition.

## Second Stage Operative Note

Diagnosis: Lower eyelid basal cell carcinoma status post excision and first-stage reconstruction with tarsconjunctival flap

Procedure: Second stage tarsconjunctival flap—Division of conjunctival pedicle.

### Indication

This is a \_\_\_/\_\_\_ (Age/gender) with a history of lower eyelid basal cell carcinoma. The patient previously underwent excision and then first stage reconstruction with tarsconjunctival flap. The flap remains in place with the conjunctival bridge connecting the upper and lower eyelids. The patient now presents for second stage reconstruction with division of this conjunctival bridge. Risks, benefits, and alternatives are explained to the patient in detail and he/she understands and agrees to the procedure.

### Description of the Procedure

The patient was brought to the procedure room and positioned in the supine position. The patient was prepped and draped in the usual sterile fashion. Time-out was completed amongst office procedure staff verifying the patient's identity, procedure, consent, operative side and site. The upper and lower eyelid operative sites were anesthetized through local infiltration of 2% lidocaine with epinephrine. A drop of proparacaine 0.5% was instilled on the ocular surface.

A grooved director was placed underneath the eyelids. One blade of the Westcott scissor was then passed along the grooved director, placing this blade posterior to the pedicle of conjunctiva connecting the upper and lower eyelids. The flap was divided along its horizontal axis slightly above (1 mm) the anticipated lower lid margin. The upper eyelid was then everted and excess bulky tissue from the flap was trimmed using Westcott scissors.

All instrument, sponge, and needle counts were correct. The patient tolerated the procedure well. There were no intraoperative complications. The patient was then transported to the post-anesthesia care unit in stable condition.

## Suggested Reading

- Leatherbarrow B. Eyelid reconstruction (Chapter 10). In: Oculoplastic surgery. 1st ed. London: Martin Dunitz; 2002.
- Levine MR. Tarsal-conjunctival advancement flap in lower eyelid reconstruction (Chapter 35). In: Manual of oculoplastic surgery. 4th ed. Thorofare: Slack; 2010.
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- Smith BC. Lid reconstruction (Chapter 39). In: Ophthalmic plastic and reconstructive surgery. St. Louis: Mosby; 1987.
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