

Case of autoimmune corneal ulcer treated with Gunderson conjunctival flap + AMG graft + steroids

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There are no ethical issues or
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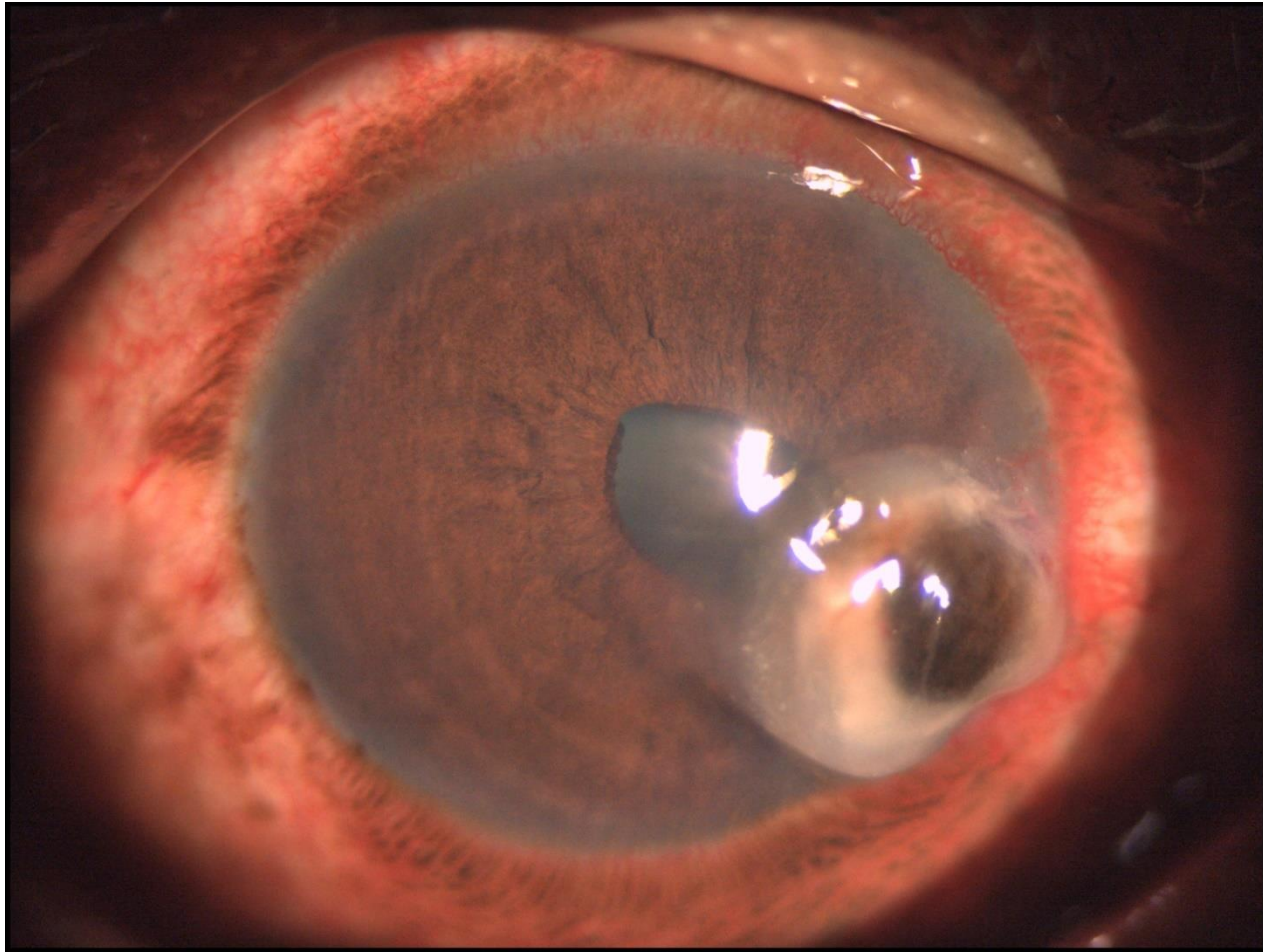
Introduction

- A conjunctival flap can be used to cover an unstable or painful corneal surface with a hinged flap of more durable conjunctiva when there is little chance of resolution by normal corneal wound healing.

Case study

- History:
- A 51 year old male patient came to Ophthalmology out patients department with complaints of right eye redness, watering and diminution of vision since 1 week, following a minor trauma by finger.
- **Vision on presentation-** finger counting 3 meters.
- Examination: 3mm×3mm perforated corneal ulcer nasally close to limbus with iris tissue plugging. Vitally stable.

On presentation



Treatment

Corneal scrapping was sent for microbial tests, found negative



Topical antibiotic eye drops, and steroid eye drops were started



A trial of Amniotic membrane graft was done



On follow ups significant improvement was not observed



Systemic and autoimmune workup was done



ANA titers were found weakly positive, 1:80 fine speckled pattern,
no other significant abnormality



With the different available options in taking conjunctival flaps, Gunderson technique was given a trial



After surgery, patient was started on Oral steroids and steroid eye drops

Surgical technique

- A complete (Gunderson) flap is a highly successful technique if the surgeon pays close attention to several fundamental principles for covering the corneal surface with vascularized tissue and keeping this tissue in place.
- complete removal of the corneal epithelium and debridement of necrotic tissue from the cornea
- reinforcement of thin areas with corneal or scleral tissue
- creation of a mobile, thin conjunctival flap that contains minimal Tenon's capsule
- absence of any conjunctival buttonholes
- absence of any traction on the flap at its margins, which may lead to flap retraction

Surgical steps

1-2cc of lignocaine+adrenaline solution is injected under the superior bulbar conjunctiva

A 3cm long horizontal incision is made along superior bulbar conjunctiva, ant. to retrotarsal fold, avoiding Tenon's capsule

Flap is made by dissecting the conjunctiva from Tenon's capsule at sup. Fornix to limbus

Once reaching limbus, conjunctiva is excised from limbus by doing peritomy, using scissors

The bridge flap attachments are visualized by lifting the flap with hook

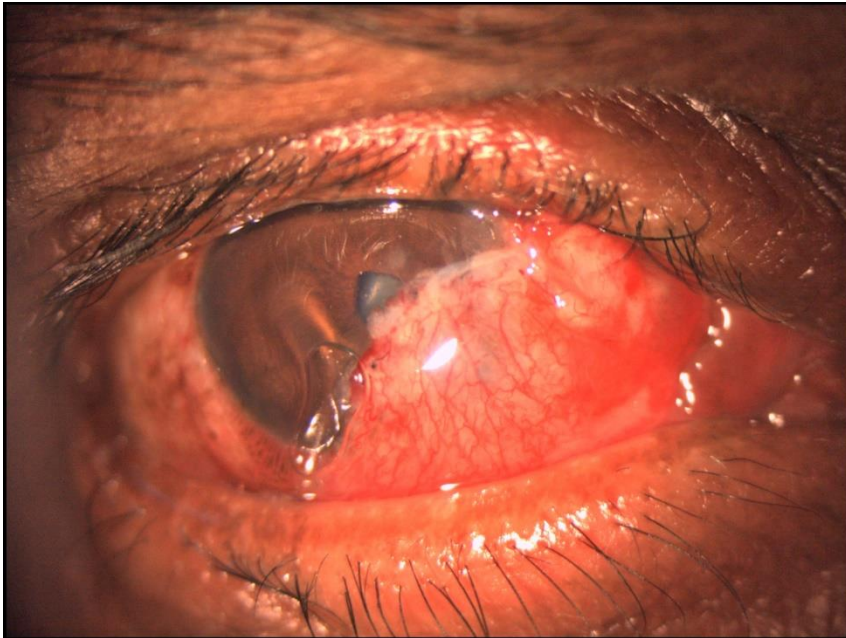
Any adhesions with Tenon's are lysed to prevent traction on the flap when repositioned over cornea

The flap is then placed over cornea and sutures are placed

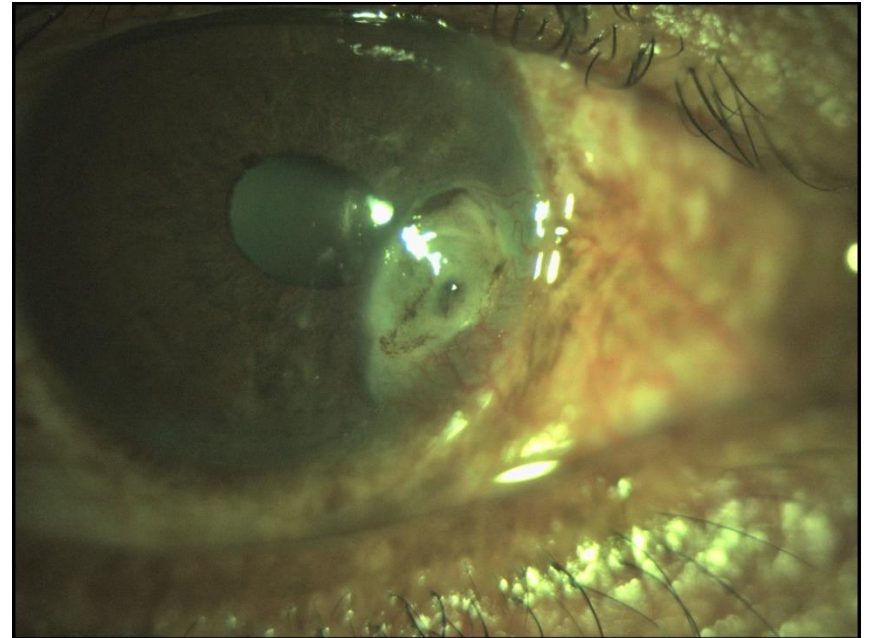
Lower border of flap is attached to conjunctiva inferiorly by sutures

Results

Post op day 1



Post op day 15



Patient had slow and steady visual improvement and is now stable with best corrected visual acuity on Snellens chart as 6/9

Discussion

Indications

- Infectious keratitis(viral, bacterial, fungal)
- Neurotrophic
- Non infectious corneal ulcers
- Descemetocoele
- Nontraumatic corneal melts/perforation
- Chemical burns
- Herpes zoster and herpes simplex keratouveitis associated with neurotrophic disease
- Preservation of globe

Advantages

- Globe preservation
- Reduces pain
- Less frequent follow up visits
- Less frequent topical medications
- Improved blood supply
- Enhanced healing
- Preventing secondary infections

Disadvantages

- Prevents direct view of corneal pathology
- Cosmetic issue
- Difficulty in measuring IOP
- Visual impairment

However, a successful conjunctival graft, free of buttonholes, will thin out and if blood vessels regress, may eventually enable usable vision.

Conclusion

- The conjunctival flap is an effective method for managing inflammatory and structural corneal disorders when restoration of vision is not the primary concern.
- As it's a vascular graft healing is ensured and there are less chances of immune rejection.

References

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