

المؤتمر السنوي الدولي للجمعية المصرية  
INTERNATIONAL CONGRESS OF THE

EGYPTIAN OPHTHALMOLOGICAL SOCIETY

**EOS 2023**

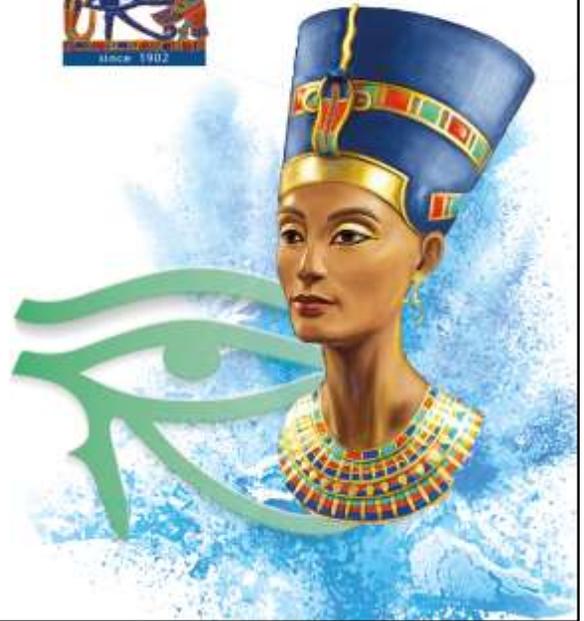


## Aesthetic and Functional Outcomes of Eyelid Reconstruction

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## Introduction

- Eyelids reconstruction can range from direct eyelid repair to more complex procedures.
- Goals directed mainly to maintain protection of the eyeball, Smooth internal lining for proper lubrication and to avoid corneal irritation beside insuring a good skeletal support to provide lid rigidity and shape.
- One of the important causes of eyelid defects is tumors which affect the eyelids and periocular region



## Aim of the Work

- To determine aesthetic and functional outcomes of different techniques used in eyelid reconstruction for periocular defects.
- To determine the complications of eyelid reconstruction and how to prevent them



## Patients and Methods

- **Study design:** A prospective case series study .
- **Participants:** Twenty five eyes of twenty five patients were included in the study
- **Ethical consideration:** All participants signed a written informed consent that clarified the planned procedure, prognosis, possible complications, the aim of the study and their acceptance to participate in it. Additionally, approval of ethical committee of Sohag Faculty of Medicine was fulfilled. The study complied with the tenets of the Declaration of Helsinki.
- **Inclusion criteria:**

Patients with periocular lesions and candidate for surgical management



## Pre Operative Evaluation :

- History
- Visual acuity and slit lamp examination
- Detailed eyelid and lacrimal examination including Lid position , Lid movements , Presence or absence of lid laxity , The state of surrounding skin to the eyelid , the state of the tarsus and the state of the other eyelid .
- Measurement of vertical and horizontal palpebral fissure
- Tear break up time test
- Size of the lesion
- State of surrounding skin
- Imaging if needed
- Biopsy



## Post operative follow up

- **Follow up schedules:**
- All patients were examined on the third day of surgery. Then follow up visits were scheduled at the end of the 1st week, the 1st month, the 3rd month and the 6th month.
- **Examination included the following**
- Measurement of horizontal and vertical palpebral fissure height as previously described , Assessment of eye lid movement , The graft or Flap state , Tear break up time test , Assessment of postoperative complications including flap or graft necrosis, lid malpositions and tumor recurrence , Symmetry between both eyes , Assessment of the post operative scar and patient degree of satisfaction .



## Techniques of Reconstruction

	Frequency	Percent
direct closure	4	16.0
Reconstruction	19	76.0
laissez fair	2	8.0
<b>Total</b>	<b>25</b>	<b>100.0</b>

	Frequency	Percent
advancement flap	11	42.3
rorational flap	5	19.2
tenzel flap *	2	7.7
cutler beard flap	2	7.7
bilobed flap	1	3.8
<b>Total</b>	<b>21</b>	<b>80.8</b>

Tenzel flap was used in two cases with advancement flaps

	Frequency	Percent
tarsal graft	7	26.9
tarsal flap	1	3.8
hughs flap	5	19.2
cutler beard	2	7.6
<b>Total</b>	<b>15</b>	<b>57.6</b>

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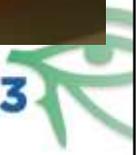
Repair of full thickness lower lid defect with direct eyelid closure , Lateral canthotomy was done with roational flap

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Reconstruction by tarso-conjunctival graft from the oppsite lid with advancement skin flap with suturing levator muscle fibers to the tarsus

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Reconstruction of large lower lid defect by Hughes flap and advancement myocutaneous flap

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Reconstruction of medial canthal defect with advancement flap



laissez fair technique



## Results

- **The change in palpebral fissure :**

- The mean pre operative vertical fissure height was 8.1 mm. and changed to 9.5 mm. in post operative follow up with no significant change
- The mean pre operative transverse fissure width was 27.5 mm. and changed to 28.5 mm. in post operative follow up with no significant change between pre or post operative measurements or even between post operative measurements and the other eye.



## Results

- **Tear break up time test :**

Tear break up time revealed significant change in the early post operative period with p value 0.01 at the first week , But at 6 months follow up revealed no significant change with p value 0.15 .



## Results

### • Eyelid movements :

- Eyelid opening and closure was documented to be normal in 23 patients with good eyelid motility and adequate eye closure
- 4 eyes was associated with inadequate opening in the early post operative period due to associated edema that improved to normal during follow up period .
- One case with advanced basal cell carcinoma that was subjected to reconstruction by forehead and cheek flaps was associated with lagophthalmos and incomplete eye lid closure .
- Another case with lower Lid basal cell carcinoma that was subjected to reconstruction by hugh's flap was associated with mild incomplete lid closure that caused no symptoms and required no treatment apart from lubricant and eyedrops .



### Post operative scar assessment

	Frequency	Percent
Not seen	3	12
Minimal	10	40
Visible	9	36
Hypertrophic	3	12
Total	25	100

### Patient degree of satisfaction

	Frequency	Percent
Not satisfied	0	0
Moderate satisfaction	7	28
Satisfied	9	36
Highly satisfied	9	36
Total	25	100





36 years old male with left eye mass below the eye brow , Excision with direct closure was done , Biopsy revealed shwanoma , 6 months post operative photo showing no visible scar .



69 years old male with left upper eyelid squamous cell carcinoma , Reconstruction was done by transposition flap and tarsal graft , 6 months Post operative photo showing no visible scars .





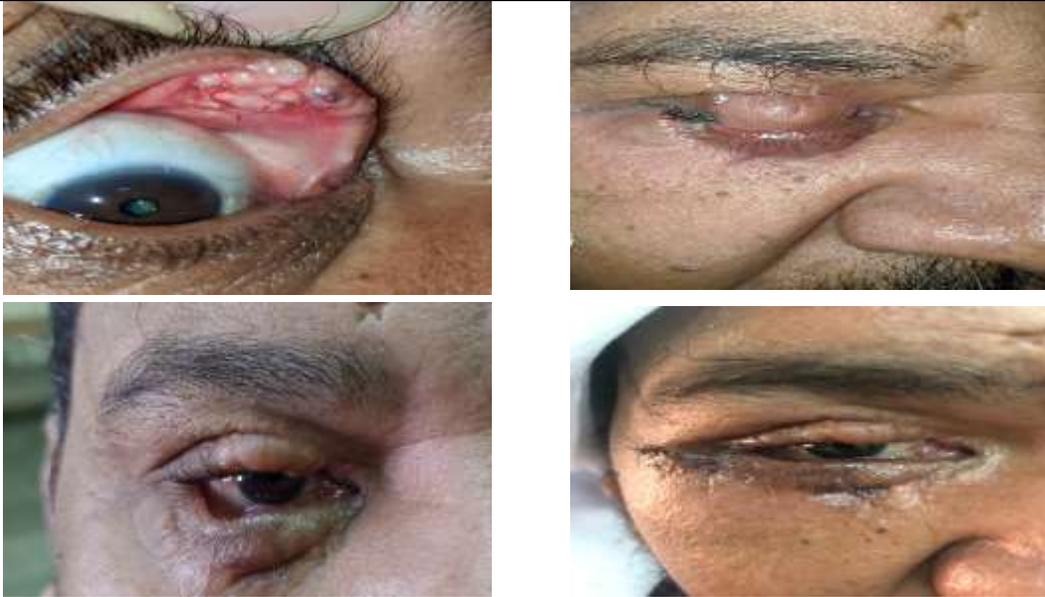
70 years old female patient with lower lid basal cell carcinoma ,  
Reconstruction was done by hughs graft and advancement flap , 3 months  
post operative photo showing minimal visible scar with minimal change on  
palpebral fissure .



## Complications

- Hypertrophic scar : was documented in 2 cases
- Lid malpositions :
  - Mild upper lid entropion was found in one case who was subjected to reconstruction by rotational skin flap and tarsal graft .
  - Lower lid ectropion was found in one case who was subjected to reconstruction by cutler beard flap , Ectropion was surgically repaired after three months by lateral tarsal strip procedure.
  - Mild Ptosis was found in two cases .
- Lagophthalmos : was documented in one case
- Epiphora : 4 cases complained of epiphora





58 years old male with hypertrophic scar , ptosis and lower lid ectropion after cutler beard flap , Surgical correction of ectropion was done.

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## Conclusion

- Proper planning for upper and lower eyelid reconstruction starts with fundamental knowledge of the eyelid and periocular region anatomy.
- Analysis of the anterior lamella, posterior lamella, and the canthal regions helps create an organized operative plan.
- Lastly, accommodation with the principles, guidelines and recent techniques for eyelid reconstruction will provide best options for the final aesthetic and functional outcomes.

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