



C14

Basic Principles of Eyelid Surgery

15.06.2019

14:15-15:45hrs

Clio

HAND-OUTS

SOE 2019 Nice

ESOPRS Course

“Basic principles of eyelid surgery”

- **Set up, materials, suture techniques**

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- **Measures to protect the eye (no handout)**

Haraldur Sigurdsson, Reykjavik

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- **“Straightforward” eyelid reconstruction**

Vladimir Thaller, United Kingdom

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- **Involitional ptosis correction**

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Local anaesthesia, suture techniques, flaps & grafts

Christoph Hintschich

Skin disinfection

- 2x solution of Polyvidone-iodine 10%
- 1x cleansing with water
- 1x drying

Local anaesthesia (i.e.)

- Bupivacain 0,5% (Carbostesin® 0,5%)
± Epineprin 1:200.000
- Mepivacain 1% (Scandicain® 1%)
few ml (2 – 3 ml) sufficient

Instruments

Skalpell (blade no. 15 & 11), Stevens scissors (blunt curved), Wescott scissors (blunt curved), Adson forceps (toothed, baby & small), Colibri style forceps (toothed), Needle holder (Castrovejo straight, with lock), Caliper, squint hook, Desmarres eyelid retractor, punctal dilator, Bowman lacrimal probes (1/2 & 0/00), lacrimal syringing probe, Kellnar lacrimal probe (right/left), malleable orbital spatula (8-12 mm), bipolar cautery, suction device

Sutures (selection)

Skin	Thin skin, no tension Thin skin, difficult to remove Skin under tension, large facial flaps	6-0 silk, 7-0 monofilament (i.e. Ethilon®) 6-0 / 7-0 Vicryl® 3-0 / 4-0 monofilament (i.e. Ethilon®)
Lid margin	Inter-tarsal Inter-marginal	6-0 Vicryl®, 1/2-circle (i.e. S-12, Ethicon MLL 2641) 6-0 / 7-0 silk 7-0 Vicryl®
Conjunctiva		3-0 - 6-0 Vicryl®, Dexon®, 4-0 Ethilon®
Subcutaneous		5-0 Vicryl® (i.e. P-2, Ethicon V 505), 5-0 Ethilon®
Canthal tendon (medial & lateral)		

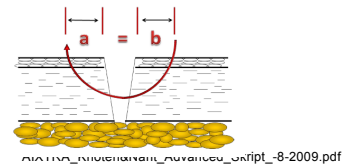
→ Needle holder: Grasp the needle with the end of the holder's distal branches at the apex of the curvature & never touch the tip of the needle!

Suture placement

Many techniques exist; the most common is a simple interrupted stitch (called "interrupted" because the suture thread is cut between each individual stitch). A mattress stich is also interrupted and specialized for everting the skin margins and distributing tension. The running or continuous stitch is quicker but risks failing if the suture is cut in just one place; the continuous locking stitch avoids sliding the skin edges and is in some ways a more secure version of a running suture.

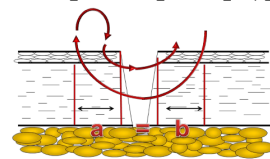
Simple interrupted suture

- Principles:
- Insert needle in 90° angle to surface
 - Grab equivalent amounts of tissue on both edges
 - Have same distances between sutures on both sides



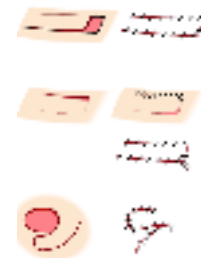
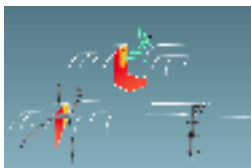
Interrupted vertical mattress suture (Donati)

Good distribution of tension, everting edges
Also very helpful for eyelid margin suture



Eyelid margin suture

- Principles:
- Inter-tarsal sutures (2), Inter-marginal sutures (grey line)(1), pre-lash-line suture (1)
 - Avoid rubbing of sutures by leaving them long and knotting anteriorly



Flaps: Principles:

- Undermine skin only or skin & muscle

“Straightforward” eyelid reconstruction *V T Thaller, Plymouth, UK*

Priorities

- Cure!
- Preserve Vision (Protect Eye)
- Preserve Appearance

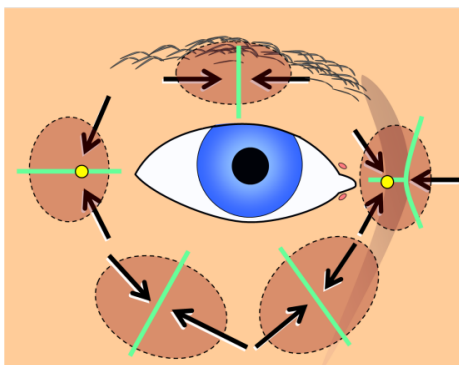
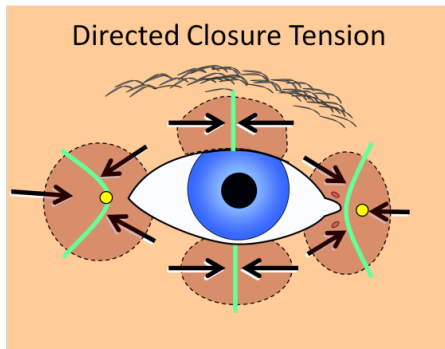
Reconstruction Ladder

80
n%
20
%

- *Laissez-faire* & Directed *laissez-faire*.
- Direct closure
- Local flap
- Free graft

Eyelid Tension

- “Waste not, want not!” Excise only what you need to. Forget the Dog-ears, they resolve.
- Direct Closure Tension parallel to the lid margin (parallel to Langer’s lines).
- The resulting closure scar will be perpendicular to the lines of skin tension (Langer’s lines). If you ignore you will cause ectropion.



Direct Closure Problems

- Distortion & asymmetry
- Impaired lid function
- Induced astigmatism
- Eye displacement

All will occur and **resolve in time** (2-8 weeks).

Received Wisdom

- ✓ Local tissue = best match.
- ✓ Direct wound closure = best results.
- × Direct closure for defects $< \frac{1}{4}$ - $\frac{1}{3}$ lid length \pm cantholysis. – **Larger defects can be closed!**
- × “Never close under tension” - **Ignore**

Lid Importance

- Upper lid Essential Lower lid Optional !
- *Never sacrifice upper lid function when reconstructing lower lid!*

How is direct closure possible?

- Lid tissue stretch (elasticity)
- Arc to chord conversion (eye \uparrow)
- Tissue ‘creep’ - (\downarrow water, collagen tearing)
- Tissue expansion - (Needs tension, so **NO** cantholysis). The eye is the tissue ‘expander’

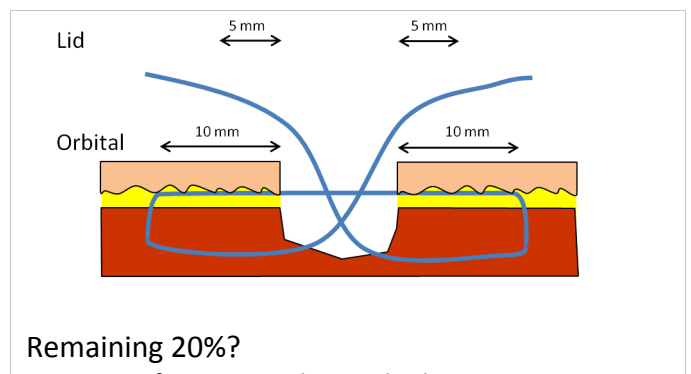
Don’t Undermine!

- Face is mobile so why undermine skin edges?
- Scar plane – contraction? Tumour spread & margin alteration?

Direct Closure benefits

- Happy patients
- Buys time
- Easy margin re-excision
- No donor site
- All reconstruction options remain

Magic Suture



Remaining 20%?

- Refer to specialist oculoplastic surgeon
- Local pedicle flap
- Free graft (vascular bed required)

Summary: Less is more

- Repair under tension
 - Tension direction is critical: tangential to lid margin = scar perpendicular.
 - Ignore Langer's lines
- Tissues expand

Involitional Ptosis

Richard Collin, Moorfields Eye Hospital NHS Foundation Trust

The causes of ptosis can be listed as follows:

- Dysgenetic
- Aponeurotic
- Neurogenic
- Myogenic
- Myasthenic
- Mechanical
- Pseudoptosis

The management of any ptosis depends mainly on the cause of the ptosis and how this affects levator function and ocular motility. The actual operations are chosen on the basis of the levator function. If the levator function is more than 10mm a Fasanella Servat procedure or aponeurosis surgery is indicated. If the levator function is between 4mm and 10mm a levator resection is carried out. If the levator function is less than 4mm, another source of power has to be found to raise the lid and a frontalis sling is indicated.

Involitional ptosis is usually thought to be caused by a defect of the levator aponeurosis. The features of an aponeurotic defect are a ptosis with good levator function, raised or doubled skin crease, deep upper lid sulcus, a thin lid, and no lag on down gaze.

The correction of an involitional aponeurotic defect is to advance the aponeurosis and replace it onto the tarsal plate. This is achieved by making a skin crease incision, identifying the aponeurosis by getting the patient to look up and down so that the aponeurosis can be clearly seen to be moving under the preaponeurotic fat pad. The aponeurosis is then advanced and sutured to the tarsal plate. The patient is usually operated under local anaesthetic so that an assessment can be made about how much to advance the levator aponeurosis. The skin crease is then reformed, usually by passing sutures through the skin and into the aponeurosis and back out through the skin.

If there is excess skin, dermatochalasis, this can be excised at the same time that the aponeurosis is advanced.

If the lid does not elevate satisfactorily it may be necessary to shorten Muller's muscle and/or to advance and possibly resect a little of the levator muscle itself.

If the lid ends up higher than is desired, it can be lowered in the immediate post-operative phase by opening the wound and releasing the sutures. If the lid is a little higher than required, but not high enough to make it worthwhile releasing the sutures, the lid can be lowered a little with eyelid traction, which is graded according to the degree of lid elevation. If this does not correct the lid elevation, a formal upper lid retractor recession needs to be carried out.