

SOE2017



**EUROPEAN SOCIETY OF OPHTHALMOLOGY
10-13 JUNE 2017 | BARCELONA, SPAIN**

C13

Basic Principles of Eyelid Surgery

11 June 2017

10:00 - 11:30hrs

Room 116

HAND-OUTS

SOE 2017 Barcelona

ESOPRS Course

“Basic principles of eyelid surgery”

Sunday, 11.06.2017, 10.00 – 11.30

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

Christoph Hintschich, Munich/Germany

Email: christoph.hintschich@med.uni-muenchen.de

- **Simple surgical procedures to protect the eye in facial palsy**

Ilse Mombaerts, Leuven/Belgium

Email: ilse.mombaerts@uzleuven.be

- **“Straightforward” eyelid reconstruction**

Vladimir Thaller, United Kingdom

Email: v.thaller@virgin.net

- **Involitional ptosis correction**

Richard Collin, United Kingdom

Email: richard.collin3@btopenworld.com

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	6-0 silk, 7-0 monofilament (i.e. Ethilon®)
	Thin skin, difficult to remove	6-0 / 7-0 Vicryl®
	Skin under tension, large facial flaps	3-0 / 4-0 monofilament (i.e. Ethilon®)
Lid margin	Inter-tarsal	6-0 Vicryl®, 1/2-circle (i.e. S-12, Ethicon MLL 2641)
	Inter-marginal	6-0 / 7-0 silk
Conjunctiva		7-0 Vicryl®
Subcutaneous		3-0 - 6-0 Vicryl®, Dexon®, 4-0 Ethilon®
Canthal tendon (medial & lateral)		5-0 Vicryl® (i.e. P-2, Ethicon V 505), 5-0 Ethilon®

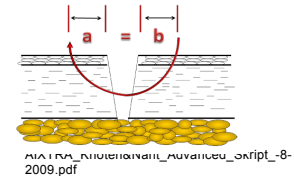
→ Needle holder: Grasp the needle with the end of the holder's distal branches at the apex of the curvature & never touch the tip of the needle!

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.

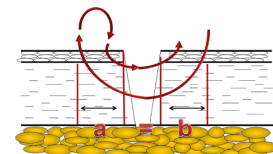
Simple interrupted suture

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



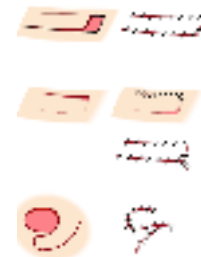
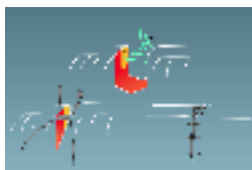
Interrupted vertical mattress suture (Donati)

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

Simple surgical procedures to protect the eye in facial palsy

Ilse Mombaerts, MD, PhD, University Hospitals Leuven, Belgium

Determine the corneal risk

- *Severe lagophthalmos*
- *Associated anesthetic cornea*
- *Absent Bell's phenomenon*

Upper eyelid loading

- stepped skin incision in the upper lid crease
- create a pocket between anterior surface of the tarsal plate and the orbicularis muscle
- the gold or platinum weight is sutured to the superior part of the tarsal plate and lower part of the levator aponeurosis with non-absorbable sutures

Lateral tarsal strip

- skin incision in a horizontal crease of the lateral canthus
- expose the periosteum of the lateral orbital rim
- lower limb canthotomy and inferior cantholysis
- fashion the tarsal strip, excise the upper margin and denude the posterior surface of any epithelium
- secure the tarsal strip to the periosteum posterior to the lateral orbital rim with a non-absorbable suture using half-circle needles

McLaughlin lateral tarsorrhaphy

- remove a triangular strip of the outer lid margin from the lower lid incorporating the skin, muscle and eyelashes
- remove a corresponding triangular strip from the posterior lamella of the upper lid (denuded tarsal plate) - preserve the lashes of the upper lid
- tug the lower lid under the upper lid, overlapping the denuded areas
- draw both tarsal plates together with absorbable sutures passed through bolsters

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

Priorities

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

Reconstruction Ladder

- 80%
 - Laissez-faire & Directed laissez faire.
 - Direct closure
- 20%
 - Local flap
 - Free graft

Received Wisdom

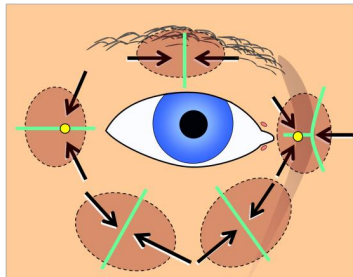
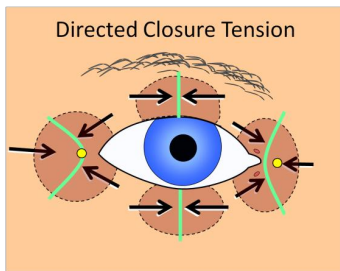
- Local tissue = best match.
- Direct wound closure = best results.
- Direct closure for defects < ¼ - ½ lid length ± cantholysis. –**Larger defects can be closed!**
- “Never close under tension” - **Ignore**

Lid Importance

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

Tension

- Directed Closure Tension parallel to lid margin.
- Lines of skin tension (Langer’s lines) – Ignore if tissue loss (or you will cause ectropion).
- “Waste not, want not!” Excise only what you need to. Forget the Dog-ears, they resolve.



How is direct closure possible?

- Lid tissue stretch (elasticity)
- Arc to chord conversion (eye ↑)
- Tissue ‘creep’ - (↓water, collagen tearing)
- Tissue expansion - (Needs tension, do no cantholysis). The eye is the tissue ‘expander’

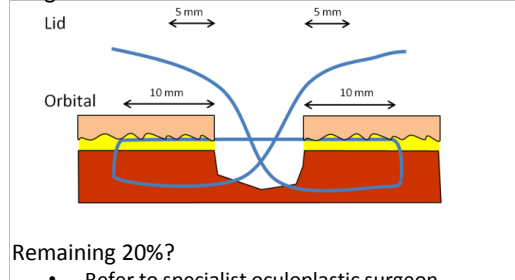
Don’t Undermine !

- 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)

Direct Closure Problems

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

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

Summary: Less is more

- Repair under tension
 - Force Vector 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.