A Guide to Lateral Canthotomy and Cantholysis

Anshu Sachdev
Locum SpR Ophthalmology BMEC
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Introduction

This guidance provides instructions on how to perform a lateral cantotomy in the emergency setting where there is a risk of loss of vision due to a dangerous rise in intraorbital pressure i.e. orbital compartment syndrome, the most common cause being retrobulbar haemorrhage.

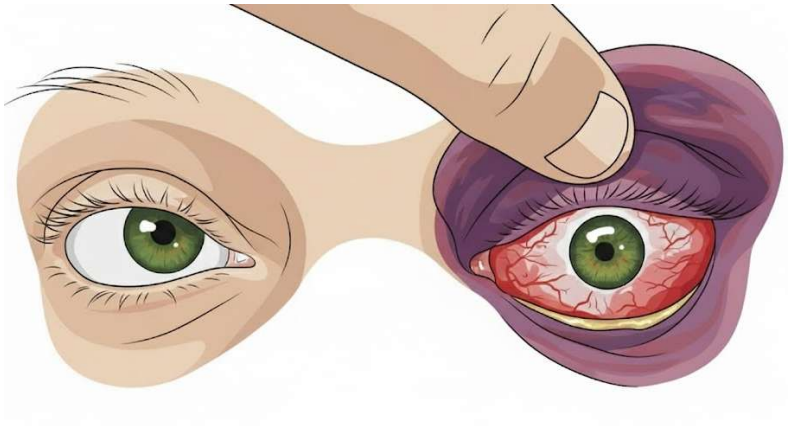
Orbital compartment syndrome

Presentation

History of trauma
Severe/significant pain
Systemically unwell (nausea and vomiting/unconscious)
Retrobulbar haemorrhage seen on CT if performed

Examination

Proptosis
Chemosis
Tense/swollen lids
Reduced VA
Limited EOMs
RAPD/fixed and dilated pupil
Raised IOP



Management

Perform lateral canthotomy and cantholysis
Request urgent CT scan but perform the procedure 1st to release pressure on the optic nerve and avoid damage due to any delay.

Consent

Benefits

Prevent vision loss due to raised intraorbital pressure

Risks

Pain, Bleeding, Infection, Scarring, Lid malposition, Further surgery, Injury/damage to other ocular structures, Loss of vision/loss of eye

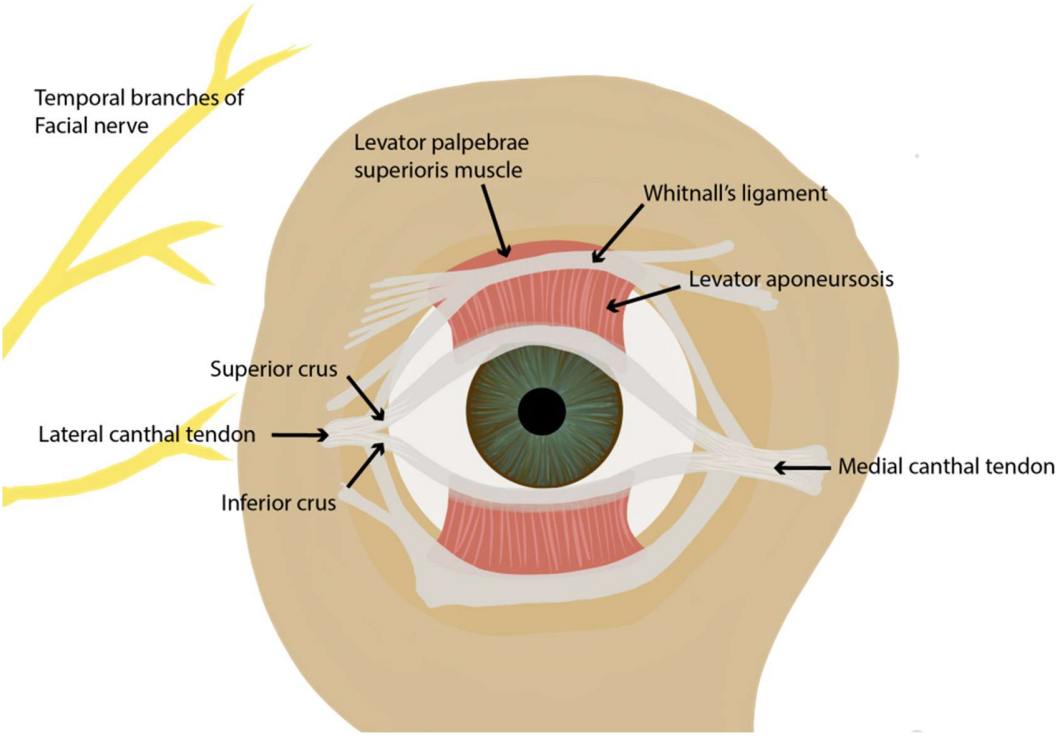
Equipment

Sterile gloves
Topical anaesthetic drops (G. proxymetacaine/G. oxybuprocaine/G. tetracaine
G chloramphenicol drops or Oc chloramphenicol ointment
10% povidone iodine solution or 0.02% chlorhexidine solution

Local anaesthetic lignocaine with adrenaline (not always necessary - crushing the lateral canthal area is all that is required as the high intraorbital pressure has a numbing effect on local tissue)
5mL syringe
Blunt filter needle
30G (yellow) needle

Toothed forceps (St. Martin's)
Straight artery forceps
Straight blunt scissors/Westcott scissors

Saline 0.9%
Gauze



Procedure

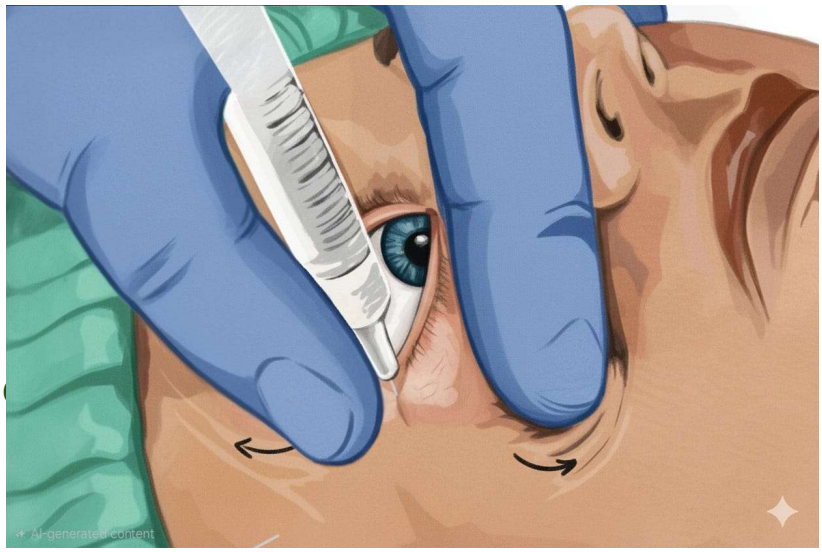
Skin prep and anaesthetic

Instill topical anaesthetic into the eye

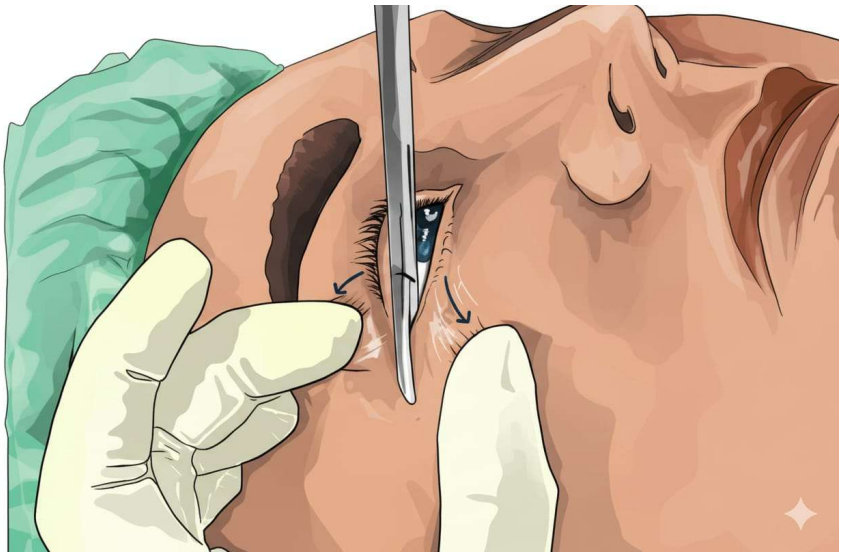
Clean the skin using 10% povidone iodine or 0.02% chlorhexidine

Draw up 2% lignocaine with adrenaline into 5mL syringe

Using the yellow needle inject anaesthetic into the lateral canthus down to the orbital rim as well as into the lateral halves of the upper and lower lids - ensure needle is pointing away from the globe at all times and aspirate before injecting

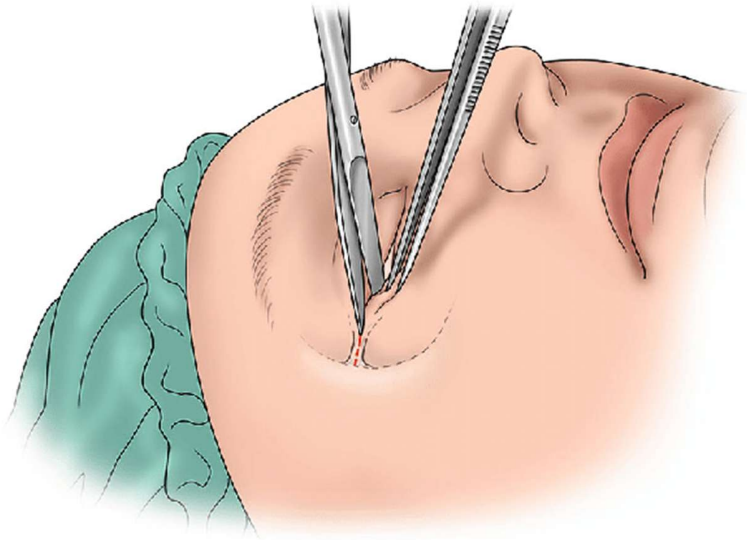


Insert one arm of the artery clip into the lateral canthus and crush the tissue for ten seconds - this reduces bleeding when cutting the tissue



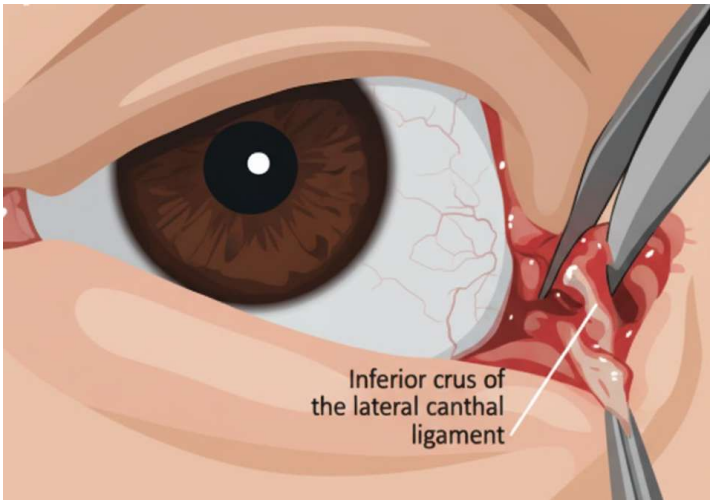
Cut the lateral canthal tendon

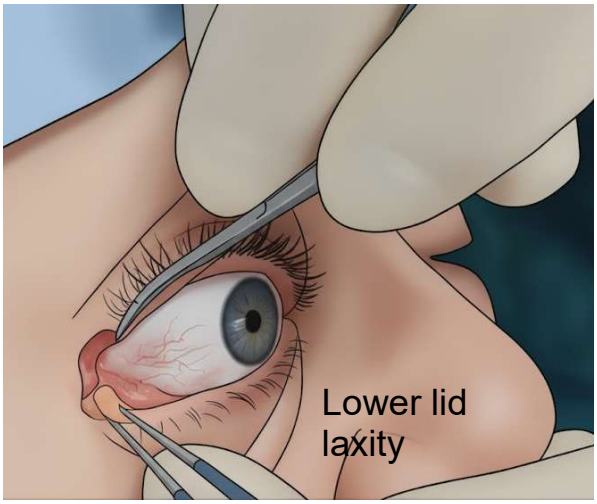
Use the blunt ended straight scissors to cut along the lateral canthus by inserting one blade of the scissors under the skin and orbicularis - if this is difficult due to pain and swelling the blade can be inserted horizontally and then rotated into the correct orientation for cutting
Separate the superior and inferior crus of the lateral canthal tendon from each other (canthotomy)
Use tamponade with the gauze if excessive bleeding



Cut the inferior crus (cantholysis)

Hold the exposed edge of the lower lid and pull anteriorly and inferiorly away from the globe using the toothed forceps
Use the blunt ended straight scissors ‘strum’ the inferior crus of the lateral canthal tendon with the scissors closed. Then cut these fibres.
Repeat the process keeping tension on the lower lid with the forceps until all the fibres have been cut and the lower lid is completely lax
Repeat this process with the superior crus if there is still pressure within the orbit





Post-procedure care

Tamponade until the bleeding stops - do not suture the wounds
Clean the wounds with 0.9% saline
Check VA, IOP and EOM 15 minutes post-procedure and up to one hour - If VA has not improved and IOP not reduced, escalate to senior
G/Oc Chloramphenicol to the eye and wounds
Advise the patient of the risk of rebleed - SOS if pain/vomiting
Review in eye casualty/local ophthalmology team the next day

The canthotomy usually heals up by itself