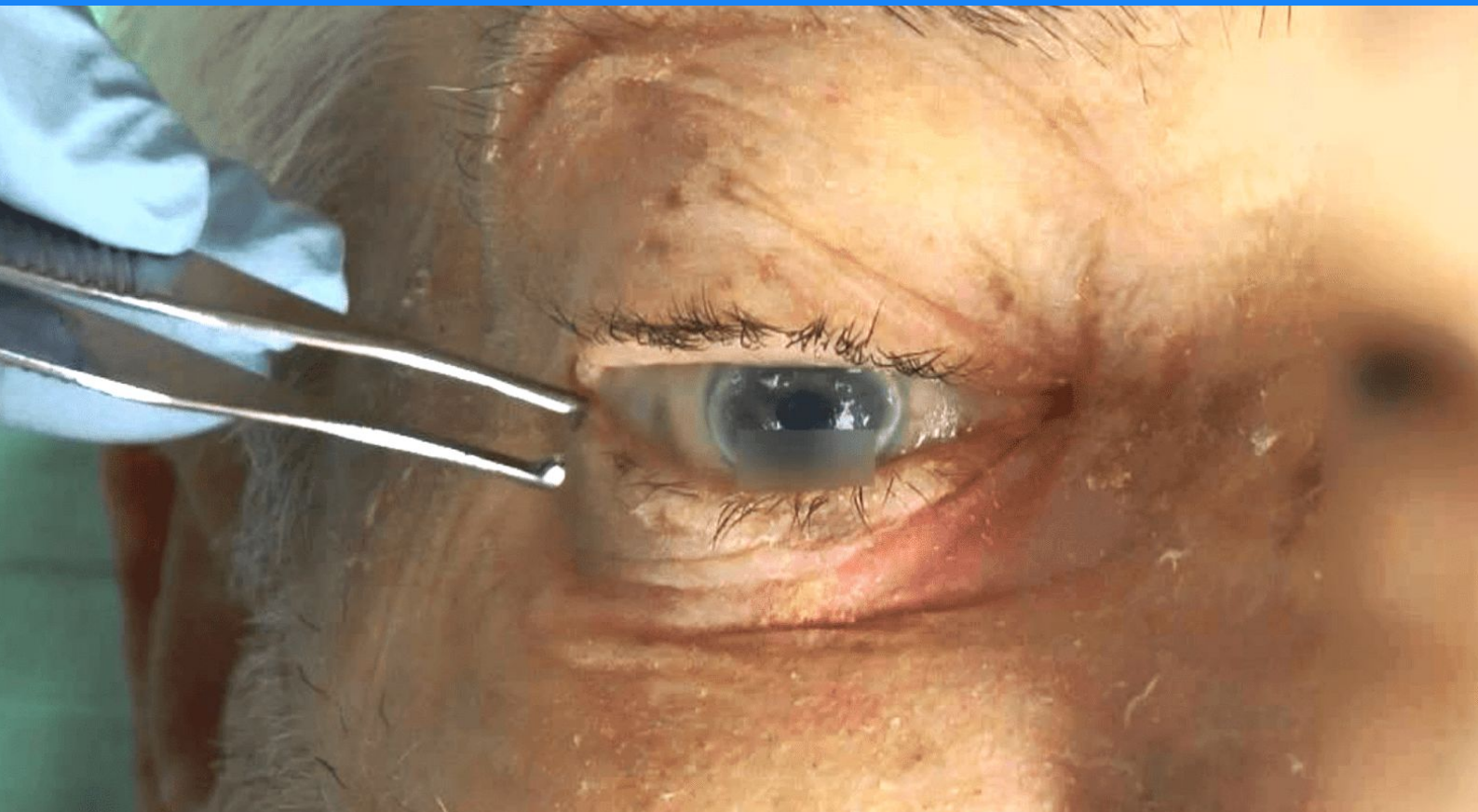


RESUS DRILLS



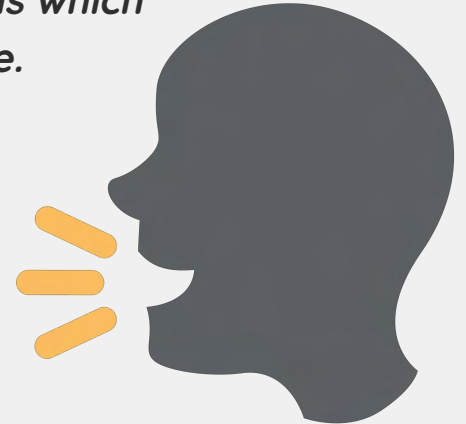
LATERAL **#1**
CANTHOTOMY

Pre-brief

Instructor to read out this section

“Welcome to this Resus Drill. Drills are for situations which are not common, and need a time-critical response. This is not a Simulation. Drills are a rehearsal for practising teamwork and speed.

We will run a scenario for 5 minutes, chat and reflect on it, then run the same scenario again for another 5 minutes.”



Assurances

Learning, NOT assessment: drills are for practice and for learning. We're concentrating on how fast you can think, and how well you work as a team.

Safe zone: lessons are shared here, not judged, not told as tales.

5-min reflection rules: please use the debrief to be positive about what you can all do better on the re-run. These are deliberately tough scenarios. That's the point of a drill.

Pretend it's real: although it's not real, we need you to help us by acting as you'd do in real life, in your normal role, and we'll try to run it in real-time.

Take-away pack: there is some information that you can take away for further learning. We recommend “spaced repetition” for the best learning!

- make some reflective notes while it's fresh in your mind
- make yourself read them again in a couple of weeks

How does it work?

Each Resus Drill pack follows a standard format.

The drill packs are laminated and available for teaching purposes, and can be downloaded from www.em3.org.uk

Our downloaded drills can be edited to suit local hospitals.

S.E.T.U.P.

Instructor to read out before patient arrives

SELF... physical readiness (stay calm) & cognitive readiness (accept the challenge)

ENVIRONMENT... lighting, crowd control, appropriate equipment?

TEAM... initial briefing, identify Team Leader, allocate team roles

UPDATE... if possible, recap for the team (and yourself) before patient's arrival

PATIENT... the patient arrives

Location of Equipment

Suture packs can be located in the Resus/ER equipment stacks opposite the *Dirty Utility* room - next to the equipment charging area.

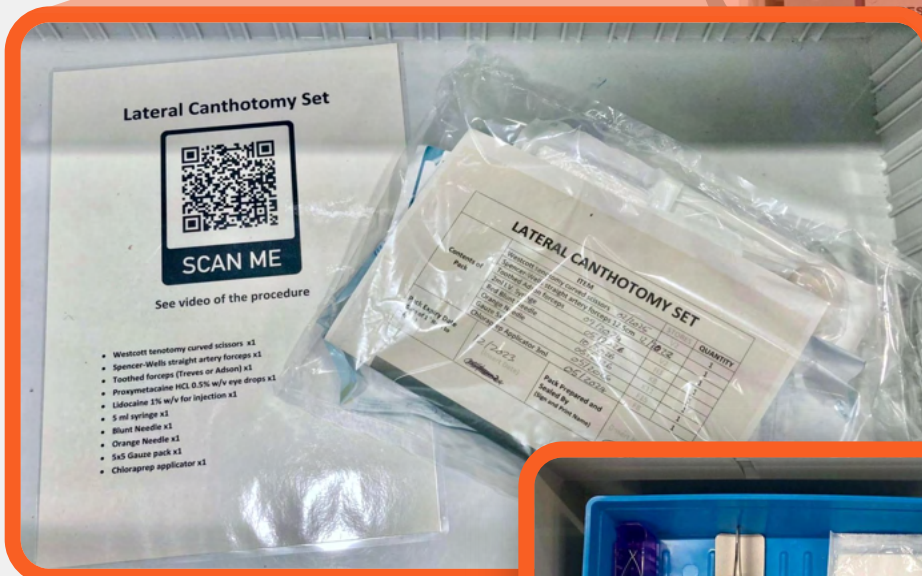
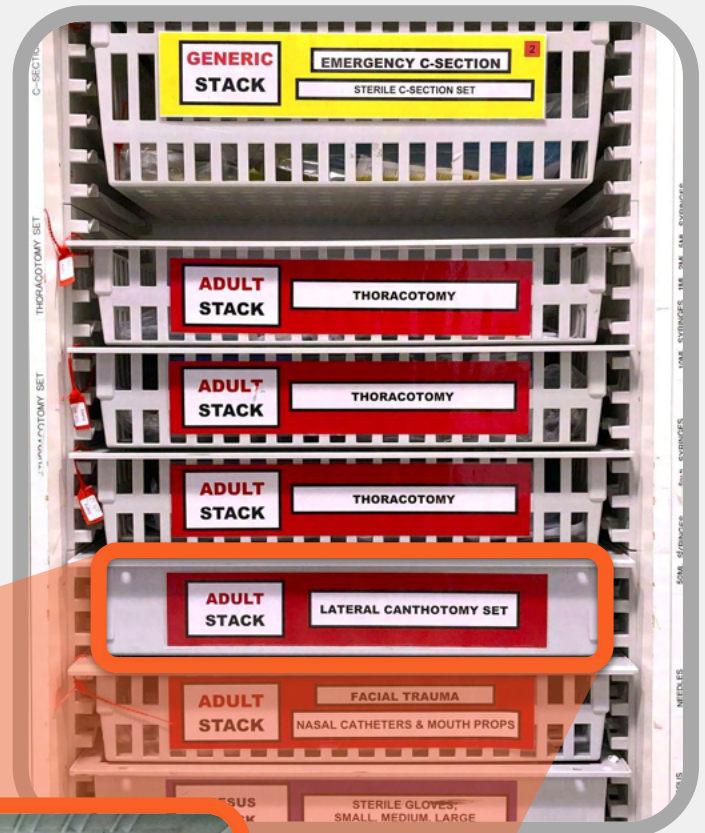


Location of Equipment

...continued

The Lateral Canthotomy kit can be located on the far right of the Resus/ER equipment stacks, opposite Bay 10.

Special curved scissors for canthotomy are found inside this stack.



Training Version

See next page for instructions on making an eye model.



How to make an eye model

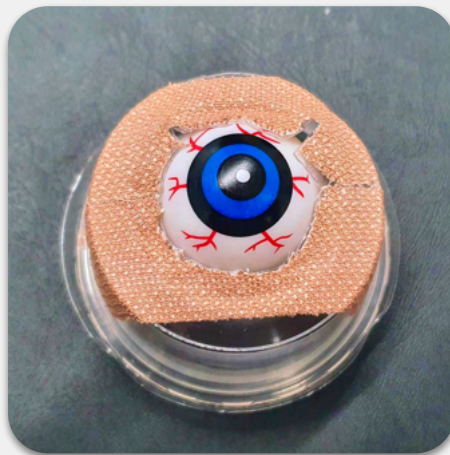
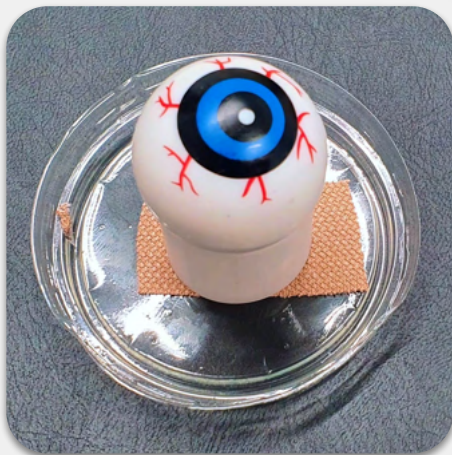


You will need:

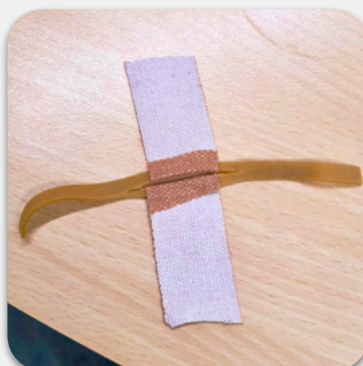
- ✓ Tattoo practice skin
- ✓ Plastic eyeball
- ✓ Small plastic pot with lid
- ✓ Elastoplast fabric tape
- ✓ Thick rubber band
- ✓ Scissors
- ✓ Scalpel



Assemble the pot. Place two lengths of tape across the base. Cut a cross shape in the middle using a scalpel, then widen with scissors.



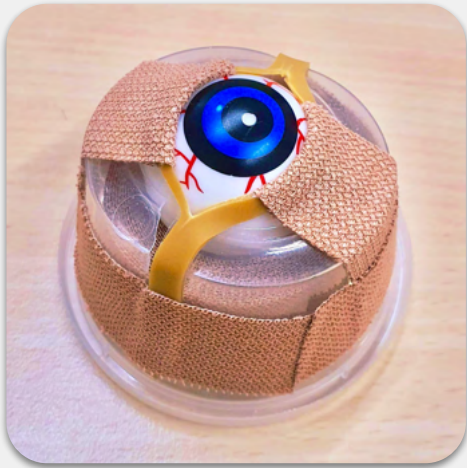
The size of the hole should be slightly smaller than the eyeball to prevent falling out. You can use the roll of tape to raise the eyeball up inside the pot when assembled.



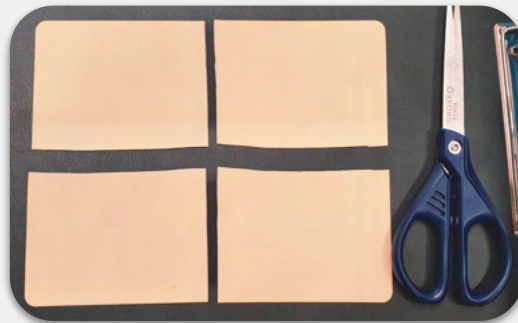
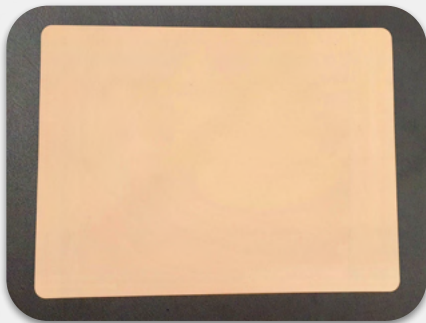
Cut the rubber band into one straight piece. Fold in half and snip down the middle to create a 1-1.5 inch opening. Cut two pieces of tape and thread through the hole as shown.

How to make an eye model

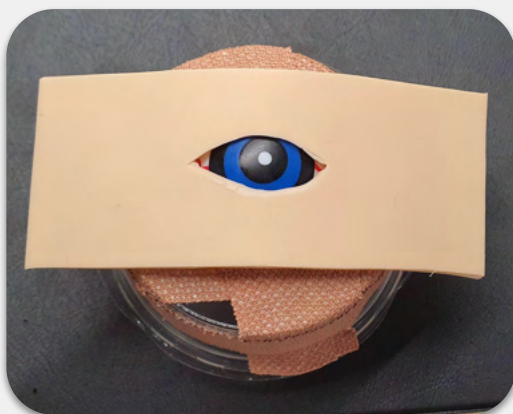
...continued



Place the elastic band over the eyeball. Pull each piece of tape apart and stick them to the sides of the pot. Secure the other loose ends of the rubber band. Ensure that there is adequate tension as this will create the ligaments that will need to be 'strummed' and cut during the drill.



Cut 1.5 x 4 inch strips from the tattoo practice skin. The skin and the rubber band will be cut during the drill and will need to be quickly replaced between attempts. It will help to have spares!



Finally, cut an eye hole in the skin using a scalpel. Experiment by starting small and then making larger as necessary for practice. Secure to the pot with more tape.

Indications

Facial trauma and suspected orbital compartment syndrome. Signs include:

- Deteriorating visual acuity
- Diffuse subconjunctival haemorrhage
- Painful tense eyeball when pressure put on eyelid
- Oculomotor palsy
- Proptosis

Equipment Required

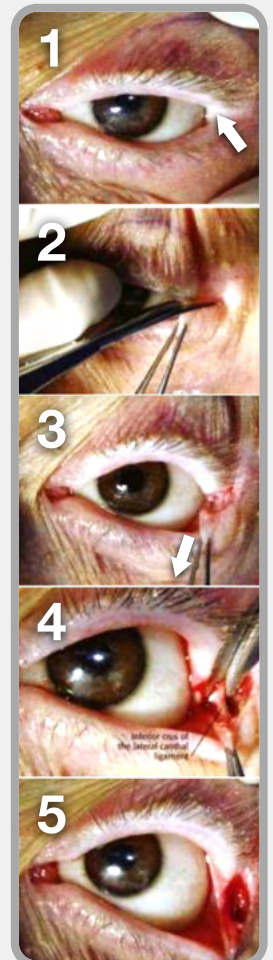
- ✓ Westcott tenotomy curved scissors
- ✓ Spencer-Wells straight artery forceps 12.5 cm
- ✓ Toothed Adson forceps
- ✓ 2 ml IV syringe
- ✓ Red blunt needle
- ✓ Orange needle
- ✓ Gauze 5x5 cm
- ✓ Chloraprep applicator 3 ml

Landmarks and Techniques

The left eye is depicted in the images (see opposite)

1. Identify the lateral canthus (see arrow). Cleanse the area with antiseptic and anaesthetise with 1 ml of 1% Lidocaine.
2. Crush the lateral canthus with the toothed forceps for 1-2 minutes to reduce incisional bleeding (not shown). Then, cut through the crushed tissue with tenotomy scissors to perform the canthotomy.
3. Pull the lower eyelid away from the globe with straight artery forceps (see arrow).
4. “Strum” the tissue under the canthotomy with the scissors to identify the inferior crus of the lateral canthal ligament. Cut through this ligament with scissors to perform the inferior cantholysis. Note the scissors are directed inferiorly during this step, perpendicular to the canthotomy incision.
5. The eye seen afterwards with intraocular pressure relieved by allowing the globe and orbital contents to move forward.

MAGPAS
AIR AMBULANCE



NOTE: if intraocular pressure remains elevated after inferior cantholysis, the superior crus of the lateral canthal ligament may be released in a similar fashion.

Orbital Compartment Syndrome (OCS) Decision Algorithm

Bleed risk factors?

- Trauma
- Recent orbital or periocular surgery
- Coagulopathy or taking anticoagulant meds

Infection risk factors?

- Recent preseptal or orbital cellulitis
- Acute or chronic sinusitis

YES



NO



Any of these within the last few hours?

- Decreased vision
- Diplopia
- Abnormal colour vision
- Restricted painful extraocular movements
- Proptosis (*look from above patient's head*)
- A relative afferent pupillary defect (*shine pen torch in each eye and observe both*)
- Increased intraorbital pressure (palpate the eyeball to test for pain)

OCS unlikely



Call for help immediately!

Eye Casualty in-hours (Mon-Fri, 0830-1630) & (Sat/Sun, 0830-1230)

OOH: on-call Ophthalmology registrar via switchboard

**Decompress within 60 minutes
of patient's symptoms**

Scenario Script

Instructor to read out this section

“A 74-year-old man has fallen in his garden and has facial injuries. He is on apixaban, has had a head CT scan which is normal, and is awaiting an orthopaedic bed for his fractured femur. He’s told a nurse he can’t see out of his right eye very well in the last half an hour and it is painful.”

Minute One

Rapid assessment to include ocular movements (painful), pupillary response (sluggish) and for proptosis (*should be assessed from above – it is present*).



Minute Two

Decision to perform a lateral canthotomy.

Call Ophthalmology for help/advice and assemble kit. Simulate call.

Instructor announces *“They can’t get there for at least 20 minutes.”*

Minute Three

Ask **Team Leader (TL)** to say what kit they need and observe how they task people. If procedure not explained to the patient – prompt **TL** to do so.

Minute Four

Team Leader to talk through what they are doing (see description, Page 4).

If patient not comforted by staff during procedure – feedback at debrief.

Minute Five

Eye successfully released and patient describes improvement in pain.

Debrief and Feedback

You should aim to cover the following points within 5 minutes, then re-run the scenario:

1. Did the **Team Leader** assess the eye efficiently and adequately?
2. Did the **Team Leader** rapidly reach a decision to proceed?
3. Did the **Team Leader** explain the situation so that everyone understood it was a time-critical operative procedure?
4. Was the right equipment asked for and provided quickly?
5. Was a brief, non-frightening explanation given to the patient?
6. Did the **Team Leader** display knowledge of the technical skills required?
7. Was the patient comforted and supported during the procedure?
8. Were there any instances of:
 - a. Equipment issues?
 - b. Human factors negatively impacting communication or patient care?



Additional Resources



Lateral Canthotomy
(UMEmergencyMed)
<https://bit.ly/3NX9sB0>



How to do a Lateral Canthotomy
(EM:RAP) <https://bit.ly/3b6Ccsu>



Procedural Aide Memoires - PAMs
(MAGPAS) <https://bit.ly/3N1k0h2>



How to make a Low Tech - Cheap Lateral Canthotomy model (Dr Sarah Edwards) <https://bit.ly/3tKe1Xs>



Lateral canthotomy and cantholysis: a simple, vision-saving procedure

(Gord McInnes, MD; Daniel W. Howes, MD)

<https://bit.ly/3YEtsNX>



A low fidelity eye model for lateral canthotomy training

(R. Kong, D. Pascal Kaya, E. Cioe-Pena, J. Greenstein)

<https://bit.ly/3xwGe53>

