LATERAL CANTHOTOMY AND CANTHOLYSIS: A LOW COST, SIMPLE AND ANATOMICALLY CORRECT SIMULATION MODEL

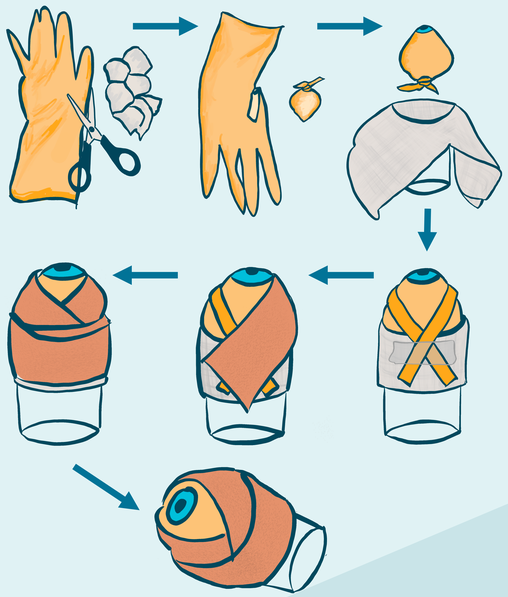
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Introduction

The lack of confidence in lateral canthotomy and cantholysis results in poor outcomes in orbital compartment syndrome[1]. Teaching opportunities have previously been limited to real patients or cadavers. Recently, multiple centres have developed simulation models[2,3]. Here, we present a low-cost model using only hospital equipment.

Model Assembly



Equipment:

- 1 surgical glove
- 6 cotton swab balls
- 1 Specimen pot
- 1 gauze sheet
- Micropore surgical tape
- Fabric dressing tape
- 1 elastic band

Our model allows the user to 'strum' the inferior canthal tendon, without cutting the lower lid, and to appreciate the difference between Canthotomy and Cantholysis.

Methods

The model was validated by 28 trainee ophthalmologists and emergency medicine doctors using pre and post teaching questionnaires to rate confidence using a 5-point Likert scale.

Simulation

Lateral canthotomy is simulated by cutting through the tape at the lateral canthus. Cantholysis is simulated by strumming and cutting the elastic band.



Canthotomy



Cantholysis

Results

7.14% (n=2) of 28 respondents felt 'Quite confident' with the procedure before teaching. Following the session, **42.85%** (n=6) of 14 respondents felt 'Quite confident'.

35.71% (n=5) of participants stated they would not require additional teaching. Further feedback is being sought as the teaching programme is implemented more widely.

Discussion

The main advantage of our model is the anatomic relationship of the canthal tendons to the orbital rim. During canthotomy, the lids are cut but the tendons are not released. In other models, performing the canthotomy may also release the tendon. Our model also uses only low-cost and accessible hospital equipment, enabling use in regular or ad hoc teaching sessions: this is key for maintenance of skill.

Model Assembly:
https://bit.ly/3yqRP7L
Simulated Procedure:
https://bit.ly/38ijPjk
Real Procedure:
https://bit.ly/3PmZvy7

Watch the simulation →

1. Edmunds MR, Haridas AS, Morris DS at al. Management of acute retrobulbar haemorrhage: a survey of non-ophthalmic emergency department physicians. *Emerg Med J* 2019;36(4):245–7.
2. Kong R, Kaya DP, Cioe-Pena E et al. A low fidelity eye model for lateral canthotomy training. *Afr J Emerg Med* 2018;8(3):118–22.
3. Mendes M, Buchanan JA, Sande M et al. An Easily Assembled, Low-Cost Model for Lateral Canthotomy Education. *J Emerg Med* 2021 Jun;60(6):777–80