

Emergency Department, St Vincent's University Hospital Elm Park, Dublin 4

Introduction

- With centralisation of subspecialty care on a small number of hospital sites, there is an increasing need for physicians to be skilled in performing subspecialty emergency procedures
- Facial and ocular trauma is the most common cause of retrobulbar haemorrhage
- Orbital compartment syndrome caused by retrobulbar haemorrhage is a sight threatening emergency
- Lateral canthotomy is a simple 3 minute bedside procedure and can be vision saving when performed expeditiously

Case Report

- A 51 year old male presented to our University Teaching Hospital Emergency Department following an assault
- He sustained blunt trauma to his right eye with subsequent decrease in visual acuity, severe pain, raised intra-ocular pressure, subconjunctival haemorrhage with proptosis and restricted extra-ocular movements
- An urgent CT brain and facial bones was performed
- The after hours ophthalmology service at the Royal Victoria Eye and Ear Hospital (RVEEH) was consulted
- They recommended an emergency lateral canthotomy, prior to transfer to them at the RVEEH

Figure 1 – Comparison of Both Eyes



Affected Eye

Normal Eye

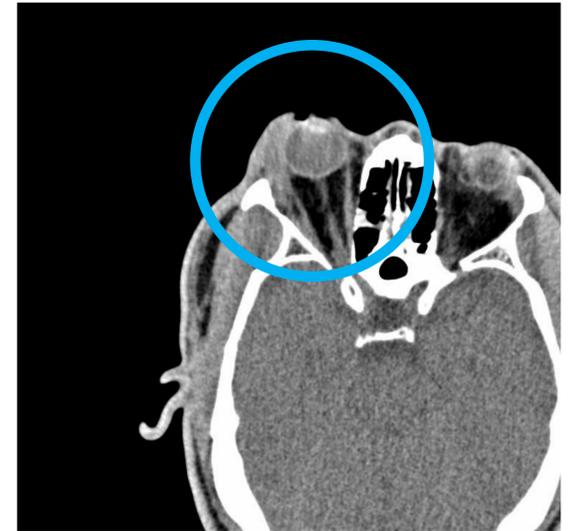
Procedure

- 2mls 2% lignocaine was injected from the lateral canthus to the orbital rim
- The lateral canthus was compressed with a straight mosquito haemostat for 1 minute
- All layers of the tissue were subsequently cut to free the globe

Figure 2 – CT Brain and Facial Bone Findings

Right Eye

- Soft tissue swelling
- Extra-conal haematoma
- Proptosis
- Intact Globe



Outcome

- Right Visual Acuity: 6/9
- Raised Right Intra-ocular Pressure: 30mmHg
- IV Hydrocortisone and IV Acetazolamide was injected
- Vision was checked every 2 hours
- The eyelid was repaired
- The patient was discharged home the following morning with outpatient follow up arranged

Discussion

- Orbital Compartment Syndrome is a time sensitive and sight threatening condition, in the presence of retrobulbar haemorrhage
- Indications for Lateral Canthotomy include:
 - Reduced visual acuity
 - Decrease colour vision
 - Proptosis
 - Relative afferent pupillary defect
 - Restricted extra-ocular movements
 - Increased intra-ocular pressure
- Optic nerve damage may be irreversible after 3 hours of ischaemia
- Orbital decompression via lateral canthotomy is the treatment of choice and can be readily performed at the bedside by an emergency physician without specialised equipment

References

- Adam D. 'Lateral Canthotomy and Cantholysis: Emergency Management of Orbital Compartment Syndrome' Department of Emergency Medicine, University of California. The Journal of Emergency Medicine 2014
- Vassallo S, Hartstein M, Howard D, Stetz J. Traumatic retrobulbar hemorrhage: emergent decompression by lateral canthotomy and cantholysis. J Emerg Med 2002;22:251–6