Eye Emergencies: Acute Vision Loss

SESLHDPR/496

Aim:

- Early identification and treatment of sight/life threatening causes of acute vision loss escalation of care for patients at risk.
- Early initiation of treatment / clinical care and symptom management within benchmark time.

Assessment Criteria: On assessment the patient should have one or more of the following signs / symptoms:

- > 50 years old (often female)
- Sudden painless vision loss, unilateral but rapidly can become bilateral
- Reduced colour
- Temporal artery tenderness
- Temporal headache
- Polymyalgia Rheumatica (stiffness / aching muscles / joints)
- Jaw claudication
- Scalp tenderness
- Weight loss/reduced appetite
- Low grade fever
- Headache
- Nausea

Escalation Criteria: Any patients presenting with a sudden persistent loss of vision need an URGENT ophthalmology consult

- Homonymous hemianopia (visual field loss in either the two right or two left halves of the visual fields of both eyes)
- Painful vision loss
- Acute vision loss (central or peripheral)
- Floaters and photopsia (the presence of flashes of light)
- **Ocular trauma meeting trauma Criteria***
- Cranial nerve palsy (6th) – restricted EOM
- Chemical trauma /burns
- Pale swollen optic disc
- Recent ocular surgery
- Relative Afferent Pupillary Defect (RAPD)
- Photophobia

Primary Survey:

- **A**irway: patency
- **C**irculation: perfusion, BP, heart rate, temperature
- **B**reathing: respiratory rate, accessory muscle use, air entry, SpO_2.
- **D**isability: GCS, pupils, limb strength

Notify CNUM and SMO if any of following red flags is identified from Primary Survey.[1]

- Airway – at risk
  - *Partial / full obstruction*
- Disability – decreased LOC
  - *GCS ≤ 14 or a fall in GCS by 2 points*
- Breathing – respiratory distress
  - *RR < 5 or >30 /min*
  - *SpO_2 < 90%*
- Exposure
  - *Temperature <35.5°C or >38.5°C*
  - *BGL < 3mmol/L or > 20mmol/L*
- Circulation – shock / altered perfusion
  - *HR < 40bpm or > 140bpm*
  - *BP < 90mmHg or > 200 mmHg*
  - *Postural drop > 20mmHg*
  - *Capillary return > 2 sec*

History:

- Presenting complaint
- **A**llergies
- **M**edications: eye drops, anticoagulant therapy, anti-hypertensives, diabetic medications, analgesics, inhalers, chemotherapy, non-prescription medications, any recent change to medications
- **P**ast medical and past Ophthalmic surgical history
- **L**ast exposure to ultraviolet radiation source or chemicals
- **E**vents and environment leading to presentation

- **P**ain Assessment / Score: **PQRST** (Palliating/ provoking factors, Quality, Region/radiation, Severity, Time onset)
- **A**ssociated signs / symptoms: sudden painless vision loss; headache; fever;
- **H**istory: Eye surgery, vision acuity including vision correction required (e.g. glasses, contact lenses)

Systems Assessment:

Focused ophthalmic assessment:[2,3]

- *Inspection:* Inspect skin around eye, eyelids, conjunctiva, pupil light response and clarity of cornea. Examination by slit lamp/magnifier with fluorescein drops
- *Palpation:* Palpate over sphenoid-temporal region for tenderness or dilated temporal artery.
- Complete visual acuity testing and record result.

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Notify CNUM Medical Officer (SMO) if any of following red flags is identified from History or Systems Assessment and Senior.[1]

- Radiating chest pain
- Altered conscious level
- Sudden severe headache +/- nausea or vomiting
- Aphasia
- Numbness/paralysis in arm or leg? (FAST positive)
- Diplopia
- Restricted ocular movements

Investigations / Diagnostics:

Bedside[3]:

- Visual Acuity using visual acuity chart (Perform with glasses / contact lens if patient normally wears them
- Intraocular Pressure Testing (IOP)
- Pupil response (swing torch test) – RAPD (Relative Afferent Pupillary Defect) exists when one eye apparently dilates on direct stimulation after prior consensual constriction. If positive, Eye Registrar to confirm
- Palpation over sphenoid-temporal region for tenderness or dilated temporal artery

Laboratory / Radiology[4]:

- **Pathology**: Refer to local nurse initiated **STOP** FBC (platelets) , ESR, CRP
- **Radiology:** Not generally indicated

Nursing Interventions / Management Plan:

Resuscitation / Stabilisation[4]:

- Oxygen therapy & cardiac monitor [as indicated]
- IV Cannulation (consider large bore i.e. 16-18gauge)
- IV Fluids: Sodium Chloride 0.9% 1 litre stat *(discuss with SMO)*

Symptomatic Treatment[4]:

- **Analgesia:** as per district standing order

Supportive Treatment:

- Nil By Mouth (NBM)
- Monitor vital signs as clinically indicated (BP, HR, T, RR, SpO_2)
- Monitor neurological status GCS as clinically indicated
- Monitor pain assessment / score

Practice Tips / Hints:

A visual acuity of 6/6 does not necessarily exclude a serious eye injury

Never think of the eye in isolation, always compare both eyes.

Further detailed Ophthalmology resources are available from the ACI(cited 2021) ophthalmology resources

Further Reading/ References:

1. SESLHD Deteriorating Patient-Clinical Emergency Response System for the Management of Adult and Maternity inpatients SESLHDPR/283,2019. https://www.SESLHD Deteriorating Patients-Clinical Emergency Response System for the Management of Adult and Maternity Inpatients
2. Pane, A. and P. Simcock (2005). Practical ophthalmology: a survival guide for doctors and optometrists. London, Churchill Livingstone.
3. NSW Health Eye Emergency Manual Second Edition 2019-Found online ACI (cited 2021) Eye Emergency Manual | Agency for Clinical Innovation
4. SESLHD Framework for Emergency Nurse Protocols and Standing Order.2018. https://www.seslhd.health.nsw.gov.au/sites/default/files/documents/SESLHDPR369.pdf

Acknowledgements: SESLHD Adult Emergency Nurse Protocols were developed and adapted with permission from:

- Murphy, M (2007) Emergency Department Toolkits. Westmead Hospital, SWAHS
- Hodge, A (2011) Emergency Department, Clinical Pathways. Prince of Wales Hospital SESLHD.

Revision & Approval History

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