

Ophthalmology Answers

Question 21 (11 marks)

A 63 year old man presents to the ED with bilateral leg weakness. He has had a recent diarrhoeal illness and you suspect Guillain-Barre syndrome.

Please describe the differences in clinical features between GBS and spinal cord compression (8 marks)

	Guillain-Barre Syndrome	Spinal Cord Compression
History	Prior infectious illness Others potentially ok	No prodrome
Exam Finding 1	Arreflexia (LMN) Sensory typically preserved	Hyperreflexia (UMN) Sensation impaired (level)
Exam Finding 2	Ascending Respiratory muscle involvement	Fixed level No respiratory muscle involvement unless above C5
Diagnostic Investigation	MRI not showing lesion (can show enhancement of anterior spinal nerves) CSF showing albumin-cytological dissociation (e.g. high protein, low WCC) EMG / nerve conduction FVC not accepted answer as below	MRI shows lesion Normal CSF

ISLHD Emergency Medicine Trial Written Fellowship Exam 2019.1 - [ANSWERS](#)

Describe the use of forced vital capacity (including threshold values) in the monitoring of a patient with GBS and suspected diaphragmatic weakness (3 marks)

FVC result	Management/Disposition
<15mL/kg	Indication for mechanical ventilation
15-20mL/kg	Close monitoring in intensive care setting
>20mL/kg	Observe, ward-based setting if no other indication for ICU

SAQ 17:

Questions:

1- List three (3) abnormalities in the given photograph: (3 marks)

Marked conjunctival injection
Hyphaema
Traumatic mydriasis

2- List three (3) possible associated injuries (3 marks)

Lens dislocation
Globe rupture
Orbital wall fracture
Retinal detachment

3- Please list two (2) early and two (2) late complications of the above condition. (4 marks)

Early Complications	Late Complications
Rebleeding	Corneal blood staining
Raised IOP Traumatic iridocyclitis	Posterior/peripheral anterior synechiae Optic atrophy

4- List five (5) management steps for this patient. (5 marks)

- Analgesia (avoid NSAIDs, aspirin)
- Patch eye
- Bed rest and head elevated 30 degrees to aid settling of hyphaema
- Topical cycloplegics – homatropine/tropicamide
- Treat associated complications – Raised IOP with acetazolamide/topical timolol. Traumatic iridocyclitis – steroids/cycloplegics
- Treat associated injuries listed above

SAQ 3 (6 Minutes)
(Total 12 marks)

Passmark: 8/12

A 21-year-old male presents to a tertiary Emergency Department after suffering an injury to his right eye at work while hammering metal.

His eye photo is included in the props booklet:

Questions:

1. List 3 abnormalities on the image

(3 marks)

- . Lacerated sclera
- Uveal prolapse
- Misshapen pupil

2. List 2 relevant negative findings

(2 mark)

- No hyphema
- No signs of extraocular trauma

3. State what further investigation you would perform and justify your choice.

(2 marks)

- Safe modality (CT/USS) to locate FB.
- MRI incorrect and contraindicated.
- Plain film not appropriate as investigation in a tertiary ED.

4. State 5 immediate management steps.

(5 marks)

- Immediate ophthalmological referral
 - Elevate head of the bed
 - Eye shield
 - ADT
 - IV antibiotics. (broad spectrum IV Pip taz or similar broad spectrum cover with appropriate dose)
 - Analgesia (IV with appropriate dose opiate)
 - Antiemetics (IV appropriate dose)

Pass mark: 8/12

SAQ 22 (11 marks)

A 78 year old man presents with acute painless visual loss in the R eye an hour ago. He has a history of cataracts and hypertension for which he takes candesartan.

a) List three (3) risk factors for retinal detachment (3 marks)

- High myopia
- Cataract surgery
- Recent eye trauma
- Past history of detachment
- Connective tissue disease

b) The posterior chamber is not clearly visible due to a cataract. List six (6) investigations that may help establish a diagnosis, with reasoning (6 marks)

- (6 marks, 1/2mark for each) **bold** mandatory for pass.
- **ECG > ? embolic source (esp AF) in CRAO**
- **ESR/CRP > ? TGA**
- FBE > Hyperviscosity/platelets
- Coags > ? coagulopathy
- Glucose > ? diabetes in CRVO
- Ultrasound > ? detachment vs vitreous h'age
- CT/CTA or carotid ultrasound > ? embolic source in CRAO

c) List two (2) treatments for central retinal artery occlusion that may be used, with rationale. (2 marks)

Treatment:	Rationale:
Ant. chamber paracentesis	Reduce IOP > dislodge clot
Hyperbaric O2	Reduce retinal ischaemia

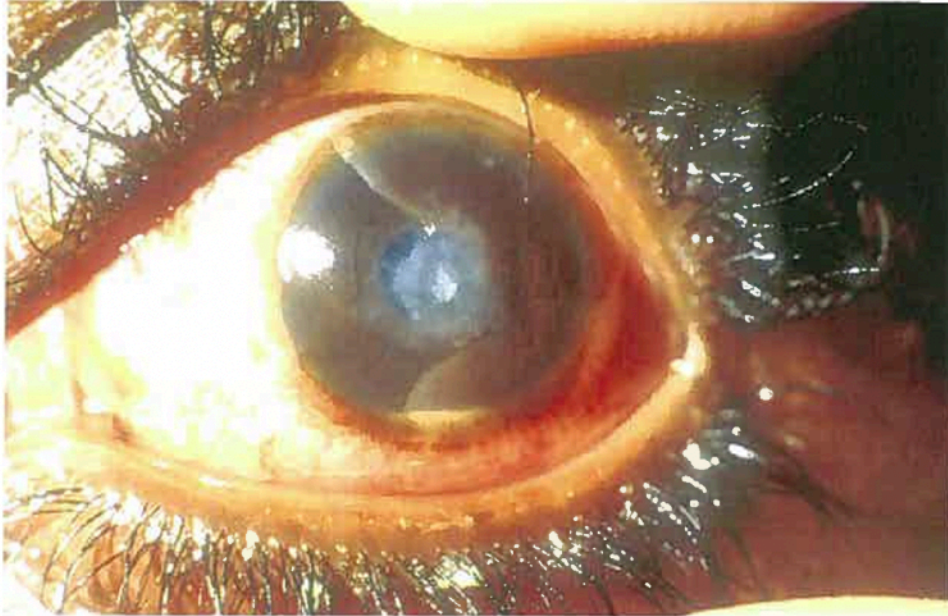
- Ocular massage: dislodge embolus
- carbogen: vasodilate retinal vessels
- tPA: lyse clot

SAQ 23

SAQ X (12 marks)

A 35 year old man of no fixed address presents to the ED with a complaint of a painful red eye for the past 3 days associated with worsening visual acuity. He is not forthcoming with more history.

On initial inspection with the patient sitting up using normal light, this is what you see:



a) List the 4 most significant findings on the image (4 marks)

Central corneal opacity

Surrounding arcuate corneal opacity (appears raised) with possibly linear streaking medially

Single eyelash that may be entropic causing corneal abrasion

Small **hypopyon** in the anterior chamber

Marked conjunctival injection especially laterally (difficult to see in this image) and around the limbus

Slightly irregular pupil

b) List the 3 most important other aspects of the ocular evaluation should be performed and your expected findings (3 marks)

Visual acuity – likely significantly reduced due to central corneal opacity

Intraocular pressure – likely normal or raised due to synechiae

Examination under slit lamp – any one of - fluorescein uptake on ulcer, raised corneal, cells/flare in anterior chamber

Corneal scraping for culture (central severe ulcer) – likely bacterial growth

b) List the 2 most important next things in managing this patient (2 marks)

Urgent Ophthalmology referral

Broad spectrum antibiotic drops (need broad spectrum to get mark)

Analgesia (topical)

Cycloplegics

c) List 3 possible complications of this if left untreated (3 marks):

Opacification of the cornea and scarring (sight threatening)

Synechiae formation

Increased intraocular pressure /secondary glaucoma

Corneal perforation of the cornea

Q9 8/12

1.

Bacterial

Unilateral

Dryness of the eye and surrounding skin

Purulent discharge

TREATMENT: Antibiotic drops/ointment

Viral

Bilateral

Erythema

Watery Discharge/excess lacrimation

TREATMENT: Conservative

Allergic

Itching

Oedema of conjunctiva and eyelid

TREATMENT: Steroid drops, antihistamine drops, cool compresses

SAQ 17 Facial Rash

Peter Jordan

Overall a relatively straightforward question.

Picture quality – v good.

As expected nearly all gave correct diagnosis.

Expected standard with regards to identifying important complications (either serious or common or both) was high.

Features mandating admission – needed to be important and show perspective.

1) What is your provisional diagnosis– approx. 1 mark allocated – minimum – Herpes Zoster – facial

No marks for simply “shingles” – without additional qualification/ description.

No marks for Herpes Simplex.

Acceptable to state herpes zoster ophthalmicus or Herpes Zoster V1 distribution.

Approx. 90% full marks

2) Describe four features supportive of this diagnosis

Approx. 3 marks allocated – No particular ranking

Clear majority of candidates answered this section well.

Most common error was to describe the vesicles as blisters.

A few stated the rash was painful or did not involve the scalp – neither can be inferred.

Expectation – minimum three of:

a) Vesicular (most stated this) ideally ‘clusters and/or typical and/ or small

b) Unilateral/ ipsilateral

c) Confined to V1 trigeminal dermatome (or description of this – forehead and eyelid.

No marks if stated rash involved nose (none visible)

One persons suggested erythema possible involved maxillary distribution (which I agree with but was not clear)

d) Absence of features suggestive of alternative pathology – bullae/ blisters/ bilateral involvement, exudate, Target lesions etc.

e) patchy underlying/ surrounding erythema

SAQ 17 (cont.)

3) Five important Complications – approx. 4 marks

Nearly all came up with five complications of varying importance or appropriateness. To differentiate possible responses were ranked as either important, somewhat important, of dubious importance or not a complication.

Those considered somewhat important attracted a half mark

Those of dubious importance or incorrect did not receive a mark.

Four marks allocated in total.

More common errors – referring to standard symptoms such as pain/ discomfort

Use of the term Zoster Ophthalmicus (as this can refer to the common cutaneous form)

Infectivity – risk to pregnant patients

Use of vague/ incorrect terminology

Very rare complications – e.g. cavernous sinus thrombosis where risk is low due to extremely low probability.

Important complications:

Keratitis

Uveitis/ Scleritis

Acute glaucoma

Optic neuritis/retinitis
Progressive Outer Retinal Necrosis
Disseminated Herpes Zoster/ sepsis
Meningoencephalitis
Other Cranial nerve palsies
Ramsay Hunt syndrome
Recurrent Herpetic ulcers
Blindness resulting from one or more of above
Post herpetic neuralgia
Social/ employment complications
Analgesia dependence
Secondary bacterial infection

Others:

Ocular Zoster
Septic Shock
Orbital Cellulitis (this is very rare)

4) Three key features that would mandate admission.

Two key features were required as a minimum.

The least well addressed section

Many considered ocular involvement mandated admission – Ocular involvement (e.g. dendritic ulcer) mandates early ophthalmological review. Not necessarily admission.

Severe ocular involvement or involvement of globe was an appropriate answer.

Pain – requiring IV opiates – this is reasonable and not uncommon in elderly patients – they may require admission but not necessarily for IV opiates. (Many stated simply – pain requiring IV opiates)

Many only wrote two responses to what is a simple/ standard question.

Others: systemically unwell.

Suspicion of meningoencephalitis or disseminated infection

Immunocompromised

Significant superinfection (must qualify- limited/ superficial superinfection does not mandate admission)

Q6 Answers

Q1

Pupil mid-sized

pupil irregular

Lateral ciliary injection

Cloudy cornea

Q2

Acute angle closure glaucoma

Q3

(electronic indentation) Tonopen

Impression (Schiotz) tonometry

Applanation tonometry with slit lamp (Goldmann)

Rebound tonometry

Pneumato-tonometry

Q4

<20-22 cmH₂O

Q5

Acetazolamide 500mg iv or oral

Pilocarpine drops

Apraclonidine drops

timolol drops

Q6

Anti-emetic eg ondansetron 8mg

Analgesia eg morphine 2.5mg aliquots

Q18 (7/10)

1.

Iritis	Perilimbal Inflammation, Cells and Flare in ant chamber, synechiae
Glaucoma	Raised IOP
Corneal Abrasion	Defect with fluorescein uptake on slit lamp
Dendritic Ulcer	Dendritic Ulcer on Slit Lamp
Infective Conjunctivitis	Discharge, conjunctival erythema,
Episcleritis/Scleritis	Diffuse or sectoral inflammation
Allergic conjunctivitis	cobblestone appearance to lid conjunctiva