HKCEM
JCM OSCE Questions

Tuen Mun Hospital

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7 Jan 2026

Question 1

M/30, recently travelled to Africa, with history of mosquito bite, presented with fever.

1. What are the DDx?

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Malaria

Dengue fever

Zika virus infection

Chikungunya

Yellow fever

Japanese encephalitis

2. Name the vector that transmits malaria.

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Female **Anopheles** mosquito

3. Name 1 specific diagnostic test for malaria?

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- Blood smears (thick and thin)
- Nucleic acid test (PCR)
- Antigen detection test

4. What is blackwater fever?

4. What is blackwater fever?

- An uncommon complication of malaria
- Massive haemolysis, haemoglobinuria, kidney failure

5. Name 4 features of severe infection

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- Pulmonary oedema
- Shock
- Impaired consciousness
- Prostration
- Multiple convulsions
- Significant bleeding
- Severe anaemia
- Renal impairment
- Hypoglycaemia
- Jaundice
- Acidosis
- Hyperparasitemia

6. Name 2 anti-malarial drugs.

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- Artesunate
- Quinine
- Doxycycline
- Mefloquine
- Chloroquine (if chloroquine-sensitive)

7. Can you name the malaria prophylaxis for travellers?

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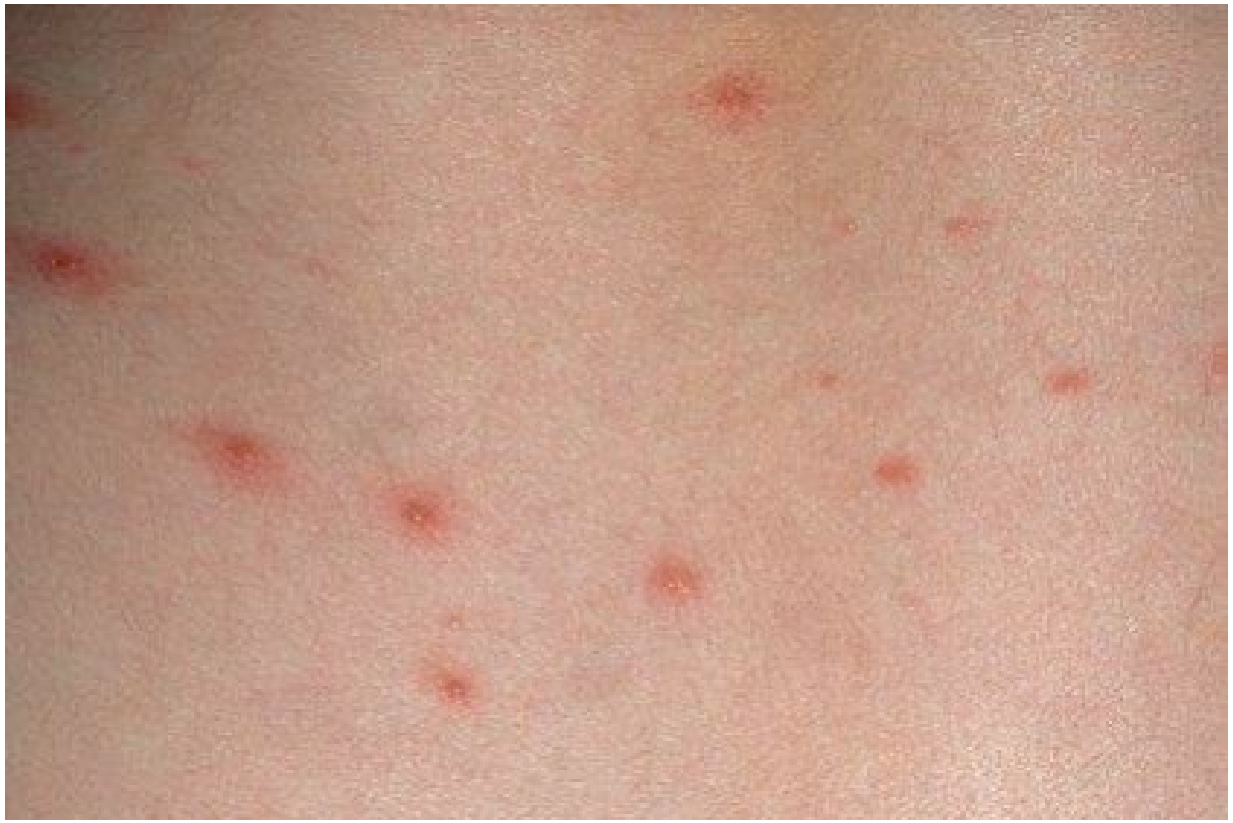
- Doxycycline
- Malarone
- Mefloquine
- Chloroquine/ hydroxychloroquine (not recommended due to resistance)

Question 2

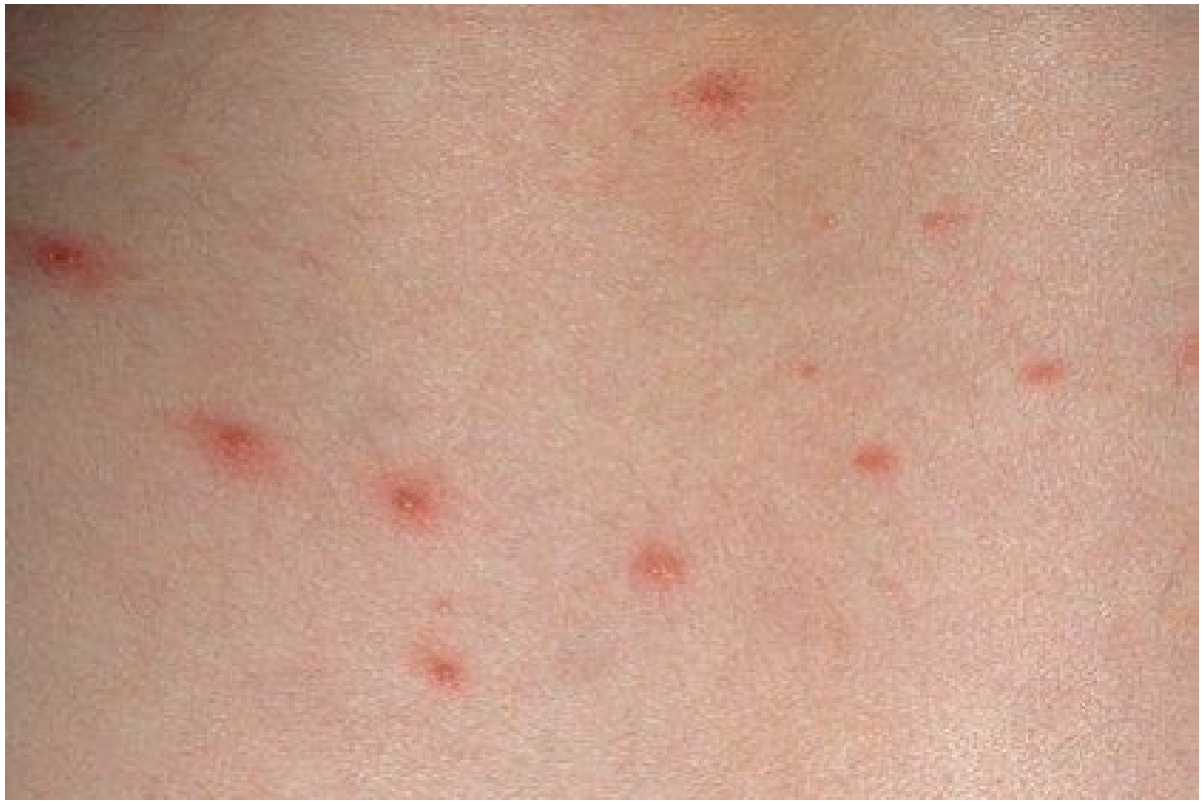
F/25

36 weeks gestation

Low grade fever and rash for 1 day



1. Describe the clinical photo and state the likely diagnosis.



1. Describe the clinical photo and state the likely diagnosis.

- Lesions in different stages of development
- including macules, papules and vesicles
- Varicella (chickenpox) infection

She had contact history with a child diagnosed with chickenpox last week. She was uncertain whether she had past chickenpox infection.

2. What are the definitions of close contact?

2. What are the definitions of close contact?

- Household contact
- Face to face contact x 5 mins
- Room sharing x 15 mins
- 2 days prior to rash, until lesions crusted

3. What are the risk factors for developing severe disease for chickenpox in pregnancy?

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- Lack of immunity
- Smokers
- Chronic lung disease
- ≥ 20 weeks of gestation
- Immunocompromised

4. What are the complications of chickenpox in pregnancy?

4. What are the complications of chickenpox in pregnancy?

- (Varicella) pneumonia
- Meningitis, encephalitis, cerebellar ataxia
- Myocarditis
- Ocular disease
- Adrenal insufficiency
- Glomerulonephritis

5. How would you manage this patient?

5. How would you manage this patient?

- Airborne precaution
- Establish diagnosis (clinical, PCR, IF, viral culture)
- Acyclovir
  - PO 800mg five times per day x 1/52 if uncomplicated
  - IV 10mg/kg Q8h if varicella pneumonia or other complications present
- Fetal assessment
- Notify CHP/ICN and perform contact tracing

6. How would the fetus be affected by VZV infection?

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- **Congenital varicella syndrome**
  - Cutaneous scars in dermatomal pattern
  - Neurological (microcephaly, hydrocephalus, seizures)
  - Ocular (optic nerve atrophy, cataracts)
  - Limb (hypoplasia, atrophy, paresis)
  - Gastrointestinal (gastroesophageal reflux, stenotic bowel)
  - Low birth rate

  > *Usually at 8-20 weeks of gestational age*
  > PCR testing of fetal blood/ amniotic fluid for VZV DNA
  ➢ Serial AN USG for detection of fetal abnormalities

- **Neonatal varicella infection**
  - Risk highest with maternal varicella in last 4 weeks of gestation

7. If the lady is brought back 2 days later for convulsion, what are the possible differential diagnosis?

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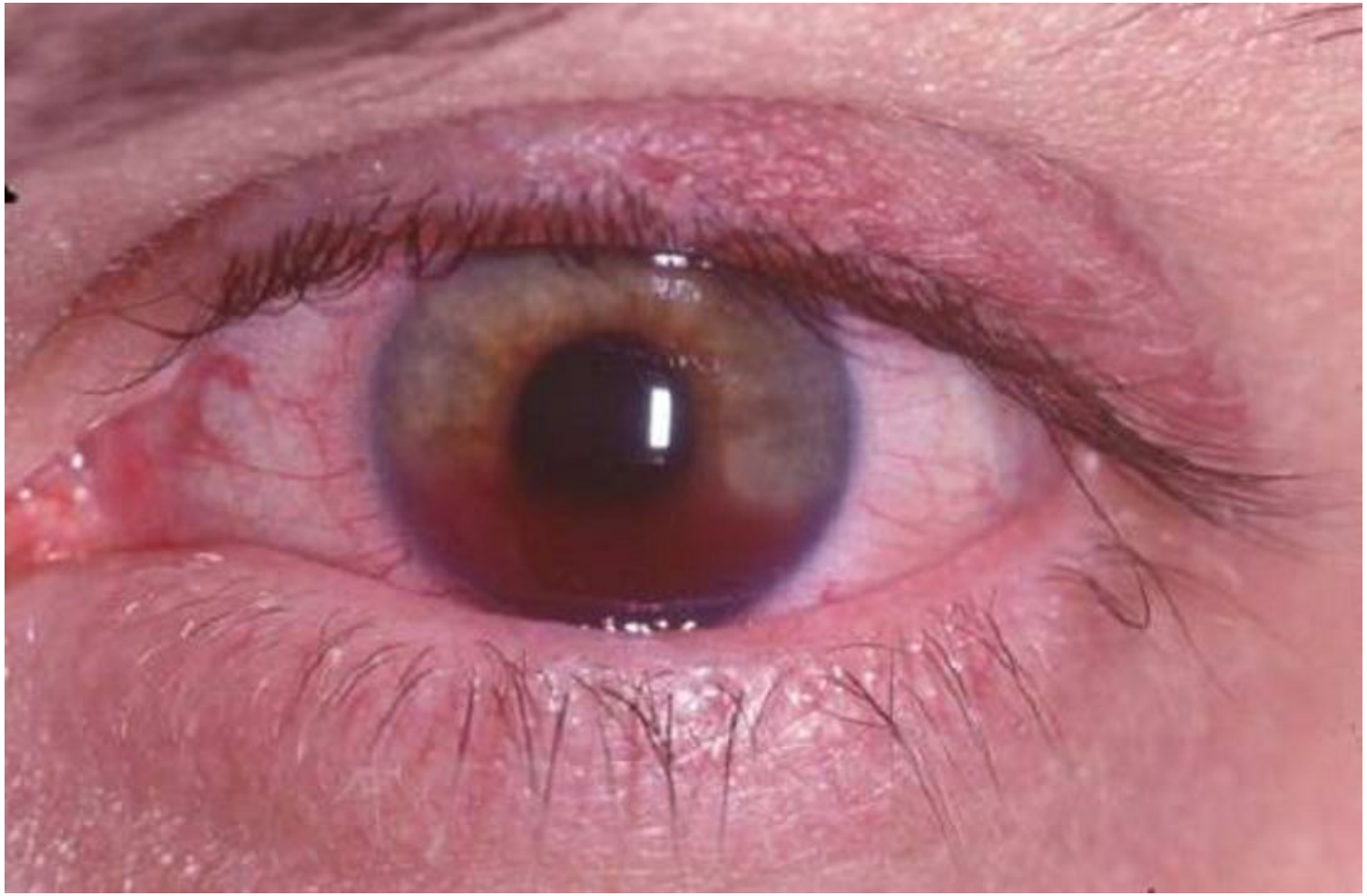
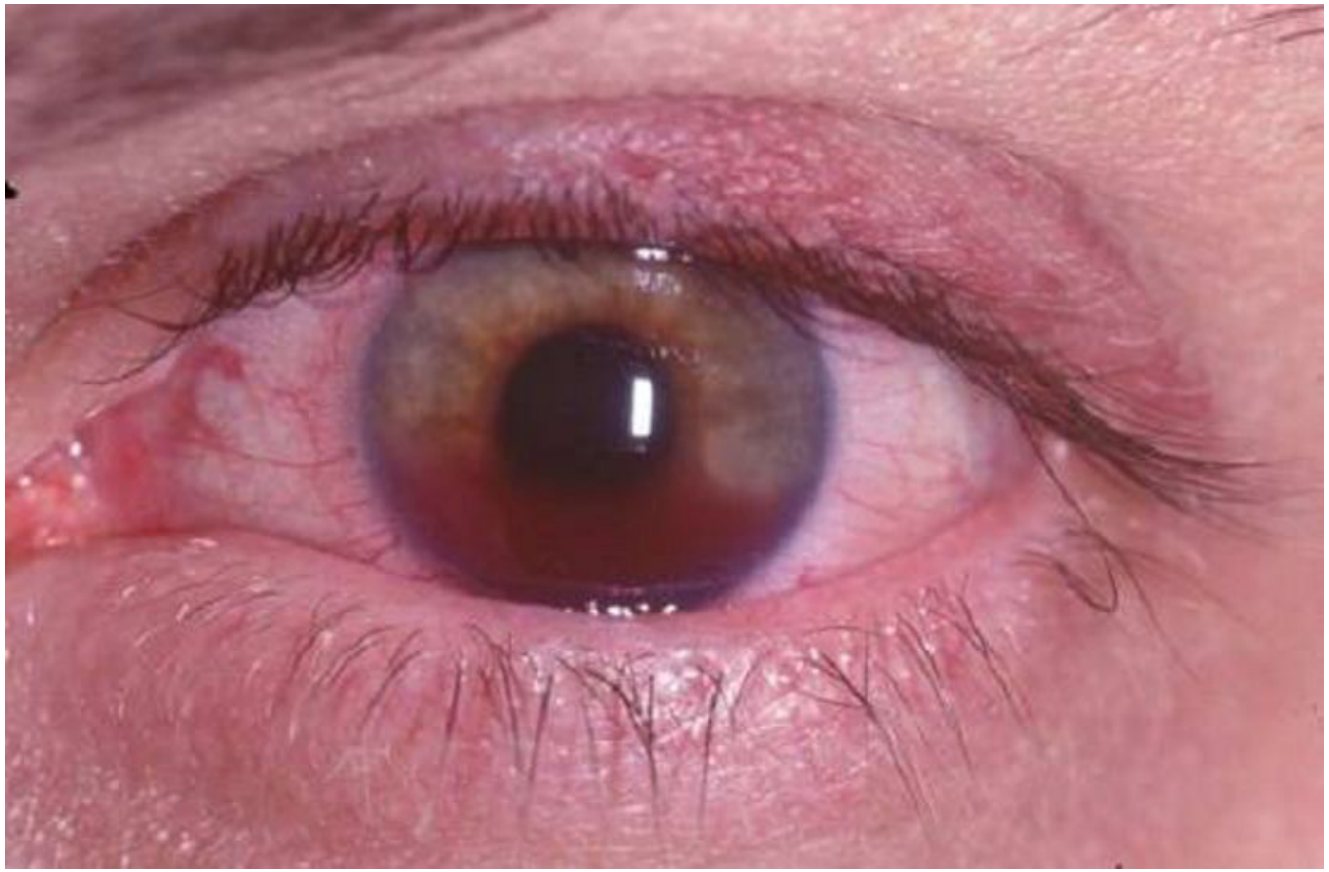
- Varicella encephalitis
- Acyclovir neurotoxicity
- Eclampsia
- ICH, epilepsy, electrolyte disturbance

Question 3

M/30, sustained a left eye injury in a rugby game, complaining of ocular pain and blurring of vision.



1. What is the diagnosis?

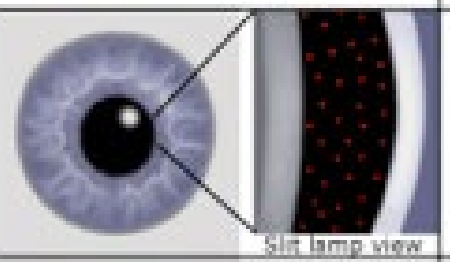
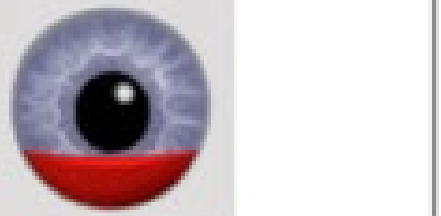


1. What is the diagnosis?

Left eye traumatic hyphema

2. What is the grading?

Grade 2

Grade	Anterior chamber filling	Diagram	Best prognosis for 20/50 vision or better
Microhyphema	Circulating red blood cells by slit lamp exam only		90 percent
I	<33 percent		90 percent
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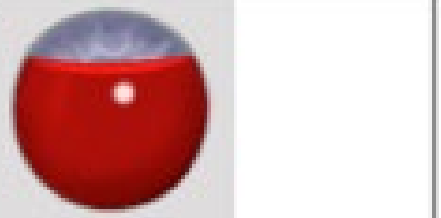
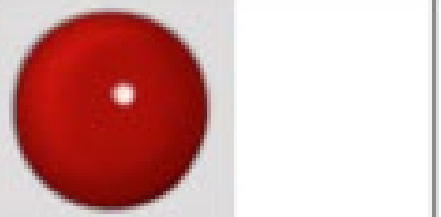
III	>50 percent		50 percent
IV	100 percent		50 percent

3. What are the management in ED?

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- Sit upright
- Protection with eye shield
- Analgesics (avoid NSAID)
- Measure and monitor IOP (after r/o globe rupture)
- Urgent eye consultation
- Cycloplegics eg atropine (reduced pain)
- Topical amniocaproic acid / systemic tranexamic acid to prevent rebleeding
- Corticosteroid (topical/ systemic)
- Acetazolamide/ mannitol if raised IOP

4. What are the potential complications?

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Acute	Rebleeding Raised IOP
Chronic	Corneal blood staining Optic atrophy Synechiae formation

5. What are the signs of globe rupture?

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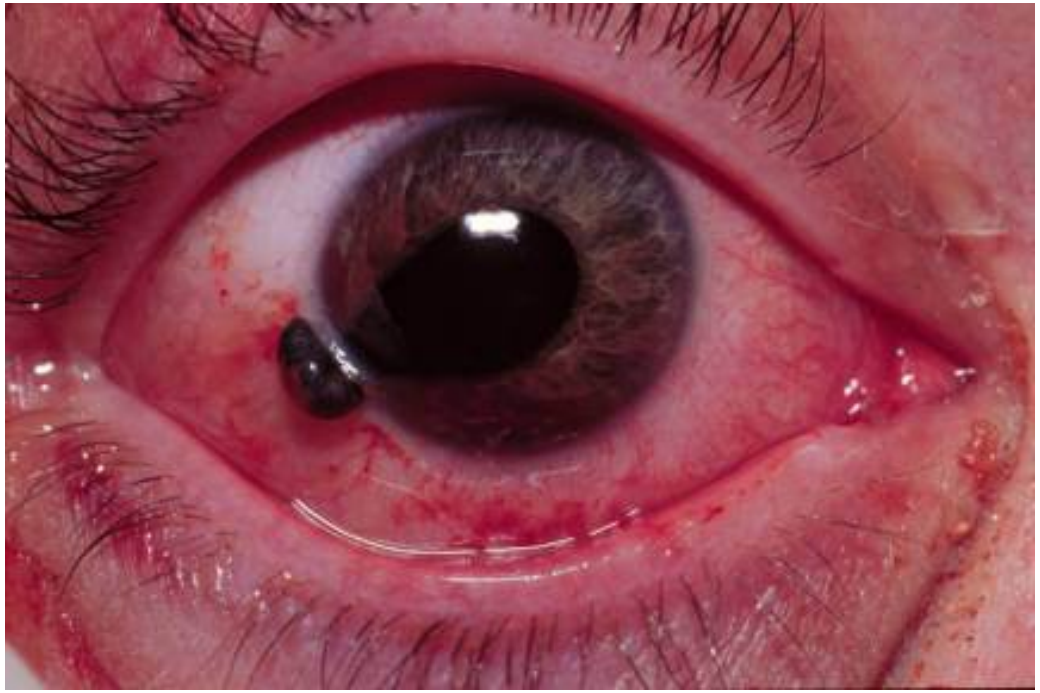
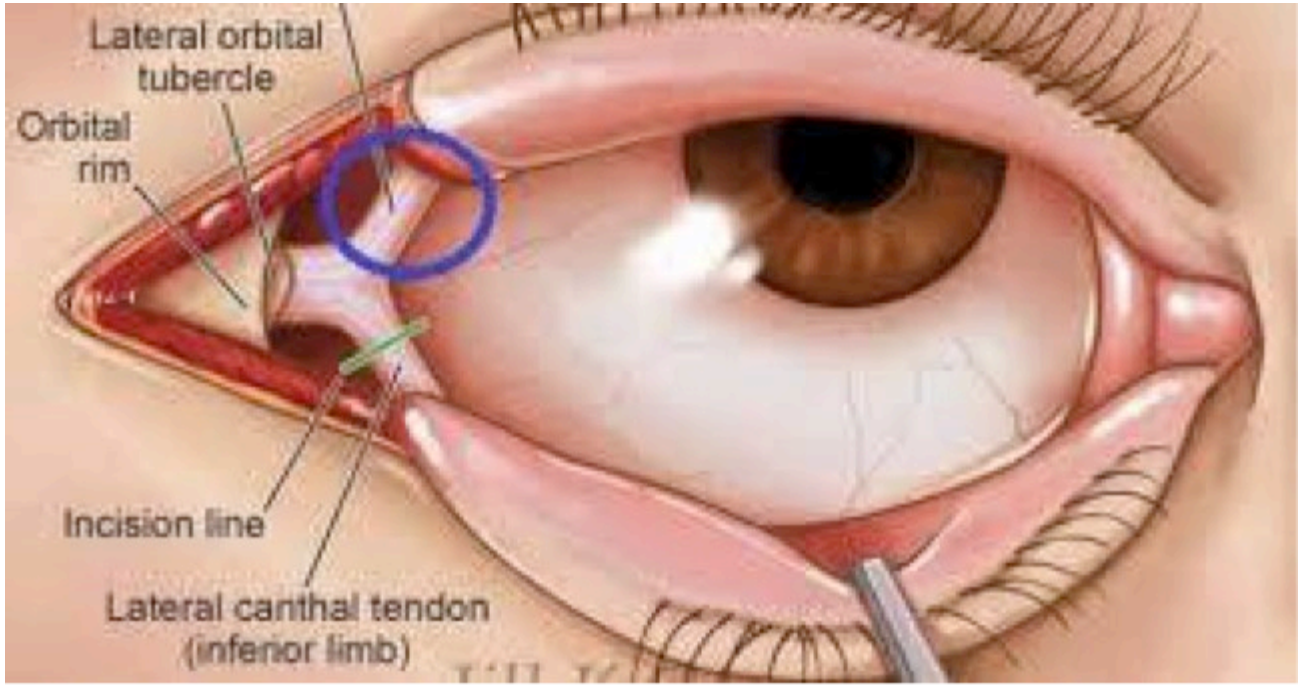
- Markedly decreased visual acuity
- Eccentric pupil
- Increased anterior chamber depth
- Low intraocular pressure
- Extrusion of vitreous
- External prolapse of the uvea or other internal ocular structures
- Tenting of the cornea or sclera at the site of globe puncture
- Seidel's sign (fluorescein streaming in a tear drop pattern away from the puncture site)



6. Patient complained of increasing pain and visual loss after few hours. PE revealed proptosis.

What worrying diagnosis do we need to consider? What is the emergency surgery required?

- Retrobulbar haematoma
- Acute orbital compartment syndrome
- Lateral canthotomy



Question 4

M/50 found collapsed at fire scene in a silk factory. Smoke inhalation was suspected.

On arrival to AED:

GCS 3/15

BP 182/110mmHg

P 130/min

RR 28/min

SpO2 98% on 100% O2 supplement

H’stix 6.7mmol/L.

1. Suggest 2 inhalation toxins that can occur in this patient.

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Cyanide

Carbon monoxide

You performed arterial blood gas and co-oximetry for him:

Parameter	Result	Reference range
pH	7.12	(7.35-7.45)
pCO2	3.3 kPa 24.8 mmHg	(4.7-6.0 kPa) (35-45 mmHg)
pO2	34 kPa 255 mmHg	(>10.6 kPa) (75-100 mmHg)
HCO3	12 mmol/L	22-28 mmol/L
SaO2	100%	> 98%
CO-Hb	20%	(<1.5 – non-smoker; <3% smoker)

2. Please comment on the blood gas result.

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pCO2	**3.3 kPa** **24.8 mmHg**
pO2	34 kPa 255 mmHg
HCO3	**12 mmol/L**
SaO2	100%
CO-Hb	20%

Winter's formula to estimate resp compensation

Expected pCO2 = **(1.5 x HCO3) + 8 ± 2** [1mmHg = 0.133 kPa]

= [(1.5 x **12**) + 8 ± 2] x 0.133

= 3.19 - 3.72 kPa (24-28 mmHg)

→ Metabolic acidosis

→ Appropriate respiratory compensation

3. Which inhalational poison is more likely accountable for the clinical picture?

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Cyanide poisoning

CO-Hb of 20% is unlikely to be accountable for the current GCS of 3/15

4. Suggest 2 laboratory tests to help guide your diagnosis?

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- High serum lactate
- Narrowed venous-arterial PO2 gradient (venous hyperoxia)

5. Is blood level of this poison useful in acute management? Why?

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- No
- Long turn-around time to be clinically useful

6. Could you name few common sources of this toxin other than smoke inhalation?

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- Electroplating
- Nitroprusside
- Cyanogenic glycosides
  - Plants of Prunus species
  - Eg apricots, bitter almond, peaches

7. Suggest 2 antidotes. Which antidote is a better choice for this patient?

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Cyanide antidote kit

- Contains amyl nitrite, sodium nitrite, sodium thiosulfate
- Induce **methemoglobinemia**
- Reduced oxygen carrying capacity

Hydroxocobalamin (preferred in fire victim)

- Directly binds cyanide to form Vit B12
- No risk of Met-Hb formation
- Produces cherry-red or raspberry urine

Question 5

M/70, presented to AED with fever and back pain.

1. List 3 differential diagnosis.

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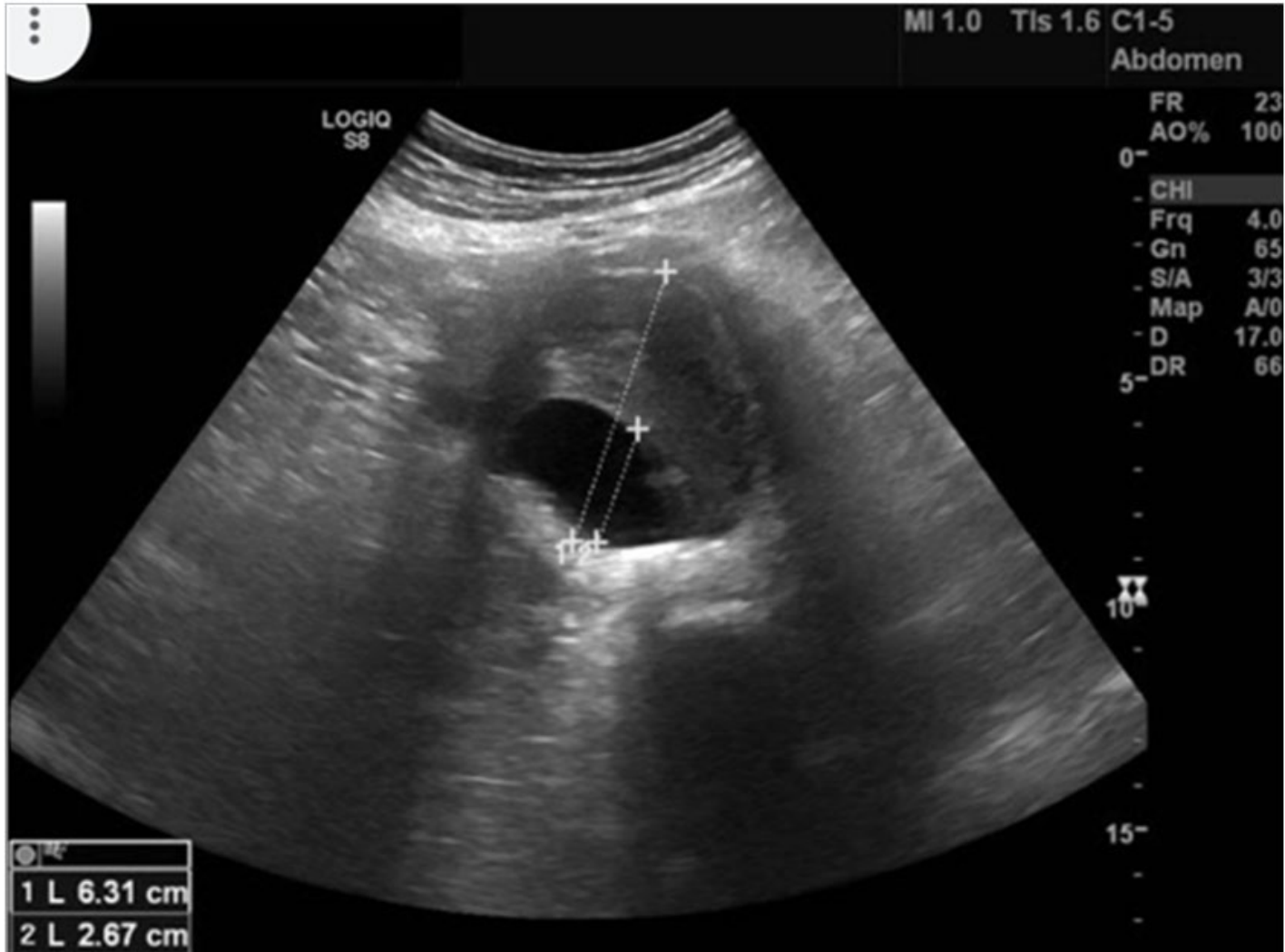
Musculoskeletal	Urological	Vascular
Psoas abscess Epidural abscess Osteomyelitis Infective spondylodiscitis Ankylosing spondylitis	Acute pyelonephritis	Mycotic aneurysm

- 2. A KUB was done for this patient, please describe the x-ray findings.

- Curvilinear mass with calcification in the left paravertebral region

3. BP 80/60, P 110, T 38C. Ultrasound was done with the following findings. What is this view and findings?

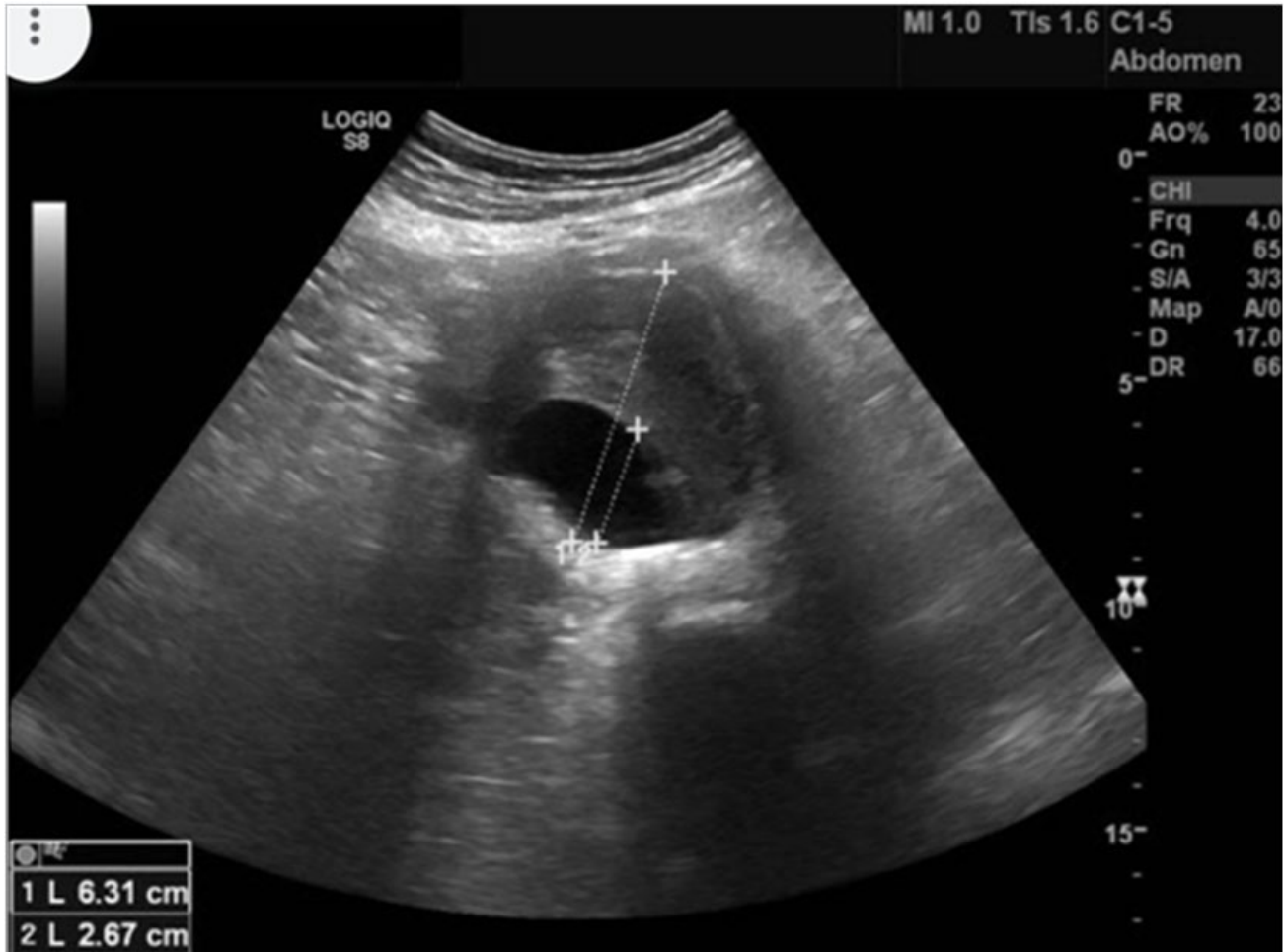


3. BP 80/60, P 110, T 38C. Ultrasound was done with the following findings. What is this view and findings?

Transverse view of abdominal aorta

Dilated abdominal aorta

Transmural thrombus



4. What is the provisional diagnosis based on the clinical picture? What are the common risk factors?

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Mycotic aneurysm

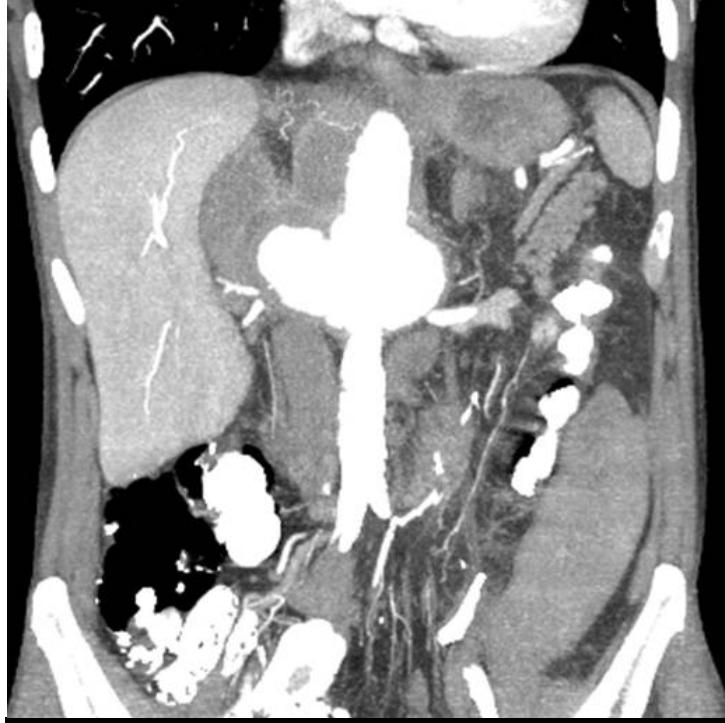
Risk factors

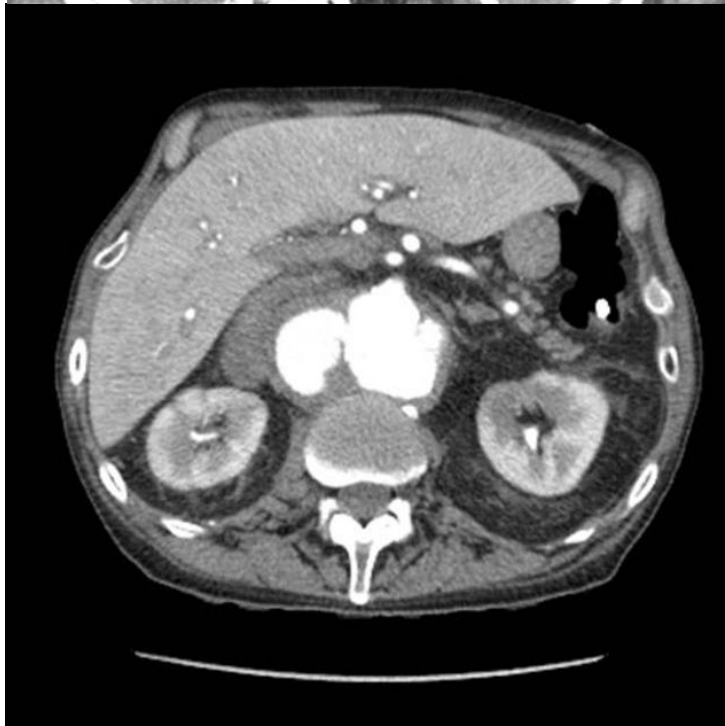
- Infective endocarditis
- IV drug addicts
- Immunosuppression
- Iatrogenic arterial trauma
- Pre-existing atherosclerotic plaque or aneurysm
- Prosthetic arterial device

5. Suggest 4 features which may be shown if CT was done for this patient.

5. Suggest 4 features which may be shown if CT was done for this patient.

- Saccular, multilobulated appearance
- Interruption of arterial wall calcification
- Adjacent soft tissue stranding
- Adjacent collection +- gas
- Adjacent reactive lymphadenopathy
- Retroperitoneal para-aortic collection + vertebral erosion
- Thrombus formation within false lumen if rupture





6. What are the most common pathogens?

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Staphylococcus aureus

Salmonella

7. What are the immediate ED treatment?

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- Fluid resuscitation
- Early intravenous antibiotics (vancomycin, ceftriaxone)
- Consult surgeon for operation (open vs endovascular)

Thank you!