

FEx Net 2022 collated SAQs:

Trauma in Special Circumstances - Questions

1. Burns
2. Burns
3. Burns
4. Burns
5. Burns
6. Burns
7. Burns
8. Electrical Trauma
9. Electrical Trauma
10. Eye Trauma
11. Eye Trauma
12. Eye Trauma
13. Eye Trauma
14. Eye Trauma
15. Eye Trauma
16. Eye Trauma
17. Injured Infant
18. Lightning Strike
19. Obese Trauma
20. Pregnancy Trauma
21. Pregnancy Trauma
22. Pregnancy Trauma
23. Retrieval

Question 1 (12 marks)

A 53 year old female had a syncopal episode and collapsed onto an electric heater. She sustained a facial burn. She is now haemodynamically stable and GCS 15.

You are in a rural ED.

A CLINICAL IMAGE IS SHOWN below

- i. List 4 issues to consider in your assessment of this patient (4 marks)

- ii. How would you describe this burn to the burns registrar on call at the tertiary hospital (2 marks)

- iii. Outline 4 issues in the management of this burn (4 marks)

- iv. List 2 possible adverse sequelae from this burn (2 marks)



Question 2 (10 Marks)

You are the duty consultant in charge of an urban ED. A 55 year old gentleman is brought to your resuscitation bay after being rescued after the gas from a barbeque exploded in his face. His estimated weight is 80 kg.



1. List 5 clinical signs and symptoms would you actively look for in this patient (2.5 marks).

2. List 5 investigations you would perform in this patient (2.5 marks).

On exposure of the patient you estimate he has sustained **10%** deep dermal burns.

3. Calculate this patient's fluid requirements in the first 8 hours. Show working. (1 mark)
4. List **8** criteria requiring transfer to a specialised burns unit (4 marks).

Question 3 (13 Marks)

A 25 year old fireman has been brought to ED after being pulled unconscious from an apartment fire. He has significant thermal burns.

On arrival his vital signs are:

GCS	12	E3 V4 M5
HR	105	/min
BP	120/60	mmHg
RR	28	/min
O2 saturation	95%	15L O2 via non-rebreather mask

1. List 5 findings on examination that would indicate an airway threatening burn.

(5 marks)

2. List 4 relevant differential diagnoses for his altered level of consciousness

(4 marks)

He has been successfully intubated.

On assessment you note that he has deep burns to the entirety of both upper limbs and his anterior trunk.

3. Calculate the % of body surface area involved in his burn injury. (1 mark)

4. Calculate this patient's fluid requirements using Parkland formula. Body weight is 100kg. (3 marks)

FORMULA

RESULT

ADMINISTRATION PRINCIPLE

5. List six (6) criteria that would indicate that this patient requires referral to a burns centre for ongoing management.

(6 Marks)

6. Complete the table by listing five (5) immediate and five (5) long term complications that may occur from this patient's burns. (10 Marks)

Immediate Complications	Long term Complications

Question 5 (12 Marks)

1. List 2 different methods for estimating burns TBSA%

(1 Marks)

2. What are the 4 different burns depths?

(2 Marks)

3. List 3 scenarios when a patient with burns requires IV fluids?

(3 Marks)

4. How are initial fluid requirements calculated in burns, describe the details?

(1 Marks)

5. List 5 patient scenarios that would require referral to a burns centre:

(5 Marks)

Question 6 (Total 18 marks)

You are working in the retrieval service when you receive a call for advice from a junior medical officer who is working in a small rural hospital 300km from the tertiary centre.

They have a 34-year-old male patient who has sustained burns to his chest and arms whilst lighting a fire on his farm.

1. List 2 different methods that could be used to estimate the TBSA% of this patient's burns. (2 Marks)

2. What key features of this patient's assessment would suggest the presence of airway burns. (4 Marks)

3. What features in patient presentation and assessment would indicate IV Fluids should be given? (3 Marks)

4. If fluids are required, outline your advice about how to calculate the initial fluid requirements for this patient. (2 Marks)

5. List 6 criteria that would indicate that this patient requires referral to a burns centre for ongoing management. (3 Marks)

6. Complete the table by listing 4 early (<72hrs) and 4 long term (>72hrs) complications that may occur from this patient's burns.

(4 marks)

Immediate Complications	Long term Complications

Question 7 (17 marks)

A 50 year old homeless alcoholic man has received 40% full thickness burns to his torso and upper limbs after a fire in his bedding.

He appears intoxicated currently and is struggling to breathe. There is a suggestion the fire may have been deliberately lit.

His vital signs are:

HR	110	Sats	93% on 15L Oxygen BP
RR	38		100/55
Temp	36.5		

Questions:

1. List 7 potential complications of this burn and describe the key management option for each. (14 marks)

Complication 1: -----

Management option:-----

Complication 2: -----

Management option:-----

Complication 3: -----

Management option:-----

Complication 4: -----

Management option:-----

Complication 5: -----

Management option:-----

Complication 6: -----

Management option:-----

Complication 7: -----

Management option:-----

2. You are preparing to do an escharotomy of the torso when your resident asks whether the patient needs to consent to the procedure.

List the principles of consent that apply in this situation. (3 marks)

Question 8 (15 marks)

A 27 year old man climbed over an electricity sub-station fence and sustained an electrical injury while grabbing a metal pole with his right hand. He arrives 30 minutes later complaining of tingling in his right arm and a numb left foot.

A CLINICAL PHOTOGRAPH IS SHOWN BELOW

- i. Describe the wound seen on the foot (1 mark)



- ii. Complete the table outlining factors that determine the severity of an electrical injury (8 marks)

Category	Explanation
Voltage	
Current	
Resistance	
Type of current	

- iii. For each of the three categories below, what specific injuries or problems may occur in the patient described in the stem? For each, describe the patho-physiological process (6 marks)

	Injury	Pathophysiology
Cardiac		
Nervous system		
Limb/soft tissue		

Question 9 (12 Marks)

A 36-year-old male electrician is brought into your ED post electrocution from exposure to a 11,000-volt power line. He was thrown against a metal panel 8 metres away and noted to have no signs of life on scene.

Bystander CPR and ambulance resuscitation managed to gain ROSC after a down time of approximately 20 minutes.

His initial cardiac rhythm on scene was ventricular fibrillation.

On arrival to your ED this patient is intubated and ventilated with the following vital signs:

Heart rate 84bpm
Blood Pressure 145/90
Resp Rate 15 breath per min,
O2 Sats hand ventilated 98% on 15L
 via BVM

Questions:

- 1. Name four factors related to the nature of electrical exposure that can influence the severity of an electrical injury.**

(4 Marks)

Factor Influencing Injury Severity

2. List four types of injuries that can be sustained in this patient and provide an example of each type.
(4 Marks)

Injury Type	Example

3. List 4 indications for the use of telemetry in the Emergency Department for a patient with a suspected electrical injury, without cardiac arrest.

(4 Marks)

Question 10 (16 marks)

A 68 year old male sustains blunt trauma to his right eye from a golf ball.

- i. Describe three abnormalities in the image (3 marks)

A CLINICAL IMAGE IS SHOWN BELOW

- ii. List 5 features on assessment that would suggest orbital compartment syndrome (5 marks)



iii. Describe the steps involved in a lateral canthotomy/cantholysis (8 marks)

Question 11 (10 Marks)

A 45 year old Male is hit in the eye with a tennis ball while having a friendly match with his neighbour



1. Describe the abnormalities in the photo (1 mark).

2. List 3 things that should be examined or assessed (3 marks).

3. What grade is this hyphema? (1 mark).

4. List **4** complications of this condition (4 marks).

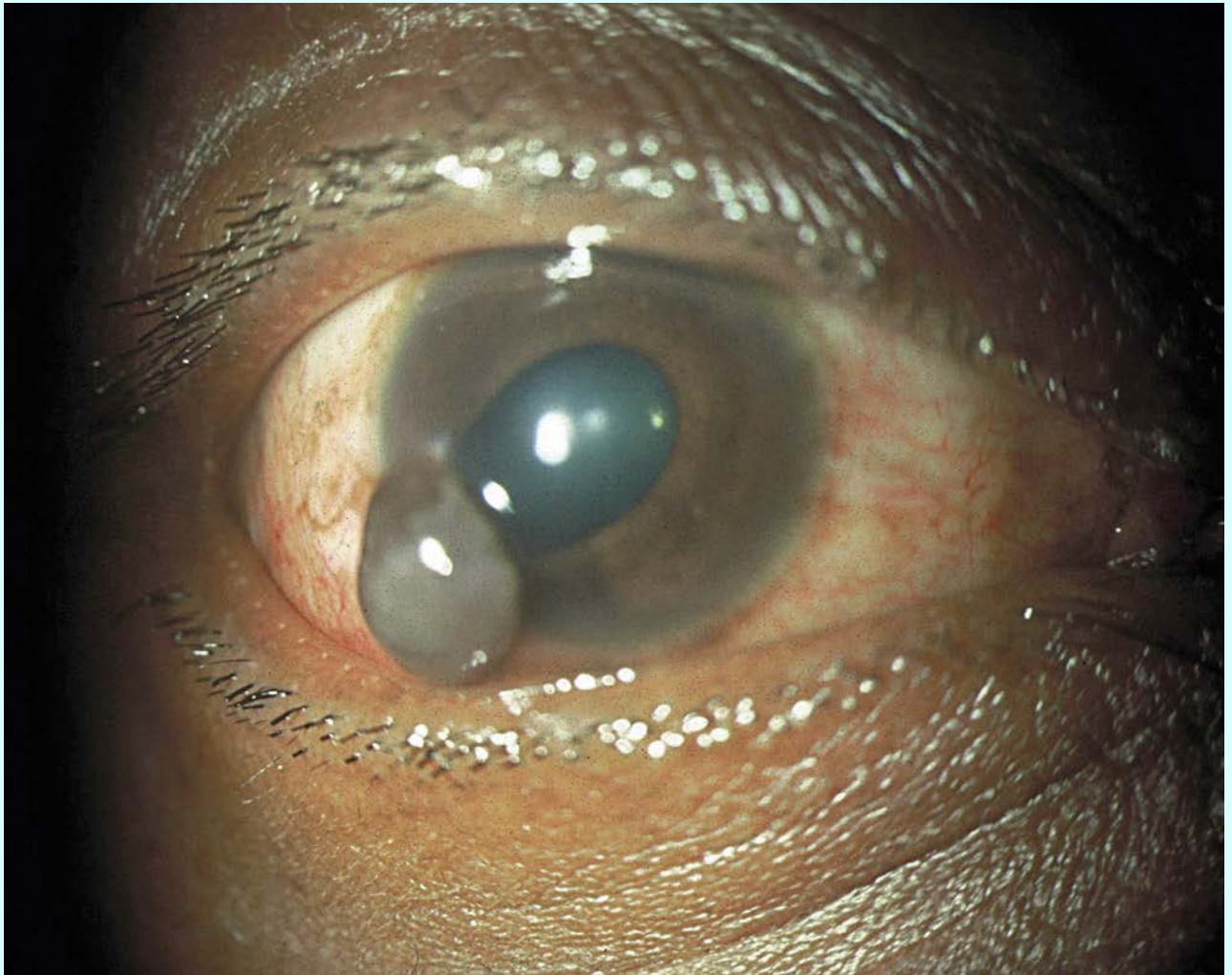
Three days after being discharged home with outpatient ophthalmology review, he re-presents with throbbing eye pain, tearing and photophobia.

5. What is the most likely diagnosis? (1 mark).

3. State 5 steps in your management of this patient. (5 marks)

A 45 year old man has presented to the ED with right eye pain after an injury at work where he was hammering metal.

A clinical photograph of his right eye is provided **BELOW**.



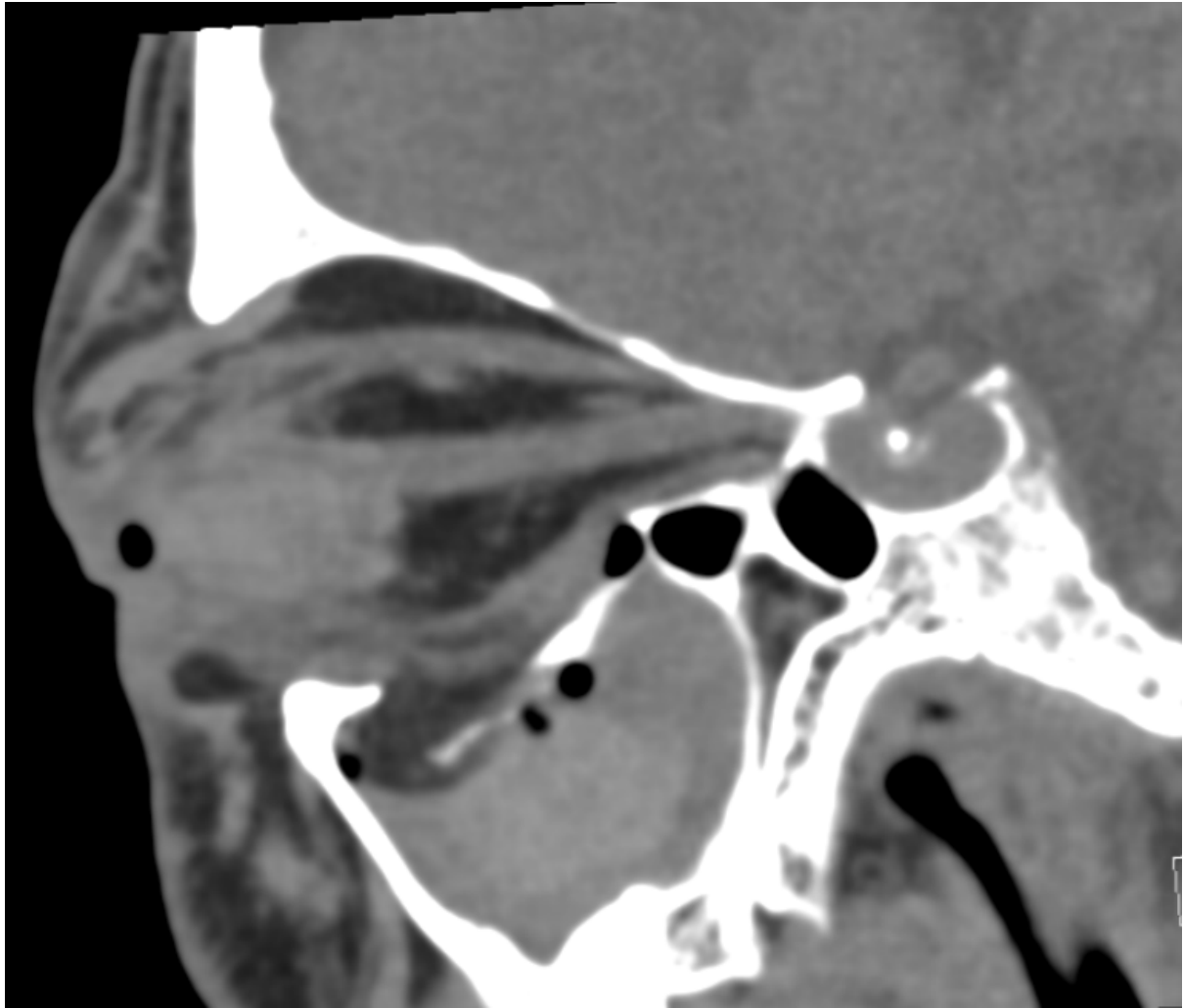
Question 13 (12 Marks)

A 60yr old man presents to your non-tertiary emergency department stating he 'walked into something' 30 minutes ago sustaining a left eye injury. He refuses to answer further questions as to the exact mechanism. He undergoes an urgent CT scan of his head and face.

His CT is found below

1. List THREE abnormalities on his CT scan (3 marks)
2. List FOUR examination findings you would look for on your assessment (4 marks)

3. State your ongoing management for this man (5 marks)



Question 14 (20 Marks)

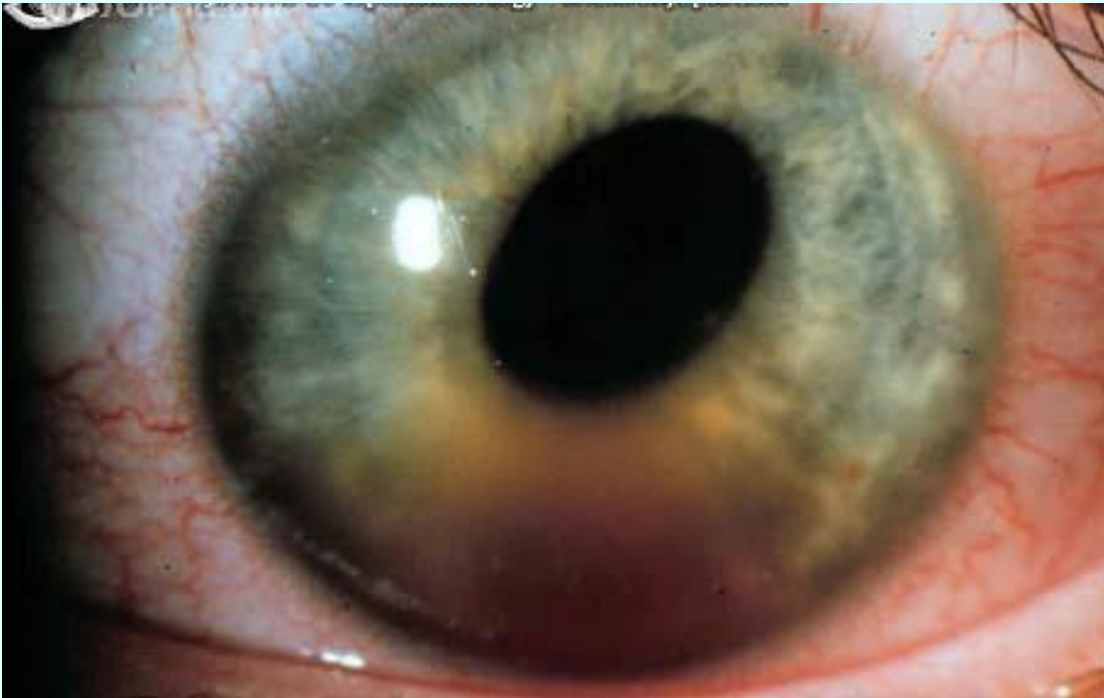
A 28 year old male presents after being struck in the right eye with a cricket ball. Trauma screening reveals no other injuries. He has the following symptoms in the right eye:

Decreased vision

Pain

Floaters

A photograph of his eye is reproduced:



Questions:

1. Describe the key findings on the photograph. (3 marks)

2. What associated injuries need to be considered?

Complete the table below, indicating 2 key clinical features for each associated injury. (12 marks)

Associated injury	2 Clinical Features
1.	
2.	
3.	
4.	

3. List your management steps for the above injury. (5 marks)

Question 15 (15 Marks)

A 24 year old male presents to ED after being hit in the face by a football. He is complaining of pain and blurred vision in his left eye.

His eye photo is attached:



Questions:

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

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

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

Early Complications	Late Complications

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

Question 16 (12 Marks)

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)

2. List 2 relevant negative findings

(2 mark)

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

(2 marks)

--

4. State 5 immediate management steps.

(5 marks)

Question 17 (15 marks)

Whilst you are at triage, a 3 month infant is brought to ED by his father. His father states that the infant has been sleepy all day and is not interested in feeds. He also reports the baby has also had a recent cough and a fever.

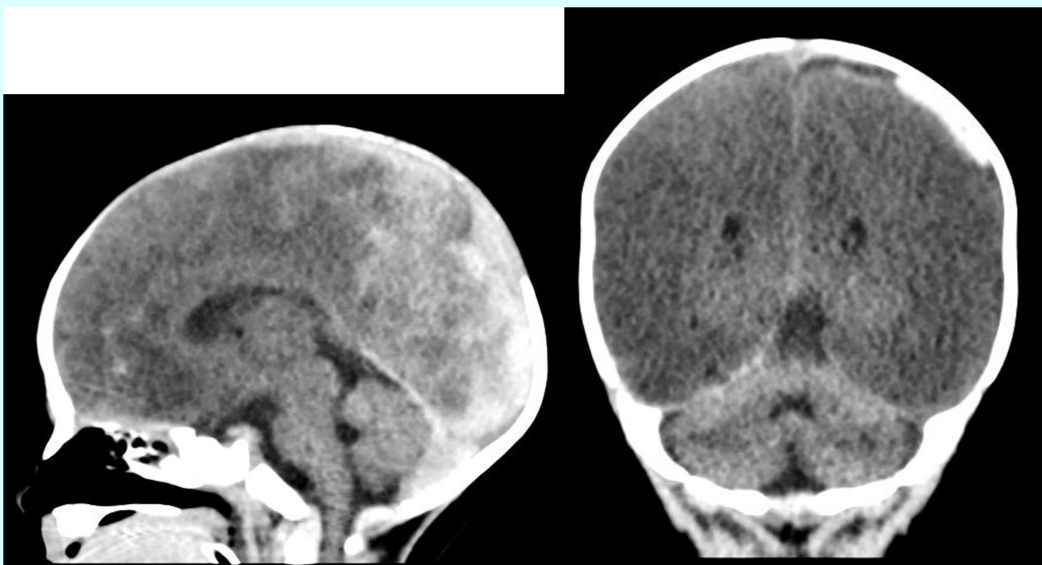
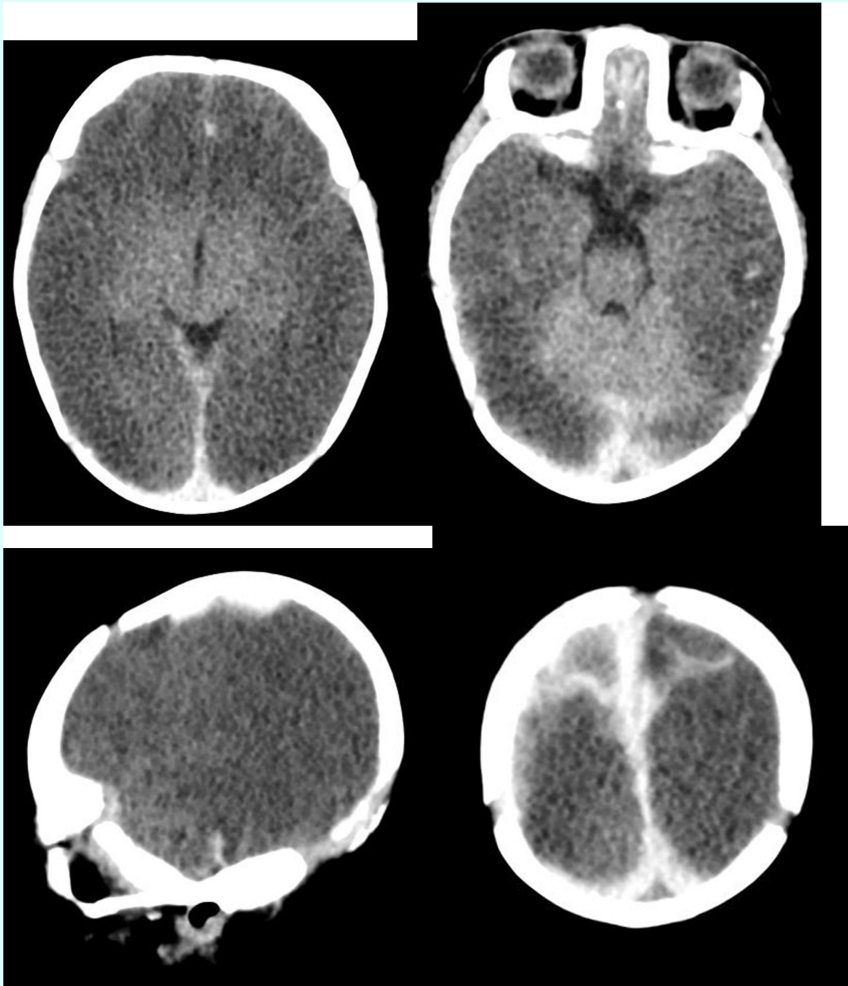
The following observations are recorded

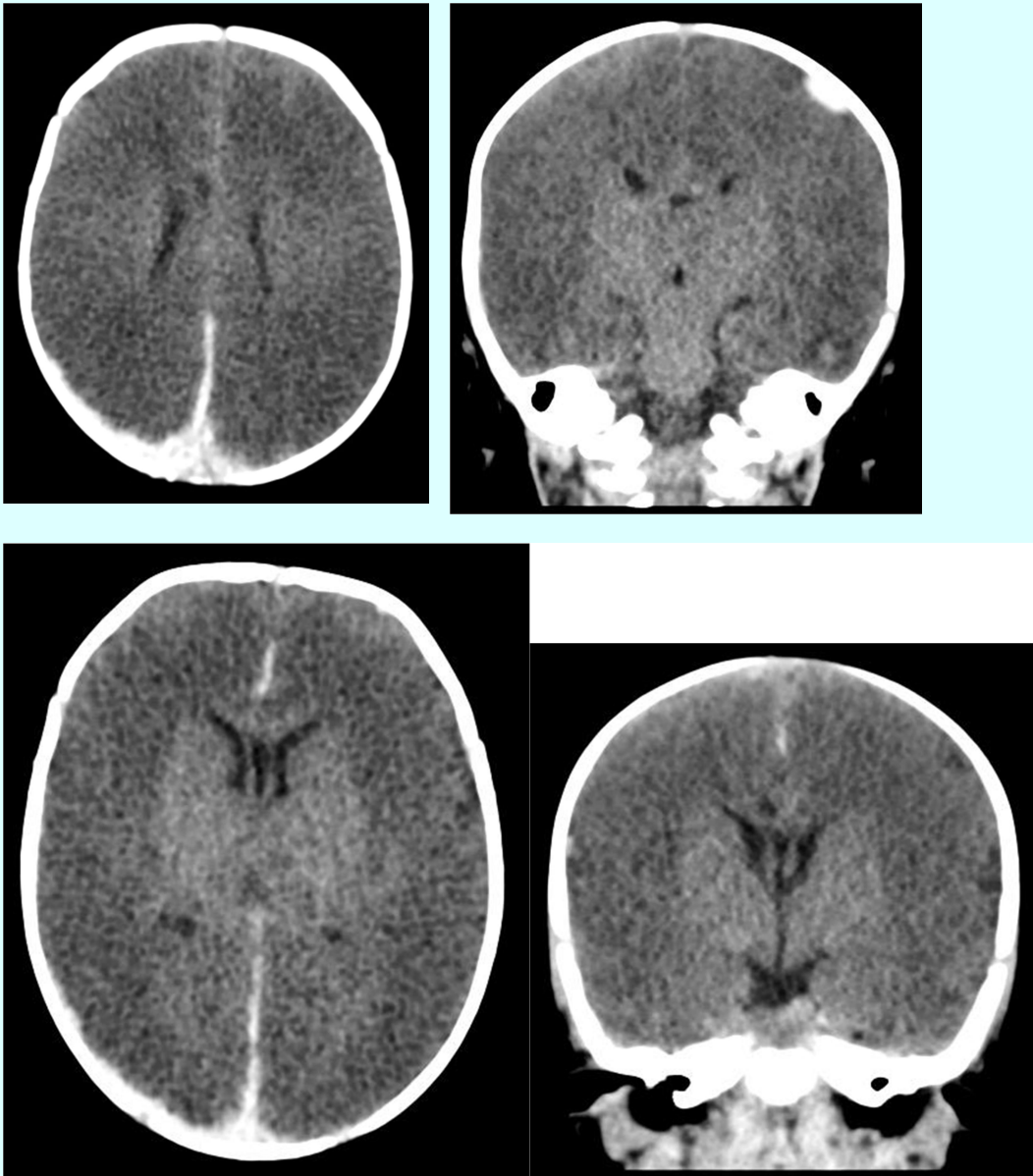
RR 14 /min and poor respiratory effort
SpO2 84%on room air
HR 50bpm
BP 95/50mmHg
Temp 34.8°C

The infant appears pale, quiet, and is unresponsive. Faint bruising is noted on the cheeks.

a. Describe your IMMEDIATE management of this infant (6 marks)

- b. An urgent CT of his brain is performed (**see prop booklet**). Describe the relevant findings on the selected images provided (4 marks)
- c. List two (2) other services that need to be informed because of these findings (2 marks)
- d. The patient's mother arrives in the department, visibly distraught. Outline your approach to explaining your findings to her (3 marks)





Question 18 (10 Marks)

A 55 year old man is brought to ED by ambulance after being found collapsed on a golf course. He received bystander CPR for 5-10 minutes at the scene. On arrival to ED, he is haemodynamically stable, spontaneously ventilating and alert but slightly confused.

Vital signs:

HR 120/min

BP 190/100mmHg

GCS 14

E4, V4, M6

RR 26/min

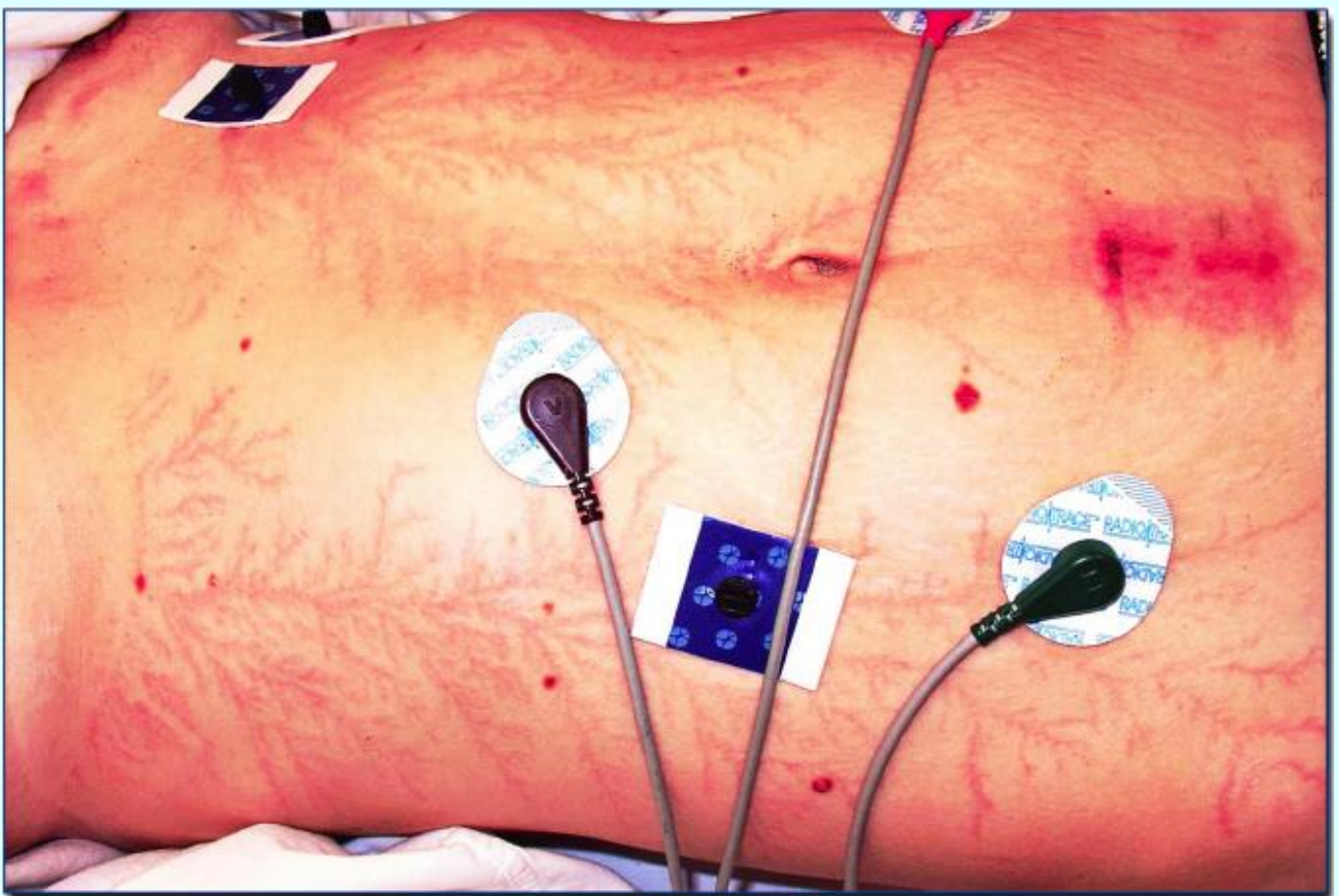


Figure 1: Image reproduced from Dunn's Emergency Medicine Manual (6th edition)

1. What is the most likely diagnosis? List **2** features from the photograph that support this diagnosis (2 marks).

Diagnosis:

Clinical Features:

2. List **4** immediate complications that you would assess for (4 marks).
3. List **1** important delayed complication requiring specialty follow-up (1 mark).
4. List and justify **3** investigations for this patient (3 marks).

	Investigation	Justification
1.		
2.		
3.		

- iii. Non-invasive BP measurement is difficult in the obese. Provide a detailed description of the recommended BP cuff bladder width, length and position (3 marks)

Question 20 (18 Marks)

You are in charge at the emergency department of a tertiary centre when the ambulance service notifies you of the imminent arrival of a 28yr old female who is 30 weeks pregnant who has been involved in a motor vehicle collision.

You are informed that her vital signs are:

GCS 15 (E4,V5,M6)

HR BP 120 100/80

O2 sats 95% RA

RR 24

Temp 37. 0

BSL 5.6

You prepare for her arrival with your trauma team.

1. Complete the table, listing 3 changes to her cardiovascular and 3 changes to her respiratory system in pregnancy and their implication that make interpretation of her vital signs or management challenging (6 marks)

Cardiovascular	Change in pregnancy	Implication
Respiratory	Change in pregnancy	Implication

2. List the relevant specific maternal obstetric history to obtain: (4 marks)

On your primary survey you confirm her vital signs are

HR 120
 BP 100/80
 RR 24
 O2 sats 95%
 Afebrile
 GCS 15.

She has equal breath sounds, no evidence of a chest injury and her airway is patent with no cervical tenderness. She is warm and well perfused with dual heart sounds. She has a seatbelt mark across her abdomen with tenderness in the left upper quadrant.

3. List 3 diagnostic imaging options of her abdomen and their justification for use: (3 marks)

Imaging modality	Justification

4. She is known to be Rh negative. What is the role for a Kleihauer test? (1 mark)
5. List 4 clinical examination findings you expect if placental abruption occurs: (4 marks)

Question 21 (12 marks)

A woman in late pregnancy is brought to you following a high speed MVA.

- i. List three changes in respiratory physiology that occur with pregnancy [3 marks]

- ii. Complete the table regarding cardiotocographic (CTG) monitoring in trauma (4 marks)

Purpose of CTG monitoring	
Gestation (weeks) from which CTG monitoring is useful	
Recommended duration of CTG monitoring in	
Three CTG findings suggesting foetal distress	

- iii. Describe the process of peri-mortem caesarean section [5 marks]

Question 22 (12 Marks)

A 32 year old female self presents to your emergency department following a fall down 6 stairs at work.

She is 28/40 G1P0.

She has no complaints of pain but wants to be 'checked out'.

- I. What are four of the major cardiovascular physiological changes in pregnancy that may impact on the clinical assessment of this patient?

(4 Marks)

- II. On assessment, her primary and secondary survey is normal. List one (1) specific examination and three (3) investigations related to the pregnancy that need to be performed for this patient?

(4 Marks)

Examination:
Investigations:

III. What four criteria need to be met for safe discharge of this patient?

(4 Marks)

Question 23 (19 marks)

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You are a Flight Medical Officer with a state helicopter retrievals service and are tasked as a primary response to a road traffic crash approximately 270km north west of the regional trauma centre. On arrival less than half an hour later, there are two patients, both trapped by the legs inside the vehicle. Fire and rescue and ambulance are both already in attendance.

Patient	Demographic	Pulse	Cap Refill	Resp. rate	GCS	Estimated Extrication Time	Comments
1	Male, twenties	119	5	34	12	15 min	Cyanosed
2	Female, twenties	98	2	46	14	5 min	Screaming incessantly with eyes closed.

Questions:

1. Based on the above information, which patient would you request be extricated first and why?

(3 marks)

2. Based on the above information, list 4 injuries that you are concerned that Patient 2 may have sustained, stating the reason for your concern.

(4 marks)

3. Based on the above information, list 6 potential injuries that Patient 1 may have sustained. For each, state how the injury would need to be specifically addressed before helicopter transportation to the trauma centre.

(12 marks)

Potential Injuries	Management of Injury prior to transport