

FExNet 2022 Collated SAQs - Trauma Chest, Abdo, Pelvis

Questions

- | | |
|----------------------|-----------------------------|
| 1. <u>Abdo</u> | 20. <u>Pelvis</u> |
| 2. <u>Car vs Ped</u> | 21. <u>Pelvis</u> |
| 3. <u>Chest</u> | 22. <u>Pelvis</u> |
| 4. <u>Chest</u> | 23. <u>Pelvis</u> |
| 5. <u>Fall</u> | 24. <u>Penetrating Abdo</u> |
| 6. <u>MVA</u> | 25. <u>Polytrauma</u> |
| 7. <u>MVA</u> | 26. <u>Quadbike</u> |
| 8. <u>MVA</u> | 27. <u>Shotgun</u> |
| 9. <u>MVA</u> | 28. <u>Stabbing</u> |
| 10. <u>MVA</u> | 29. <u>Stabbing</u> |
| 11. <u>MVA</u> | 30. <u>Stabbing</u> |
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| 13. <u>MVA</u> | 32. <u>Stabbing</u> |
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| 15. <u>MVA</u> | 34. <u>Stabbing</u> |
| 16. <u>MVA</u> | 35. <u>Stabbing</u> |
| 17. <u>MVA</u> | 36. <u>Trauma imaging</u> |
| 18. <u>MVA</u> | |
| 19. <u>Pelvis</u> | |

Question 1 (18 Marks)

A 23 year old male presents to an urban district hospital in a private car after falling from a 1st floor balcony. He was at a party and admits to drinking heavily. He is complaining of isolated abdominal pain and had a positive FAST scan. He has some abdominal wall abrasions and superficial lacerations.

P 130
BP 80/60
Sats 91% on room air
RR 26
Temp 35.1

GCS 15
BSL 5.6

A CT abdomen is obtained and 2 key images are provided. **(see below)**



- i. List the four (4) **MOST** abnormal findings seen on the CT images. (2 marks)

1. _____

2. _____

3. _____

4. _____

The patient has had a whole body CT (pan Scan) and there are no additional injuries detected. There is a 1 hour delay till the patient can receive definitive management of their injury.

- ii. List five (5) clinical goals you are aiming for pending definitive care and the management you will institute to achieve these (10 marks)

	Clinical goal	Management Provided
1		
2		
3		
4		
5		
All questions taken from existing FOAMED resources		

- iii. List three (3) options that could be considered for ongoing definitive management of this type of injury, with brief rationale for each. (6 marks)

	Definitive Management	Rationale
1		
2		
3		

Question 2 (13 Marks)

A 58 year old man riding a pushbike was hit by a car at high speed and is brought into your emergency department.

Upon arrival he undergoes a rapid primary and secondary survey, which shows a tender abdomen and significant lower back pain.

His vital signs are:

GCS 14/15
SBP 75mmHg
HR 80 / min
RR 25
O2 Sat 88% on 15L via NRBM

He has a negative eFAST scan.

The patient has no significant background medical history, is not on any regular medications and has no known allergies.

Below is a single slice CT scan of this patient. **(See props booklet)**



- 1. Name the significant finding on this CT image and any relevant associated features. (4 marks)**

- 2. List (4) clinical features you would expect to find in neurogenic shock. (4 marks)**

- 3. List your management priorities for neurogenic shock (5 marks)**

Question 3

A 6 year old boy is brought in by ambulance with a penetrating chest wound after an incident with a knitting needle and loom bands (small rubber bands) while playing with his little brother.

A clinical photograph is supplied



1. Write three (3) statements that describe the injury in this photo.

2. List six (6) possible complications that may be associated with this presentation

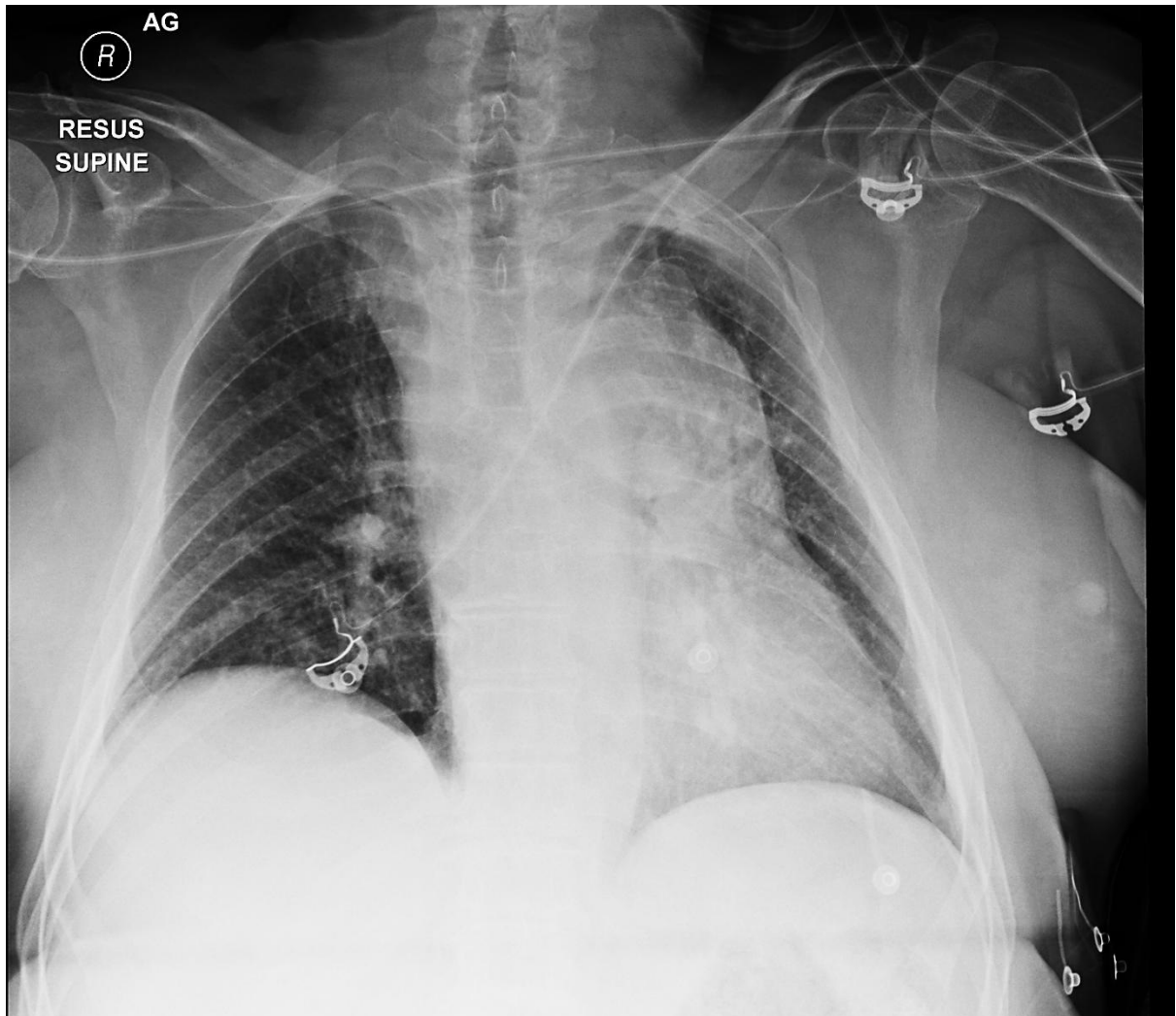
The patient's chest pain worsens. Vital signs are:

RR	40	/min
PR	160	bpm
BP	60	systolic mmHg
SaO2	98%	on room air

3. Describe your three (3) most important management priorities

Question 4

A 67 year old woman has been brought to the ED after falling from a second storey roof. An initial chest Xray has been taken.



1. Give the main pathology depicted on the chest x-ray. Include 4 radiographical supporting features. (5 marks)

Main pathology _____

Radiographical supporting features

The patient's vital signs are:

GCS	15	
Pulse	60	/min
BP RR	70/40	mmHg
O2 sats	16	/min
	99%	2L O2 via nasal prongs

Xray of the pelvis is normal.

FAST scan is normal.

Examination reveals no long bone fractures and no open wounds.

The patient cannot move her legs.

The patient is awaiting CT scanning to further delineate her injuries.

2. What is the likely cause of this patient's hypotension? (1 mark)

3. Give 2 other differential diagnoses for her hypotension of traumatic aetiology. (2 marks)

There are no significant areas of haemorrhage on CT scan.

4. Give your management steps for her hypotension, including doses and end-points where appropriate. (3 marks)

Question 5

A 26 year old man has been brought to the ED after falling from a horse.

A CT scan has been performed. One image is provided below:



1. List 3 radiological features of the major injury demonstrated on this image. (3 marks)

1) _____

2) _____

3) _____

2. List 3 options for management of this injury. For each option, state the indication for its use. (6 marks)

Management option	Indication

3. List 4 complications of this injury. (4 marks)

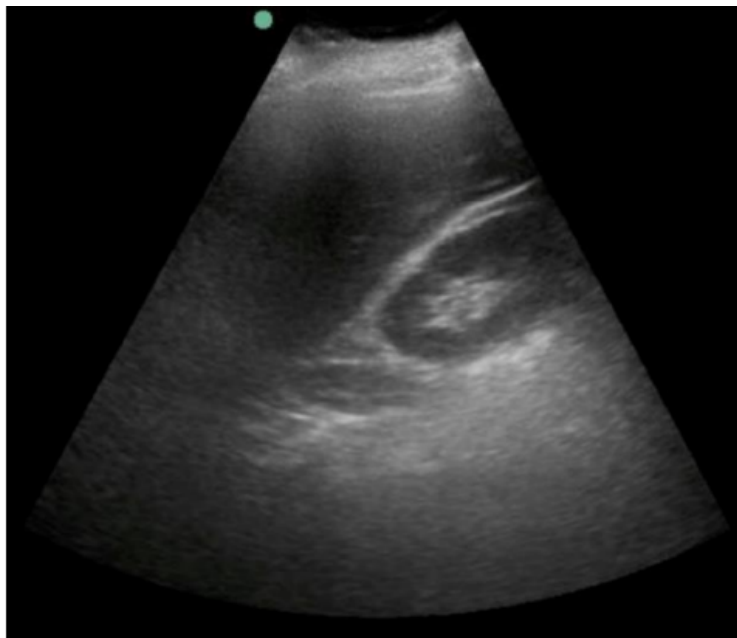
Question 6 (17 marks)

A 23 year-old female is brought to your ED following a high speed motor vehicle accident. She has normal vital signs but has tenderness in her right upper abdomen with no peritoneal signs. Secondary survey reveals no other injuries.

- i. Outline the role of the abdominal FAST scan in haemodynamically *stable* blunt trauma patients (3 marks)

An abdominal FAST scan is performed in this patient

AN IMAGE FROM THE FAST SCAN IS SHOWN BELOW



- ii. Describe the findings in the right upper quadrant on this FAST scan image (2 marks)

- iii. What are the pitfalls and limitations of FAST ultrasound scanning in trauma (4 marks)

- iv. Discuss the advantages and disadvantages of whole body CT scanning (“pan scan”) versus selective imaging in trauma (4 marks)

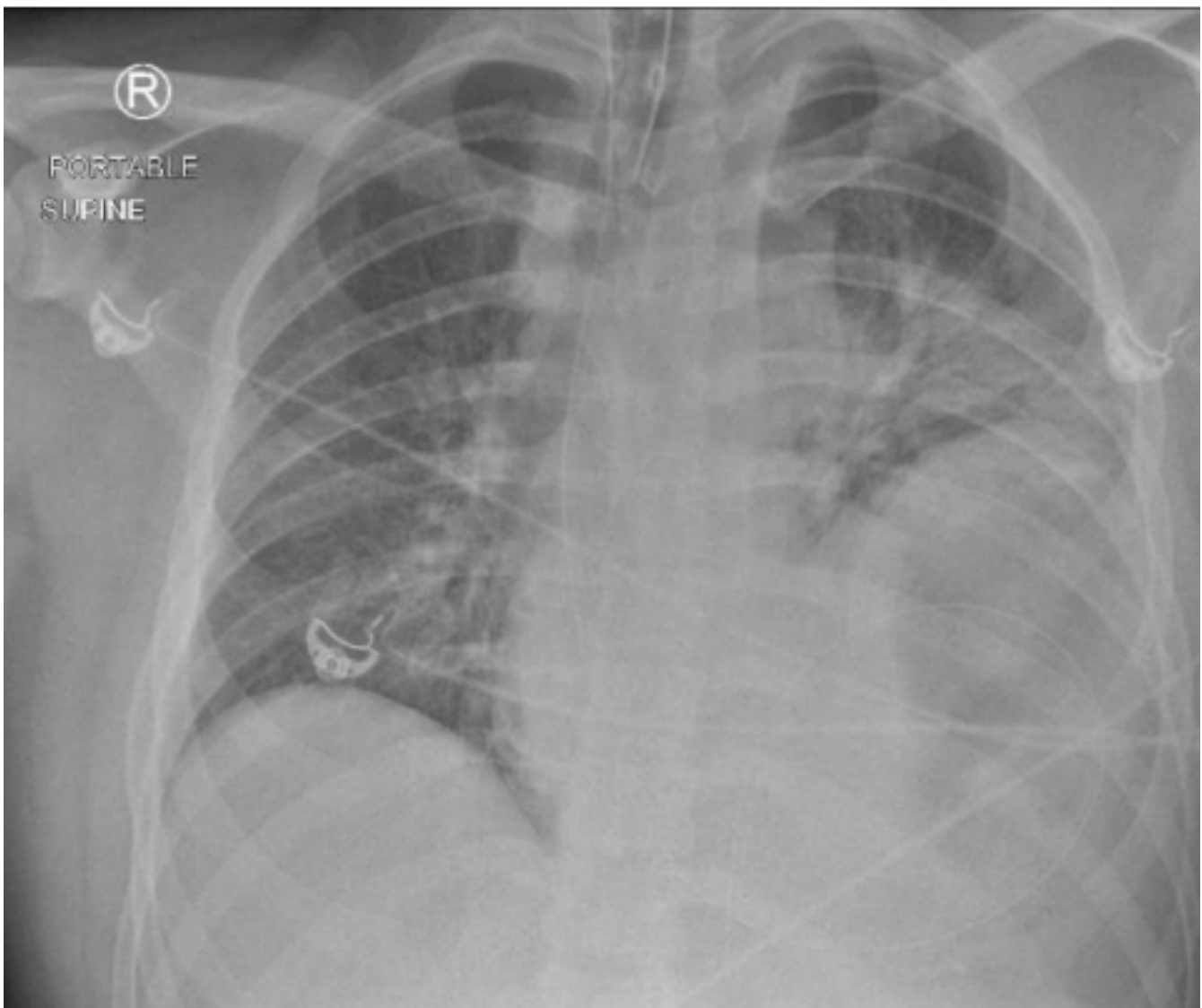
- v. Complete the following table relating to ionising radiation arising from CT imaging (4 marks)

	Dose (mSv)	Equivalent number of chest X-rays	Equivalent period of natural background radiation (years)
Head CT	2		
CT abdomen/pelvis	15		

Question 7 (17 marks)

A 27 year old male driver has been involved in a motor vehicle crash at 140kph. He was taken to a rural base hospital and was intubated soon after arrival in ED. Current vital signs are BP 80/40 mmHg, P 140 bpm.

A CHEST XRAY IS SHOWN BELOW



- i. List 6 findings on his CXR (6 marks)

- ii. List 5 potential diagnoses in order of severity (5 marks)

- iii. List the next 3 investigations you would order/perform, in order of priority and provide your reasoning (6 marks)

Question 8 (15 Marks)

A 32 year old man has been brought to the ED after a high speed motor vehicle accident.

He was intubated in the field due to severe respiratory distress. There is no evidence of head injury.

His initial chest x-ray is provided BELOW



1. List 3 pathological processes seen on this x-ray. For each, provide the radiological evidence. (6 marks)

Pathological process	Radiological evidence

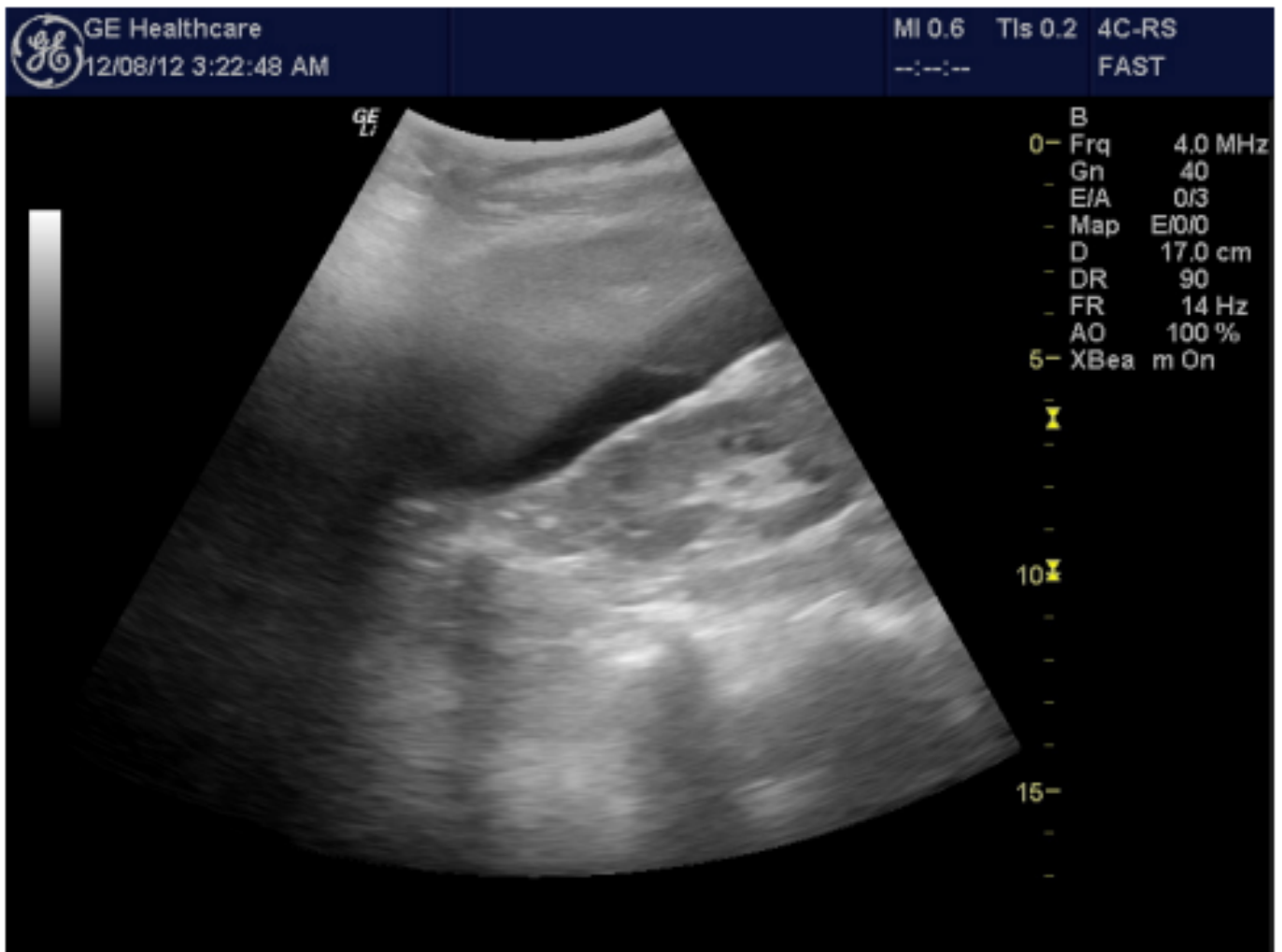
The patient looks pale and sweaty.

His vital signs are:

Pulse	140	/min
BP	65/45	mmHg
O2 sats	92%	FiO2 1.0

The pelvic x-ray is normal. There are no long bone injuries.

FAST scan imaging from the right upper quadrant is provided BELOW



2. Give your interpretation of this image.

(2 marks)

3. State your fluid resuscitation principles, including end-points.

(3 marks)

4. List your 4 main management steps, apart from fluid resuscitation.

(4 marks)

(1)

(2)

(3)

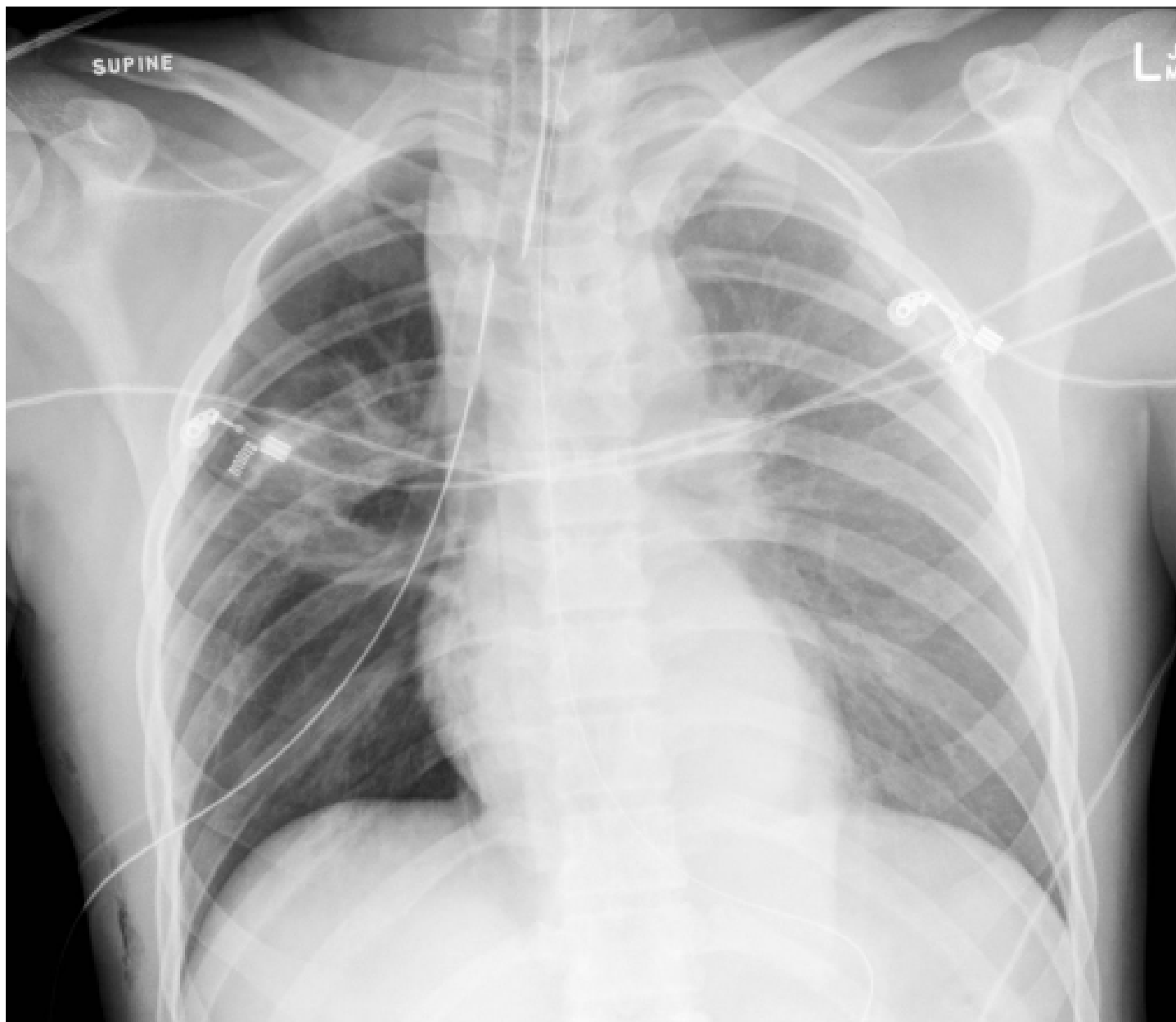
(4)

Question 9 (12 min)

A 25 year old man has been brought to your tertiary ED after a major motor vehicle accident. He was the driver of a van that collided head-on with a sedan on a stretch of highway.

The patient was retrieved by helicopter from a rural hospital where he was intubated due to a reduced level of consciousness and had a right sided intercostal catheter inserted.

His initial chest x-ray is provided **below**.



1. List 4 pathologies demonstrated on this x-ray. Complete the table for each pathology by stating one supportive radiographical feature. (8 marks)

Pathology	Radiographical feature

The initial vital signs are:

Pulse 130 /min

BP 75/45 mmHg

O2 sats 86%

As part of your initial management, an arterial blood gas has been taken. The result is provided

FiO2	0.4		
pH	6.86		(7.35 – 7.45)
pCO2	75	mmHg	(35 – 45)
pO2	55	mmHg	
HCO3	13	mmol/L	(22 – 33)
Na	138	mmol/L	(135 – 145)
K	6.1	mmol/L	(3.5 – 5.2)
Cl	101	mmol/L	(95 – 110)
Lactate	11.5	mmol/L	(0.5 – 2.2)

2. List 4 abnormalities on the arterial blood gas. Give the most likely explanation for each abnormality. (8 marks)

Abnormality	Explanation

- 3. State 4 initial actions you would take based on all of the clinical information provided. (4 marks)**

1) _____

2) _____

3) _____

4) _____

- 4. List 4 measures you will take in an effort to minimise the chance of this patient developing a coagulopathy. (4 marks)**

1) _____

2) _____

3) _____

4) _____

Question 10 (15Marks)

You are the ED Consultant leading the Trauma team in a Major Trauma Centre.

A 32 year old, previously healthy male has been brought in following a high-speed motor-bike crash which occurred approximately 90 minutes ago. His scene GCS was initially 13, E3 V4 M6, then declined to 7, E1 V2 M4, and he was subsequently intubated. The patient has had bilateral finger thoracostomies and given 2 units of PRBC by the pre-hospital retrieval service.

The initial primary survey in the resus room reveals

A – ETT at 22cm at the teeth.

B – Sats 96% on FiO2 100%, PEEP 5, ETCO2 47, TV 500, Rate 12, PIP 20

C – BP 110 / 60 mmHg, MAP 77, PR 117

D – E1 VT M1, Pupils 4mm, equal and reactive

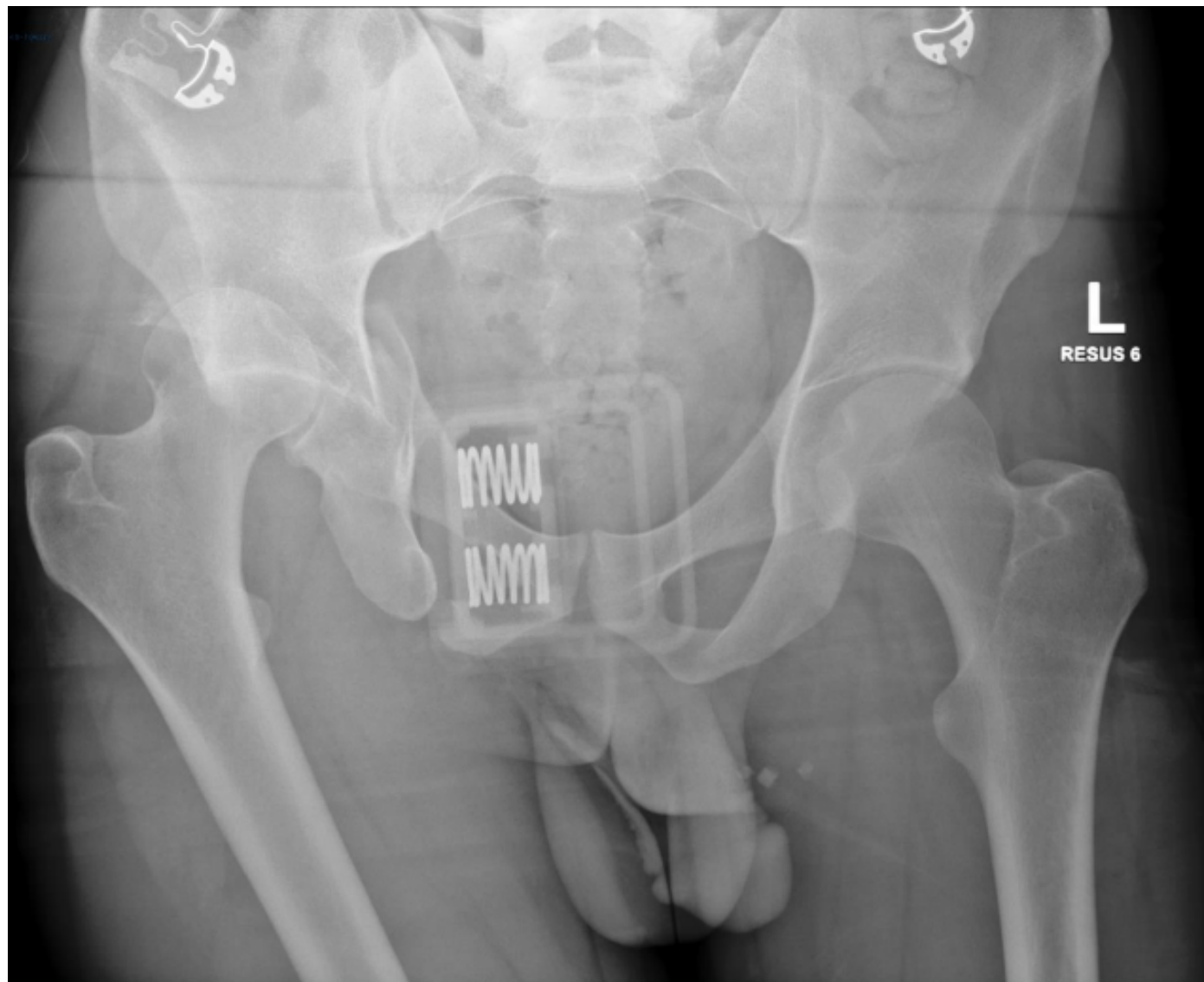
E – Temp 35.7, right sided scalp and facial lacerations. Bruising to right flank. Pelvic binder in-situ. Patient weight approximately 80kg. Sedated on propofol 1% infusion at 10mls per hour with intermittent fentanyl, last being 40mcg 10 minutes before arrival in resus.

There has been a CXR, PXR, eFAST performed. **(see images in props booklet)**

- a) List three (3) different life-threatening injuries present in this patient and the basis for your diagnoses (6 marks)

Injury	Basis for diagnosis





▼ C60: Abdomen

MI:

0.83

TIB:

0.20

THI

MHz

2.18

96%

88%

08:45 15.8cm

05/18/2019



VBG results are

<i>pH</i>	<i>7.18</i>	
<i>HCO₃</i>	<i>20</i>	<i>mmol/L</i>
<i>pCO₂</i>	<i>57</i>	<i>mmHg</i>
<i>pO₂</i>	<i>83</i>	<i>mmHg</i>
<i>Lactate</i>	<i>3.2</i>	<i>mmol/L (n < 2)</i>
<i>Ion Ca.</i>	<i>0.87</i>	<i>mmol/L (n 1.1 – 1.3)</i>
<i>Na</i>	<i>138</i>	<i>mmol/L (n 135-145)</i>

- b) On the basis of his VBG, what medication and dose should you administer immediately? (1 mark)

- c) What would be your ventilation strategy and aim? (2 marks)

1.

2.

- d) What blood pressure goals will you have for this patient and state your reasoning? (2 marks)

His current observations haven't changed in the first 20 minutes in the resus bay but his right pupil is now 7mm and un-reactive.

- e) State one (1) treatment and dose you would give (1 mark)

Question 11 (20 Marks)

You receive pre---hospital notification that a 45 year old male motor cyclist has been involved in a collision with a tree. He has obvious compound lower limb injuries and appears to have lower abdominal pain.

Vitals on scene:

GCS 13/15 (E3, M6, V4)
 P 120
 BP 95/60
 RR 26
 O2 Sats 96% 15L NRB

He is 10 minutes away from your tertiary, level 1 trauma centre.

1. List 5 priorities in your preparation for this patient's arrival.

(5 marks)

PRIORITIES

2. Patient arrives and following handover and transfer to hospital trolley his vitals deteriorate.

GCS 12/15
 HR 140
 BP 82/50
 RR 30
 O2 Sats 92% on 15L NRB

List 4 potential causes for the patient's deterioration and your intervention for each.

(8 marks)

	CAUSES	INTERVENTION
1		
2		
3		
4		

3. List 3 goals of your fluid resuscitation strategy. (3 marks)

1	
2	
3	

4. Your investigations reveal a pelvic fracture with a disrupted pelvic ring in a vertical shear pattern on pelvic XR . The patient has an unremarkable CXR and a negative FAST scan. The patient remains haemodynamically unstable.

List 1 advantage and 1 disadvantage of operative v angiographic management of the patients pelvic bleeding. (4 marks)

	Operative Management	Angiographic Management
ADVANTAGES		
DISADVANTAGES		

Question 12 (25 Marks)

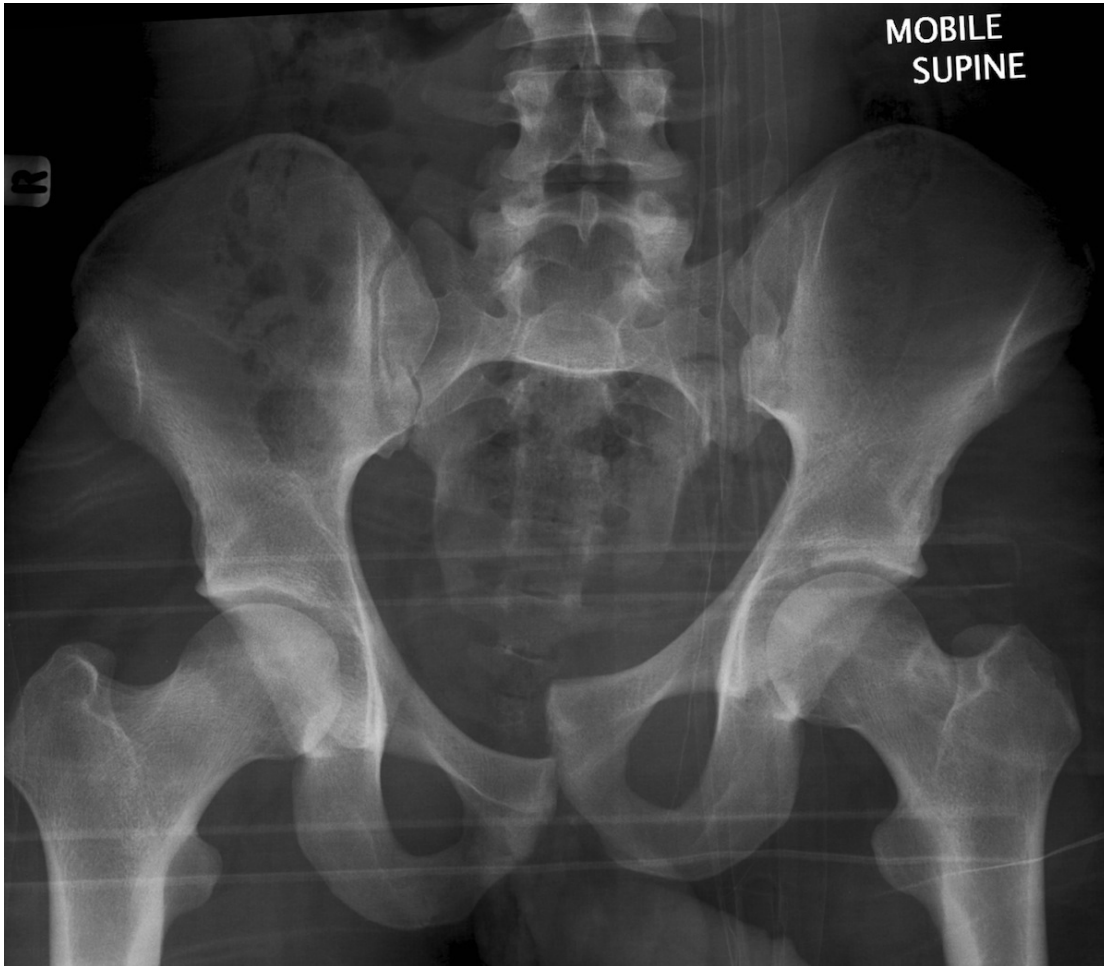
A 22 year old male is en route to your Tertiary ED following a high speed MBA. The telephone handover you have received indicates he is hypotensive with a systolic BP of 70mmHg and a HR of 120 BPM, despite receiving 500mls of crystalloid and 1U PRBC. The pre-hospital team have done an E-FAST at the scene, and this is negative. His other vital signs are within normal limits, and the patient is lucid and recalls all events. He is complaining of R hip pain. They are 10 mins away.

Questions:

1- In the 10 mins before the patient arrives, please indicate 6 priorities in your preparation for this patient: (6 marks)

2- On arrival an AP pelvic X-ray is performed as part of the trauma series which is shown in the next page.

Please describe the X-ray findings and the implications this will have on the patient's management. (6 marks)



3- Despite 2 further units of PRBC, the patient remains hypotensive. You repeat the E-FAST in the trauma room, and it remains negative. The trauma surgeon has just arrived and wants an update. Please give a summary of:

- a. What is the most likely cause for this patient's hypotension?

(1 mark)

- b. What are your recommendations for this patient's disposition

(2 marks)

- c. Complete the following table to outline 5 ongoing resuscitation priorities for this patient and the specific actions you will take to achieve these.

(10 marks)

Resuscitation Priority	Actions Required

Question 13 (13 Marks)

A 55 year old male presents after a high speed MVA where he was the restrained driver of the car. He is rapidly transported to your tertiary ED by ambulance without a secure airway.

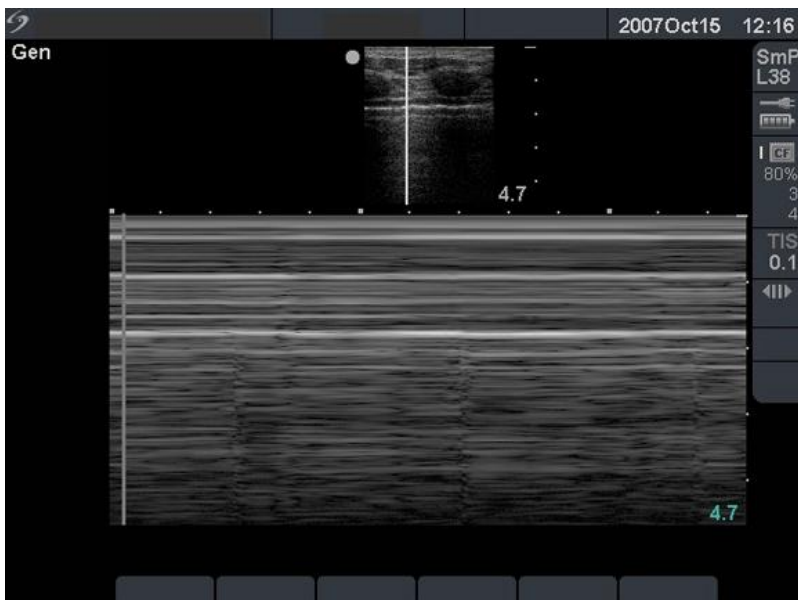
On arrival his vital signs are shown below

GCS 8/15 (E2 V M2 M4)
 HR 125
 BP 75/55
 RR 6
 Saturation 89% on 15L NRB

Primary survey reveals unilateral chest rise on left side with distended neck veins and tracheal deviation to the left. His abdomen is soft and non-distended with anatomically normal looking pelvis and lower limbs.

As an extension of your primary survey you obtain an e-FAST which showed no free fluid in the abdomen and no pericardial tamponade. These are the lung views you obtain are shown below:

Right lung:



Left lung:



Questions:

1-What is the name of the sign shown on the above ultrasound?

(1 Mark)

2- What is the diagnosis and what is the likely clinical significance in this patient?

(2 Marks)

3. Complete the table outlining your immediate management priorities and the actions you will take to manage these (10 Marks)

Clinical Priorities	Action Required

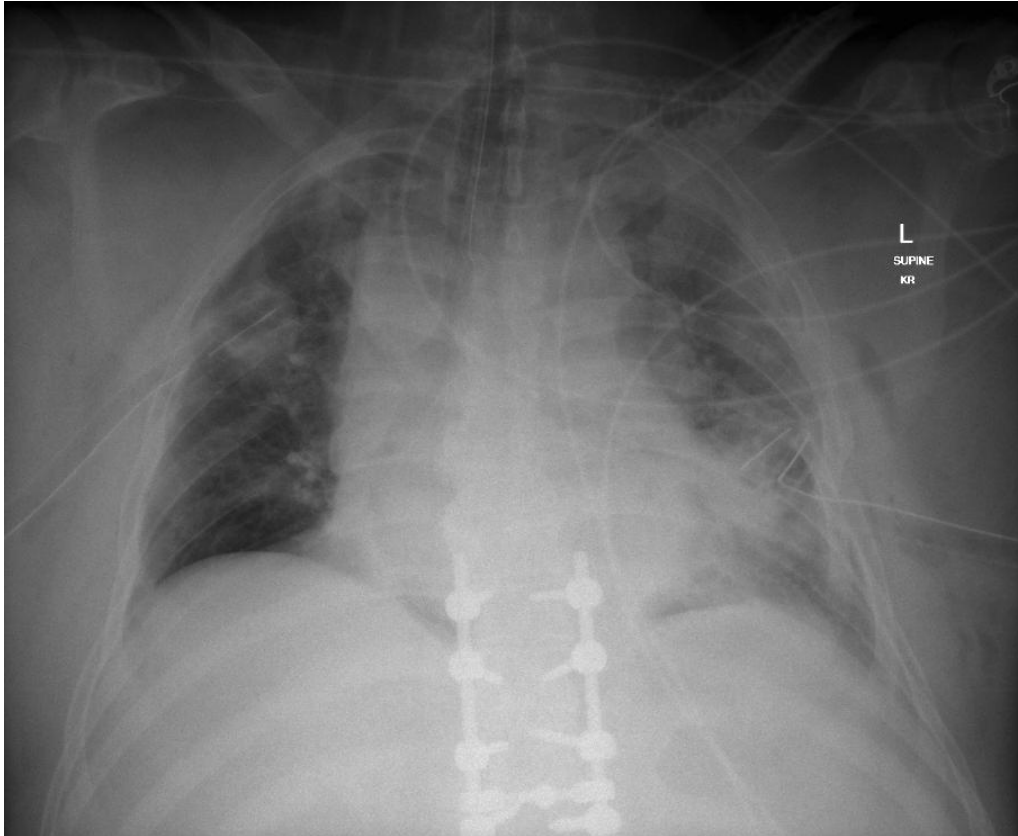
Question 14 (16 marks)

A 54 year old male is involved in a high speed rollover motor vehicle crash.

He was GCS 6 (E1, V1, M4) on scene and was intubated for airway protection due to his reduced conscious state.

He underwent bilateral thoracostomies on scene for low blood pressure which have just been formalised with ICC insertion on arrival to the ED by the ED registrar.

His CXR is attached below: **(See props booklet)**



1. List four (4) major abnormalities shown on his chest X-ray.

(4 Marks)

2. Whilst in the ED he becomes progressively more difficult to ventilate. List three (3) potential causes for this and state the immediate management of each. (6 Marks)

Cause	Management

3. Outline six (6) key steps in performing a large bore intercostal catheter placement on an intubated patient who has been adequately sedated & paralysed.

(6 Marks)

Question 15 (12 marks)

A 62-year-old man is brought in by ambulance to your tertiary hospital after a low-speed dirt bike accident. He was riding up a hill, hit a mound, and fell backwards onto his left chest and shoulder. He did not lose consciousness and mobilised at the scene.

On assessment, he is alert and talking. His respiratory rate is 20 breaths/minute with shallow respirations, his SaO₂ is 92% on room air; BP is 130/80, his heart rate is 95 bpm, his GCS is 15 and his temperature is 36.2 degrees Celsius. His abdomen is soft and non-tender.

A chest x-ray is performed and is shown in the Props Booklet (Figure 9)

- a. List three positive and two negative findings on this Chest x-ray.(5 marks)

- b. List and justify two further investigations you would request for this patient. (4 marks)

Investigation	Justification

You decide he needs admission for analgesia and observation, however he refuses to stay.

- c. List the medico-legal requirements necessary for him to be declared competent to make this decision (4 marks)

Question 16 (27 Marks)

A 25 year old woman has been brought to the ED after a high speed head-on motor vehicle accident.

Her initial chest x-ray is provided in the **PROPS BOOKLET**.



1. Give the **most important** pathology demonstrated on this x-ray, with 3 radiographic supporting features. (4 marks)

Most important pathology	Radiographic supporting features

2. What will be your **definitive treatment** of the diagnosis in Q1? (1 mark)

3. What other **clinically significant** pathology is demonstrated in this X-ray? Include the radiographic support for this diagnosis. (2 marks)

Pathology	Radiographic supporting features

You have managed the above injuries and have intubated the patient to optimise ongoing assessment and management.

After a short period, the ventilator has begun to alarm due to high pressures.

4. List **six possible causes** of high ventilator pressures.

(6 marks)

(1) _____

(2) _____

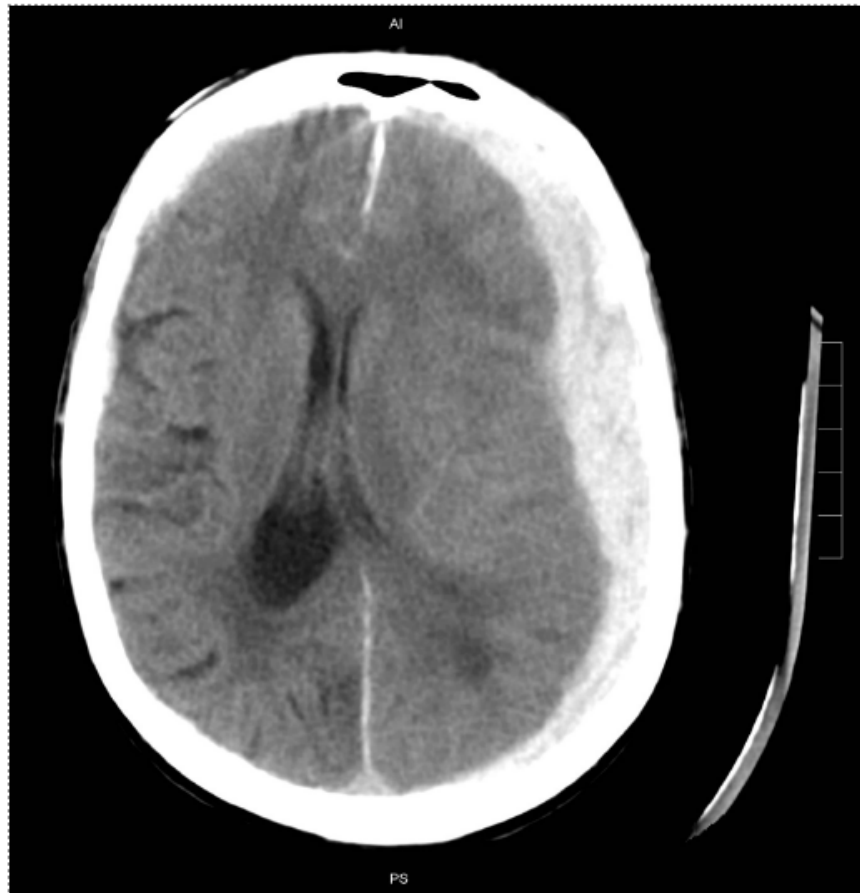
(3) _____

(4) _____

(5) _____

(6) _____

The patient has undergone CT scanning to delineate her injuries. A slice from her head CT is provided in the **PROPS BOOKLET**.



5. List the abnormalities seen on the image.

(6 marks)

(1) _____

(2) _____

(3) _____

(4) _____

(5) _____

_____ (

CT scanning has revealed only chest and head injuries as demonstrated in the above images. The chest injury has been satisfactorily managed.

The patient has a dilated left pupil.

Her vital signs are:

GCS	3	sedated and paralysed
Pulse	100	/min
BP	90/60	mmHg
O2 sats	90%	FiO2 0.5

6. State your management steps, including drugs and doses and treatment end-points where appropriate. (8 marks)

—

Question 17 (21 marks)

You are working in a tertiary ED when you are notified about a 35 year old male who is en route (5 minutes away) after his motorcycle collided with a kangaroo.

He was intubated on scene for falling GCS and subsequently developed a dilated left pupil. He has had persisting hemodynamic instability with one PIVC and 250mls saline given by ambulance officers.

1. List your top (5) management priorities on arrival of this patient.

(5marks)

You opted to do a FAST scan in the trauma room

2. Give (4) Pros and Cons of a FAST scan in this patient.

(8marks)

PROS	CONS

During his ongoing resuscitation the massive transfusion protocol has been activated.

3. Give (8) parameters you will aim for in your ongoing haemodynamic resuscitation of this patient.

(8marks)

Question 18 (13 marks)

You are the retrieval doctor at a pre-hospital scene where there has been a single-occupant rollover MVA. The driver has been trapped for 2 hours by extensive compression of both legs by dashboard and steering column intrusion. He has chest and head injuries (GCS 7)

- i. What are the potential pathophysiological consequences of rapid release of this patient's legs? (2 marks)

- ii. What therapies could you use to mitigate these pathophysiological consequences? (3 marks)

On arrival at the nearby trauma centre, concerns are raised about the possibility of a bilateral lower leg compartment syndrome.

- iii. Outline a technique for measuring compartment pressures (4 marks)

- iv. What pressure threshold would confirm suspicions of compartment syndrome? (1 mark)

- v. The patient's creatine kinase is 7000 IU/L. The renal registrar wants you to start a mannitol infusion to reduce renal injury from tubular deposition. List 3 disadvantages or adverse effects of mannitol in this context (3 marks)

Question 19 (11 Marks)

A 56 year old man has been brought to your tertiary ED after a motorcycle accident.

His pelvic Xray is given.



1. Classify his pelvic injury based on the Xray provided. (2 marks)

2. List 4 possible methods of arresting the blood loss from his pelvic injury. (4 marks)

CT scans have revealed active arterial haemorrhage related to his pelvic injury, but no other obvious injuries.

His vital signs are:

GCS	14	E4 V4 M6
Pulse	135	/min
BP	70/40	mmHg
O2 saturation	98%	6L O2 via mask
Temp	36.5	degrees

3. In point form, list your principles of his fluid resuscitation while he is awaiting definitive management of his pelvic injury. (5 marks)

Question 20 (23 Marks)

A 50 year old farmer has been run over by a tractor. He has severe pelvic pain.

His vital signs are:

GCS 13 E3 V4 M6

Pulse 140 /min

BP 70/30 mmHg

O2 Sats 99% room air

His CXR is normal.

His pelvic x-ray is given in the PROPS BOOKLET.



1. List 3 abnormalities on the x-ray. (3 marks)

2. Classify the injury pattern using a recognized system. (1 mark)

3. State the immediate intervention you would perform. Include the endpoint for your intervention. (2 marks)

Intervention: _____

End-point: _____

4. List 3 injuries that are commonly associated with this type of pelvic injury. For each, list the clinical findings that would support its presence. (6 marks)

Injury	Supportive clinical findings

As part of your assessment a FAST scan is performed. The image obtained is provided in the PROPS BOOKLET.



5. State your conclusion from the image provided. Include the clinical implication of this finding. (2 marks)

Conclusion

Clinical implication

You have initiated a massive transfusion protocol (MTP) –based approach for your resuscitation.

6. List 4 key laboratory end-points you will target to guide your MTP resuscitation. (4 marks)

Parameter	Target result

7. List 5 complications specific to massive volume transfusion. (5 marks)

Question 21 (17 Marks)

A 45 year old man has been brought to the ED after falling off a horse.

An x-ray of his pelvis is provided in the **PROPS BOOKLET**.



1. List 4 significant x-ray findings. (4 marks)

2. Classify the injury using the Young-Burgess system. (1 mark)

3. List 4 potential complications of this injury.**For each complication, state:****a) an assessment finding (history, examination or investigation) that would confirm its presence and,****b) the definitive management. (12 marks)**

Complication	Assessment finding	Definitive management

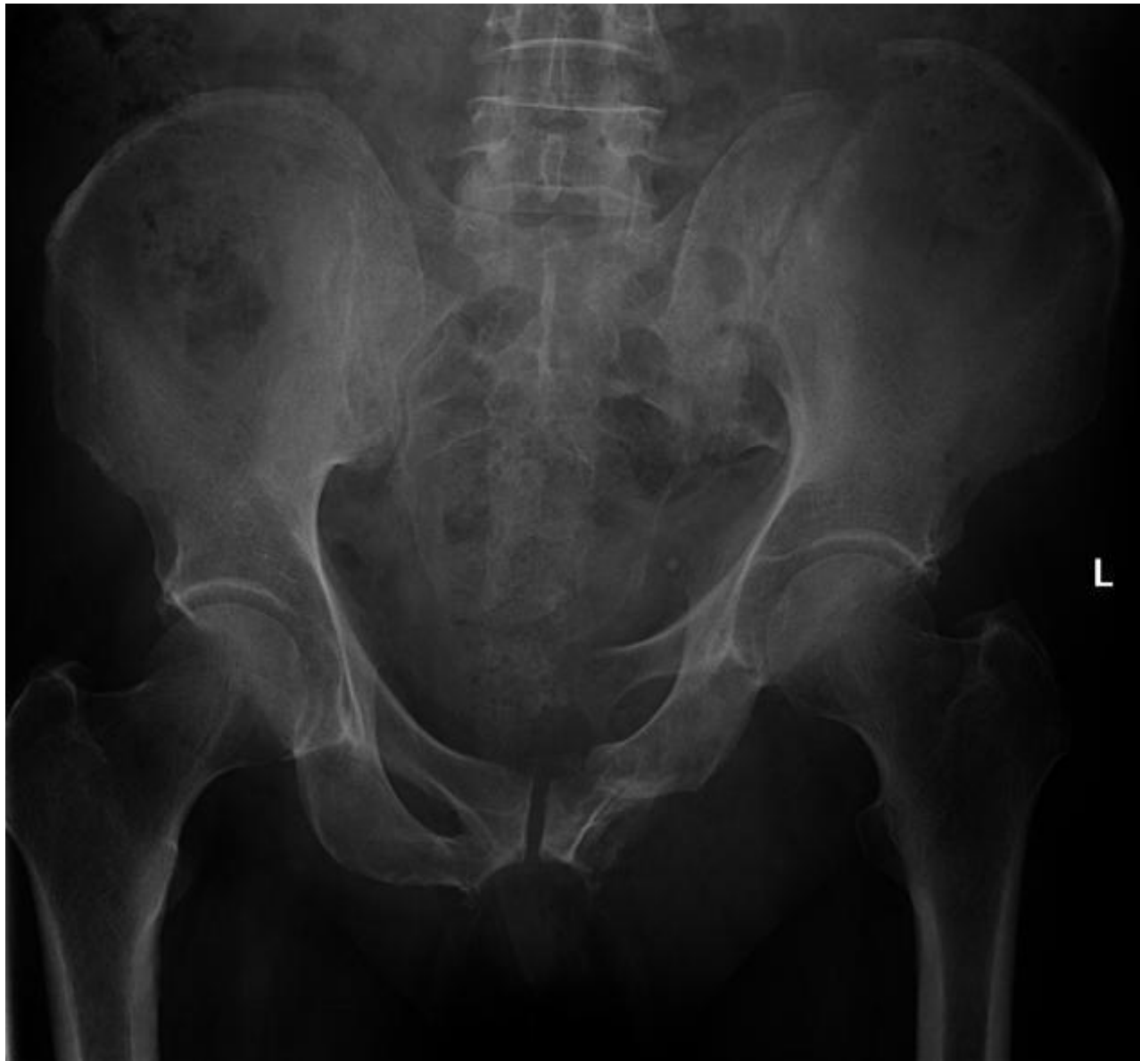
Question 22 (27 Marks)

A 40 year old female patient is brought to your tertiary Emergency Department following a fall from 4 meters, where she landed heavily on her feet.

Her vital signs are:

GCS 15/15
RR 24
HR 100
BP 115/50
SaO2 99% on 6L O2 via face mask

Her pelvis X-ray is attached:



Questions:

1-Classify the radiological abnormality & state the findings that support this.
(3 Marks)

2-List 5 possible complications of this injury in this patient. State how you would assess for these in the ED. Complete the table below. (10 marks)

Complication	Assessment

3- List 2 alternate options for further management for this patient's pelvic injury.
(2 Marks)

4- List 5 factors which may affect your choice in the above management options.
(5 Marks)

3- List 2 alternate options for further management for this patient's pelvic injury.
(2 Marks)

4- List 5 factors which may affect your choice in the above management options.
(5 Marks)

Question 23 (12 Marks)

A 22 year old male is brought in by ambulance having been involved in a high speed motor vehicle accident.

On arrival his observations are as follows:

GCS	13	(E3, M6, V4)
PR	140	bpm
BP	80/50	mmHg
SaO2	96%	on room air

He has no significant past history and is on no medication

A portable pelvic xray is performed as part of his workup.



1. Describe the three (3) most important positive findings.

2. List five (5) treatment priorities relevant to this patient

3. Describe four (4) essential elements of a massive transfusion protocol

Question 24 (14 marks)

An 8-year-old girl is brought to the emergency department following a bicycle accident. She was wearing a helmet but no other safety gear. The child states she crashed into a fallen tree and was impaled on a stick. She is alert and distressed. When asked to describe the stick she indicates it was the length of her forearm and as thick as her thumb.

Her vital signs are:

Pulse 110 bpm

BP 105/70 mmHg

Cap refill 3 sec

Resp rate 24 breaths/min

SaO₂ 92% on 6L oxygen via non-rebreather mask

Examination reveals a 10cm laceration to the right lateral abdomen at the level of umbilicus (see picture in Props Booklet; Figure 5).

a) List eight potential injuries from the described mechanism.(4 marks)

b). List four(4) ways in which the paediatric abdomen is different to the adult abdomen. (4 marks)

c). State your management of this patient in the ED, including relevant investigations.(6 marks)

Question 25 (9 marks)

You receive a pre-notification that you will be receiving a 23 year old male who has been in a high-speed motor vehicle accident. He has obvious head, torso and limb injuries and is haemodynamically unstable with an unrecordable blood pressure.

On arrival to your emergency department he has lost output and CPR has been commenced 2 minutes prior.

What interventions will you prioritise in this setting? (5 marks)

Discuss the role of CPR in this setting (2 marks)

What is the role of ED thoracotomy in blunt traumatic cardiac arrest? (2 marks)

Question 26 (11 Marks)

A 52 year old man has presented after rolling his quadbike. He is conscious but complains of severe right-sided chest pain. Your assessment, including a CT scan, has revealed fractured ribs 5 – 10 on the right side with a small pneumothorax.

His only other injury is a closed ankle fracture which has been placed in a plaster backslab.

1. List 3 indications for the insertion of an intercostal catheter (ICC) in this patient. (3 marks)

- 1) _____

- 2) _____

- 3) _____

You have decided that ICC insertion is not currently warranted.

You are completing the admission of the patient directly to a surgical unit for review on the ward in the next 4 hours.

- 2. State 4 analgesic options, including doses, that you could use. For each, indicate 1 contra-indication to its use, NOT including allergy. (8 marks)**

Analgesic option with dose	Contra-indication

Question 27 (17 marks)

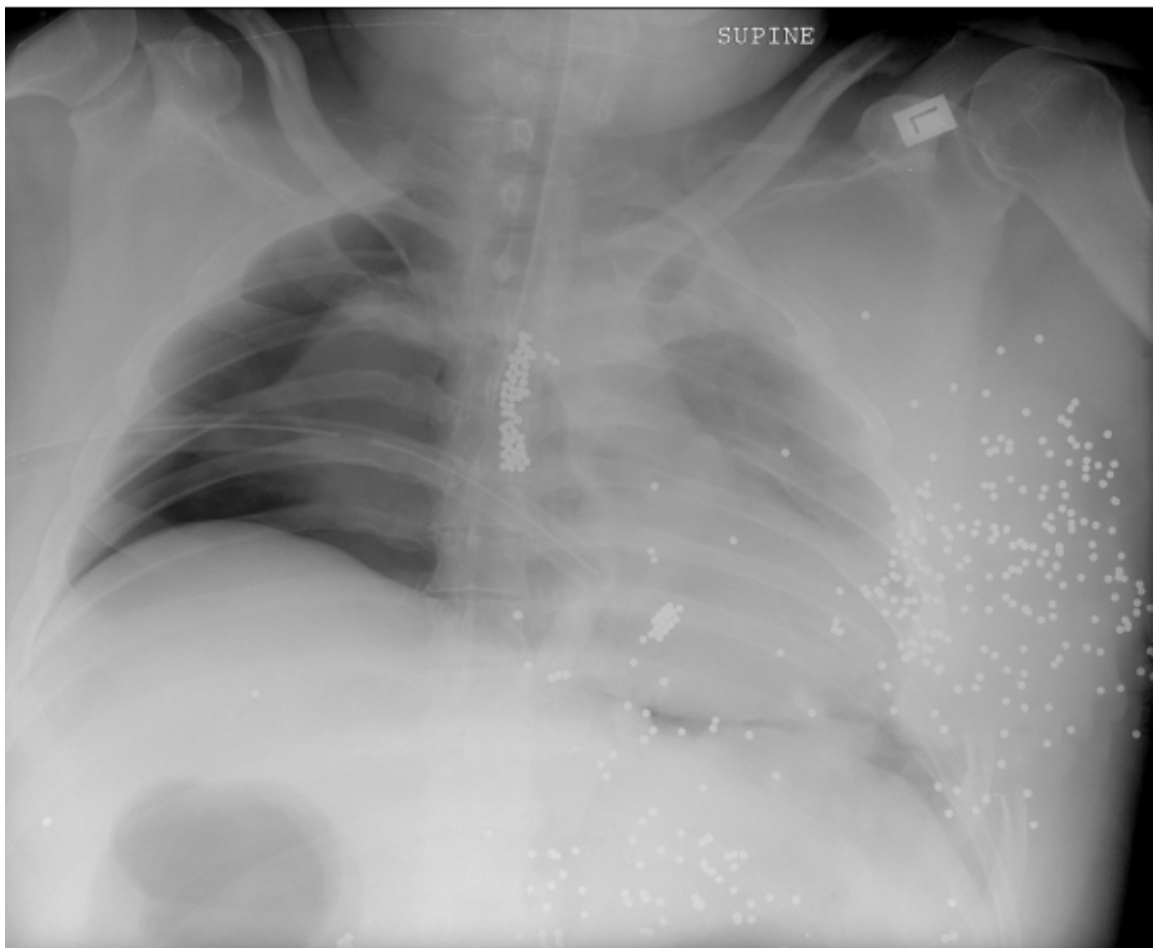
You are the consultant in an urban ED, on a busy shift. You receive ambulance pre-hospital notification about a domestic dispute. They are transporting 2 patients both with shotgun wounds. ETA is 10 minutes.

Patient 1: 46 year old male with wounds to his left chest and abdomen GCS 12 (E3V4M5)
P 110
BP 80/---

Patient 2: 43 year old female with minor wounds to her left forearm
Vitals are stable

- i. Outline 4 key issues involved in this scenario (4 marks)

- ii. The male patient is in shock despite 2 litres of normal saline pre-hospital. His GCS has fallen to 8. His chest is hyper-resonant on the right with bilaterally reduced breath sounds. He has an acute abdomen.
List 4 immediate management priorities (4 marks)



- iii. List 5 positive findings on the male patient's CXR (5 marks)

- iv. The male has been transferred to theatre. While you are reviewing the female, the police ring to advise you of her husband's possible arrival. He is the suspected perpetrator, and may be armed.
Outline 4 key issues in your immediate response (4 marks)

Question 28 (16 marks)

You are the overnight registrar in your tertiary hospital ED. You receive an ambulance pre-arrival call at 2am for a 25 year old male, stabbed multiple times in the chest. ETA is 10 min.

Vital signs: HR 150 bpm
 BP 72/41 mmHg
 SaO2 90% on
 15L RR 30 bpm
 GCS 12

- i. List 6 potential life threatening injuries in this patient (6 marks)

- ii. Briefly describe how you would prepare to receive this patient (5 marks)

iii. What are the indications for ED thoracotomy in trauma (3 marks)

iv. Provide an estimate of survival rates following ED thoracotomy for traumatic arrest (2 marks)

In penetrating chest trauma	
In blunt trauma	

Question 29 (10 Marks)

A 26 year old male presents after a domestic dispute with this injury. He is confused and agitated. Vital signs are:

BP 85/-40

PR 130

Sats 94% on RA

GCS 13

RR 28.

He looks grey and sweaty.



1. List **3** possible life threatening injuries (2 marks).

- i. _____
- ii. _____
- iii. _____

After the placement of 2 x16G IVC and 500ml of IV crystalloid he becomes progressively more hypotensive and has a PEA arrest.

2. List **2** indications of emergency thoracotomy (1 mark).

i. _____

ii. _____

3. List **4** contraindications to performing an emergency thoracotomy (4 marks).

i. _____

ii. _____

iii. _____

iv. _____

4. List **3** procedures that can be performed once the chest is opened (3 marks).

i. _____

ii. _____

iii. _____

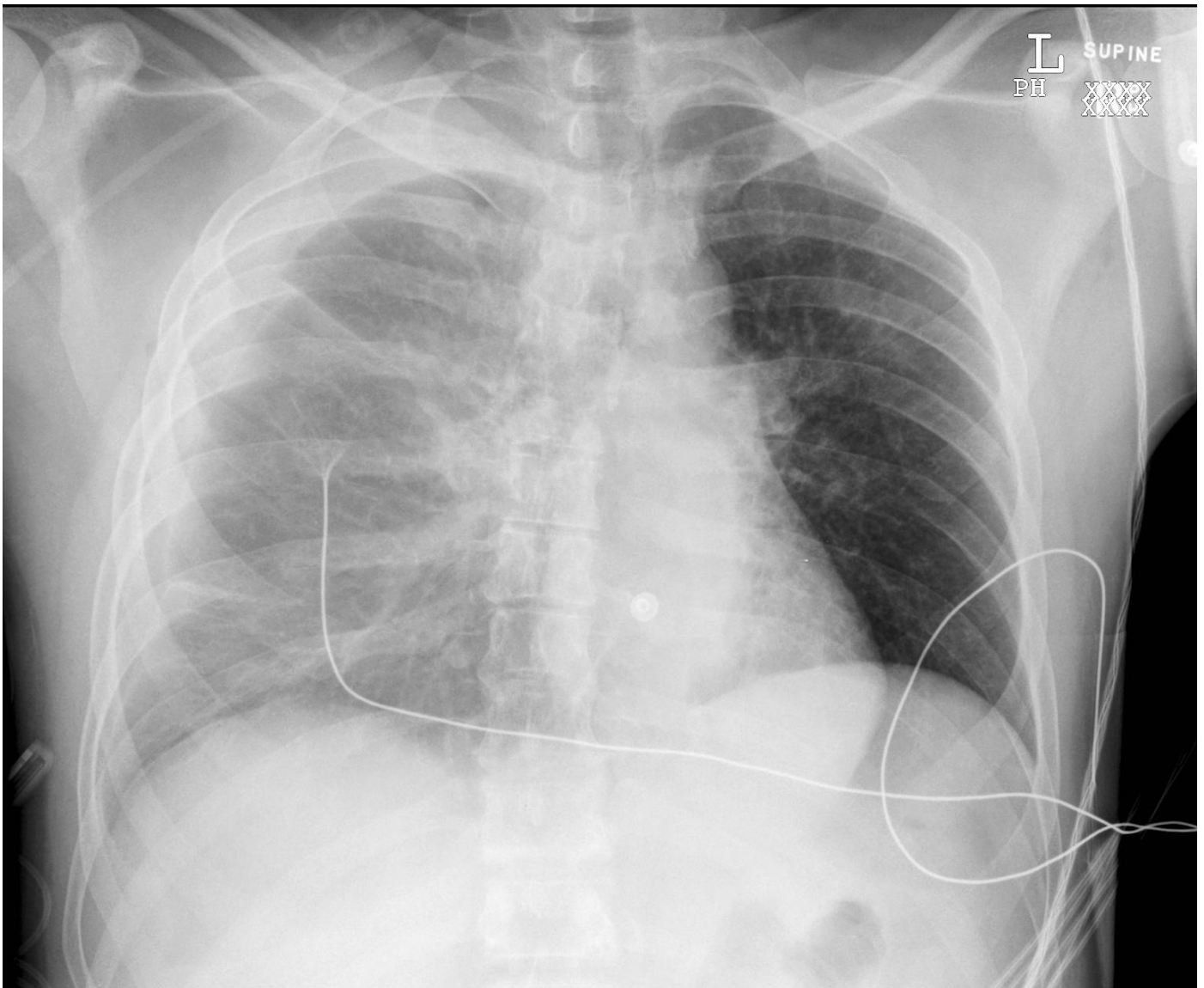
Question 30 (12 Marks)

A 45 year old man has been brought to your ED by ambulance after being stabbed once in the right side of the chest.

On arrival, his vital signs are:

GCS	15	E4 V4 M6
Pulse	120	/min
BP	85/40	mmHg
O2 sats	94%	15L O2 via non-rebreather mask

A chest Xray has been performed.



1. Give the main abnormality on the chest Xray, with supporting evidence. (3 marks)

2. List the steps involved in inserting an intercostal catheter in this patient. (9 marks)

[illegible]

Question 31 (9 Marks)

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A 23 year old man has been brought to the ED with a single stab wound to the left side of the chest.

Immediate FAST scan shows the following image.



1. What pathology is demonstrated?

(1 mark)

Very shortly after arrival, the patient becomes unresponsive and has no palpable pulse.

2. List the steps in your performance of an ED thoracotomy on this patient. (8 marks)

Question 32 (23 Marks)

The ambulance service has called to alert you about the impending arrival of a critically unwell patient. You will be receiving a 25 year old man who has been stabbed once to the left side of his anterior chest with a large knife.

His vital signs with the ambulance are:

GCS	14	E4 V4 M6
Pulse	135	/min
BP	85/45	mmHg
O2 sats	98%	15L O2 via non-rebreather mask

The patient is reported to be agitated.



1. List 4 critical interventions you would prepare to perform in the ED. For each intervention, give the clinical indication for its use. (8 marks)

Critical intervention	Clinical indication

Upon arrival, a chest x-ray has been performed. The x-ray is provided in the **PROPS BOOKLET**.

2. List the main pathology evident in the chest x-ray. (1 mark)

3. List 2 supporting radiographical features. (2 marks)

1) _____

2) _____

4. List 2 other possible traumatic causes of the patient's hypotension. For each, state the supportive findings on examination or investigation. (4 marks)

Cause of hypotension	Examination or Investigative finding

You have determined that an intercostal catheter needs to be inserted for management of this patient's injuries.

5. List 4 possible complications of the procedure and a safety step you would include in your technique to avoid each complication. (8 marks)

Complication	Safety step

Question 33 (19 Marks)

The ambulance service has notified you of a 22 year old man who has been stabbed multiple times to the back with a kitchen knife. He will be arriving to your ED in approximately 10 minutes.

His vital signs on scene are:

GCS	15	
Pulse	125	/min
BP	95/45	mmHg
RR	20	/min
O2 sats	99%	15L/min O2 via non-breather

1. List 5 life-threatening injuries that you will aim to identify on the patient's arrival. For each injury, state how you will confirm its presence and the action you will take to manage the condition. (15 marks)

Injury 1

Confirmation

Management

—

Injury 2

Confirmation

Management

Injury 3

Confirmation

Management

Injury 4

Confirmation

Management

—

Injury 5

Confirmation

Management

During the early management of this patient in the ED, you have identified uncontrolled massive haemorrhage. As such, the hospital's massive transfusion protocol has been activated.

- 2. State 4 principles of your fluid resuscitation of this patient. Include end-points where appropriate. (4 marks)**

1) _____

2) _____

3) _____

4) _____

—

Question 34 (10 marks)

A 24 year old male is brought to your non trauma centre ED by his friends. He is moribund, with no palpable radial pulses and a thready carotid pulse with a HR=155.

His photograph is shown below:



1. Describe 3 important features in this clinical photograph & state the significance.

(3 marks)

2. List 2 ultrasonographic signs that would be consistent with pericardial tamponade?

(2 Marks)

3. List 2 indications for emergency department thoracotomy for penetrating trauma.

(2 marks)

4. List 3 potential complications from resuscitative thoracotomy?

(3 marks)

Question 35 (32 Marks)

A 25 year old man has been brought to the ED after being stabbed once in the epigastrium.
There are no other injuries.

He appears pale, sweaty and agitated.

His vital signs on arrival are:

GCS	14	E4 V4 M6
Pulse	125	/min
BP	75/40	mmHg
O2 sats	94%	15L O2 via non-rebreather mask

1. List your 2 most important radiological investigations. For each provide 2 significant positive or negative findings. (6 marks)

Investigation	Finding

2. List 4 principles of your fluid resuscitation strategy. (4 marks)

3. List 3 indications for urgent thoracotomy in the operating theatre. (3 marks)

4. List 3 indications for intubating this patient in the ED. (3 marks)

2. List 4 principles of your fluid resuscitation strategy.

(4 marks)

3. List 3 indications for urgent thoracotomy in the operating theatre.

(3 marks)

4. List 3 indications for intubating this patient in the ED.

(3 marks)

The patient required intubation in the ED.

Shortly after intubation, the ventilator has begun to alarm due to high peak airway pressures.

5. List 6 possible causes of the high peak airway pressures.

(6 marks)

Question 36 (19 marks)

- i. With regard to blunt abdominal trauma, complete the table with 2 pros and cons of each diagnostic modality (12 marks)

	PROS	CONS
FAST SCAN		
CT SCAN		
DIAGNOSTIC PERITONEAL LAVAGE		

- ii. List two contraindications to performing a FAST exam in trauma. Provide an example for each (4 marks)

- iii. Bowel and mesenteric injuries are particularly associated with an abdominal “seatbelt sign”. What CT radiographic findings are classically seen in this injury (3 marks)
