

Started on Sunday, 1 March 2020, 8:08 PM

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Completed on Sunday, 1 March 2020, 8:10 PM

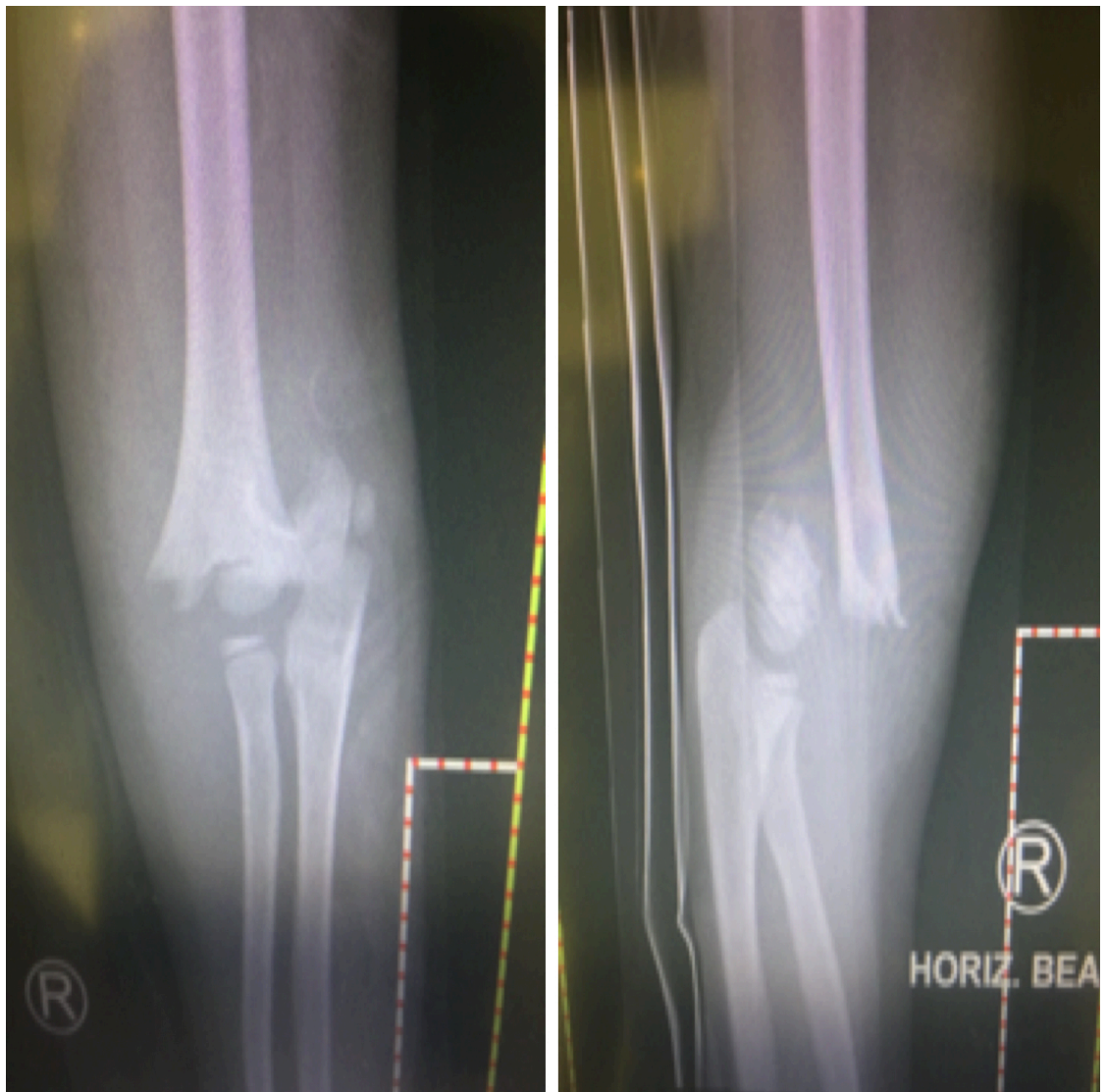
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Question 1

Complete

Marked out of
16.00

You are the Consultant for the Paediatric Area in the Emergency Department. It is Thursday evening and a 5 year old presents to your Emergency Department after a fall off a trampoline. She complains of severe pain in the right elbow and is quite distressed. You obtain X-rays of her elbow.



a. State four (4) abnormal findings in the series of xrays.

(Marked out of 4.0)

1.

- b. List three (3) structures at risk from this fracture and how you would examine for them.
(Marked out of 6.0)

	Structure at risk	Examination findings
1		
2		
3		

- c. State three (3) analgesic options for this patient including dose and route.
(Marked out of 6.0)

1.

Question 2

Not answered

Marked out of
12.00

A 60 year old man with no previous medical history presents to your Emergency department with gradual onset of shortness of breath. There is no chest pain. He drinks 3-4 beers per day. His Chest X-ray shows bilateral pleural effusions with moderate cardiomegaly and upper lobe diversion.

You suspect a new diagnosis of heart failure.

- a. What is the definition of heart failure according to the National Heart Foundation ?

(Marked out of 2.0)

- b. State three (3) laboratory investigations in the Emergency department you would request with one justification for each.

(Marked out of 6.0)

	Lab Investigation	Justification
1		
2		
3		

- c. Your registrar is keen to perform a bedside lungs and cardiac ultrasound for logbook purposes on the patient.

State Two (2) pros and Two (2) cons of doing a bedside ultrasound on this patient.

(Marked out of 4.0)

	Pros	Cons
1		
2		

Question 3

Complete

Marked out of
12.00

An 81 year old woman with past medical history of asthma, ischaemic heart disease, hypertension and diabetes presents with acute onset dyspnea this morning following a two week history of dry cough. She has no calf swelling or oedema and her vital signs and examination findings are:

HR: 110 bpm (dual heart sounds with nil added)
BP: 170/90 mmHg
O₂ Sats: 91 % (Room Air)
RR: 24 breaths/minute (with poor air entry bilaterally with occasional wheeze)
Temp: 37.3 °C

- a. Apart from exacerbation of asthma, complete the following table listing three (3) differential diagnoses and for each provide one examination finding to support it.

(Marked out of 6.0)

	DDx	Examination findings
1		
2		
3		

- b. After trial burst therapy with three nebulised Salbutamol 5 mg /Atrovent 500mcg over an hour, the patient doesn't improve and her vital signs remain as those on arrival. You now hear fine creps at both bases.

List your next six (6) management priorities for this patient.

(Marked out of 6.0)

1.

Question 4

Complete

Marked out of
13.00

You are asked to place a nasogastric tube (NGT) in one of your intern's patients.

- a. List five indications for placing a nasogastric tube.

(Marked out of 5.0)

1.

- b. Complete the table below - list four ways nasogastric tube placement can be confirmed and what findings confirm placement.

(Marked out of 8.0)

	Method	Findings
1		
2		
3		
4		

Question 5

Complete

Marked out of 12.00

You are caring for a 50 year old male patient who presented after sudden onset of severe tearing chest pain radiating through to his back. You suspect a thoracic aortic dissection. His observations are as follows:

Temp 36.7 °C
 HR 110 bpm (Sinus rhythm)
 BP 190/110 mmHg
 Sats 98% Room air
 RR 25 bpm
 GCS 15

- a. In addition to analgesia, give your two (2) initial therapeutic (medication) interventions, in order and with clinical end-points, if this patient has a Stanford type B dissection. (4 marks)

(Marked out of 4.0)

	Therapeutic intervention (2 marks)	Clinical end points (2 marks)
First intervention		
Second intervention		

- b. Your patient suddenly deteriorates and becomes hypotensive. State four (4) potential reasons for the patient's hypotension. For each reason, state how you would elucidate this cause within the ED. (8 marks)

(Marked out of 8.0)

	Cause of Hypotension (4 marks)	ED elucidation (4 marks)
1		
2		
3		
4		

Question 6

Not answered

Marked out of 12.00

A 47 year old male with no past medical history, presents to your emergency department with dry cough for three months and increasing orthopnoea. His chest X-ray is demonstrated:



a. State the exact location of the abnormality.
(Marked out of 1.0)

b. State Four (4) characteristics of the lesion that help you distinguish its location.
(Marked out of 4.0)

1.

c. Excluding Lymph node, and based on the identified location, list three (3) differential diagnoses for the finding.
(Marked out of 3.0)

1.

d. List Two (2) important further investigation you would request for this patient with one rationale for each.
(Marked out of 4.0)

Investigation	Rationale
---------------	-----------

1		
2		

Question 7

Complete

Marked out of 12.00

A 38 year old woman presents to your Emergency Department with headache and blurred vision. She is 36 weeks pregnant. Her observations are as follows:

HR: 105 bpm
 BP: 200/120 mmHg
 O₂ Sats: 98 % (Room Air)
 RR: 24 breaths/minute
 Temp: 36.9 °C

You suspect pre-eclampsia.

- a. State four (4) pharmacological agents (including dose and route of administration) you would consider to control this patient's hypertension.

(Marked out of 6.0)

	Agent	Dose & Route
1		
2		
3		
4		

- b. 15 minutes following presentation, the patient has a generalised tonic-clonic seizure. List two (2) pharmacological agents (including dose and route of administration) you would consider to terminate the seizure.

(Marked out of 2.0)

	Agent	Dose & Route
1		
2		

- c. The seizure terminates, but the patient remains obtunded (GCS 8: E1V2M5) and hypoxic (O₂ Sats 88% on 15L non-rebreather mask). You prepare to intubate the patient via rapid sequence induction.

Complete the following table with regards to expected complications during intubation **of this patient** and how you would address them. (8 marks)

(Marked out of 6.0)

	Anatomical change in airway due to pregnancy	Expected complication as a result of change in airway	Modification to standard airway management
1			
2			
3			
4			

Question 8

Not answered

Marked out of 13.00

A 19 yo male presents to your Emergency department for the first time concerned about being followed by street gangs. He is agitated and pacing. His vital signs on arrival are:

BP 115/70 mmHg
 HR 90 bpm
 Temp 36.9 °C

- a. List six (6) features in history that make you more likely to consider an organic rather than psychiatric cause as a diagnosis.

(Marked out of 6.0)

- b. The psychiatric team have asked you for a “medical clearance” for this patient. State three (3) objectives of a medical assessment.

(Marked out of 3.0)

- c. The psychiatric team believe this is likely to be drug induced psychosis. State four (4) factors that might lead you to consider drug induced psychosis above schizophrenia.

(Marked out of 4.0)

Question 9

Not answered

Marked out of 18.00

An 18 year old male is brought to your ED in an altered conscious state by his two house-mates. He is vomiting and complaining of flank pain. His vital signs are:

- HR 120 bpm
- BP 85/55 mmHg
- O2 sat 99% RA
- RR 32 bpm
- GCS 13 (E4 V3 M6) - confused to time and place.

Bloods are taken on arrival by nursing staff and sent. His venous blood gas and initial pathology tests are shown below.

pH	7.1	7.35-7.45
pCO ₂	20 mmHg	40-50
HCO ₃	4 mmol/L	24-32
BE	-16	-3-3
Na ⁺	135 mmol/L	135-145
K ⁺	6.0 mmol/L	3.5-5.1
Cl ⁻	95 mmol/L	95-110
Glu	18 mmol/L	3.5-7.8
Lactate	5.2 mmol/L	0.6-2.4
Hb	163 g/L	135-175

Urea	10 mmol/L	1.8-8.2
Creat	148 µmol/L	44-97
Serum Osmolality	340 mOSm / kg	285-295

- a. Derive three (3) calculations using the shown results to assist in your interpretation. Please also include the relevant formulae.

(Marked out of 6.0)

- b. State the most likely diagnosis based on your calculations above, and one important differential diagnosis.

(Marked out of 2.0)

- c. List two (2) other initial investigations that would be important in supporting the most likely diagnosis above, and give a reason for each test.

(Marked out of 2.0)

- d. Shortly after arriving, he has a prolonged generalised seizure, and is subsequently successfully intubated and ventilated.

Aside from ongoing supportive management, state four (4) key components of your ongoing treatment of the patient in the context of their likely diagnosis, including rationale and additional detail for any specific therapies mentioned.

(Marked out of 8.0)

Question 10

Not answered

Marked out of
18.00

A 21 year old man is brought in by ambulance to your rural ED after being struck in the anterior midline of the neck with a hockey stick 30 minutes ago. Initial evaluation reveals he has a hoarse voice, large haematoma and tenderness of the anterior neck. He is having difficulty swallowing saliva. He is alert and has no other injuries. His vital signs are :

HR	105	bpm
BP	150/90	mmHg
RR	22	bpm
O2 saturation	98 %	on 6L O2/ min
Temperature	37	⁰ C
GCS	15	

- List Two (2) important clinical signs that indicate significant airway injury.
(Marked out of 2.0)
- List and Justify two (2) Investigations to assess his airway.
(Marked out of 4.0)
- List three (3) different airway treatment options for this patient. For each option provide a specific associated risk/concern.
(Marked out of 6.0)
- State six (6) modifications to your routine intubation plan in order to safely manage his airway. Please provide your reasoning/rationale.
(Marked out of 6.0)

Question 11

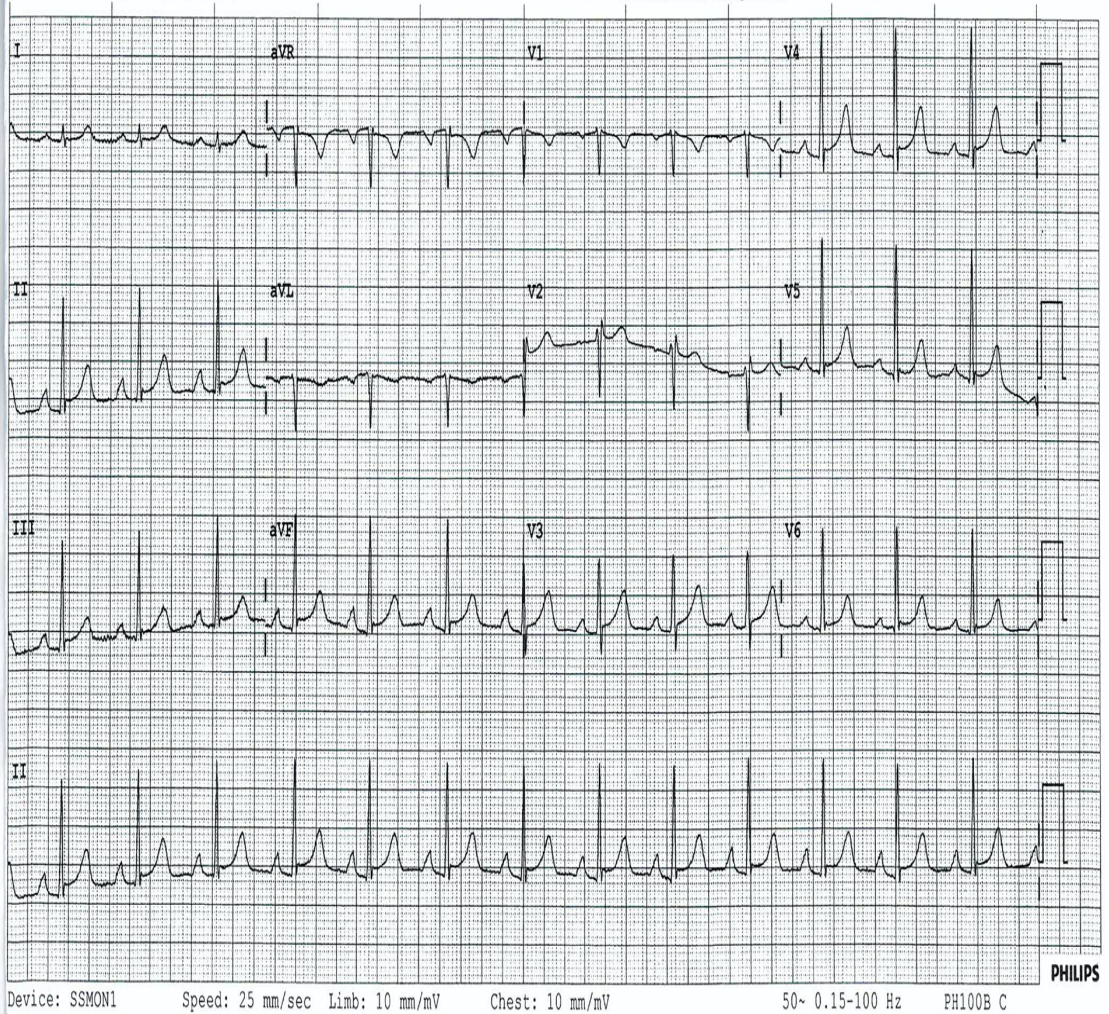
Not answered

Marked out of
9.00

A 40 years old male presents with prolonged chest pain. His initial ECG has been recorded and is shown below.

12 Lead ECG Report (Standard)

Unconfirmed Diagnosis



- What is the most significant abnormality?
(Marked out of 1.0)
- What is the most likely diagnosis?
(Marked out of 1.0)
- State two (2) other ECG abnormalities likely to be associated with this condition?
(Marked out of 2.0)
- List four (4) causes for this condition that you would consider in this man?
(Marked out of 4.0)
- If he suddenly becomes hypotensive, what intervention is most likely to be life-saving?
(Marked out of 1.0)

Question 12

Not answered

Marked out of
12.00

You receive notification that a two-year-old boy is being transported to your ED by ambulance. He was found face down and unresponsive in the backyard pool. CPR was commenced by his father and continued when the ambulance arrived. He is now intubated and has a spontaneous circulation.

His Vital signs on arrival:

HR	70	bpm
RR	20	bpm
O2 saturations	93%	on 80% FiO2
BP	80/40	mmHg
Temperature	32	°C

- a. Complete the table below listing six (6) factors on history/examination which could impact prognosis, and for each factor how prognosis would be impacted.

(Marked out of 12.0)

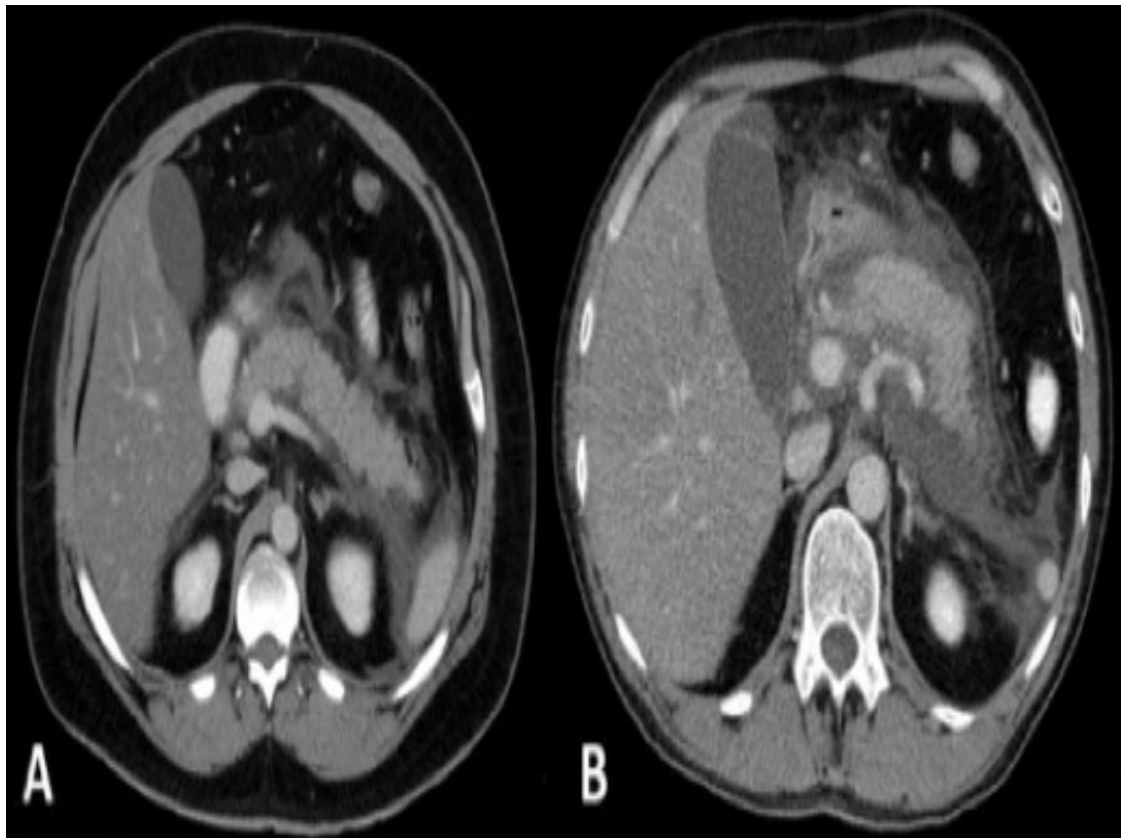
Question 13

Not answered

Marked out of
12.00

A 65-year-old man with past medical history of atrial fibrillation, HTN and high cholesterol, presents with a 2 day history of **severe** upper abdominal pain and vomiting. He is on atenolol and rivaroxaban with no known drug allergies.

A CT scan of his abdomen is performed with 2 slices post-contrast shown.



- a. List one (1) important abnormality in his CT scan.
(Marked out of 1.0)

- b. List two (2) important negative findings.
(Marked out of 2.0)

- c. What is the most likely diagnosis?
(Marked out of 1.0)

- d. List four (4) underlying aetiologies.
(Marked out of 4.0)

- e. State four (4) management priorities.
(Marked out of 4.0)

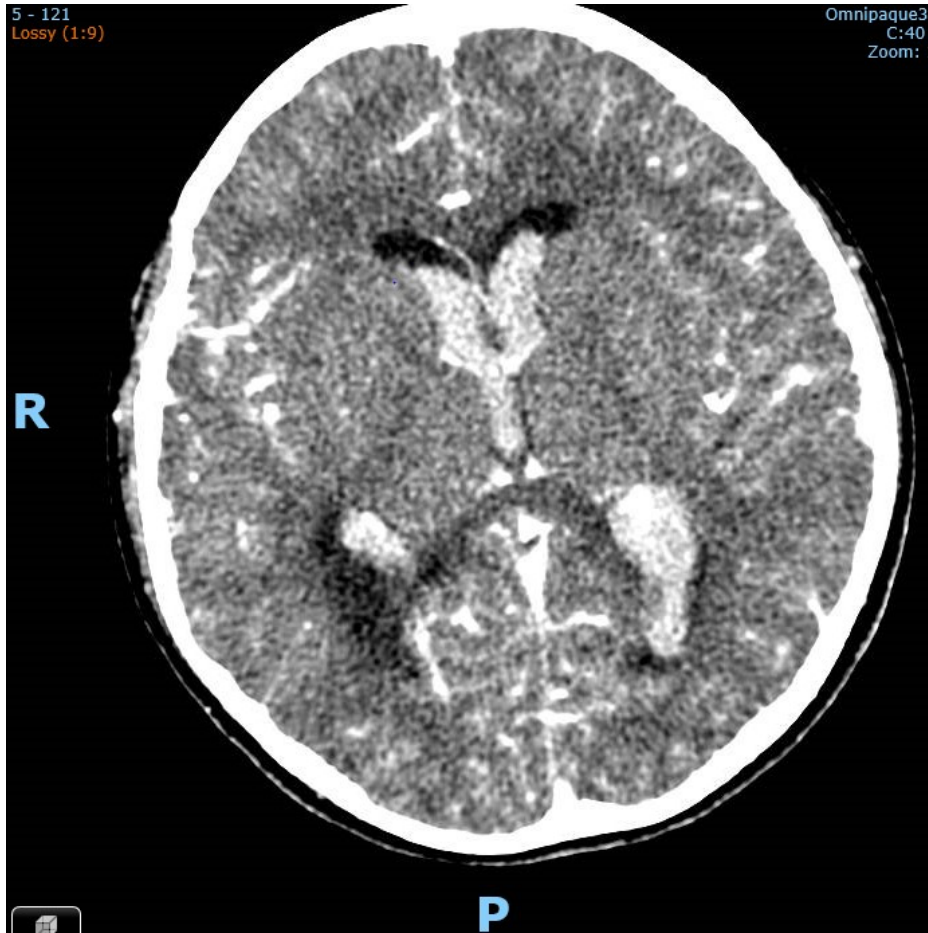
Question 14

Not answered

Marked out of 12.00

A 9 year old boy collapsed at home with a headache. He is transported to your rural ED and intubated on arrival. He has no other injuries.

An image of his CT brain is shown below.



- a. Complete the table below listing two (2) actions that you would take for each system to prepare this child for aeromedical retrieval to a tertiary centre. For each action give a justification.

(Marked out of 12.0)

Question 15

Not answered

Marked out of
12.00

You are the director of a large teaching hospital Emergency Department. Your Nurse Unit Manager comes to you and says that one of her nurses informed her that a senior registrar had asked her to sign an amended dose of adrenaline she had given to a patient with anaphylaxis. The registrar told the nurse that only after she had administered 1mg IM did she realise the guideline recommended 0.5 mg IM. The patient developed some chest pain and was hypertensive and tachycardic after the injection but this settled after 5 minutes so "no harm was done." The registrar had amended the medication chart by changing the "1" to a "0" and adding a 0.5 to make it look like the order said 0.5. They then asked the nurse to countersign the amended order.

- a. State six (6) steps you would take to investigate this claim.

(Marked out of 6.0)

- b. State six (6) steps of open disclosure you would follow in this case.

(Marked out of 6.0)

Question 16

Not answered

Marked out of
18.00

An 18 month old girl presents to the ED with fever and vomiting for the past 36 hours, associated with two loose bowel actions. She is not tolerating any oral intake. Her mother believes that she has caught gastroenteritis from her 3 year old brother.

- a. List 3 (three) alternative diagnoses which may account for her symptoms.

(Marked out of 3.0)

- b. List 3 (three) features on history that would suggest an alternate diagnosis to acute gastroenteritis

(Marked out of 3.0)

- c. List 2 (two) initial therapeutic interventions to treat her symptoms

(Marked out of 2.0)

- d. You determine that the child requires rehydration. Based on a determination of 5% dehydration in a 10kg child, complete the following table

(Marked out of 6.0)

- e. List 1 (one) advantage and 1 (one) disadvantage for each rehydration option.

(Marked out of 4.0)

Question 17

Not answered

Marked out of
16.00

You are working in a busy tertiary trauma centre and your registrar asks you to review images from an eFAST examination they have performed on a 26-year-old male who has a single stab wound to the chest. The patient is currently haemodynamically stable with a pulse of 90/minute and BP 110/80, GCS 15/15. Image 1 and Image 2 are shown below.

IMAGE 1 Subcostal View.

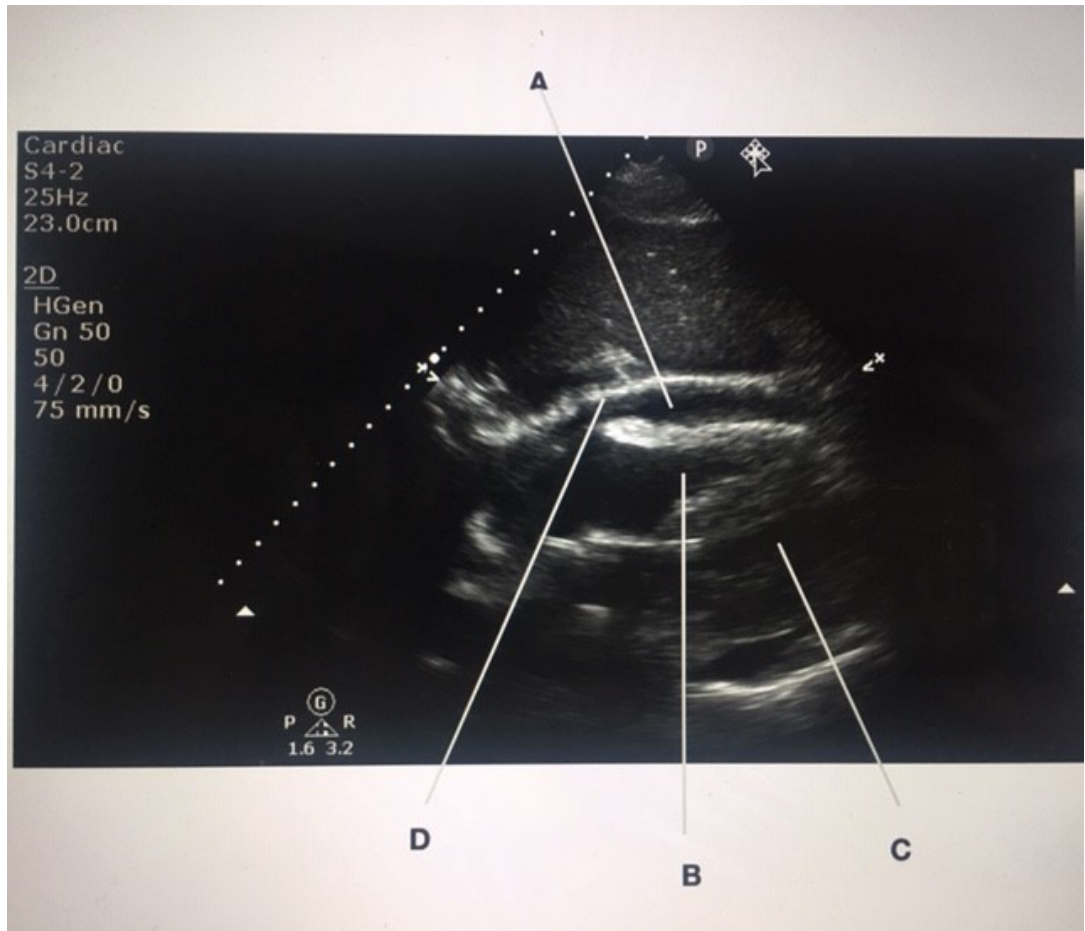
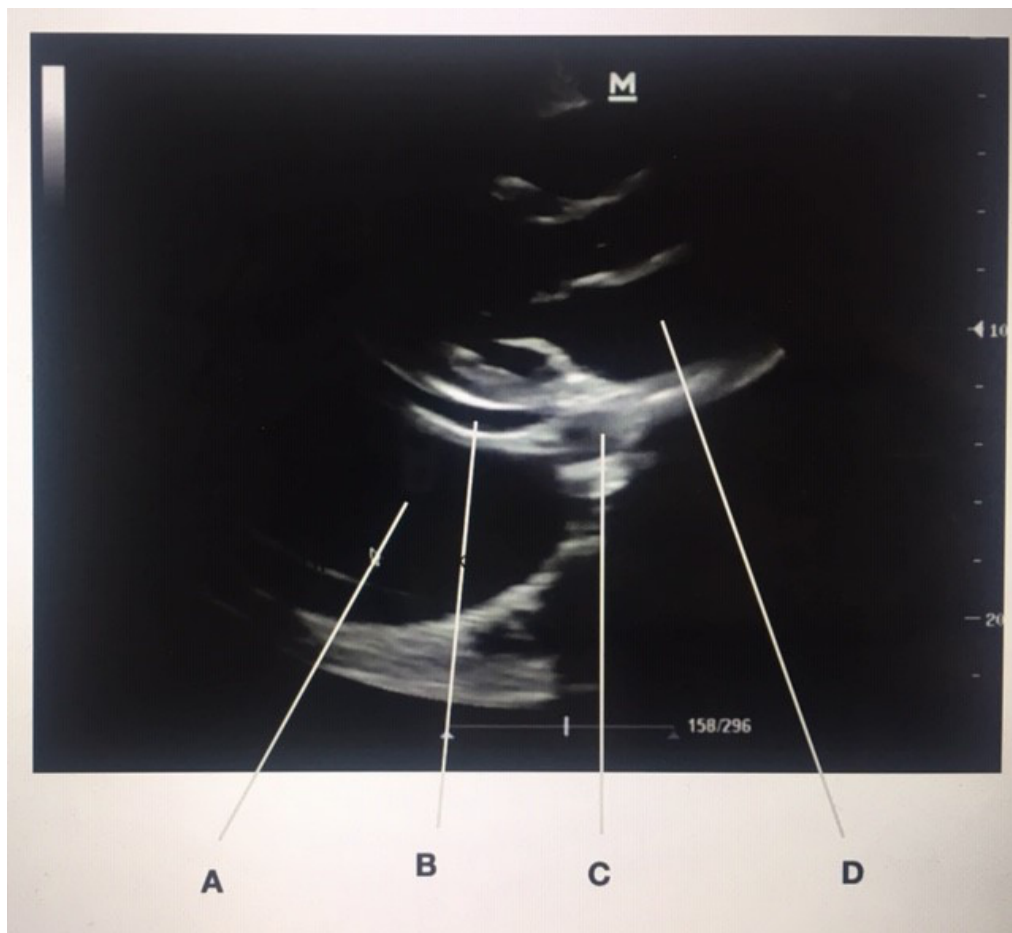


IMAGE 2 Parasternal Long View



a. Identify the labeled points on image 1:

(Marked out of 4.0)

b. List four (4) features on echo suggestive of pericardial tamponade:

(Marked out of 4.0)

c. Identify the labeled points on image 2:

(Marked out of 4.0)

Question 18

Not answered

Marked out of
18.00

A 25 year old female with no past medical history presents to your Emergency department with gradual onset diplopia. She is not on any regular medications and there has been no history of trauma.

- a. Using the table, list four (4) neurological diagnoses to account for her presentation. Aside from diplopia, for each condition listed, state one (1) clinical examination finding and one (1) investigation finding which would support each diagnosis.

(Marked out of 12.0)

- b. On examination, she was found to have lower limb weakness. List four (4) clinical signs that distinguish the origin of neuromuscular weakness as upper motor neuron. (UMN)

(Marked out of 4.0)

Question 19

Not answered

Marked out of
17.00

A 48 year old man presents to your small regional Emergency department, 30 minutes after being bitten on his ankle by a snake.

- a. Complete the table below listing four (4) clinical syndromes associated with snake envenomation and four (4) different Australian snakes that can cause the syndromes listed.

(Marked out of 8.0)

- b. You decide the patient will require transfer to a larger hospital for ongoing management. State three (3) criteria that must be met for a hospital to treat a patient with possible envenomation.

(Marked out of 3.0)

- c. Outline six (6) important steps in his management prior to transfer.

(Marked out of 6.0)

Question 20

Not answered

Marked out of
10.00

A 55 year old female with no significant past medical history presents to your Emergency Department with right knee pain after a fall in which she landed on her knees. She tripped over her dog and has no other injuries.

- a. List five (5) indications for a plain knee X-ray.

(Marked out of 5.0)

- b. The following X-rays are obtained. State two (2) abnormal findings.





(Marked out of 2.0)

c. State three (3) treatments you would commence in the ED.

(Marked out of 3.0)

Question 21

Not answered

Marked out of
12.00

You are the Consultant in charge of a metropolitan emergency department. An explosion has occurred in the engineering department of your facility. The Emergency department is now without any wall outlet oxygen supply. A hospital code yellow has already been called, and the Hospital executive is en route to the hospital. You are currently the most senior member of staff on site.

- a. Complete the table below stating three (3) actions you will take to manage the supply of oxygen within your Emergency Department.

(Marked out of 6.0)

- b. The explosion has caused a fire which is adjacent to your department. The hospital executive asks you to prepare to evacuate.

Complete the table below listing the patient groups you would evacuate, in order of priority, with one justification for each as to why they fall in that level of priority.

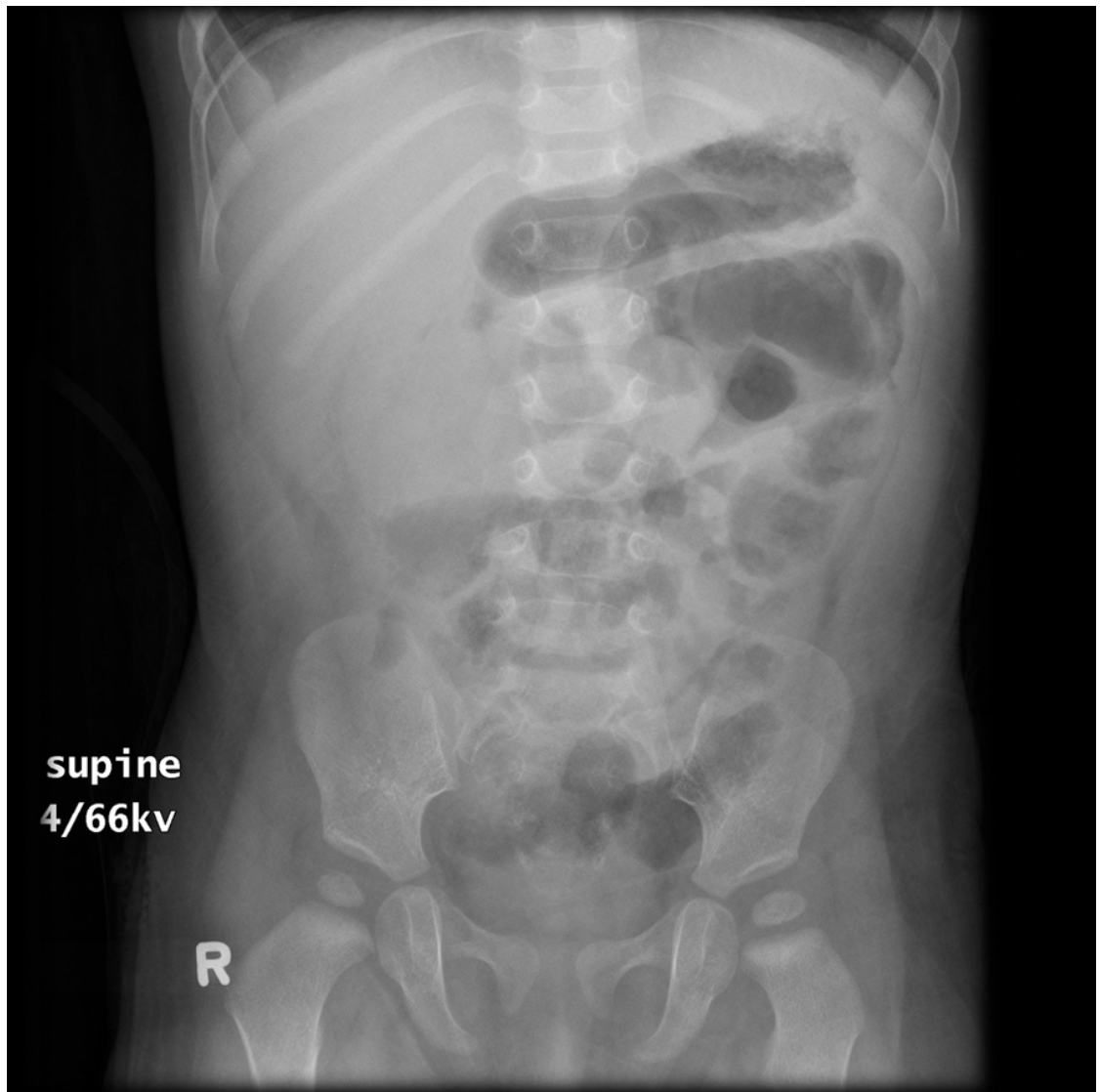
(Marked out of 6.0)

Question 22

Not answered

Marked out of
12.00

You are assessing a one year old infant with intermittent abdominal pain and vomiting. Her X-ray is shown:



- a. State three (3) abnormal findings seen on this abdominal X-ray.
(Marked out of 3.0)

- b. State your most likely diagnosis and how you would confirm it.

(Marked out of 2.0)

- c. List three (3) other possible diagnoses.
(Marked out of 3.0)

- d. State four (4) key steps in her management.
(Marked out of 4.0)

Question 23

Not answered

Marked out of
11.00

A 40 year old male presents to your Emergency department with 3 days of right knee pain and swelling. He has no significant past history and takes no regular medications. Examination reveals a significant effusion. You decide to aspirate the knee joint.

- a. Complete the table below listing the likely results for each of the types of aspirate.
(Marked out of 6.0)

- b. The gram stain of knee aspirate reveals a gram negative diplococci. What is the likely organism?
(Marked out of 1.0)

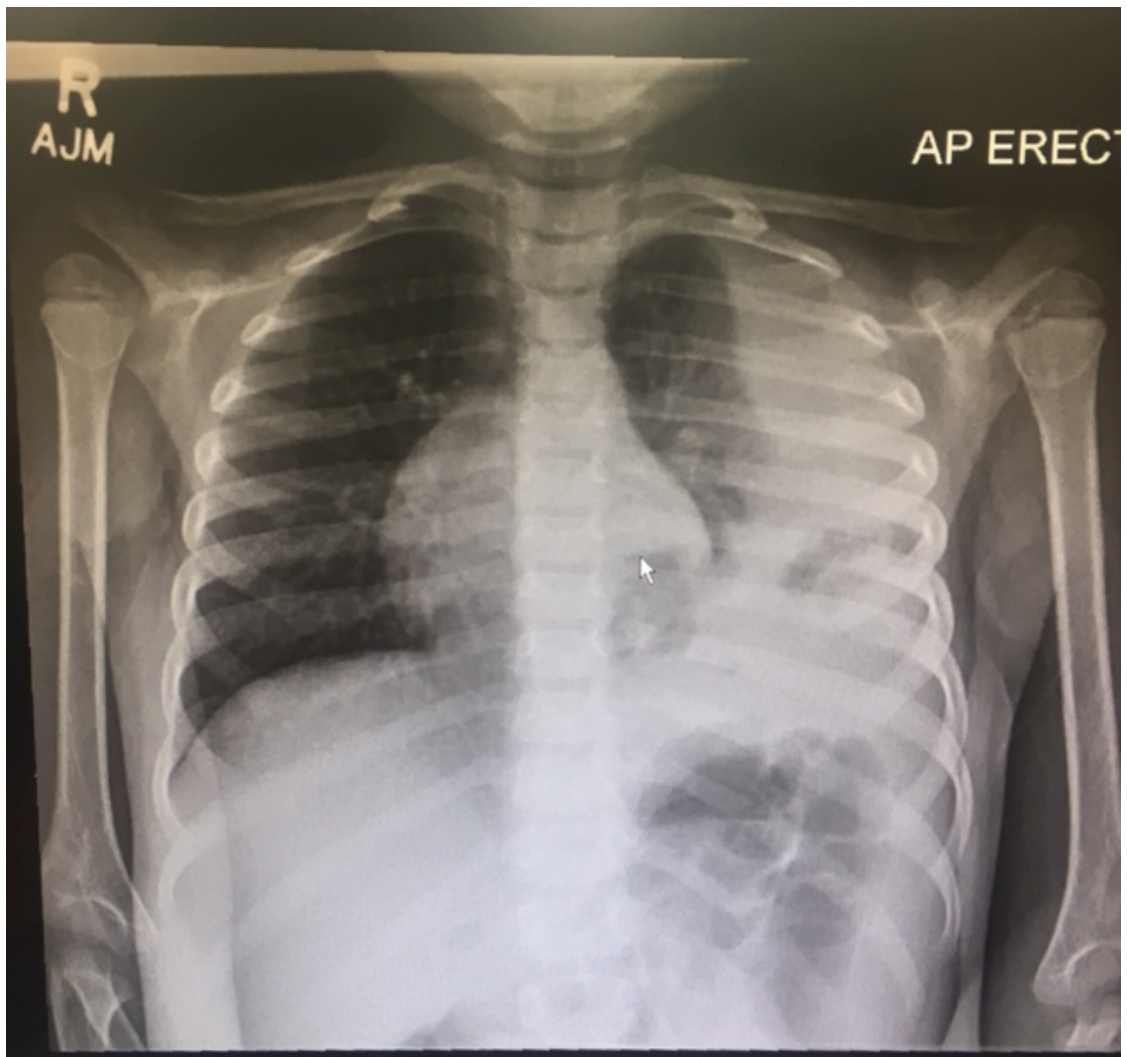
- c. State four (4) key management steps for this patient.
(Marked out of 4.0)

Question 24

Not answered

Marked out of
10.00

A 9 year old boy presents with 10 days of fever. There is no history of trauma. Their CXR is shown below.



- a. List the three (3) most important abnormal findings on this CXR.

(Marked out of 3.0)

- b. List the most important relevant negative.

(Marked out of 1.0)

- c. What is the most likely clinical diagnosis?

(Marked out of 1.0)

- d. What imaging modality would be most appropriate to aid diagnosis and further management?

(Marked out of 1.0)

- e. Outline four (4) steps in management of this child in the first 24 hours of care.

(Marked out of 4.0)

Question 25

Not answered

Marked out of
12.00

You are the director of an Emergency Department reviewing a recent adverse outcome with delayed instigation of appropriate care. The case is of a 2 year old with pneumonia that required intubation for severe respiratory distress. The child presented with tachycardia and tachypnoea and was triaged as Category 3. They waited 2 hours to be seen by an Intern who then informed the consultant 1 hour later. On review by the senior doctor the child was immediately moved to a resuscitation area, intubated and received ongoing care in ICU.

- a. Complete the table below listing strategies you might use to prevent a similar adverse event in the future with details on how these strategies would help.

(Marked out of 12.0)

Question 26

Not answered

Marked out of 12.00

A 25 year old man is referred to your ED from his GP who has diagnosed him with splenomegaly.

- a. In general, list two (2) causes of MASSIVE splenomegaly.
(Marked out of 2.0)

- b. List four (4) other causes of splenomegaly, each from a different category.
(Marked out of 4.0)

- c. List six (6) other examination findings you would seek in this patient to assist in your differential diagnosis.
(Marked out of 6.0)

Question 27

Complete

Marked out of 15.00

You are the consultant in charge of a tertiary ED Trauma Centre. You receive pre-notification of a 29 year old male involved in a high speed motorbike accident colliding with a tree. He has suspected head, chest and abdominal injuries. His right upper limb has been partially amputated.

The paramedics placed a pelvic binder, a cervical collar, and administered a 250ml bolus of Normal Saline through an 18G IV in the patient's left cubital fossa. The right arm has been dressed and splinted. Your Trauma Team has been activated.

Vital signs on arrival:

GCS	8	(E-2, V-2, M-4)
HR	160	bpm
BP	80/50	mmHg
SaO ₂	92%	On 15L oxygen via a non-rebreather mask.

Primary survey reveals:

Airway - patent, receiving 15L O₂ via non-rebreather mask.

Breathing - decreased AE bilaterally

Circulation - thready radial pulse uninjured arm. eFAST positive in right upper quadrant.

Inconclusive views of pericardium and lungs. Right upper limb partially amputated through the arm with large volume of blood streaming through compression bandage.

D - GCS 8, pupils - 2mm reactive bilaterally.

- a. List six (6) immediate priorities in this patient's management.
(Marked out of 6.0)

1.

- b. Despite your initial management, the patient becomes more tachycardic and hypotensive. His vital signs are now:

GCS 4 (E-1, V-1, M-2)
HR 190 bpm
BP unmeasurable - just palpable carotid plus.
SO2 unmeasurable.

A repeat eFAST demonstrates pericardial fluid and fluid in the right and left upper quadrants.

List three (3) immediate treatment priorities.

(Marked out of 3.0)

1.

c. Regarding trauma patients in general, state three (3) indications and three (3) contraindications for resuscitative thoracotomy.

(Marked out of 6.0)

Indications	
1	
2	
3	
Contraindications	
1	
2	
3	