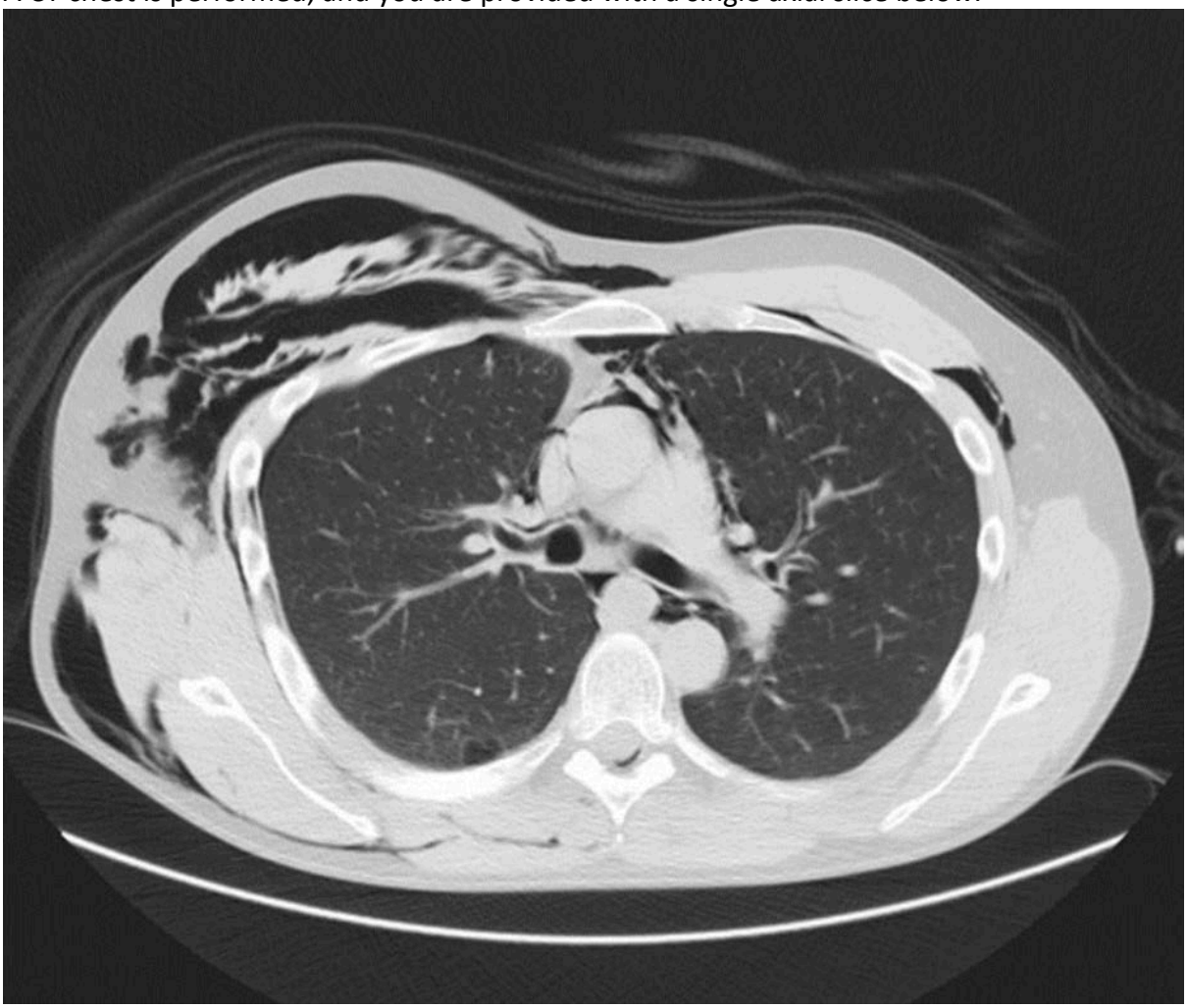
Trauma Pt 1

1. A 28 year old male is brought to ED after being involved in a high speed MVA. On arrival he is complaining of severe right sided chest pain and shortness of breath. His initial observations are:
   - SaO2 95% on 15l NRB mask
   - RR 34
   - Pulse 105bpm
   - BP 110/70

A CT chest is performed, and you are provided with a single axial slice below.



a) list five positive and two negative findings of this CT image

Positive	Negative
Extensive right and left chest wall surgical emphysema	No tension evident No chest tube No haemothorax
Epidural air	
Pneumo-mediastinum	List could be expanded!
Right sided pneumothorax	
Emphyseamtous bleb posterior right hemithorax	

b) List three potential complication of the finding identified
   - Air embolism
   - Airway compromise from tracking to larynx/pharynx
   - Pneumopericardium, progressing to cardiac tamponade
   - NB must relate to the findings that the candidate has stated, ie read the question properly!

c) List three options for treatment of the above findings
   - Small lumen right ICC for drainage of the pneumothorax
   - Small bore ICC inserted using incision/surgical technique _
   - Large bore ICC specifically to treat pneumothorax and possible haemothorax. _
   - Catheters on Heimlich valve/UWSD +/-suction
   - OT for thoracotomy

2. A 25 year old man has been brought to ED after being stabbed to the left side of his neck during an assault. His vital signs are normal, other than a tachycardia of 110bpm. He is fully conscious. A photograph of the wound is provided.

a) Describe and interpret the injury seen in the picture (4 marks)
- Large, y shaped laceration
- Platysma breached
- Extending though zones II and III
- Blood-soaked gauze indicates active bleeding
- Soft tissue swelling at the angle of the mandible to indicate an expanding haematoma

b) Complete the following table:

NECK ZONE	ANATOMICAL LANDMARKS	ANATOMICAL STRUCTURES WHICH MAY BE INJURED	INVESTIGATION MODALITY
ZONE III	Angle of mandible to base of skull	Pharynx, jugular veins, vertebral arteries, internal carotid arteries	Angiography Bronchoscopy Oesophagoscopy
ZONE II	Between cricoid cartilage and angle of mandible	Jugular veins, vertebral and common carotid arteries, external and internal carotids, trachea, oesophagus, spinal cord, larynx	Operative exploration
ZONE I	Between clavicles and cricoid cartilage	Lung, trachea, great vessels, oesophagus, spinal cord, thoracic duct, cervical nerve trunks	Angiography Bronchoscopy Oesophagoscopy

c) List the indications for emergent intubation in this patient
- Stridor
- Acute respiratory distress
- Airway obstruction from blood/secretions
- Expanding haematoma
- Persistant hypotension
- Extensive subcutaneous emphysema
- Altered mental state

3. A 37 year old man is brought to ED via ambuylance after being involved in a high speed motorbike accident.He was found on the road 20mettres from his bike. His helmet has been removed by paramedics and he has c spine immonilisation in-situ. He is complaining of diffuse abdominal pain. The CDA administered 50mcg of fentanyl, alongside 2 litres of normal saline. He is pale, sweaty and distressed. Sats 96% on 8L, PR 110bpm, BP 80/60, eFAST negative
   A pelvic XRay is performed and shown below:

a) List the positive findings and overall interpretation of the Xray shown (3 marks)
   - Open book pelvic fracture with pubic symphysis diastasis and widening of the sacroiliac joint on the right. Unstable fracture with the possibility (likely) for associated bleeding and other injuries

b) List four potential other injuries for this patient
   - Closed head injury
   - Femoral fractures
   - Thoracic injury
   - Abdominal solid organ injury without intraperitoneal blood visible on eFAST
   - Hollow viscous injury
   - Diaphragmatic injury

c) List and justify the management priorities for this patient's haemodynamic instability (6 marks)
   - Application of pelvic binder to reduce intrapelvic volume
   - Haemostatic resuscitation, ie massive transfusion, to prevent further coagulopathy, acidaemia and shock
   - Correct hypothermia to assist with blood cloting
   - Tranexamic acid 25mg/kg as an antifibrinolytic agent to prevent breakdown of clots formed
   - Early discussion with and facilitation of definitive surgical assistance +/- interventional radiology