VAQ 2009.1.4 (Photo)

This 25 year old man has been brought in to your emergency department after he crashed into a fence on his motorcycle. He did not sustain loss of consciousness, but has left sided chest pain and laboured breathing. His observations are:

HR	110	/min
BP	100/70	mmHg supine
RR	28	/ min
GCS	15	

a. Describe and interpret his photograph. (30%)
Your secondary survey does not reveal any other injury
b. List your immediate management priorities (70%)

This man has life threatening chest injuries and hypotension. He has an extensive left thoracic laceration extending into the pleural space. This will need an occlusive dressing, large bore intercostal catheter drainage, wound toilet, antibiotics and analgesia at the absolute minimum, but there is a very high risk of other injuries with immediate potential life threats including great vessel, cardiac injury, pulmonary laceration or contusion, haemothorax, and blunt abdominal trauma. Depending on ongoing stability he may require immediate thoracotomy +/- laparotomy.

Photograph
view of torso from left side of patient
ECG dots and leads
USS gel visible in epigastrium likely from FAST scan
Dressing lifted to view wound
    extensive laceration left anterolateral thorax
    approximately follows left 7th intercostal space from midaxillary line to anterior costal junction

deep injury extending through to intercostals and extensive breach of pleural space with visible lung in wound base
lower margin of rib seen in wound – not visibly broken
minimal visible external haemorrhage
marked pallor suggesting anaemia / shock
minor surrounding contusion

Left arm
laceration visible but no detail seen
sharp margin of skin colour change – 'T-shirt tan' or alternatively abrasion

Interpretation
Extensive penetrating chest trauma
approx 20cm wound extending through pleura
especially concerning for underlying pulmonary, cardiac injury
this will be a sucking chest wound
impending respiratory failure
needs occlusive dressing, ICC +/- ventilation

Pallor and hypotension
shock
possible hypovolaemia, tamponade, pneumothorax, arrhythmias, cardiac contusion or combination

Immediate management priorities
ATLS approach with team based approach and simultaneous assessment and treatment
'ABC' approach
Airway likely to be intact from stem but may need positive pressure ventilation for thoracic injuries
intubate as required
likely to be managed without ET tube initially if respiratory stability achieved with wound treatment and ICC

Oxgenation / ventilation
occlusive dressing to wound after rapid wound toilet (minimally contaminated)
32F ICC / underwater seal drain to left pleural space
+/- intubation and ventilation as needed for ongoing ventilatory failure

Antibiotics (cephalothin 2g IV, ADT)
Exclusion of cardiac tamponade – likely to be directly visible as has effective left lateral thoracotomy
Exclusion of right sided (tension) pneumothorax

IV access and escalating circulatory support as indicated by dynamic assessment
address mechanical causes of hypotension (tamponade, tension pneumothorax)
Ongoing hypotension with significant penetrating chest trauma needs consideration for immediate thoracotomy +/- proceed to laparotomy with early blood products
Needs full secondary and tertiary surveys when immediate life threats addressed

Admission under trauma surgeon / thoracic surgeon but likely disposal will be operating theatre