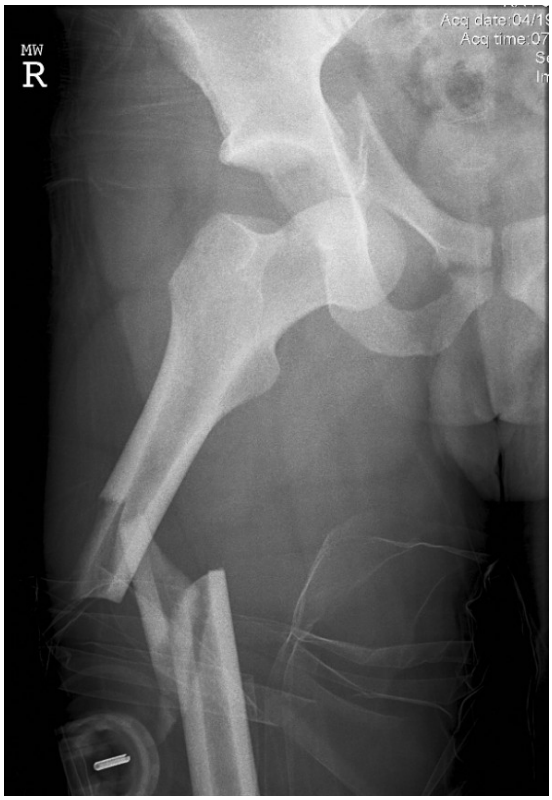
VAQ 2008.2.2

A 45 year old man is brought to your emergency department with severe pain in his right hip after a fall from his bicycle an hour earlier. He has no other obvious injuries.



GCS	15	
HR	110	/min
BP	95/50	mmHg supine

a. Describe and interpret his X-ray (50%)
b. Outline the analgesia options (50%)

This man has a severe injury to his right leg with a displaced pelvic/acetabular fracture, dislocated hip, and proximal femoral shaft fracture with haemodynamic compromise. Treatment priorities are

- resuscitation
- analgesia
- reduction of hip dislocation

Radiograph - AP

- shows right hip, limited pelvic views, proximal femur

Injuries demonstrated

- femoral fracture
  - junction prox 1/3 and distal 2/3
  - comminuted with large fragment
  - angulated at least 30 degrees varus
  - off ended / displaced approx 2-3cm (distal fragment medial)
  - shortened at least 1cm
  - concerning for open injury laterally
- high energy severe injury
- significant fracture haematoma expected
- likely to contribute to haemodynamic compromise
- risks to neurovascular structures
  - profunda femoris
  - femoral nerve
- hip dislocation
  - inferomedially - likely anterior dislocation

- high energy severe injury
- risk of anterior neurovascular injury
  - femoral nerve, artery and vein
- requires prompt reduction to minimise risk of femoral head AVN

pelvic fracture
- acetabular fracture extending into superior pubic ramus
- medial displacement approx 1cm
  - risk of
    - bladder laceration
    - pelvic vessel bleed - usually venous
- significant concern in context of haemodynamic compromise

pubic bone fracture
- transverse fracture extending to pubic symphysis
- no associated pubic symphysis widening
- concern for other pelvic injury – need further imaging

additional
- air splint artefact noted
- no pelvic binder

Analgesic options

oral
- inappropriate

inhalational
- methoxyflurane 3mg prehospital
- nitrous oxygen may be used as adjunct

intravenous
- titrated narcotic
  - avoid morphine (haemodynamic upset)
  - fentanyl 25mcg increments, expect 100-200 mcg total
- titrated ketamine
  - 10mg increments, expect 30-40mg adequate for analgesia
  - safer in haemodynamic upset but may cause tachy masking clinical assessment

PCA
- appropriate after resuscitation complete only

Regional
- Femoral nerve block
  - not appropriate
  - inadequate analgesia to most injuries present
  - increased risk of neurovascular injury with hip dislocation

Reduction / splintage
- difficult in multi-injury environment
  - Donway splint
    - isolated femoral fracture not present
    - pelvic/hip injuries preclude safe use
  - traction
    - useful for acetabular fracture, femoral fracture
    - not applicable with hip dislocation

General
- procedural sedation
  - temporary
- limited application – reduction of hip if isolated injury but unlikely usable in this situation

general anaesthesia
- temporary
- allows for definitive treatment in ortho OT

Interpretation:
Severe #/dislocation of pelvis/R hip and comminuted # femur with potential for neurovascular compromise and blood loss. Observations indicate early shock. Dislocated hip is an orthopaedic emergency/ urgent reduction req.