1) This 35 year old man fell onto his outstretched wrist today.

What does the X-ray show?

Dislocation of the lunate (remember perilunate dislocation is when the lunate stays in position and the rest of the carpus dislocates).

How would you manage this patient?

Analgesia, assess neurovascular status, immobilise, refer T+O for reduction.

What are the possible complications?

Median nerve injury, avascular necrosis, Sudeck's atrophy.

2) This 26 year old female presents with a 3 week history of a tender, red, progressive rash on her legs. She has a history of exposure to TB which is currently not active. The patient started taking a new OCP 4 weeks prior to presentation. She is now on her second course of antibiotics for suspected cellulitis but the rash is not improving.

What is the likely diagnosis?

Erythema nodosum.

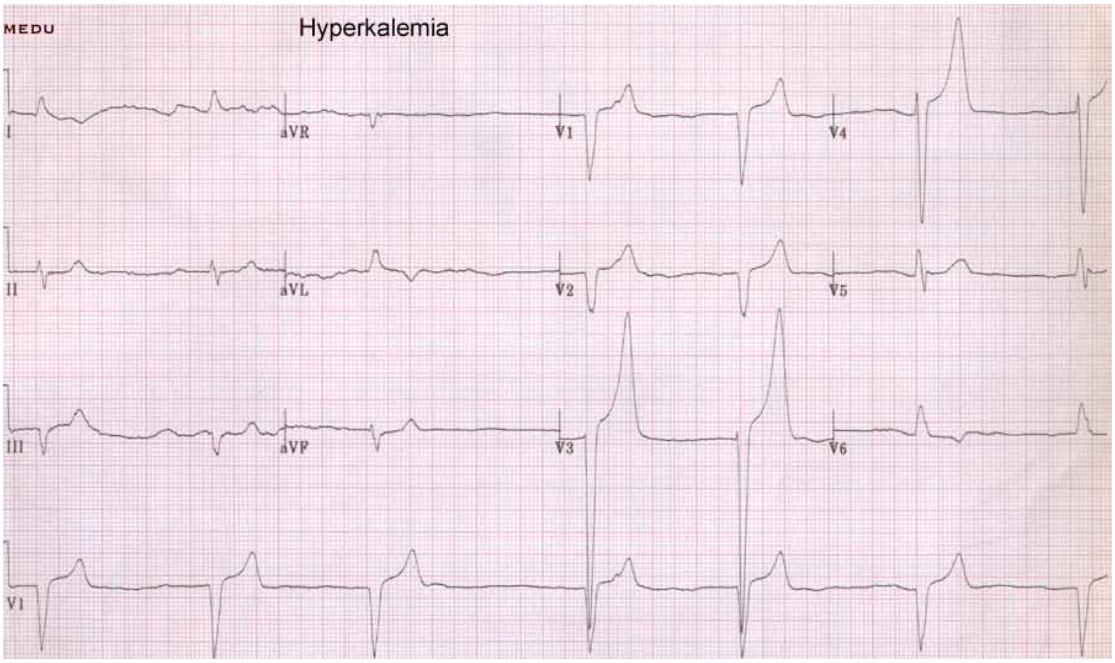
What are the possible causes?

i) sarcoidosis
ii) infections: streptococci, TB, infectious mononucleosis, chlamydia, viral
iii) drugs: sulphonamides, OCP, salicylates
iv) inflammatory bowel disease
v) idiopathic

How would you manage this patient?

Advise NSAID, bed rest, elevate legs.
Remove underlying cause – OCP.
Most attacks settle within 2-12 weeks.
Systemic steroids may be used for severe cases.

3) This ECG is from a 55 year old with type II DM who states she feels weak all over for the last few days.



What does the ECG show?

Broad QRS complexes
Tall peaked T waves
Small/ absent P waves

What is the likely underlying cause?

Hyperkalaemia secondary to CRF due to DM.

Hyperkalaemia notes

Mild	(5.5-6.0)
Moderate	(6.1-6.9)
Severe	(>7.0)

Causes

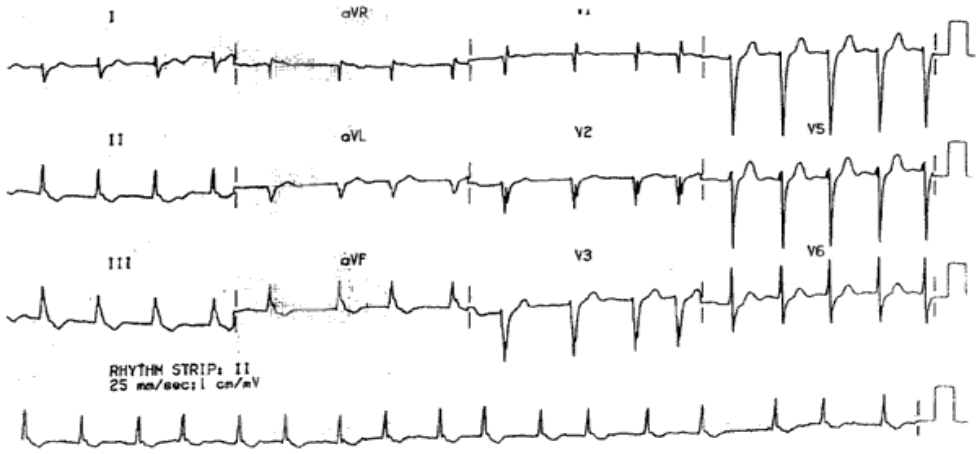
i) Factitious e.g. haemolysed sample.
ii) Reduced renal excretion – ARF, CRF, K+ sparing diuretics e.g. spironolactone.
iii) Cell injury e.g. burns, rhabdomyolysis.
iv) Hyperaldosteronism – Addison's disease, drug induced (NSAID, ACE inhibitors).
v) K+ cellular shifts – acidosis from any cause (DKA), drugs (suxamethonium).

Clinical features include muscle weakness/ cramps, paraesthesiae, hypotonia.

Treatment

i) 10ml 10% calcium gluconate.
ii) 10u Actrapid with 50ml of 50% dextrose IV – helps cellular uptake of K+.
iii) Nebulised salbutamol.
iv) Careful fluid balance, correct acidosis with sodium bicarbonate.
v) ? calcium resonium.
vi) Correct underlying cause.

4) A 48 year old lady presents with syncope and hypotension.



What ECG abnormalities are there?

Atrial fibrillation
Right heart strain – RAD
S wave in lead I and T wave inversion in III

What is the diagnosis?

Pulmonary embolism.
Sinus tachycardia is the most common ECG finding. RBBB and right axis deviation are usually only present in large PE. There may be non-specific T wave changes in the anterior and inferior leads.

She is previously fit and has no risk factors for PE. What investigations would you suggest to find the underlying cause?

Doppler USS of legs
CTPA
Inherited procoagulant screen (protein C, S, antithrombin III, Factor V Leiden)
Autoimmune screen (anticardiolipin antibodies, ANA)
USS or CT of abdomen and pelvis to look for occult masses

If a patient with suspected PE has arrested or is deteriorating, or in a stable patient with confirmed PE, thrombolysis with alteplase 50mg IV is appropriate.

Five risk factors for PE?

i) Major abdominal/ pelvic surgery
ii) Puerperium
iii) Malignancy
iv) Previous proven PE
v) Lower limb fracture

5) This 48 year old Pakistani woman developed cough and haemoptysis with night sweats and weight loss.

What is the diagnosis?

Pulmonary tuberculosis.

Which groups of patients are at risk from this?

Alcoholics, recent immigrants, HIV +ve, health care workers.

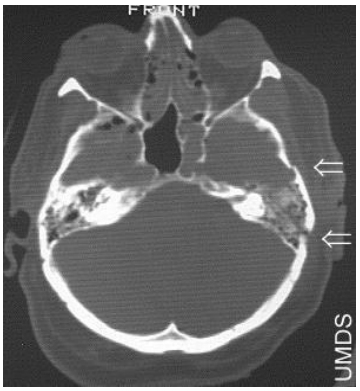
What test may be useful in determining the diagnosis of TB?

Mantoux test – Tuberculin is injected under the skin; if there is a strong reaction after 72 hours it means that there is a hypersensitivity to Tuberculin acquired by a previous BCG vaccination or active infection.

What treatment is indicated?

Combination therapy with e.g. rifampicin, isoniazid, pyrazinamide, ethambutol.

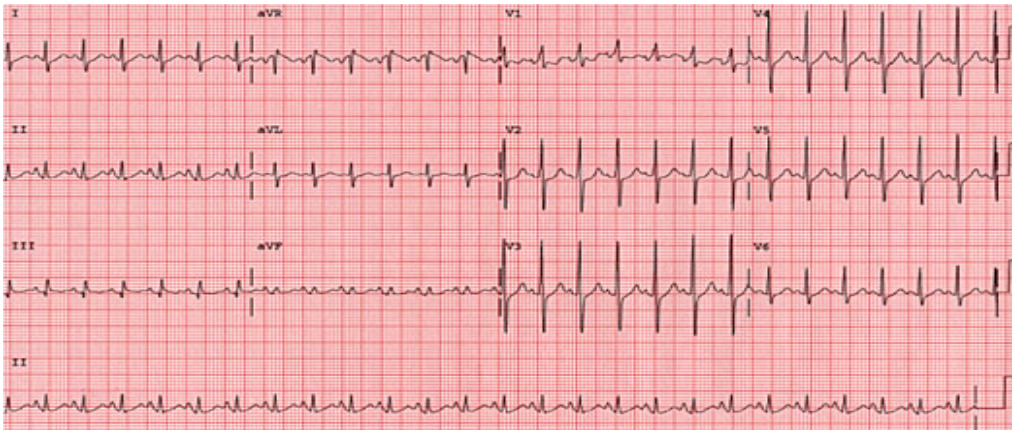
6) This man was assaulted and placed on the observation ward overnight. His GCS has deteriorated and he has been vomiting. You request a CT scan.



What abnormalities does the scan show?

Fracture of petrous part of temporal bone. There is blood in the sphenoid air sinus indicating basal skull fracture.

7) A 30 year old woman presents with SOB and dizziness. Her blood pressure is 80/45. This is her ECG.



What is the diagnosis?

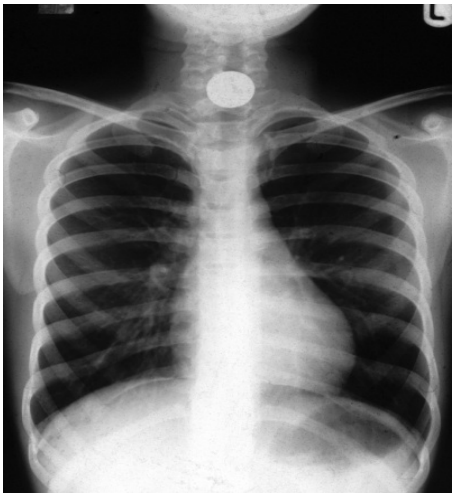
AV nodal re-entry tachycardia.

What is the management?

Resuscitation Council guidelines:

i) Support A/ B/ C
ii) Patient is unstable so give synchronised DC shock under sedation.
ii) If unsuccessful give amiodarone 300mg IV over 10 minutes and repeat shock; followed by amiodarone 900mg over 24 hours.

8) A 12 year old boy presents with history of coin ingestion. An X-ray is performed. Describe this.



X-ray shows radio-opaque oesophageal foreign body.

Objects that stick in the oesophagus do so at sites of anatomical narrowing;

i) Cricopharyngeus
ii) Aortic indentation
iii) Diaphragm

Neglected objects may result in oesophageal perforation and mediastinitis.

May require removal with rigid endoscopy. Foley catheters and magnets have also been used but without much success.

9) A 60 year old lady presents with two hours of central chest pain not relieved by GTN. Her ECG shows inferolateral ischaemia.

What are the TIMI risk factors?

TIMI= Thrombolysis in Myocardial Infarction trials.

i) Age ≥65 years
ii) ≥3 CAD risk factors
iii) Prior CAD (stenosis >50%)
iv) Aspirin in last 7 days
v) ≥2 anginal events in ≤24 hours
vi) ST deviation
vii) Elevated cardiac markers

The score (0-7) gives the risk of cardiac events (death, MI or urgent revascularisation) within 14 days in TIMI IIB.

10) A patient attends with a history of general malaise over the past three weeks. Some blood results are available to you;

Hb	9.0
WCC	6.9
Plt	190
Na	138
K	7.9
Urea	35.6
Creat	587
Ca	3.05

LFTs are normal.

Give two possible diagnoses?

Essentially this is a hypercalcaemia/ RF question; the RF may be caused by the hypercalcaemia (e.g. multiple myeloma) or the hypercalcaemia may be caused by the RF (e.g. CRF with tertiary hyperparathyroidism). A PTH level would be useful. Treatment priority would be $\downarrow K^+$. The classic elderly patient with multiple myeloma has back pain and presents with acute-on-chronic RF.

Causes of hypercalcaemia include:

i) Primary or tertiary hyperparathyroidism
ii) Malignancy (e.g. myeloma, metastases)
iii) Hyperthyroidism
iv) Sarcoidosis
v) Drug-related e.g. thiazide diuretics, lithium

Treatment of hypercalcaemia is fluids, careful fluid balance, calcitonin, diphosphonate.

11) Question about APLS fitting child protocol – know backwards.

12) List ten notifiable diseases.

i) Anthrax
ii) Cholera
iii) Dysentery
iv) Malaria
v) Measles
vi) Meningitis
vii) Plague
viii) Rabies
ix) Scarlet fever
x) Typhoid fever