

78 year old woman

Lightheadedness when exercising

Ejection-systolic, high-pitched murmur

Murmur radiates to the carotids

Narrow pulse pressure

Q1. Likely diagnosis?

Q2. Surgical options?

Q3. Key complication of surgery?

Q4. Life-long treatment with metallic valve?

Q5. Auscultation finding with metallic valve?

Q1. Likely diagnosis?

Aortic stenosis

Q2. Surgical options?

Open surgery (midline sternotomy)

Transcatheter aortic valve implantation (TAVI)

Q3. Key complication of surgery?

Infective endocarditis (2.5%)

Q4. Life-long treatment with metallic valve?

Warfarin (target INR 2.5-3.5)

Q5. Auscultation finding with metallic valve?

Metallic click replaces S2

26 year old man
Intravenous drug user
Presents with fever, fatigue
and night sweats

- Q1. Suspected diagnosis?**
- Q2. Examination findings in hands?**
- Q3. Examination findings on fundoscopy?**
- Q4. Diagnostic tests?**
- Q5. Criteria for diagnosis?**

Q1. Suspected diagnosis?

Infective endocarditis

Q2. Examination findings in hands?

Splinter haemorrhages (thin brown lines on fingernails)

Janeway lesions (painless red flat spots on palms)

Osler's nodes (tender red nodules on finger pads)

Q3. Examination findings on fundoscopy?

Roth spots (haemorrhages on the retina)

Q4. Diagnostic tests?

3 x blood cultures (separated by 6 hours)

Trans-oesophageal echocardiogram

Q5. Criteria for diagnosis?

Modified Duke criteria

64 year old woman

Fatigue, bone aches and constipation

Serum calcium 3.3 mmol/L (normal 2.2 – 2.6)

Q1. Causes of hypercalcaemia?

Q2. Clinical features of hypercalcaemia?

Q3. Cause of primary hyperparathyroidism?

Q4. Causes of secondary hyperparathyroidism?

Q5. Cause of tertiary hyperparathyroidism?

Q1. Causes of hypercalcaemia?

Medications (e.g., calcium and vitamin D)

Hyperparathyroidism

Cancer (e.g., lung, breast and kidney)

Q2. Clinical features of hypercalcaemia?

Kidney stones

Bone pain

Abdominal groans (constipation, nausea and vomiting)

Psychiatric moans (fatigue, depression and psychosis)

Q3. Cause of primary hyperparathyroidism?

Parathyroid tumour

Q4. Causes of secondary hyperparathyroidism?

Vitamin D deficiency or chronic kidney disease

Q5. Cause of tertiary hyperparathyroidism?

Parathyroid hyperplasia following secondary hyperparathyroidism

60 year old woman

Never smoked or drank alcohol

Develops bronchiectasis and liver cirrhosis

Q1. Suspected diagnosis?

Q2. Harmful enzyme?

Q3. Gene affected?

Q4. Screening blood test?

Q5. Liver biopsy results?

Q1. Suspected diagnosis?

Alpha-1 antitrypsin deficiency

Q2. Harmful enzyme?

Neutrophil elastase

Q3. Gene affected?

SERPINA1 gene on chromosome 14

Q4. Screening blood test?

Serum alpha-1 antitrypsin (low)

Q5. Liver biopsy results?

Periodic acid-Schiff positive globules in hepatocytes

8-7

70 year old man

Skin and sclera turn yellow

Dark urine, pale stools

No pain

Q1. Top differentials?

Q2. Tumour marker?

Q3. Usual histology?

Q4. Initial imaging?

Q5. Procedure to relieve obstruction?

Q6. Surgical option if head of pancreas affected?

Q1. Top differentials?

**Pancreatic cancer
Cholangiocarcinoma**

Q2. Tumour marker?

CA19-9

Q3. Usual histology?

Adenocarcinoma

Q4. Initial imaging?

CT abdomen

Q5. Procedure to relieve obstruction?

ERCP + stent

Q6. Surgical option if head of pancreas affected?

Whipple procedure (pancreaticoduodenectomy)

Benign breast lumps

- Q1. Small, smooth, painless, round, well-defined, firm, mobile?**
- Q2. Generalised breast lumpiness and soreness?**
- Q3. Smooth, well-defined, fluctuant?**
- Q4. Painless, firm, irregular lump following trauma?**
- Q5. Soft, painless, mobile, subcutaneous?**
- Q6. Firm, mobile, painless, beneath the areola, breastfeeding?**

Q1. Small, smooth, painless, round, well-defined, firm, mobile?

Fibroadenoma

Q2. Generalised breast lumpiness and soreness?

Fibrocystic breast changes

Q3. Smooth, well-defined, fluctuant?

Breast cyst

Q4. Painless, firm, irregular lump following trauma?

Fat necrosis

Q5. Soft, painless, mobile, subcutaneous?

Lipoma

Q6. Firm, mobile, painless, beneath the areola, breastfeeding?

Galactoceles

74 year old woman at risk of falls
Worried about fractures

- Q1. Scoring system to calculate risk?**
- Q2. Investigation for bone mineral density?**
- Q3. Fracture type → treatment without tests?**
- Q4. Vitamin and mineral supplements?**
- Q5. First-line drug for improving BMD?**
- Q6. Rare sites of osteonecrosis with Q5?**

Q1. Scoring system to calculate risk?

QFracture score or FRAX

Q2. Investigation for bone mineral density?

DEXA scan

Q3. Fracture type → treatment without tests?

Vertebral fracture

Q4. Vitamin and mineral supplements?

Vitamin D and calcium

Q5. First-line drug for improving BMD?

Bisphosphonates (e.g., alendronic acid)

Q6. Rare sites of osteonecrosis with Q5?

Jaw or external auditory canal

46 year old man

Staying in crowded accommodation

Intensely itchy rash

Small red spots in finger webs

Q1. Suspected diagnosis?

Q2. Topical treatment?

Q3. Treatment protocol?

Q4. Oral option?

Q1. Suspected diagnosis?

Scabies

Q2. Topical treatment?

Permethrin

Q3. Treatment protocol?

Cover whole body

Leave on for 8 - 12 hours

Wash off

Repeat 1 week later

Q4. Oral option?

Ivermectin

42 year old woman

26 weeks pregnant

Blood pressure 146/92

Urine dipstick: protein ++

Q1. Diagnosis?

Q2. Important blood tests?

Q3. First-line antihypertensive?

Q4. Second-line antihypertensive?

Q5. Used to prevent/treat seizures?

Q1. Diagnosis?

Pre-eclampsia

Q2. Important blood tests?

FBC (thrombocytopenia)

U&E (renal insufficiency)

LFT (elevated transaminases)

Q3. First-line antihypertensive?

Labetalol

Q4. Second-line antihypertensive?

Nifedipine

Q5. Used to prevent/treat seizures?

IV magnesium sulfate

48 year old woman

Taking cocaine while having sex

Sudden-onset occipital headache

Neck stiffness and photophobia

Q1. Suspected diagnosis?

Q2. Initial imaging?

Q3. If Q2 is negative?

Q4. Seen on Q3?

Q5. Treatment to prevent vasospasm?

Q1. Suspected diagnosis?

Subarachnoid haemorrhage

Q2. Initial imaging?

CT scan

Q3. If Q2 is negative?

Lumbar puncture (>12 hours after onset)

Q4. Seen on Q3?

Xanthochromia

Q5. Treatment to prevent vasospasm?

Nimodipine

20 year old woman

Elevated mood, risk-taking, sexual disinhibition

Not sleeping, irritable, excessive spending

Previous episodes of depression

Q1. Suspected underlying diagnosis?

Q2. Current episode?

Q3. First-line for acute episode?

Q4. First-line long-term treatment?

Q5. How to monitor Q4? Usual target?

Q1. Suspected underlying diagnosis?

Bipolar affective disorder

Q2. Current episode?

Mania

Q3. First-line for acute episode?

Antipsychotics (e.g., olanzapine, quetiapine, risperidone)

Q4. First-line long-term treatment?

Lithium

Q5. How to monitor Q4? Usual target?

Serum lithium levels 12 hours post-dose

Target 0.6–0.8 mmol/L