

MCQs

Peri-operative medicine / geriatric medicine

Question 1

An 80-year-old woman fell and hurt her left hip. She was normally independent for activities of daily living in her own home. Her regular medication comprised ramipril 10mg, bendroflumethizide 2.5mg and amlodipine 5mg od for hypertension.

On examination of the left hip, there was no deformity, but it was painful to move and she was unable to weight bear. Antero-posterior and lateral X-rays of the left hip were performed. These did not show any fracture, but a fracture was suspected clinically.

What is the next best step in management?

- A CT scan of the hip
- B MRI scan of the hip
- C No further imaging
- D Radio-isotope imaging of the hip
- E Repeat plain X-rays 24-hours later

Question2

An 80-year-old woman fell and hurt her left hip. She was normally independent for activities of daily living in her own home. Her regular medication comprised ramipril 10mg, bendroflumethizide 2.5mg and amlodipine 5mg od for hypertension.

On examination of the left hip, there was no deformity, but it was painful to move and she was unable to weight bear. Antero-posterior and lateral X-rays of the left hip were performed. These did not show any fracture. The sensitivity of plain X-rays in suspected hip fracture in the Emergency Department is 95%.

Which of the following statements is most relevant to this case?

- A 1: 20 hip fractures will be missed on plain X-ray
- B A normal plan X-ray virtually excludes a hip fracture
- C A test with a high sensitivity tends to have a low specificity
- D A very sensitive test will over-diagnose suspected hip fractures
- E Repeated plain X-rays increase the sensitivity to almost 100%

Question 3

An 80-year-old woman fell and hurt her left hip. She was normally independent for activities of daily living in her own home. Her regular medication comprised ramipril 10mg, bendroflumethizide 2.5mg and amlodipine 5mg od for hypertension.

On examination, she was euvolaemic and her left hip was extremely painful and she was unable to weight bear. Her blood pressure was 180/100 mmHg, heart rate 95 per minute, respiratory rate 18 per minute, oxygen saturations 95% on air, and temperature 35.5°C. Antero-posterior and lateral X-rays of the left hip were performed.

Investigations:

Haemoglobin	90 g/L (115–165)
MCV	79 fL (80–96)
white cell count	$10.4 \times 10^9/L$ (4.0–11.0)
platelet count	$567 \times 10^9/L$ (150–400)
serum sodium	129 mmol/L (137–144)
serum potassium	4.5 mmol/L (3.5–4.9)
serum urea	10 mmol/L (2.5–7.0)
serum creatinine	128 $\mu\text{mol/L}$ (60–110)
eGFR	>48 mL/min/1.73 m ² (>60)
serum glucose	5 mmol/L (3.0–6.0)
serum C-reactive protein	40 mg/L (<0.5)
12-lead electrocardiogram	89 beats per minute no other abnormalities
Antero-posterior and lateral X-rays of left hip	Garden type II subcapital fractured neck of femur

Which of the following should be completed within 24-hours of admission?

- A Blood transfusion
- B Correction of electrolyte abnormalities
- C CT scan of the hip
- D Dynamic hip screw
- E Thomas splint

Question 4

A 79-year-old woman was admitted for an elective right knee replacement under general anaesthesia. She had a past medical history of type 2 diabetes and hypertension and was taking metformin and ramipril.

After an uneventful surgery she was found to be confused and disorientated the next day.

Which of the following best predicts delirium over other causes of 'confusion'?

- A General anaesthesia
- B Hallucinations
- C History of dementia
- D Inattention
- E Previous history of delirium

Question 5

An 80-year-old man with a history of dementia was admitted from his residential home not eating and drinking and more confused than usual.

On examination he appeared underweight. The only abnormal finding was a large reddish lump in his right groin which seemed to be uncomfortable when palpated. The abdomen was otherwise soft, non-tender and not distended, with normal bowel sounds.

His investigations were normal, apart from a slightly raised white cell count. His chest X-ray showed evidence of old tuberculosis.

What is the most likely diagnosis?

- A Incarcerated inguinal hernia
- B Leiomyosarcoma
- C Lymphoma
- D Tuberculosis
- E Undescended testis

Question 6

A 79-year-old woman was admitted for an elective right knee replacement under general anaesthesia. She had a past medical history of type 2 diabetes and hypertension and was taking metformin and ramipril. After an uneventful surgery she was found to be confused and disorientated the next day. The only new medication she was taking was paracetamol and prn oramorph.

On examination, she appeared confused and was unable to concentrate on the conversation. The rest of the examination was normal.

Investigations:

Haemoglobin	110 g/L (115–165)
MCV	85 fL (80–96)
white cell count	$10.4 \times 10^9/L$ (4.0–11.0)
platelet count	$567 \times 10^9/L$ (150–400)
serum sodium	140 mmol/L (137–144)
serum potassium	4.5 mmol/L (3.5–4.9)
serum urea	6 mmol/L (2.5–7.0)
serum creatinine	99 $\mu\text{mol/L}$ (60–110)
eGFR	>60 mL/min/1.73 m ² (>60)
serum glucose	5 mmol/L (3.0–6.0)
serum C-reactive protein	40 mg/L (<0.5)
12-lead electrocardiogram	normal
Chest X-ray	normal
Urinalysis	normal

What is the most likely underlying cause of her confusion?

- A Medication
- B Non-dominant hemisphere stroke
- C Pain
- D Post-operative cognitive dysfunction
- E Urinary tract infection

Question 7

An 80-year old man was recovering from an elective total hip replacement. He had a past medical history of type 2 diabetes, hypertension, ischaemic heart disease and benign prostatic hypertrophy.

Following his surgery he was placed on treatment to prevent venous thromboembolism.

Which of the following best describes the most appropriate treatment to prevent venous thromboembolism following his surgery?

- A Aspirin 300mg orally daily until discharge from hospital
- B Clexane 40mg SC daily until discharge from hospital
- C Rivaroxiban 10mg daily for 30 days
- D TED stockings + rivaroxiban for 30 up to 35 days
- E TED stockings + aspirin 300mg for up to 35 days

Question 8

A 65-year-old man underwent an elective open hemi-colectomy for bowel cancer and was cared for on the surgical high dependency unit on the first post-operative day because of his history of obstructive sleep apnoea. At 9pm on the evening following his surgery, the doctor was called because of his hypotension (80/60 mmHg). The patient's past medical history comprised hypertension, for which he was taking rampril and bendroflumethiazide, and obstructive sleep apnoea.

The clinical examination was normal apart from hypotension, and his blood results and 12-lead ECG were normal.

What is the most appropriate management?

- A 0.9% sodium chloride
- B 4.5% human albumin solution
- C Hartmann's
- D No treatment
- E Metaraminol

Answers

1. B (NICE guideline states MRI hip should be performed, but if not readily available then CT).
2. A (sensitivity = sensitivity is the ability to detect true positives; specificity is the ability to detect true negatives. There is no test that can 100% of the time detect people with a disease and exclude those without it. Even a very good test, with 95% sensitivity, will miss 1 in 20 people with the disease. Every test therefore has 'false positives' and 'false negatives'. It is not true that a very sensitive test must have a low specificity – some have a high sensitivity and specificity e.g. CTPA for pulmonary embolism).
3. D (Garden type II = an undisplaced complete fracture, which can be treated by DHS. Displaced or intracapsular fractures are usually treated with a hemiarthroplasty. In the UK, the mortality following a fractured neck of femur is between 20% and 35% within one year in people aged 82, \pm 7 years, of whom 80% were women. Surgery should be performed the same day or within 24-hours as delays significantly impact on outcome for patients. Hip fracture is said to be a marker of 'frailty' – not just a broken bone.
4. D (the short-CAM states acute onset/fluctuating course + inattention + either disorganised thinking or altered level of consciousness is required to diagnose delirium).
5. A (Lymphoma is unlikely with no other lymphadenopathy elsewhere. This Q illustrates the atypical presentation of the elderly acute abdomen, and that small bowel obstruction may not cause any visible abdominal distension. Signs in older people are fewer, atypical, less well localised and more diffuse – furthermore any acute illness can present with one of the 'geriatric giants' as opposed to a clear history pointing towards the problem itself).
6. D (POCD is defined as delirium following GA with no other apparent cause, e.g. infection or medication. It is a transient, short-lived disorder of memory, cognition and attention. When other causes of delirium have been excluded, a diagnosis of POCD can be made. It is thought to be due to the interaction of anaesthetic agents and the neurotransmitters involved in cognition. Prognosis is good in most patients.)
7. D (NICE guideline – mechanical measures pre-op and continued until back to full mobility, plus chemical thromboprophylaxis for 35 days post-op).
8. D (no treatment – normal vital signs otherwise and U&Es. This is ERAS – enhanced recovery after surgery, which limits fluid treatment post-op in order to minimise oedema/wound healing and leads to quicker recoveries. Normally, fluid is retained post-op due to appropriate ADH secretion.)