

## FOR SHORT ANSWERS

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## FOR LONG ANSWERS

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### PICTURE QUIZ Gradually worsening shortness of breath

A 38 year old woman who smoked presented to her general practitioner with intermittent shortness of breath and wheeze. She admitted smoking 15 cigarettes a day for the past 20 years. A diagnosis of asthma was made and appropriate inhalers prescribed. Over the next few months she re-presented to her doctor several times with persistent productive cough and increasing shortness of breath. Symptoms were treated as an infective exacerbation with repeated courses of antibiotics. Despite continued treatment with bronchodilators and inhaled steroids little clinical improvement was seen. She returned intermittently to her general practitioner with worsening shortness of breath. Initially this was evident only on exertion, but over the course of two years it began to limit even mild activity. Auscultation showed decreased breath sounds in the lower zones with increased resonance to percussion. Simple spirometry performed at the general practitioner's surgery showed prolonged expiration and airflow obstruction.

She was referred to a chest physician, and chest radiography was performed as part of her initial investigations.

- 1 What are the radiological findings?
- 2 What is the likely diagnosis?
- 3 What further investigations would you request?
- 4 How would you manage this condition?

Submitted by Andrew Baldwin, David Howlett, and David Maxwell  
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### ON EXAMINATION QUIZ Breast pathology

The answers to this question, and more questions on this topic, are available from [www.onexamination.com/endgames](http://www.onexamination.com/endgames) until midnight on Wednesday. This week's quiz is on breast pathology and is taken from the OnExamination revision questions for the MRCS Part 1 and Part 2 exams.

Which of the following is true regarding breast cancer in men?

- A It carries a worse prognosis than breast cancer in women
- B It has an incidence of around five in 100 000 of the male population
- C It is more common in association with Klinefelter's syndrome
- D It is more common in men treated for prostate carcinoma
- E It has a higher incidence in men of Afro-Caribbean origin than in white men

### CASE REPORT

#### A toddler with pallor and recurrent infection

A 2½ year old girl presented to her general practitioner after several weeks of being, in her mother's words, "tired and just not herself," preceded by several months of recurrent upper respiratory tract infections. After positive urinalysis, the general practitioner diagnosed a urinary tract infection. Despite repeated treatment with oral antibiotics, she developed four further urinary tract infections over the next two months. At this time—four months after the initial onset of symptoms—the mother noticed her daughter was pale and lethargic. Over the coming few weeks, she also observed the child's skin become yellow in colour. Eventually, when her daughter rapidly developed fever, night sweats, and joint pain severe enough to prevent walking, the mother made an emergency appointment at her general practice. The toddler was sent urgently to hospital, where examination elicited hepatosplenomegaly and cervical lymphadenopathy. On admission, she was pancytopenic (haemoglobin 28 g/l, white blood cell count  $0.89 \times 10^9/l$ , platelets  $120 \times 10^9/l$ ). The blood film confirmed pancytopenia, with occasional teardrop cells but no immature lymphoid cells. The working diagnosis was acute leukaemia.

- 1 What other conditions would you include in your differential diagnosis and why?
- 2 What are the potential life threatening complications in patients presenting with acute leukaemia?
- 3 How would you make a definitive diagnosis?
- 4 How might acute leukaemia lead to jaundice?
- 5 What is the likely prognosis for this child?

Submitted by Rachel T Clarke and Chris Mitchell  
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### STATISTICAL QUESTION

#### Allocation concealment

A randomised controlled trial investigated whether an exercise programme increased activity levels in women. Intervention consisted of brief physical activity with regular support that was led by nurses. Control participants received usual care. The order in which participants were allocated to treatment was contained in sequentially numbered opaque envelopes. A researcher not involved in recruitment generated the sequence by computer. Following written informed consent and baseline measurements, treatment allocation was revealed by a nurse not involved in future assessments. Participants were assessed at follow-up by nurses unaware of group allocation; assessors and participants were asked not to discuss group allocation.

Which of the following, if any, are true?

- a) Allocation concealment was achieved
- b) The trial was single blind
- c) The trial was double blind
- d) Selection bias was minimised

Submitted by Philip Sedgwick  
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