

Quiz (answers on page 34)

Part one

At 38 years old Tony, from Zimbabwe, was brought into the outpatient department of the local hospital by his wife, who said that he had had fever, vomiting and diarrhoea for the previous two weeks. Obviously acutely ill, his first checks showed a temperature of 38.5 degrees C, heart rate of 98 per minute, and a respiratory rate of 26 beats per minute. His blood pressure was 84/56 mm Hg. Oxygen saturation was 100% on breathing room air.

Q1 Which of the following diagnoses are you considering at this early stage?

- (a) He has septic shock.
- (b) He has acute respiratory distress syndrome (ARDS).
- (c) This is simply the result of severe dehydration and he will improve on IV fluids.
- (d) You must rule out malaria.

Part two

On further questioning he admits to having had worsening bouts of exertion-induced breathlessness in the past three or four months. You find he has a loud first heart sound and a mid-diastolic murmur. His chest X ray shows hilar congestion upper lobe diversion, fluid in the right horizontal fissure and a convex border of the left atrium. A blood film showed no malarial parasites. His white cell count was $32 \times 10^9/L$ and C-reactive protein 250mg/L. Urea was 8.6mmol/L and creatinine 114micromol/L.

Q2 How do these findings alter your first thoughts?

- (a) You can rule out simple dehydration.
- (b) Malaria is not a factor in this illness.
- (c) There may be a renal element to the severity of the illness.
- (d) He has structural heart disease that explains his previous exertional dyspnoea and the origin of his sepsis.
- (e) The diagnosis now lies between septic shock and ARDS.
- (f) Whatever the diagnosis he urgently needs intravenous broad spectrum antibiotics.

Part three

He was immediately given piperacillin with tazobactam 4.5 grams every 8 hours and started on intravenous fluids, with the aim of giving 4 litres over the next 6 hours. Near the end of this infusion he suddenly developed Type 1 respiratory failure, with coarse crepitations in both lungs and acute pulmonary oedema. He was immediately ventilated, and he began to improve, so that after 9 hours he could breathe normally again. He gradually improved further over the next week.

Q3 What is now your underlying diagnosis?

- (a) It is still septic shock of unknown origin.
- (b) The acute episode leans you towards ARDS.
- (c) He has bacterial endocarditis.
- (d) The acute respiratory episode may be a reaction to one of the antibiotics.

Part four

Q4 The blood culture result reveals a strain of streptococcus often found in the mouths of patients with poor oral hygiene. Which of the following statements are now relevant to Tony's case?

- (a) ARDS is very unlikely as he would not have improved so much within such a short time.
- (b) He has an enlarged heart with fluid in his lungs and the classical auscultatory signs of mitral stenosis.
- (c) The likeliest source of his bacterial sepsis is his mitral valve.
- (d) Rheumatic heart disease is now very rare – there may be another reason for the enlarged heart, possibly congenital.
- (e) Pulmonary oedema in a younger person (say under 50) is a strong pointer to structural disease of the heart.



CHRONOLAB SYSTEMS

