

Medical Quiz: SBA – Answers

Question No. 1: Correct Answer – A

This patient has Addison's disease whereby the adrenal gland is destroyed, usually due to infection (TB) or autoimmunity. The reduced cortisol, aldosterone and sex steroids produce a myriad of signs and symptoms, most importantly postural hypotension due to reduced aldosterone and increased pigmentation often in palmar creases and newly formed scars. This latter sign is due to elevated melanocyte-stimulating hormone (MSH) which is derived from the POMC molecule which breaks down into MSH and ACTH. The synacthen test involves giving an infusion of ACTH which would be expected to cause an increase in measured cortisol. Urinary free cortisol and the low-dose dexamethasone test is appropriate for investigating Cushing's syndrome. A single cortisol measurement is not very valuable for confirming diagnosis due to poor sensitivity and specificity, as well as the diurnal nature of cortisol. An abdominal US scan would not be appropriate until less invasive blood tests which can confirm Addison's had been conducted.

Question No. 2: Correct Answer - A

This patient's history and biochemical results indicate acute pancreatitis, possibly due to biliary tract obstruction such as gallstones indicated by the elevated alkaline phosphatase. An abdominal ultrasound scan is the optimal investigation for gallstones and can reveal pancreatic swelling from pancreatitis. A CT scan is important to investigate pancreatic necrosis, although this usually occurs in severe or recurrent attacks, it is also useful in differentiating between pancreatic carcinoma and chronic pancreatitis. Once a diagnosis has been made, a CT scan is appropriate to determine the next step in management. An MRI scan is more often used in chronic pancreatitis sufferers as often more detailed information can be acquired, such as changes in an already diseased pancreas. Rarely, in other gastrointestinal disorders, e.g. perforated peptic ulcer disease, the serum amylase can be elevated enough (>600) to overlap with pancreatitis. For this reason, an erect chest x-ray can help exclude such causes of pain and amylase elevation. An endoscopic retrograde cholangiopancreatography (ERCP) is often used in

emergency situations, e.g. stone impaction in the common bile duct causing worsening symptoms of liver and pancreas.

Question No. 3: Correct Answer - C

Infectious mononucleosis or glandular fever is caused by Epstein-Barr virus (EBV), spread by saliva or droplet infection. When acquired in the young, it is usually asymptomatic. However, infection in young adults can result in illness. Additional clinical features to those described in this case include splenomegaly, hepatitis and severe fatigue (particularly when the infection is chronic). Toxoplasmosis is caused by the protozoan *Toxoplasma gondii* and is usually acquired following the ingestion of poorly cooked meat. Most infections are asymptomatic but it can occasionally resemble infectious mononucleosis. Cytomegalovirus (CMV) infection is acquired by blood-borne transmission, direct contact or organ transplantation. In the immunocompetent, primary infection is usually latent and there may be reactivation in times of immunocompromise. Streptococcal sore throat is an important differential and may produce a sore throat similar to that seen in infectious mononucleosis. However, it will not produce the widespread lymphadenopathy. In addition, atypical mononuclear cells are not seen on blood film in patients with streptococcal sore throat. While influenza can cause some of the non-specific symptoms in this case, such as fever and anorexia, it will not result in the presence of atypical lymphocytes on blood film.

Question No. 4: Correct Answer - B

The onset of the arrhythmia is recent and there is a good chance of successful cardioversion at this point without the need for anticoagulation. Conservative management is also reasonable, though the patient is in some discomfort. 'Chemical' cardioversion may be somewhat less likely to succeed than DC cardioversion but may be preferred by the patient. Digoxin may eventually control resting, but not ambulant heart rate, but would probably take several days before it did so. Option (C) is certainly suitable in cases of persistent or permanent atrial fibrillation where it is decided to opt for rate control.

Question No. 5: Correct Answer - D

The collection of shortness of breath, dry cough and bibasal fine inspiratory crackles should point to pulmonary fibrosis. In patients with rheumatoid arthritis, this may occur as a result of extra-articular manifestation of the disease. Pulmonary fibrosis is also a side effect of methotrexate, a disease-modifying anti-rheumatic drug, which is commonly used in rheumatoid arthritis. Pulmonary edema will cause shortness of breath and be heard as fine inspiratory crackles during respiratory

examination, but would characteristically produce a productive cough of frothy sputum. Bronchiectasis would cause cough with copious sputum and on examination, there is likely to be coarse crackles. Pleural effusions are an extra articular manifestation in rheumatoid arthritis. Clinical features would include shortness of breath and, on examination, there would be reduced breath sound. Pulmonary nodules are also an extra-articular manifestation of rheumatoid arthritis, but do not cause the clinical features outlined in this question.