

## Clinical lessons

### *A biopsy away from doom*

*Dr Constantinos Parisinos, FY2, Western General Hospital, Edinburgh*

A 54 year-old woman presented to the accident and emergency department with chest pain and sudden onset breathlessness. Her pulse was 94, blood pressure 108/62 and O<sub>2</sub> saturation 95% on air. Her electrocardiogram was normal and the computed tomography (CT) pulmonary angiogram was negative for pulmonary embolism but demonstrated a posterior mediastinal mass. Further CT imaging demonstrated a mass occupying the left retrocrural space. Endoscopic ultrasound biopsy and referral to the thoracic unit was suggested by the upper gastrointestinal multidisciplinary team.

However, the thoracic review revealed episodes of headaches and palpitations, associated with a feeling of impending doom. An iodine-123 metaiodobenzylguanide scan was arranged which demonstrated uptake in the posterior mediastinum. Biochemical studies showed elevated levels of urine normetadrenaline (30.2 umol/24 h, normal range 0.4–3.4 umol/24 h), urine metadrenaline (33.6 umol/24 h, normal range 0.3–1.7 umol/24 h), confirming the diagnosis of a paraganglioma (extra-adrenal pheochromocytoma).

Over a two-week period the endocrinologists prepared the patient for surgery with propranolol and phenoxybenzamine. A left thoracotomy was performed and the mass was excised in its entirety (8 x 6 x 4 cm). The sympathetic chain coursed through the mass. Transitory increases in the patient's blood pressure occurred on mobilising the tumour, with blood pressure levels reaching 150/70 (baseline of 95/50 post tumour excision). Histology and immunohistochemistry confirmed a paraganglioma.

Alpha/beta blockade was stopped post-operatively and blood pressure remained normal. A 24-hour urine collection on post-operation day 10 showed normal normetadrenaline (3.4 umol/24 h) and metadrenaline levels (1.5 umol/24 h). Yearly catecholamine levels remain within normal range. What would have happened if the initial biopsy had taken place?

Key message: Careful history taking may play a key role in detecting and avoiding further potentially dangerous investigations of mediastinal paragangliomas.

### *An extinct volcano?*

*Dr Jennifer McCaughan, CMT2 in Medicine, Belfast City Hospital*

A 46-year-old woman on long-term haemodialysis presented with hypoxia, pyrexia and hypotension. She had been diagnosed with lupus nephritis in 1985 and been on renal replacement since with no evidence of active systemic lupus erythematosus (SLE). Her chest

X-ray demonstrated bilateral air space shadowing. She did not respond to 72 hours of empirical antibiotic treatment for hospital-acquired pneumonia. A CT scan of her chest showed bilateral nodular change, septal thickening and ground glass changes. She underwent bronchoscopy with bronchoalveolar lavage, which was negative for culture and cytology.

The patient subsequently developed acute synovitis and peritonism. Her dsDNA titres were markedly elevated and her complement level was low. The unifying diagnosis was of lupus reactivation with lymphocytic interstitial pneumonitis. The patient responded rapidly to steroid therapy.

A relapse of SLE must always be considered in a patient with a history of SLE who presents with an acute inflammatory state. There are myriad presentations of SLE and relapses can occur after many years of quiescence. In a recent paper, Moroni and colleagues stated: 'There is no such thing as "burnt out lupus", any more than there are extinct volcanoes: the possibility of further eruption is always present.'

### *In a flap about prescribing in liver disease?*

*Dr Michael McCarron, FY1, Gartnavel General Hospital, Glasgow*

A 70-year-old man was admitted to our medical assessment unit with confusion, drowsiness, generalised myalgia and calf swelling three weeks after total knee replacement. He had recently been diagnosed with alcoholic liver disease and cirrhosis. His medical history was left total knee replacement, ischaemic heart disease, chronic obstructive pulmonary disease, osteoarthritis and bladder cancer. His drug history was spironolactone, tramadol, paracetamol, movicol, bendroflumethiazide, omeprazole, thiamine, vitamin B12, aspirin, atorvastatin, furosemide, chlorphenamine, clenil modulate inhaler, salbutamol inhaler and glyceryl trinitrate spray. On examination the patient was confused, afebrile, had a liver flap and stigmata of chronic liver disease. His left knee was hot and swollen. Observations were normal.

Blood results showed acute kidney injury (Ur 18.1, Cr 209), elevated white cell count and creatine kinase (WCC 12.09, CK 2720).

Initial diagnoses of encephalopathy and urinary tract infection were made. These were treated with lactulose and trimethoprim respectively.

Creatine kinase continued to rise during the patient's admission and peaked at 122,000. Clinical diagnosis of rhabdomyolysis was made. His magnetic resonance imaging scan showed asymmetrical thigh myopathy and electromyography confirmed active myositis. The most likely cause was the atorvastatin, 80 mg daily, that the patient was taking. Although he was on this drug long term, he had recently developed liver disease.

The patient improved with intravenous fluids after stopping atorvastatin. However, following treatment, he developed ascites, which required paracentesis. He was discharged with outpatient follow-up.

Lessons: A review of patient medications should be carried out regularly, particularly following a new diagnosis. The prevalence of alcoholic liver disease is rising and managing these patients can be challenging. Liver disease is a major caveat of many common drug therapies.

### **Friday afternoon systolic tumble**

*Dr Claire Brough*, STR4 Cardiology, Wirral University Teaching Hospital NHS Foundation Trust, Wirral

A 24-year-old woman presented to hospital with a short history of pleuritic chest pain, pyrexia, rigours and neck myalgia. Significant medical history included Hodgkin's lymphoma 11 years previously, with successful remission after chemotherapy. Baseline observations were temperature 37.3°C, blood pressure 141/86, heart rate 130 bpm and saturations 100% on room air. Heart sounds were quiet, no pericardial rub was detected, but there was dullness at the left lung base.

Admission investigations included a mild neutrophilia (10.91), elevated C-reactive protein (139) and mild hyponatraemia. The electrocardiogram demonstrated global ST elevation with a depressed PR interval. Chest radiography revealed cardiomegaly and a small left pleural effusion.

The patient was treated for acute pericarditis with a moderate sized effusion, which on transthoracic echocardiogram identified no evidence of right ventricular compromise.

The patient was haemodynamically stable and thus transferred from coronary care to ward care but subsequently became hypotensive. A CT pulmonary angiogram was performed for PE exclusion. Clinically, and on repeat transthoracic echocardiogram signs of tamponade were apparent. Therapeutic pericardiocentesis was therefore performed. Pericardial fluid analysis concurred with an inflammatory aetiology.

Lessons:

- Cardiomegaly versus pericardial effusion on chest radiography
- Importance of detailed clinical handovers
- Young patients can acutely decompensate

### **It must be an MI!**

*Dr Sim Yee Lim*, CT2 CMT, University Hospital of North Durham

A 55-year-old man was admitted to our medical assessment unit with chest pain. His medical history included alcohol excess and cerebral abscess. The patient's pain was in his right posterior chest. It was

constant for the previous few weeks. A 12-lead electrocardiogram showed 2 mm ST elevation in the inferolateral leads. Following discussion with a tertiary centre for primary percutaneous coronary intervention, the patient was treated conservatively for acute coronary syndrome (ACS) in light of atypical history.

Meanwhile, his baseline troponin I was raised at 0.26 µg/l. Other abnormal results included calcium 3.02 nmol/l, alkaline phosphatase 720 U/L, C-reactive protein 207 mg/l. A chest X-ray showed consolidation in the right mid zone. Computed tomography of the thorax/abdomen/pelvis showed disseminated malignancy. There was primary bronchogenic carcinoma in the right lower lobe with direct chest wall/pericardial invasion and metastatic disease to the myocardium of the left ventricle.

The case highlights the importance of history taking and the ability to interpret results in the context of the patient. The history of chest pain in this case was non-cardiac in nature. As troponin became the gold standard for the diagnosis of ACS we should remain suspicious when history and investigation results do not add up.

### **Just one Quickie, might lead to a coma...**

*Dr Indrani Bhattacharya*, FY2, Royal Edinburgh Hospital

A 24-year-old man with Asperger's syndrome was admitted for gammabutyrolactone (GBL) detoxification. Initially he purchased GBL online. However, following its classification change to a class C drug in January 2010, internet supply became difficult. The patient then sourced GBL by diluting 'Quickies' nail varnish remover pads, which contain a high percentage of GBL, with water.

His physical examination was unremarkable and routine blood tests were taken. A high-dose benzodiazepine-reducing regimen was initiated. Within five hours of his admission the patient became acutely psychotic. He was pyrexial with muscle stiffening. Neuroleptic malignant syndrome was suspected, but no antipsychotics were administered. He was transferred to the accident and emergency department and blood tests revealed acute renal failure.

The patient was initially managed in a high-dependency unit, but he deteriorated, becoming hypoxic secondary to respiratory depression. He was intubated and ventilated in the intensive care unit for 48 hours. There was a significant rise in creatine phosphokinase and renal failure secondary to rhabdomyolysis was suspected. The patient's renal function normalised following fluid resuscitation. Once medically fit, he was transferred to intensive psychiatric care as his psychosis persisted. His psychosis later resolved and he was discharged home.

Physicians should be aware of toxic sources of GBL leading to renal failure and consider GBL in those presenting with agitation, psychosis or coma.