A 47 year old woman was referred urgently to the out of hours neurology service with severe difficulty walking. Five weeks previously she had developed a “numb, stabbing” persistent pain in her left foot. Three weeks before admission, an identical pain developed in her right foot. One day before referral her right foot “went floppy.” Hours before admission, this weakness spread to affect the left foot, and she could not walk unaided. She had also felt short of breath and had a dry cough. Her only known medical history was asthma.

On examination, the patient was coughing. Her pulse rate was 115 beats/min (regular), respiratory rate 20 breaths/min, oxygen saturation 89% on air, and temperature 36.8°C. Respiratory examination showed globally reduced breath sounds and bibasal crepitations. Her peak expiratory flow rate was 109 l/min (predicted 400 l/min). She had an erythematous rash over the metacarpophalangeal joints. A chest radiograph was performed.

Neurologically, cranial nerve and upper limb examinations were unremarkable. Lower limb examination confirmed bilateral foot drop with distal sensory loss. Ankle reflexes were absent, and plantar responses were downgoing.

Initial investigations showed normal haemoglobin concentration, platelet count, urea concentration, and electrolytes level; however, a leucocytosis of 33.4 (neutrophils 8x10⁹/l, eosinophils 21x10⁹/l) and a C reactive protein concentration of 162 mg/l were observed.

1 What pattern of neurological disturbance best explains this patient’s difficulty in walking?

2 What abnormalities are present on the chest radiograph?

3 What are the differential diagnoses and the most likely unifying diagnosis?

4 What treatment should be started immediately?

Submitted by Peter Foley, George Oommen, and Jonathan O’Riordan

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A 72 year old man presents with a two day history of pain in the lower thoracic region. He has not passed urine for 12 hours. He has a two year history of prostate carcinoma for which he has been receiving treatment with a luteinising hormone releasing hormone analogue.

On examination, he is obviously in discomfort, seems to be dehydrated, has a pulse of 102 beats/min (irregular), and a blood pressure of 108/72 mm Hg. Cardiovascular and respiratory examinations are normal. On abdominal examination he has a palpable bladder. Examination of his legs shows bilateral weakness of ankle plantar flexion with loss of tendon reflexes.

Which one of the following would be the most appropriate investigation for this man?

A Chest radiography
B Computed tomography of the spine
C Magnetic resonance imaging of the spine
D Magnetic resonance imaging of the thorax
E Serum calcium

Submitted by Philip Sedgwick and Louise Marston

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Researchers assessed the effects of β lactam antibiotics prescribed in the community for acute respiratory tract infection on the prevalence of antibiotic resistant bacteria in an individual child. A total of 119 children with acute respiratory tract infection were recruited in primary care, of whom 71 received a β lactam antibiotic. A prospective cohort study design was used with follow-up at two and 12 weeks. Antibiotic resistance was assessed by the presence of the ICEHin1056 resistance element in up to four isolates of Haemophilus species, recovered from throat swabs at recruitment and follow-up.

At two weeks, 67% of children prescribed antibiotics had isolation of Haemophilus isolates possessing homologues of ICEHin1056, compared with 36% of those not prescribed antibiotics (relative risk = 1.9; 95% confidence interval: 1.2 to 2.9).

Which of the following, if any, are true?

a) The relative risk is the ratio of probability of antibiotic resistance in children prescribed antibiotics relative to those not prescribed antibiotics
b) At two weeks, those children prescribed antibiotics were 190% more likely to exhibit antibiotic resistance relative to children not prescribed antibiotics
c) At two weeks, those children prescribed antibiotics had a 90% greater risk of antibiotic resistance relative to children not prescribed antibiotics
d) Relative risk should only be calculated if we can estimate the population at risk

Submitted by Philip Sedgwick and Louise Marston

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