Netherlands
The Journal of Medicine

PHOTO QUIZ

Fever and back pain

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CASE REPORT

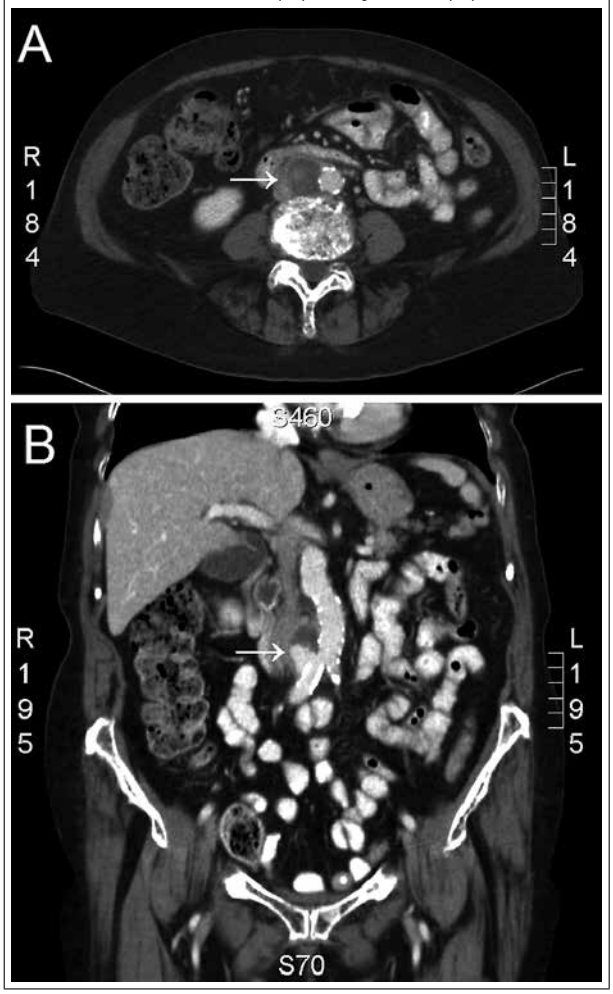
An 80-year-old female patient was admitted to our hospital with malaise, fever, pancytopenia (haemoglobin 3.7 mmol/l, leucocytes 0.4 x 10^9/l, platelets 12 x 10^9/l) and increased C-reactive protein (120 mg/l) two weeks after an episode of vomiting and diarrhoea. Her medical history revealed multiple myeloma for which she received palliative chemotherapy. Blood cultures yielded *Salmonella typhimurium* and she was treated with ciprofloxacin. After initial improvement, the patient again developed fever and ceftazidime was started. Blood cultures remained negative. Two weeks after discharge, she was once more admitted with fever and blood cultures again yielded *Salmonella typhimurium*. The strain had become ciprofloxacin resistant, but was susceptible to third-generation cephalosporins. Abdominal ultrasound, transthoracic echocardiography and 18F-fluorodeoxyglucose positron emission tomography (FDG-PET) showed no signs of abdominal abscesses, endocarditis, osteomyelitis or an endovascular source for the recurrent bacteraemia. The patient was treated with ceftriaxone for one week, trimethoprim-sulphamethoxazole for four weeks (eradication therapy), followed by low-dose prophylactic trimethoprim-sulphamethoxazole. Myeloma treatment was continued.

Three months later she presented with fever and backache. She had stopped taking the trimethoprim-sulphamethoxazole two weeks before admission, for unknown reasons. The physical examination was unremarkable. Laboratory results showed a C-reactive protein of 122 mg/l and pancytopenia. Chest X-ray and urinalysis were normal. Broad-spectrum treatment with piperacillin/tazobactam was started. Blood cultures were again positive for *Salmonella typhimurium*. Antibiotics were switched to oral trimethoprim-sulphamethoxazole. A contrast-enhanced computed tomography (CT) scan of the abdomen was performed to rule out an intra-abdominal source of infection (*figure 1*).

WHAT IS YOUR DIAGNOSIS?

See page 470 for the answer to this photo quiz.

Figure 1. *Contrast-enhanced computed tomography of the abdomen, transverse (A) and frontal (B) sections*



ANSWER TO PHOTO QUIZ (PAGE 465)

FEVER AND BACK PAIN

DIAGNOSIS

The CT scan showed a saccular dilatation at the bifurcation of the abdominal aorta to the right common iliac artery and the diagnosis of infected aneurysm due to *Salmonella typhimurium* infection was made.

Infected or mycotic aneurysms are rare lesions.[1] However, about 10-25% of patients older than 50 years who present with non-typhoidal *Salmonella* bacteraemia develop infectious endarteritis or mycotic aneurysm, due to pre-existing atherosclerosis and/or immunodeficiency.[2] *Salmonella* vascular infections most often involve the aorta, femoral or iliac arteries.[1] Symptoms include fever, back pain, chest pain or abdominal pain. Recurrent bacteraemia is present in 85% of cases.[3]

CT angiography is the diagnostic modality of choice. Signs of aortitis are an irregular arterial wall, periaortic oedema or soft-tissue mass and (uncommonly) periaortic gas. After aneurysm formation, signs of an infectious nature are an unusual location, saccular shape, rapid growth and disrupted arterial wall calcification.[4] The sensitivity of FDG-PET for detection of vascular infection is unknown.[4]

The patient's physical condition prohibited surgical resection of the infected aneurysm.[3] However, good results have been obtained with combined endovascular aneurysm repair and lifelong antibiotics.[5] Therefore, therapy was switched to ceftriaxone intravenously and the patient received an endovascular graft. After four weeks, ceftriaxone was replaced by oral trimethoprim-sulphamethoxazole but was later switched to oral azithromycin because of nausea attributed to the continuous use of trimethoprim-sulphamethoxazole.[6] Myeloma treatment was interrupted. At follow-up, six months after discharge, the myeloma was slowly progressing but no signs of infection were present with the azithromycin maintenance therapy.

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