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A nonproductive cough that would give most people a headache, but not this patient!

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CASE REPORT

A 54-year-old woman presented with a nonproductive cough that started ten weeks ago, accompanied by a slight shortness of breath, fatigue and fever. On suspicion of a respiratory tract infection the general practitioner had prescribed amoxicillin, without any effect. Next, she was seen by a pulmonologist, who ordered a chest X-ray and lung function test. These tests showed no abnormalities. The patient's symptoms were attributed to (post)infectious bronchial inflammation possibly combined with gastric asthma, for which she was treated unsuccessfully with doxycycline and pantoprazol. Thereupon, the patient was referred to the department of internal medicine.

Repeated history taking was noncontributory. Physical examination was unremarkable, except for a temperature of 38.0 °C. Laboratory analysis showed an erythrocyte sedimentation rate of 120 mm/hour, a C-reactive protein level of 178 mg/l and a normocytic anaemia (haemoglobin level 6.1 mmol/l) without thrombocytosis or leucocytosis.

Our differential diagnosis consisted of autoimmune diseases such as systemic lupus erythematodes or a vasculitis, malignancies such as a lymphoma or pulmonary metastasised solid tumour, chronic pulmonary embolism and atypical infections such as tuberculosis.

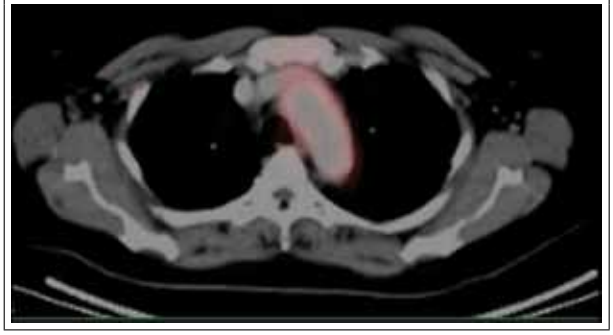
Immunological investigation showed only borderline presence of antinuclear antibodies and no anti-double-stranded DNA or antineutrophil cytoplasmatic antibodies. Computed tomography (CT) pulmonary angiography and an abdominal ultrasound were normal. Blood cultures and a Mantoux test were negative. Finally, positron emission tomography (PET)/CT was performed (*figures 1A and 1B*)

WHAT IS YOUR DIAGNOSIS?

See page 199 for the answer to this photo quiz.

Figure 1A. *Coronal image of whole body PET with increased uptake in the aorta, the carotid arteries, subclavian arteries and iliac arteries*

Figure 1B. *Transversal fused PET/CT image with increased uptake in the aortic arch*



ANSWER TO PHOTO QUIZ (PAGE 185)

A NONPRODUCTIVE COUGH THAT WOULD GIVE MOST PEOPLE A HEADACHE, BUT NOT THIS PATIENT!

DIAGNOSIS

The PET/CT revealed increased uptake of 18-fluorodeoxyglucose in the aorta and its large branches. This aortitis in a female patient beyond the age of 50 years made us assume the diagnosis of giant cell arteritis (GCA). A temporal biopsy was taken at random, since the temporal arteries were pulsatile and nontender. It confirmed the diagnosis GCA by showing mononuclear cell infiltration of the arterial wall and intima proliferation *(figures 2A and 2B)*. Treatment with prednisolone 60 mg/day made the symptoms disappear within one week, including the cough.

GCA is a relatively common vasculitis of the medium and large arteries. The most frequent symptoms include a new-onset headache, jaw claudication and stiffness and/or pain in the shoulder and pelvic girdles. This patient had none of these symptoms. Instead, she presented with a persistent nonproductive cough. Respiratory tract symptoms are unusual manifestations of GCA. Nevertheless, it has been estimated that respiratory tract symptoms affect 9% of the patients with GCA, while being the initial manifestation in 4%.[1] Besides a (non) productive cough and dyspnoea, the reported respiratory tract symptoms include pleuritic pain, a sore throat and hoarseness.[1] Radiological changes of the lungs are rare, but can occur as nodules of variable size, reticular infiltrates, pleural effusions and pleural thickening.[2] Involvement of the aorta can currently be visualised with a PET/CT, which shows inflammation of the aorta and its large branches in up to 76% of the patients with GCA.[3]

The respiratory symptoms in this patient can be explained by inflammation of the aorta and peribronchial vasculature causing stimulation of the bronchial cough receptors.[4] Awareness that GCA can present with atypical symptoms such as a nonproductive cough, can facilitate rapid diagnosis and treatment.

Figure 2A. *Overview of the temporal artery biopsy showing GCA (haematoxylin-eosin stain), the single arrow marks intima proliferation and the double arrow marks mononuclear cell invasion of the arterial wall*

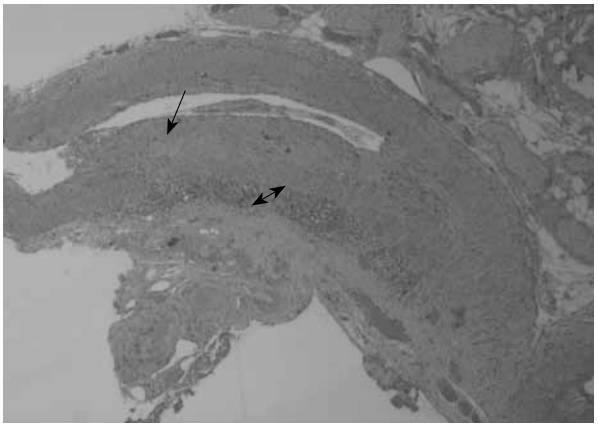
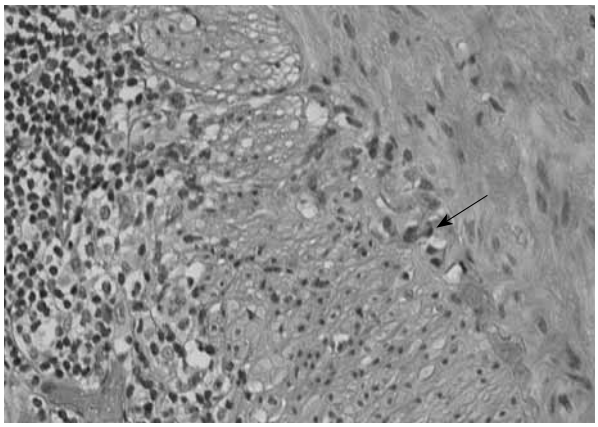


Figure 2B. *A detail of the temporal artery biopsy, the single arrow and the double arrow mark infiltration of the cell wall by a group of macrophages and lymphocytes, respectively*



ACKNOWLEDGEMENT

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