

Fever and cough in a patient with diabetes

J.A. Ropela, L. van Die, W.J.G. Oyen, G.A. Rongen*

Departments of General Internal Medicine, Radiology and Nuclear Medicine, Radboud University Nijmegen Medical Centre, *corresponding author

CASE REPORT

A 76-year-old woman with diabetes mellitus type 2, coronary artery disease with atrial fibrillation and chronic microcytic anaemia presented to the emergency room with fever and cough for one week. Five years prior to presentation, she had been evaluated for pleural effusion after complicated coronary artery bypass graft (CABG) surgery without a definite diagnosis. In subsequent years she was repeatedly admitted to the hospital for evaluation of intestinal blood loss, diagnosed as diverticular bleeding while treated with oral anticoagulation. A few months prior to admission, she was diagnosed with an anxiety disorder and depression with cognitive impairment.

Her medication comprised atenolol, furosemide, triamterene, amiodarone, aspirin, domperidone, tolbutamide, insulin, isosobide mononitrate, venlafaxine, phenprocoumon, paracetamol and iron suppletion.

On admission we saw an ill patient with fever (39°C). Examination of her chest revealed dull percussion and reduced breathing sounds over the lower lobe of the right lung. A blood culture revealed *Salmonella typhimurium*. A chest X ray was performed and compared with a previous X-ray (see figures 1 and 2).

WHAT IS YOUR DIAGNOSIS?

See page 358 for the answer to this photo quiz.

Figure 1. Chest X-ray (June 2005)



Figure 2. Chest X-ray at presentation on emergency ward (February 2006)



ANSWER TO PHOTO QUIZ (ON PAGE 357)
FEVER AND COUGH IN A PATIENT WITH DIABETES

DIAGNOSIS

The chest X-ray on admission shows an increase in the pleural effusion and several air-fluid interfaces.

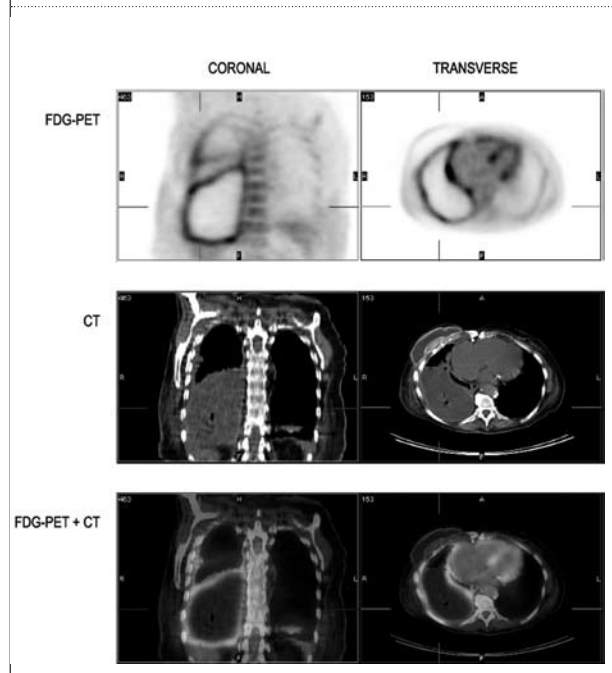
Our working diagnosis was either a partitioned empyema with local gas formation and/or intrapulmonary abscesses with either gas-forming bacteria or connection to the bronchus.

To confirm this diagnosis, a pleural puncture was performed. *Salmonella typhimurium* was cultured from the exsudate. An FDG-PET-CT was performed to identify the source or other localisations of infection. FDG-PET-CT revealed inflammation of the pleura of the whole right lung (figure 3).

Our diagnosis is empyema caused by *S. typhimurium*. *S. typhimurium* is able to form gas.¹

The source of this infection was not elucidated. FDG-PET-CT scan did not reveal any other focus of infection. This frail woman was treated with ciprofloxacin. Thoracic drainage was not performed because of presumed risk of pneumothorax associated with pulmonary involvement in this infection. Thoracic surgery was not performed because of her poor general condition and comorbidity. Her fever as well as the CRP normalised within three weeks. She was discharged to a nursing home.

Figure 3. FDG, PET and CT revealing significant glucose uptake of the pleurae of the right lung



REFERENCE

- 1 Stokes JL. Enzymatic aspects of gas formation by *Salmonella*. *J Bacteriol* 1956;72(2):269-75.