

A boy with recurrent pneumonia

In the previous issue of *Breathe*, the case of a 6-yr-old boy who had been admitted to the paediatric department of the University of Heraklion was introduced. After diagnosis of pneumonia and treatment, he was discharged and returned to normal life.

12 months later, the patient was readmitted with fever (38.5°C), dyspnoea and cough for 2 days. He appeared ill. His body temperature was 36.7°C, respiratory rate was 26 breaths·min⁻¹, pulse was 108 beats·min⁻¹ and O₂ saturation was 93%. On chest auscultation, he had decreased breath sounds over the right hemithorax. S₁ and S₂ cardiac sounds were normal with no murmur and the rest of examination was normal.

His chest radiography (CXR) on admission is shown in figure 1.



Figure 1
Chest radiograph

Task 1 How you interpret this CXR?

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Competing interests

None declared.

HERMES syllabus link: module B.3.6, C.1.10, D.3.1

Answer 1

The erect postero-anterior (PA) chest radiograph shows positive “silhouette” sign suggesting pathology of the right middle lobe.

Blood test results are shown in table 1. Blood chemistry and urine analysis were normal. Blood cultures and cold agglutinins were sent.

Table 1. Blood test results

White blood cells cells·mm ⁻³	15,800
Polymorphonucleates %	69.3
Lymphocytes %	21.8
Monocytes %	6.7
Eosinophils %	1.59
Haemoglobin g·dL ⁻¹	12
Haematocrit %	35.4
Platelets n·mm ⁻³	243
Erythrocyte sedimentation rate mm·h ⁻¹	48
C-reactive protein mg·dL ⁻¹	17.15

Task 2

What is your diagnosis?

Answer 2

Based on the clinical picture, the radiological image and the increase of neutrophils, erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP), the diagnosis of bacterial pneumonia was made.

The patient was treated with penicillin (150 mg·kg body weight⁻¹ *q.d.*), inhaled salbutamol and oral clarithromycin (30 mg·kg body weight⁻¹ *q.d.*) added the second day. He did not improve and a repeat CXR was done at the third day of hospitalisation (fig. 2).

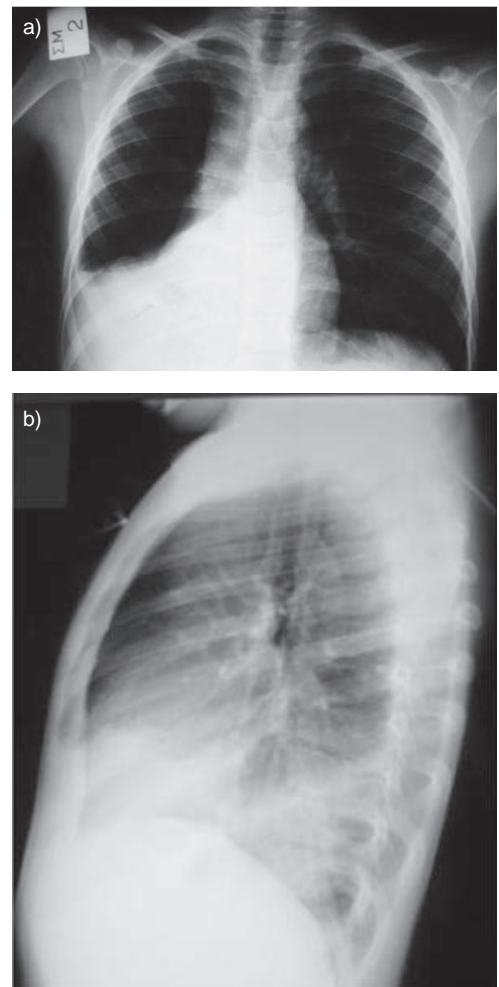


Figure 2
Chest radiograph

Task 3

How would you interpret this CXR?

Answer 3

The PA (a) and lateral (b) CXR show opacification of the right lower and middle lung lobes. The right hemidiaphragm is not seen (positive silhouette sign). A suspicion of right pneumatocele or abscess was raised.

Due to radiographic findings, penicillin treatment was replaced by cefotaxim (150 mg·kg body weight¹ *q.d.*) and clindamycin (40 mg·kg body weight¹ *q.d.*). A chest computerised tomography (CT) scan was performed, to detect possible abscess. The CT is shown in figure 3.

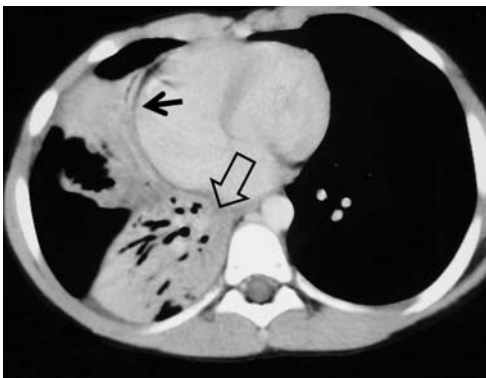


Figure 3
CT scan

Task 4
 Describe the CT scan.
Answer 4

The axial contrast enhanced CT scan of the lower thorax showed right lower lobe consolidation (white arrow) and right middle lobe atelectasis (black arrow). Linear atelectasis was shown in the left lower lobe. Mediastinum was moderately shifted to the right.

The patient continued the aforementioned treatment; clinical condition and auscultation findings improved. Repeat blood tests are shown in table 2 and blood cultures were negative.

Table 2. Blood test results

White blood cells cells·mm ⁻³	7,500
Polymorphonucleates %	44.3
Lymphocytes %	41.1
Monocytes %	8
Eosinophils %	5.27
Haemoglobin g·dL ⁻¹	12
Haematocrit %	35.2
Platelets n·mm ⁻³	229
Erythrocyte sedimentation rate mm·h ⁻¹	31
C-reactive protein mg·dL ⁻¹	0.38

Repeat CXR 8 days later is shown in figure 4.



Figure 4
Chest radiograph

Task 5
 How would you interpret this CXR?

Answer 5

The CXR shows resolution of findings and normal lungs.

The patient was discharged in excellent condition. He was instructed to continue oral amoxicillin-clavulanate for 3 days and clarithromycin for 6 days and to return in 7 days for

reassessment. At the follow-up visit he was asymptomatic. Available results showed: *Mycoplasma pneumoniae* immunoglobulin (Ig)G: 20.6 (positive); IgM: 4.2 (negative); *Rickettsia conorii* IgG and IgM negative. Serum IgG, IgA, IgM, immunoglobulin levels, serum complement and RadioAllergoSorbent Test (RAST) to common inhalants were drawn.

12 months later, the boy was readmitted to the hospital for gradually increasing productive cough for 9 days and fever (up to 39.5°C) for 3 days.

To be concluded next issue...