Letters to the Editor

Unilateral Interstitial Lung Pattern as a First Sign of a Bacterial Endocarditis

Patrón pulmonar intersticial unilateral como primera manifestación de una endocarditis bacteriana

To the Editor:

Infective endocarditis (IE) refers to the set of clinical and pathological alterations accompanying an infection of the endocardium, particularly in the cardiac valves. It may be caused by countless bacterial and fungal strains. Depending on the course of the disease, it may be classified as acute or sub-acute; the latter form progresses more slowly and is associated with previously abnormal valves and prior infections.1,2

We report the case of a woman who had been experiencing fever and dyspnoea for a month and whose radiology images showed a unilateral interstitial pattern compatible with pulmonary oedema of cardiogenic origin caused by bacterial endocarditis. Our search of medical literature revealed only one published case of a radiography showing a unilateral interstitial pattern due to heart failure.3

The 49-year old female patient was admitted to our unit for the first time for study of constitutional symptoms including loss of 8kg in one month and fever. Relevant factors in her personal history were discoid lupus on the lower lip, hypoacusia and smoking (one pack/day smoker for 18 years). She was not taking any habitual treatments. During the time she was admitted to our centre, physical examination was normal except for pulmonary auscultation, which detected crackling sounds in the left hemithorax, and cardiac auscultation, which detected a pansystolic murmur at 90rpm.

Additional procedures included the following: blood work showing haemoglobin at 10mg/dl, white blood cell count 6,620/μl, platelet count 614,000/μl, fibrinogen 628mg/dl, sedimentation rate 86mm/h, C-reactive protein 118mg/dl and rheumatoid factor 8.5 U/ml (positive). All other immunological studies were normal. In the tumour marker study, CA-125 was at 43 U/ml. Biochemical analysis revealed abnormal liver function, with alanine aminotransferase (ALAT) at 126 U/l, aspartate aminotransferase (AST) at 85 U/l, gamma-glutamyl transeptidase (GGT) at 67 U/l and lactate dehydrogenase (LDH) at 607 U/l. Functional respiratory tests showed forced vital capacity (FVC) of 2.22L (77%), forced expired volume in one second (FEV₁) of 1.36L (55%), FEV₁/FVC of 60% and baseline oxygen saturation of 90%. No significant abnormalities were found in the bronchoscopy; cytological examination of bronchial aspirate and bronchoalveolar lavage were negative, and there were no other microbiological findings. The chest radiography showed loss of volume in the left hemithorax, areas with a ground-glass appearance and others with an interstitial pattern. Inspection with a high-resolution CT showed small bilateral pleural effusion, signs of pulmonary hypertension, decreased left hemithorax volume with widespread pulmonary involvement, interlobular and intralobular septal thickening, nodular infiltrate in the upper left lobe with pleural thickening, and centrilobular emphysema.

Table 1

<table>
<thead>
<tr>
<th>Duke-Durack Criteria for Diagnosing IE</th>
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<tbody>
<tr>
<td><strong>Major criteria</strong></td>
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<tr>
<td>Positive blood culture for Infective Endocarditis</td>
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<tr>
<td>Evidence of endocardial involvement: Intracardiac mass, partial dehiscence of prosthetic valve or new valvular regurgitation</td>
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<tr>
<td><strong>Minor criteria</strong></td>
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<tr>
<td>Predisposition: predisposing heart condition or intravenous drug use</td>
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<tr>
<td>Fever: ≥ 38.0°C</td>
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<td>Vascular phenomena</td>
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<tr>
<td>Immunologic phenomena</td>
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<td>Echocardiographic findings: consistent with IE but do not meet a major criterion as noted above</td>
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<tr>
<td>Microbiological evidence: positive blood culture but does not meet a major criterion as noted above or serological evidence of active infection with organism consistent with IE</td>
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Diagnosis

Confirmed

Two major criteria, one major and three minor, or five minor criteria

Possible

Findings compatible with IE which do not meet the criteria for either “confirmed” or “excluded”

Excluded

Existence of a substantial alternative diagnosis explaining the symptoms; profile resolves with antibiotic treatment in fewer than four days

IE: infective endocarditis.
intralobular septal thickening and nodular infiltration in the upper
left lobe in addition to pleural thickening, with centrilobular
emphysema (Fig. 1). The echocardiogram detected aortic
endocarditis with severe aortic regurgitation, mild to moderate
pulmonary hypertension secondary to elevated end-diastolic
pressure in the left ventricle and an ejection fraction of 50%. The
patient underwent a procedure, and radiographic images showed
improvement at time of discharge.

Our searches of medical literature turned up only one case of
unilateral pulmonary oedema in a patient with acute heart failure
due to mitral regurgitation. At present, CT is helpful in diagnosing
heart conditions, including bacterial endocarditis. However, this
was not the case for our patient, whose radiology images were
incompatible with acute pulmonary oedema. Other peculiarities of
this case were the absence of a prior predisposing heart condition
and the age and sex, all of which are uncommon in native valve IE.
The echocardiography findings plus the appearance of the heart
murmur (two of the main Duke-Durack Criteria [Table 1]) enabled us
to confirm the diagnosis of IE.5,6

As we see, a unilateral interstitial pattern in the radiology image
does not exclude the possibility of pulmonary oedema of cardiac
origin.

References
endocarditis: Diagnosis, antimicrobial therapy, and management of complications:

Drainage of a Mediastinal Cyst by Endobronchial Ultrasound-
Guided Needle Aspiration

Drenaje de quiste mediastinico mediante aspiración con aguja
fina guiada por ecobroncoscopia

To the Editor:

Endobronchial ultrasound-guided transbronchial needle
aspiration (EBUS-TBNA) has been shown to be highly useful in
obtaining samples for lung cancer diagnosis and staging. In addition,
it is a diagnostic aid for benign illnesses such as tuberculosis and
pulmonary sarcoidosis. We have recently learned that it also has
therapeutic uses which include draining mediastinal cysts.2,3 We will
now present a case in which EBUS-TBNA was used to drain a
mediastinal cyst.

A 65-year old male patient with 80 pack year smoking history
was examined for left hemiparesis. The axial computed tomography
(CAT) scan showed a right parietal space-occupying lesion
indicative of cerebral metastasis. The chest radiography revealed
a pulmonary mass with well-defined edges in the upper left lobe
(ULL). The thoracic/abdominal CAT scan with intravenous contrast
showed a pulmonary mass measuring 30×24mm in the ULL and
left hilar adenopathies measuring 32×18mm. In addition, there
was an image measuring 23×17mm which was morphologically
similar to a right superior paratracheal adenopathy, but with a
mean density of −7.9 Hounsfield units. The bronchoscopy did not
reveal endobronchial lesions. The bronchial aspirate culture and
ULL bronchoalveolar lavage were negative for malignancy. Fine-
needle transthoracic aspiration of the mass in the ULL provided
the cytological diagnosis of adenocarcinoma. EBUS-TBNA was
performed on the upper right paratracheal lesion using convex
probe endobronchial ultrasound (CP-EBUS) (model BF-UC160F;
Olympus; Tokyo, Japan) and we observed an anechoic lesion
measuring 1.48cm with no Doppler flow signal. By puncturing the
mass we obtained 5cm³ of yellowish liquid and observed that the
lesion had shrunk in size (Fig. 1). The cytological study of the
liquid showed a mixed smear with macrophage foam cells
compatible with a bronchogenic cyst.

Mediastinal cysts are rare and generally asymptomatic, although
they may cause compression and irritation to adjacent structures or
become infected or malignant on the inside. In this case they require
draining or resection to avoid complications. Recurrence is frequent when less invasive treatments are used,
although when the cyst is collapsed by draining its entire content
with EBUS-TBNA, lack of recurrence during up to 18 months has been
observed.2,3

In a thoracic CAT scan, bronchogenic cysts appear as round, well-
defined masses with low-density homogeneous attenuation similar

A

B

Figure 1. Ultrasound-guided bronchoscopy of the right paratracheal cyst: A) before
puncture, in Doppler mode; and B) after draining.