

CLINICAL VIGNETTE

Right-sided pulmonary oedema caused by acute mitral regurgitation

Małgorzata Koźma¹, Paweł Tyczyński², Tomasz Hryniewiecki¹, Mariusz Kuśmierczyk³, Ilona Michałowska⁴

¹Department of Acquired Cardiac Defects, Institute of Cardiology, Warsaw, Poland

²Department of Interventional Cardiology and Angiology, Institute of Cardiology, Warsaw, Poland

³Department of Cardiac Surgery and Transplantology, Institute of Cardiology, Warsaw, Poland

⁴Department of Radiology, Institute of Cardiology, Warsaw, Poland

A 55-year-old man was admitted to hospital due to a fever of 39.2°C, cough, and haemoptysis lasting for four days. On examination, his pulse rate was 100 bpm, blood pressure was 95/70 mmHg, and oxygen saturation was 92% on 2 L/min of nasal oxygen supplementation. Laboratory tests revealed a white blood cell count as high as $12.9 \times 10^3/\mu\text{L}$ and an elevated level of C-reactive protein up to 30 mg/dL (reference range up to 0.5 mg/dL). Lung auscultation revealed coarse crackles in the entire right hemithorax. Chest X-ray showed alveolar-interstitial infiltrates limited to the right lung, most intense in the perihilar region (Fig. 1A). Cardiac auscultation revealed a holosystolic apical murmur. Transthoracic echocardiography showed severe mitral regurgitation (MR) with prolapse of the posterior mitral leaflet due to a chordal rupture and vegetations on the leaflets (Fig. 1B, C). The patient was scheduled for urgent surgery. Preoperative computed tomography confirmed leaflet prolapse with vegetations on the mitral valve and ruled out significant coronary artery stenosis (Fig. 1D, E). A chest X-ray performed one week after the corrective surgery showed no signs of pulmonary oedema. The patient underwent a mitral valve replacement with a mechanical prosthesis. Unilateral pulmonary oedema (UPE) is often misdiagnosed as respiratory disorders such as pneumonia, haemorrhage, and aspiration, which leads to delay in treatment. Cardiogenic UPE is a rare clinical entity, strongly associated with severe, eccentric MR. Severe MR jet directed towards the right pulmonary veins is hypothesised to be a causative mechanism of UPE, leading to a preferential pressure increase in the right lobe. It is important to note that unilateral pulmonary opacifications in a patient with severe MR may be caused by UPE.

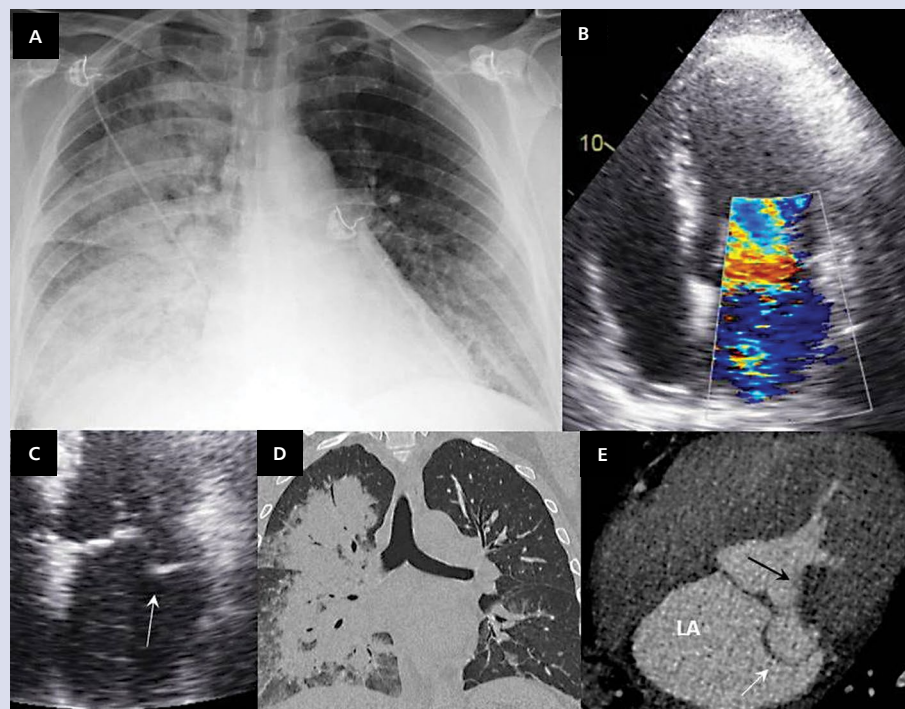


Figure 1. A. Portable chest X-ray: alveolar-interstitial infiltrates in the right lung; B. Colour Doppler transthoracic echocardiography: severe mitral regurgitation; C. Transthoracic echocardiography of the left atrium: mitral prolapse of the posterior leaflet (arrow); D. Chest computed tomography: unilateral pulmonary oedema; E. Cardiac computed tomography: mitral prolapse of the posterior leaflet (white arrow) and vegetations (black arrow); LA — left atrium

Address for correspondence:

Ilona Michałowska, MD, PhD, Department of Radiology, Institute of Cardiology, ul. Alpejska 42, 04-628 Warszawa, Poland, tel: +48 22 343 41 68, e-mail: imichalowska@ikard.pl

Conflict of interest: none declared

Kardiologia Polska Copyright © Polish Cardiac Society 2019