

The Silent Invader: Right Atrial Hydatid Disease Complicated by Acute Bilateral Pulmonary Embolism

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Abstract

Background: Pulmonary embolism usually prompts a thrombotic diagnostic pathway, but rare mimics and coexisting conditions may profoundly alter risk interpretation and management. Intracardiac hydatid disease is uncommon, and right-sided cystic lesions may create a complex embolic scenario requiring multidisciplinary decision-making.

Case presentation: A 70-year-old man with diabetes, hypertension, HCV positivity, remote smoking history, and previous liver cyst excision with middle lobectomy for hydatid disease 20 years earlier presented with progressive exertional dyspnea. Symptoms evolved over two months, worsened despite admission, and progressed to dyspnea on mild exertion. On assessment, he had hypoxemic respiratory distress with SpO₂ 87% on room air, respiratory rate 35/min, bilateral lower-limb edema, and right-sided volume-loss signs. Arterial blood gas showed severe hypoxemia, with PaO₂ 39 mmHg and oxygen saturation 79%. Laboratory evaluation showed CRP 158, sodium 123, pro-BNP 797.3, TLC 12.6, troponin 0.016, and strongly positive hydatid antibody titre of 1/1280.

Investigations: Contrast CT and CTPA demonstrated acute bilateral pulmonary arterial thromboembolism involving lobar, segmental, and subsegmental branches, with possible left lower-lobe infarction, while also revealing right paracardiac and intracardiac multilocular cystic lesions. Echocardiography showed new right-sided chamber dilatation, impaired RV systolic function, TAPSE 1.4 cm, estimated pulmonary artery systolic pressure 65 mmHg, and a right atrial mass measuring 4.1 × 1.8 cm. Cardiac MRI confirmed a multiloculated bi-lobed right atrial hydatid cyst with daughter cysts, extracardiac epicardial/pericardial extension, and a smaller mobile intracavitary component.

Management and conclusion: Surgery was declined because of severe ventilatory limitation and high operative risk. ICU management combined therapeutic anticoagulation, albendazole, respiratory support, infection coverage, and planned serial MRI/CTPA reassessment. This case highlights that unexplained dyspnea with hypoxemia and right-heart strain should trigger urgent pulmonary vascular imaging and structured multidisciplinary evaluation, particularly when rare embolic sources coexist with acute PE.