Unmasking a singular culprit for cardiogenic shock - looking beyond the coronary tree

Authors:
M Coutinho Cruz, L Almeida-Morais, G Portugal, R Ilhao-Moreira, T Branco-Mano, J Reis, R Cruz-Ferreira, Hospital de Santa Marta, Serviço de Cardiologia - Lisbon - Portugal,

Topic(s):
Acute Coronary Syndromes: Shock

Citation:
Introduction: Cardiogenic shock is most often caused by acute myocardial infarction or decompensated heart failure with reduced ejection fraction.
Case Report: A 74-year-old female with previous history of breast cancer submitted to radical mastectomy 10 years before presented to the emergency department with acute dyspnoea. The physical exam showed tachycardia, blood pressure 90/60 mmHg, regular heart sounds, no murmurs, arterial oxygen saturation of 85%, tachypnoea, accessory respiratory muscle use and bilateral rales with left hemithorax decreased breath sounds and dullness at percussion. The chest X-ray had an enlarged cardiac silhouette, bilateral heterogeneous opacities and a large homogenous consolidation in the left hemithorax. ECG demonstrated sinus tachycardia, right bundle branch block and left anterior hemiblock with 2 mm ST-segment elevation in aVL and I. The clinical condition deteriorated requiring inotropic support and mechanical ventilation. Bedside transthoracic echocardiogram (TTE) showed impaired left ventricular (LV) function with anterior and lateral wall akinesia. A diagnosis of ST-segment elevation myocardial infarction (STEMI) with cardiogenic shock was made and emergent coronary angiogram showed diffuse non-significant 3-vessel disease (TIMI 3 flow). TTE imaging review showed LV lateral and anterior wall akinesis due to infiltration by a heterogeneous echogenic mass. Transoesophageal echocardiogram confirmed TTE findings, showing mild mitral regurgitation and a large mass invading the LV wall. An urgent CT-scan uncovered a heterogeneous mass with necrotic material, originating from the inferior left lung lobe and invading the anterior and lateral wall of the left ventricle, left branch of the pulmonary artery, left bronchus and anterior chest wall, compatible with stage IV lung cancer. Despite supportive care, clinical status worsened and the patient died in the following hours.
Conclusion: Several pathological entities, such as perimyocarditis and Takotsubo syndrome, can imitate STEMI, such that the true diagnosis only becomes evident after the invasive angiography excludes a culprit coronary lesion. This case illustrates a remarkable unusual cause of cardiogenic shock. To the authors' knowledge this is the first report of lung cancer mimicking STEMI with cardiogenic shock.