Severe chronic obstructive pulmonary disease exacerbation precipitated stress cardiomyopathy

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Introduction: Takotsubo cardiomyopathy (TTS) or stress cardiomyopathy is a transient dysfunction of left ventricle often caused by emotional or physical stress. It is often misdiagnosed as myocardial infarction[1]. Bronchogenic TTS was proposed as a special form of TTS occurring during severe dyspnea in COPD and asthma[2].

Case report: We are presenting a 73-year-old female brought to the Emergency Department after sudden onset of dyspnea. During medical history taking she stated shortness of breath for the last four months. Because of severe respiratory distress and high D-dimer levels (22.46 mg/L) multislice CT pulmonary angiography was arranged and pulmonary embolism was ruled out after which she was admitted in the Intensive Care unit (ICU). Initial blood work showed severe metabolic acidosis and high troponin T level (193.3 ng/L) with normal N-terminal pro b-type natriuretic peptide (464 pg/mL). 12-lead electrocardiogram showed poor R wave progression through precordial leads. Cardiologist was consulted and emergent invasive coronary angiography was performed but showed no significant findings. Patient was transferred to the Cardiology Intensive Care Unit and echocardiography verified stress cardiomyopathy with reduced left ventricle ejection fraction (2D LVEF 42%), lower global longitudinal strain (GLS -7%), dyskinetic circumferential apical region of the left ventricle (**Figure 1**) and indirect signs of pulmonary hypertension. Echocardiography was repeated 8 days after the initial one and showed improvement of LVEF (60%), still lower GLS (-10,7 %) (**Figure 2**), and hypokinetic apicoseptal region. Pulmonary function tests were done, and chronic obstructive pulmonary disease (COPD) was diagnosed. A final diagnosis of transitory manifestation of stress cardiomyopathy due to COPD exacerbation was made. After that, patient was transferred to the Clinic for Lung Disease for further pulmonary status assessment.

FIGURE 1. Apical ballooning pattern.

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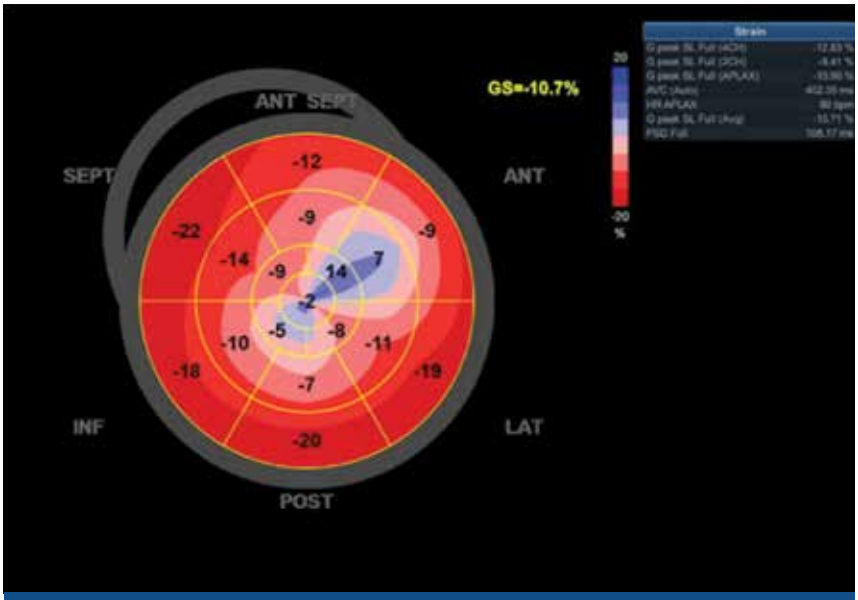

FIGURE 2. Global longitudinal strain.

Conclusion: Sometimes, severe respiratory distress due to COPD or asthma can cause stress cardiomyopathy. Echocardiography is a noninvasive pivotal imaging modality used to diagnose it.

LITERATURE

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