Dear Editor,

Tako-tsubo cardiomyopathy (TCM) is a reversible cardiomyopathy characterized by left ventricular dysfunction due to transient left ventricular apical hypokinesia or akinesia and basal hyperkinesis following some trigger factors like physical or emotional stressful events and may mimic myocardial infarction especially in middle age females. Pathophysiology of TCM is not clear but it is associated with excessive adrenergic stimulation.1-3 TCM is usually precipitated by acute physical and emotional stressors, use of exogenous catecholamines or exacerbation of chronic illnesses like asthma attack.4,10 We report a case of TCM after an asthma attack as a potential stressor. This is an interesting association between asthma attack and TCM.

A 58 year old female with a history of bronchial asthma was admitted to the emergency room. She had dyspnea and chest pain. She had no previous cardiac history. She was admitted to the coronary care unit. On physical examination, blood pressure was 110/70 mmHg, pulse was 90 beats per minute, respiratory rate was 24 breaths /minute, heart sounds were normal and bilateral wheezing was heard. Electrocardiography (ECG) revealed diffuse ST segment depressions and precordial T wave inversions (Fig.1). The peak troponin T level was 672 pg/ml and peak creatinin kinase MB level was 57 IU/ml. Other biochemical tests and whole blood count did not show any abnormality. Transthoracic echocardiography showed hypokinesia of the mid and apical segment of the interventricular septum, hypokinesia of the left ventricular anteroseptal wall and hyperkinesia of the left ventricular basal segment (Fig.2-5, supplementary material Video1-2). Left ventricular ejection fraction was 35 %. After initial evaluation, the patient was admitted to the catheter laboratory for coronary angiography. Coronary angiography revealed no coronary artery obstruction (Fig.7, supplementary material Video 3-4). Ventriculography showed global hypokinesia of the left ventricle except basis and apex of the left ventricle (Fig.6, supplementary material Video 5). The patient was treated with angiotensin converting enzyme, beta blocker, spironolactone, steroid and bronchodilators. One week later, control echocardiography showed normal ejection fraction and no segmental wall motion abnormality (supplementary material Video-6-7).

In the association of clinical findings of TCM and asthma attack, presentation of the case may be firstly thought an acute coronary syndrome and the patient is usually transferred to the catheter laboratory for coronary angiography so electrocardiographic changes and echocardiographic findings reveal ischemic findings and segmental motion abnormality. As in our case, it should be kept in mind the patients with suspected asthma attack should be monitored closely for diagnosing of takotsubo cardiomyopathy.

Declarations of Interest:
The authors declare no conflicts of interest.

Acknowledgements
The authors state that they abide by the requirements of the “Requirements for Ethical Publishing in Biomedical Journals”.11

References


Supplementary Material

**Video-1:** The characteristic pattern of apical ballooning of the left ventricle with apical two chamber window on transthoracic echocardiography

**Video-2:** The characteristic pattern of apical ballooning of the left ventricle with parasternal short axis on transthoracic echocardiography

**Video-3:** The absence of coronary artery disease at the circumflex and left anterior descending arteries territory

**Video-4:** The absence of coronary artery disease at the right coronary artery territory

**Video-5:** The ventriculography of the apical ballooning of the left ventricle

**Video-6:** The normal pattern of the left ventricle with apical four chamber window on transthoracic echocardiography after healing

**Video-7:** The normal pattern of the left ventricle with parasternal short axis on transthoracic echocardiography after healing