Emotional stress and the female heart — not so simple!

Kobiece serce i stres emocjonalny — wcale nie takie proste!

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Severe emotional or physiological stress is a recognised cause of acute myocardial infarction. However, the aetiology of chest pain following stress is not always classical atherosclerotic plaque rupture with thrombotic coronary artery occlusion. Three young women (aged 30–40 years) presented with cardiac chest pain, ischaemic ECG changes and raised cardiac enzymes following episodes of severe emotional or physiological stress. Case A had a filling defect in the proximal left anterior descending artery (LAD) on invasive coronary angiography (ICA) (Fig. A1). Intravascular ultrasound (IVUS) demonstrated remodelled atherosclerotic plaque with superimposed thrombus (Fig. A2). She was treated with heparin infusion and repeat ICA confirmed resolution of thrombus (Fig. A3). This case illustrates an example of atherosclerotic plaque rupture. Case B had disease in the LAD on ICA (Fig. B1). Optical coherence tomography showed sub-intimal haematoma (Fig. B2) and intimal dissection (Fig. B3). IVUS confirmed sub-intimal haematoma with luminal narrowing (Fig. B4). She was treated with the deployment of two drug-eluting stents. This case illustrates an example of spontaneous coronary artery dissection. Case C had normal coronary arteries on ICA. Left ventriculography and echocardiography (Fig. C1 and C2) showed apical ballooning of the left ventricle (LV) with hyperdynamic basal contraction. She was treated conservatively. Interval cardiac magnetic resonance imaging demonstrated recovery of LV contraction (Fig. C3). Late gadolinium enhancement showed no subendocardial scar (Fig. C4). This case illustrates an example of tako-tsubo cardiomyopathy. These cases highlight the important differential diagnoses to be considered in young female patients presenting with chest pain following emotional or physiological stress.

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