Cardiac arrest in takotsubo cardiomyopathy: a not so benign disease

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Topic(s):
Acute Coronary Syndromes: Takotsubo Cardiomyopathy

Citation:
A 56-year-old Caucasian woman with a past medical history of pulmonary emphysema and claustrophobia was brought to the coronary intensive care unit after being resuscitated from a cardiac arrest in the subway station. She was about to get into a crowded subway when she referred intensive dyspnea and anxiety. Then, she suddenly collapsed. Cardiopulmonary resuscitation was initiated by a bystander and when the emergency medical personnel arrived, found the patient in cardiac arrest with ventricular fibrillation. She was promptly defibrillated with restoration of spontaneous circulation without administration of adrenaline and intubated. The resuscitation efforts last over 15 minutes.

On admission to the coronary intensive care unit the patient’s vital sings were stable. A 12-lead electrocardiogram showed sinus tachycardia and 1mm ST-segment elevation in leads DII, aVF and V6 with normal corrected QT interval. The patient underwent cardiac catheterization that showed no obstructive coronary artery disease (Figure 1.A), but the left ventriculogram revealed a hypercontractile basal wall and severe mid-ventricular and apical hypokinesia consistent with Takotsubo Cardiomyopathy (TCM) (Figure1.B). An echocardiogram was performed which confirmed the same findings with an ejection fraction of 25% (Figure1.C).

After the procedure, the patient recovered consciousness without focal neurologic deficits. She was extubated within the next 12 hours. The remaining course of her stay was uneventful and a repeated echocardiogram at discharge from hospital after 8 days showed improvement of left ventricular function. The TTE performed a month later showed complete recovery of the left ventricular systolic function (Figure1.D).

TCM is not a benign disorder. It is considered to have a good long-term prognosis but it can be associated with life-threatening complications. Rarely, cardiac arrest is the initial presentation of TCM unrelated to QT interval prolongation. Sometimes it is difficult to clearly distinguish whether the syndrome is the cause or a consequence of the cardiac arrest because the patients who underwent resuscitation must have been under considerable physical stress and would have also required intravenous catecholamines as part of the resuscitation. Our patient had a stressful inciting event, did not require administration of catecholamines and had a return of spontaneous circulation following the first shock. The takotsubo syndrome seems to be the trigger for the ventricular arrhythmia in this case.

It is unclear the risk of recurrence of arrhythmic events after the initial recovery and there is currently insufficient evidence on which to recommend internal defibrillator or the use of betablockers. Further studies are needed to provide an evidence-based guidance on appropriate medical and device therapy.
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