



Type A Aortic Dissection Mimicking ST-Segment Elevation Myocardial Infarction After Return of Spontaneous Circulation

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To the Editor

Acute myocardial infarction is a common etiology of out-of-hospital cardiac arrest (OHCA) in adults. The 2010 American Heart Association Guidelines recommended performing 12-lead electrocardiography (ECG) as soon as possible after return of spontaneous circulation (ROSC) to determine if acute ST-segment elevation is present. Moreover, coronary angiography and percutaneous coronary intervention (PCI) should not be delayed for patients with OHCA who have ST-segment elevation on ECG to improve survival and neurological recovery.¹

A 67-year-old man with a history of chronic kidney disease was transported to the emergency department (ED) by emergency medical service because of sudden cardiac arrest at home. Defibrillation at 200 J twice was performed during the prehospital transfer and ROSC before ED arrival. At the ED, he was comatose with an isocoric pupil. His vital signs revealed a heart rate of 112 beats/min, blood pressure of 148/89 mm Hg, and respiratory rate of 12 breath/min. After emergency endotracheal intubation, ECG was performed and revealed an ST-segment elevation over V1–V5. We then consulted the cardiologist, who suggested an immediate PCI. Before the loading of antiplatelet and antithrombins agents, point-of-care ultrasonography (POCUS) by the emergency physician revealed an aortic intima flap. No pericardial effusion was observed. Sequence chest computed tomography confirmed a type A aortic dissection. While the patient was prepared for thoracic endovascular

aortic repair, cardiac arrest developed again. Finally, the patient expired because his family refused further resuscitation.

Factors associated with occlusive coronary artery disease-related cardiac arrest included diabetes, initial shockable rhythm, and a history of coronary artery disease.² In this patient, ST-segment elevation on ECG after ROSC accompanied by prehospital shockable rhythms may directly lead to the decision of PCI. However, aortic dissection mimicking ST-segment elevation myocardial infarction (STEMI) is not uncommon. POCUS during cardiopulmonary resuscitation is suggested to be an important tool for etiology identification.³ Therefore, we suggest POCUS assessment before PCI for resuscitated patients with OHCA, even those whose ECG images show STEMI, because misdiagnosis with early anticoagulant treatment and delayed surgical management may result in catastrophic consequences for the patient.

References

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