

Coronary Artery Embolism: a Rare Cause of ST Segment Elevation Myocardial Infarction

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Acute myocardial infarction (AMI) is a fatal clinical disease, and is often caused by thrombotic occlusion, secondary to coronary artery atherosclerotic plaque erosion or rupture [1]. But about 1-14% of AMI is caused by myocardial infarction with non-obstructive coronary atherosclerosis (MINOCA [2], which is characterized by evidence of myocardial infarction, normal coronary angiography or coronary artery stenosis of <50% [3]. The causes of MINOCA vary from person to person [4], such as coronary artery spasm [5], Stress cardiomyopathy [6], Thrombophilia [7], coronary artery embolism (CE) [8,9]. CE is a rare cause of AMI in clinical practice. We had presented a female patient who had left anterior descending artery embolism, with dilated cardiomyopathy and paroxysmal atrial flutter [10]. CE, while rare, is now recognized as an important non-atherosclerotic cause of AMI. In the past, the description of clinical features about CE was little or just case reports [8-9]. A recent study involving 1776 patients evaluated the clinical features of CE-related myocardial infarction. It is pointed out that the prevalence rate is 2.9% in the initial AMI. and atrial fibrillation is the most important cause of CE (73%). Other causes include cardiomyopathy and valvular heart disease. And proposed CE diagnostic criteria [11]. In recent years, thrombus aspiration devices have been widely used in AMI patients with angiographically confirmed thrombosis and have proved to be a viable and effective strategy for the treatment of thrombotically burdened AMI, including CE-related infarction. Moreover, histological

examination of aspiration thrombus provides additional information for the diagnosis of CE. Although thrombus aspiration is an effective method for treating patients with CE, Stoel et al [12] reported that the diameter of the lumen of the aspiration catheter is small and useless for aspirating large thrombi. In addition, it is challenging to access to the distal lumen through the suction device. In fact, 42% of existing patients are treated conservatively because of distal occlusion or small vessel with a criminal lesion.

The treatment of CE-related risk factors is also very important. Including atrial fibrillation, cardiomyopathy, rheumatic heart valve disease, prosthetic heart valve, patent foramen ovale, atrial septal defect, history of cardiac surgery, infective endocarditis or hypercoagulable state. The patient in this case was dilated cardiomyopathy with paroxysmal atrial flutter, both of which were high risk for CE. She had chest pain, typical changes in the ECG, coronary angiography revealed coronary embolization of the LAD. that are consistent with acute myocardial infarction. Intravascular ultrasound (IVUS) or optical coherence Tomography (OCT) is an effective method to detect the atherosclerotic plaque erosion or rupture of coronary artery. This patient was proved to be CE by IVUS. It is very important to given sufficient anticoagulant therapy to prevent CE in clinical practice.

Declarations

-Competing interests

The authors declare that they have no competing interests.

-Acknowledgments

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