

Coronary artery embolism as a silent killer due to asymptomatic paroxysmal atrial fibrillation

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A previously healthy 48-year-old man presented to the emergency department with chest pain of sudden onset. Electrocardiography showed complete atrioventricular block and an elevated ST-segment in the inferior limb leads. Emergency coronary angiography showed occlusion of the right coronary artery (Fig. 1A). Thrombus aspiration followed by crushing thrombi by balloon dilation and recovered favorable blood flow (Fig. 1B). Optical coherence tomography (OCT) and intravascular ultrasound demonstrated neither evidence of plaque rupture nor erosion at the culprit lesion (Fig. 1C). Asymptomatic paroxysmal atrial fibrillation was detected during the hospital stay and a huge thrombus was identified in the left atrial appendage (LAA) with transesophageal echocardiography (Fig. 1D). These findings indicate acute myocardial infarction (AMI) caused by highly likely thromboembolism

from the LAA thrombus. Administration of a direct oral anticoagulant agent dissolved the LAA thrombus and no thromboembolic event has since been observed.

Although many cases of coronary artery embolism (CE) have been reported, the present case was the first to demonstrate both a clear embolic source in LAA and an OCT finding indicating no atherosclerotic origin of the culprit lesion. CE is the underlying cause of 2.9% of cases of de novo AMI. Considering the poorer long-term outcomes of CE patients than non-CE patients, it must be recognized that they are a high-risk subpopulation of AMI patients. Atrial fibrillation is the most frequent cause of CE, and the recurrence of systemic thromboembolism is also noted in patients with atrial fibrillation. Therefore, CE patients must be appropriately diagnosed and optimize management to improve their prognoses.

Conflict of interest: None declared

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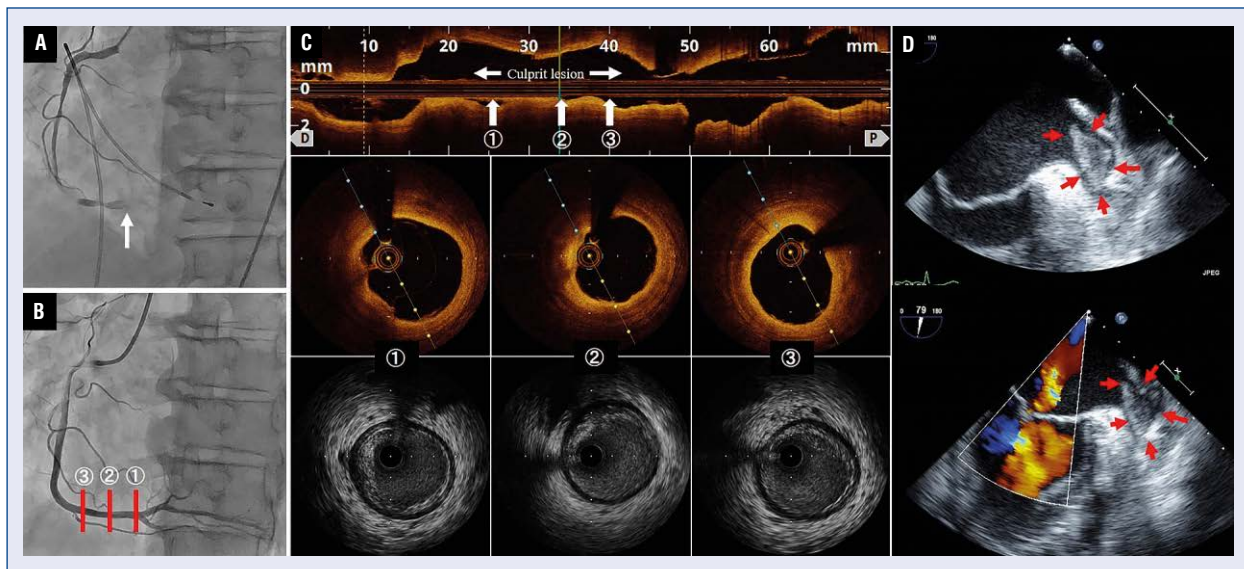


Figure 1. A. Coronary angiography showing an occlusion of the right coronary artery (RCA) (arrow); B. Absence of organized stenosis at the culprit lesion of RCA after recanalization; C. Optical coherence tomography and intravascular ultrasound showing neither evidence of plaque rupture nor erosion at the culprit lesion; D. Transesophageal echocardiography showing the presence of a huge thrombus in left atrial appendage.