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CARDIOVASCULAR FLASHLIGHT

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Silent myocardial infarction and stroke: findings of multimodality imaging

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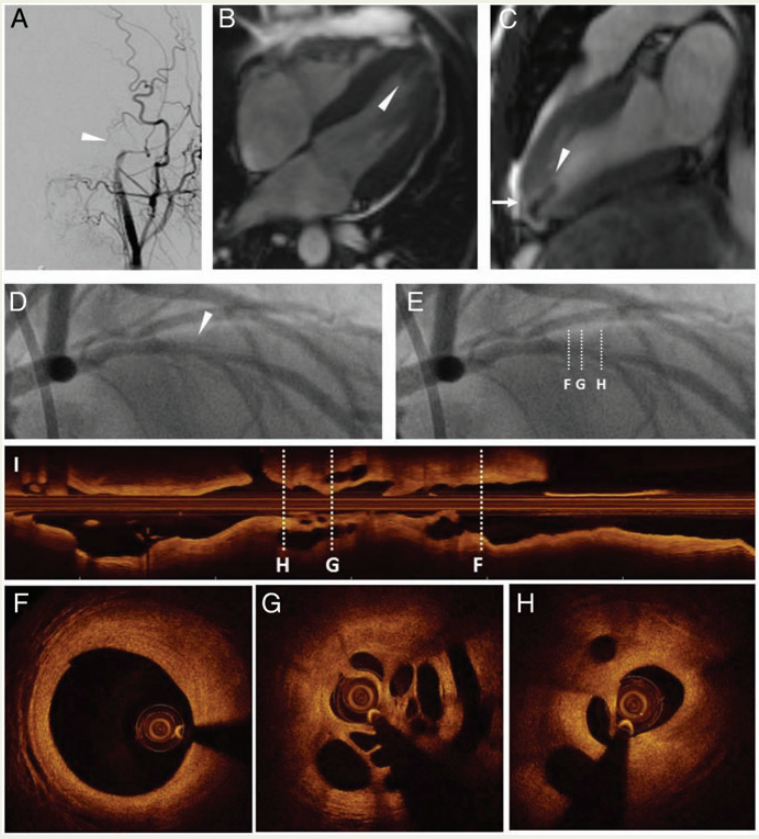

A 32-year-old male presented with acute onset of global aphasia and right hemiplegia. Emergent CT angiography demonstrated acute occlusion of the left internal carotid artery. The patient underwent angiography of the carotid arteries (*Panel A*) and after mechanical thrombectomy symptoms improved. Serial ECGs were normal. Transthoracic (TTE) and transoesophageal echocardiography (TEE) revealed no cardiac thrombi. Coagulability, lipid profile (Cholesterin 4.63 mmol/L, LDL-C 2.74 mmol/L), and cardiac enzymes were normal. The only risk factor was smoking (8 pack-years). A cardiac MRI revealed a small thrombus in the left ventricular (LV) apex measuring 0.9 × 1.8 mm (*Panels B* and *C*, arrowhead), apical wall thinning (*Panel C*, arrow), and dyskinesia (LV ejection fraction 58%), suggesting a myocardial infarction (MI) of undetermined age. Coronary angiography revealed a hazy lesion in the proximal segment of the left anterior descending artery (*Panels D* and *E*). Optical coherence tomography (OCT) to clarify the underlying lesion morphology disclosed a recanalized lesion with a 'multi-channel' appearance (*Panels F–H*). The lesion was successfully treated by implantation of a drug-eluting stent and the patient discharged with clopidogrel, rivaroxaban, statin, and ACE-inhibitor. Upon more detailed history, the patient reported crescendo angina pectoris in the preceding months.

Occult cardiac embolism is considered a principal mechanism of cryptogenic stroke. Thrombus formation within the LV cavity is a potential complication of MI. Cardiac MRI has the highest sensitivity to detect LV thrombi and should be considered in the work-up of patients with highly suspicious cardiac origin of stroke and negative standard examinations. Optical coherence tomography may be useful to fully characterize the morphology of coronary culprit lesions.