Stroke and thrombosed vertebral artery associated with retained epicardial pacing wire

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Introduction: Temporary epicardial pacing wires have been widely used in cardiac surgery to manage post-operative bradyarrhythmias. These wires are routinely removed from patients before discharge. However, they are occasionally retained due to difficulties in removal. Rare complications may occur from retained wires. We describe a case of retained temporary epicardial pacing wires that migrated into the right subclavian artery and caused stroke.

Methods: A 63-year-old man was admitted for sudden vertigo with ataxia in left limbs. Brain magnetic resonance imaging revealed acute cerebral infarction in the left superior cerebellar artery territory and right vertebral artery occlusion. Nine years ago, he underwent open heart surgery to remove cardiac myxoma in the left atrium with maze operation to control atrial fibrillation. The epicardial pacing wire was placed during the surgery and it was retained due to difficulties in removal after the surgery.

Result: Computed tomography revealed metallic density linear structure along the right atrial appendage, ascending aorta, and right subclavian artery (Panel A). On duplex sonography, right vertebral artery was seen to be occluded by mobile thrombus around a foreign, wire-like material (Panel B and C). After one month of oral anticoagulation, thrombus in the right vertebral artery disappeared in follow-up computed tomography and the wire was removed surgically (panel D).

Conclusion: Migration of retained epicardial pacing wires after cardiac surgery is a rare complication with variety of clinical features. Although the exact mechanism is unknown, it may be related with constant periodic movement of the heart and diaphragm. Temporary epicardial pacing wires should be removed whenever possible. If they are retained after cardiac surgery, a careful follow-up is needed.