CLINICAL VIGNETTE

Treat the vessel, save the heart: a rare case of spontaneous sensitive carotid artery dissection

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Dissection of the carotid artery occurs rarely, and it is usually caused by serious trauma or sporadically can be spontaneous. In most cases, this condition leads to ischemic stroke. Otherwise, nonspecific symptoms may cause a delay in diagnosis and inappropriate management. We present a very rare case of dissection of the carotid artery complicated with carotid sinus syndrome requiring pacemaker implantation.

A 62-year-old white man with a history of hypertension presented to the department of cardiology due to syncope while riding a bike with a little injury of the right arm. The patient complained of recurrent headache in the temporal area for the last 2 years and an additional symptom, photopsia, which occurred just before the hospitalization. Horner syndrome was observed on physical examination. Routine laboratory tests were in the reference range. On admission, 12-lead electrocardiogram showed sinus rhythm of 61 bpm with normal PR and corrected QT intervals and nonspecific ST-T changes. Echocardiography with bubble study did not demonstrate any interatrial septum leak or any evidence of structural heart disease. Computed tomography revealed a small remote infarct in the temporal lobe. Further Holter electrocardiogram recording showed no rhythm or conduction disturbances within the following 48 hours. Carotid doppler ultrasound found hypoechogenic plaque narrowing the intraluminal diameter to 2 mm through the right internal carotid artery (RICA) with peak velocity of 50 cm/s. To verify ultrasound abnormalities, cervical computed tomography angiography was performed, which showed dissection of the RICA (FIGURE 1A). The patient was disqualified by a surgeon from interventional treatment, so anticoagulation with a low-molecular-weight heparin was initiated. In the next few days, the patient exhibited twice presyncope associated with bradycardia and hypotension. Simultaneously, telemetric monitoring detected episodes of atrioventricular junctional rhythm and a few 4.5-second pauses (FIGURE 1B). Therefore, we concluded that the possible cause of the recurrent syncope was carotid sinus hypersensitivity secondary to RICA dissection and the decision of dual-chamber pacemaker implantation was made. The procedure was successfully performed without any early complications and DDDR mode was programmed. Two months later, magnetic resonance angiography revealed complete luminal recovery of the RICA. Simultaneously, pacemaker interrogation showed no atrial and ventricular stimulation. If the following interrogations show no atrial or ventricular pacing, the device removal will be considered.

Dissection of the carotid artery is responsible for 2.5% of ischemic strokes in the general population, while carotid sinus syndrome is a rare complication of this condition.[1] According to the European Society of Cardiology guidelines, the pacemaker implantation should be considered in patients over 40 years with cardioinhibitory carotid sinus syndrome and frequent syncope.[2] Because of short but traumatic medical history and only few episodes of syncope with injury, the decision of pacemaker implantation was made in our patient. However, further observation revealed that the healing of carotid artery ruptured plague led to full recovery of sinus node function. Hence, the question remains whether the pacemaker implantation

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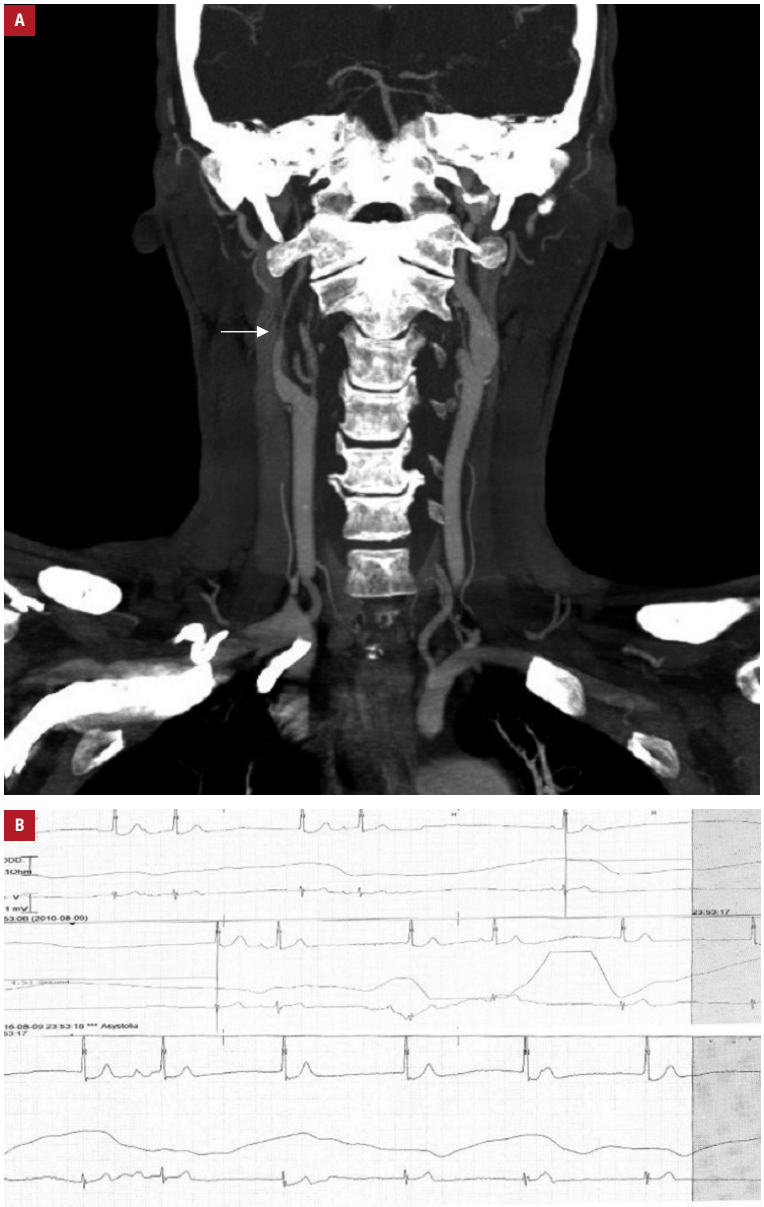

FIGURE 1 **A** – computed tomography angiography, coronal maximum intensity projection reconstruction, demonstrating a narrowing of the right internal carotid artery lumen secondary to dissection (arrow); **B** – telemetric monitoring: episodes of atrioventricular junctional rhythm and 4.5-second pause

was justified and whether surgical or endovascular treatment should have been reconsidered. However, further studies are needed to establish coherent management in such complications.

ARTICLE INFORMATION

CONFLICT OF INTEREST None declared

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