Contrastless “no-touch” technique for thrombotic left atrial appendage closure.

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History and physical:

An 82-year-old male patient, affected by hypertensive and ischemic cardiomyopathy with normal left ventricular function and permanent atrial fibrillation (AF) with CHA_2DS_2-VASc score 6, was admitted to our Centre for recurrent ischemic stroke. The patient was on active treatment with dual-antiplatelet therapy due to recent (<3 months) coronary stenting for 3 vessel disease with multiple coronary drug-eluting stent implantation, and anticoagulation with Apixaban 5 mg bid for AF. Recurrent parietal ischemic strokes occured despite the use of different anticoagulant treatments (apixaban, rivaroxaban, low molecular weight heparin).

Imaging:

TEE revealed a thrombus with dense smoke effect into the left atrial appendage (LAA, Video1), persistent despite all the anticoagulant regimens used; the patient was therefore referred for percutaneous closure of the LAA.

Indication for intervention:

LAA closure for recurrent parietal ischemic stroke despite adequate oral anticoagulation.

Intervention:

Right femoral vein and right radial artery accesses were obtained. Unfractionated heparin was given in order to obtain an activated clotting time >250 sec. An angiogram of the aortic arch was performed and the Sentinel® (Claret Medical, Santa Clara, USA) cerebral embolic protection device (EPD), folded into a 7 Fr Mullins sheath, was delivered from the right radial artery into the ascending aorta and then into the left carotid artery. The “no-touch” technique for percutaneous LAA closure was carried out: we used TEE continuous monitoring without using contrast agent aiming to minimize the risk of thrombus embolization. Measurements for device sizing were based on TEE images only. A LambreTM LAA Closure System (Lifetech Scientific, Shenzhen, China) 22/28 mm device was successfully implanted (Video 2). The Sentinel EPD was then successfully removed without complications; no thrombi were detected inside the filters. No complication occurred during the procedure or during the subsequent hospital stay, and the patient was successfully discharged on day 2, treated with a dual therapy with acetylsalicylic acid and rivaroxaban 20 mg. At the 1-month TEE check, the device was normally positioned, no residual leak was detected and no thrombi were found on the atrial side of the implanted devices. The patients did not suffered of ischemic or thromboembolic event, or hemorrhagic complications, even at the 6 months follow-up visit.

Learning points of the procedure:

LAA closure is a safe and effective alternative for thromboembolic events prevention in patients with AF and thromboembolic events despite adeguate anticoagulation. Although the presence of thrombus in the LAA is a prohibitive condition to an invasive procedure, the cerebral vessel protection device allowed to safely perform transcatheter LAA closure, reducing the risk of cerebral embolization for thrombus mobilization during catheter manipulation. The contrastless “no-touch” tecnique, using only real-time TEE images, is a new method that in expert hands allows to perform safely and effectively the percutaneous occlusion of thrombotic LAA.