IMAGE IN CARDIOLOGY

Close relationship between circumflex artery and left atrial appendage

Artéria circunflexa e apêndice arterial esquerdo: relação perigosa

Juan Caro-Codón*, Guillermo Galeote, Teresa López-Fernández,
Ángel Sánchez-Recalde, Santiago Jiménez-Valero, Raúl Moreno

Serviço de Cardiologia, Hospital Universitario La Paz, Madrid, Spain

A 61-year-old man, with a history of coronary heart disease and percutaneous coronary intervention, with stents in the right coronary and circumflex arteries, was referred to our center for left atrial appendage (LAA) closure. He had atrial fibrillation with high thromboembolic risk (CHA$_2$DS$_2$VASc=4) and oral anticoagulation was formally contraindicated because of recurrent severe bleeding. Selective angiography of the LAA (Video 1) showed a close relationship between the LAA (Figure 1, asterisk) and the circumflex artery (Figure 1, arrow), well defined by the previously implanted stents. A computed tomography scan performed after a previous episode of diffuse alveolar hemorrhage showed similar findings (Figure 2, arrow). A 22-mm Amplatzer Amulet device was successfully placed, with no residual leak. Intraoperative monitoring by transesophageal echocardiography and post-procedural radioscopy confirmed the close relationship between the device and the circumflex artery (Figures 3 and 4, Videos 2 and 3), which is vital to keep in mind in order to prevent complications during the procedure.
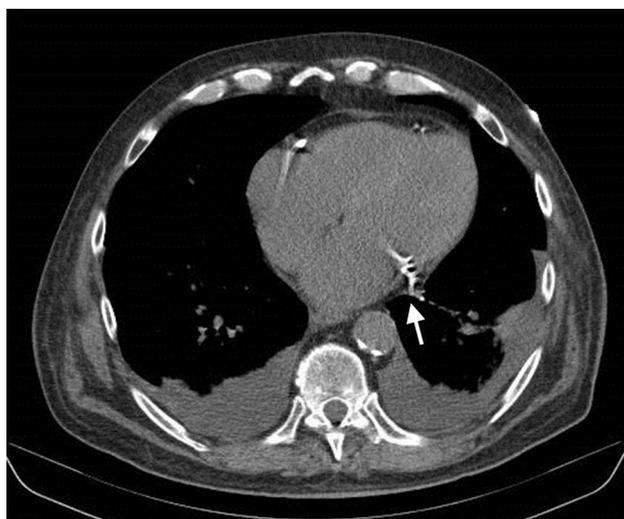
LAA closure is a safe and effective intervention used to prevent stroke and systemic embolism in patients with atrial fibrillation and contraindications for oral anticoagulation. Nevertheless, there may be procedure-related complications such as device embolization and left atrial wall perforation. The close relationship between the LAA

* Corresponding author.
*E-mail address:* juancarocd@gmail.com (J. Caro-Codón).
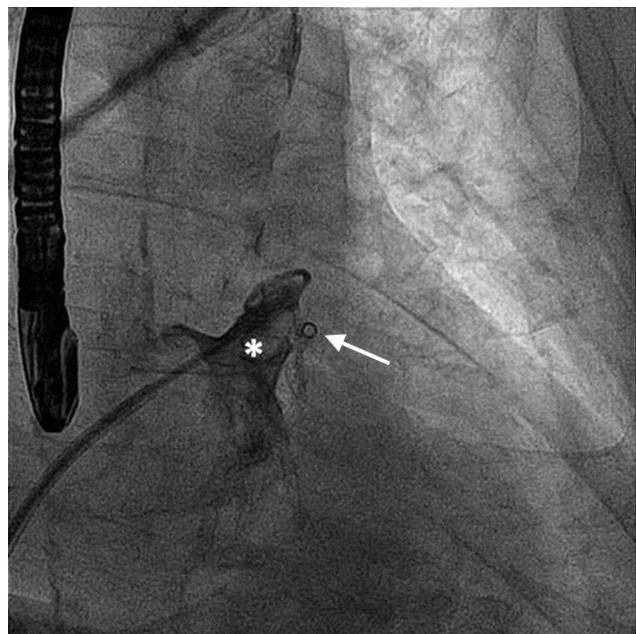
Figure 1 Selective angiography of the left atrial appendage using a pigtail catheter shows the relationship between this structure (asterisk) and the stents previously implanted in the mid-circumflex artery (arrow).

and circumflex artery place this latter structure and its branches (including the sinus node artery in 30% of patients) at risk during the procedure. This condition must be considered if the patient develops atrial

Figure 2 Thoracic computed tomography performed after an episode of alveolar hemorrhage also reveal the proximity of the circumflex artery to the left atrium and left atrial appendage (arrow).
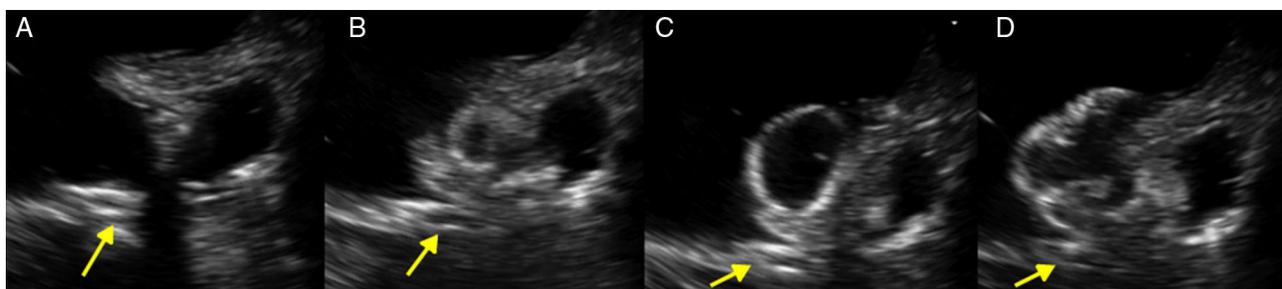
Figure 3 Intraoperative monitoring of deployment of the Amplatzer device by transesophageal echocardiography (A–D). Stents previously placed in the circumflex artery (yellow arrows) can be seen in the vicinity of the left atrial appendage, immediately next to the device landing zone.

Figure 4 After the Amplatzer was completely deployed, radioscopy confirmed the relationship between the distal lobe of the device and the coronary artery. Although in this patient this latter structure was easily delineated by the previously implanted stents, it is vital to consider this anatomical relationship during the occlusion procedure.

arrhythmias or signs of myocardial ischemia during the procedure.

Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that no patient data appear in this article.

Right to privacy and informed consent. The authors declare that no patient data appear in this article.

Conflicts of interest

The authors have no conflicts of interest to declare.

Appendix A. Supplementary material

Supplementary material associated with this article can be found in the online version at doi:10.1016/j.repc. 2015.05.002.