Image in cardiology

PentaRay floppy splines for coronary artery ostia location

Localización de los *ostium* coronarios con el PentaRay

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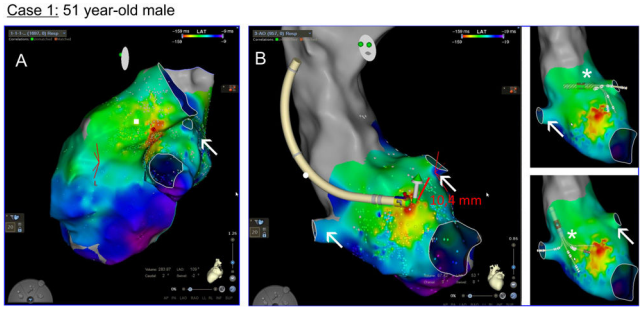

Figure 1.

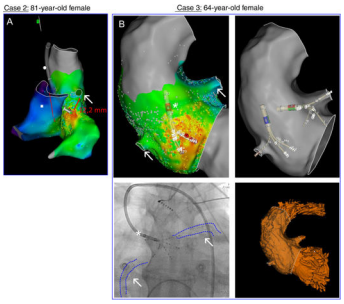

Figure 2.

Radiofrequency catheter ablation allows safe and efficient elimination of idiopathic premature ventricular contractions (PVCs) originating from the aortic root. When the ablation target is above the aortic valve, coronary artery (CA) ostia location (figure 1 and figure 2: arrows) is crucial to avoid ablating closer than 5mm.

We present 3 cases with normal cardiac magnetic resonance studies and high-density PVCs with left bundle branch block morphology, V_2-V_3 transition and inferior axis. Right ventricular outflow tract was mapped first (figure 1A and figure 2A: square) using the PentaRay catheter (Biosense-Webster Inc., United States) (figure 1B and figure 2B: asterisks); no local electrogram preceded the QRS except in 1 case where right-sided ablation was unsuccessful. The aortic root was explored with optimal pace-mapping and earliest activation time in the commissure between the coronary cusps preceding the QRS by > -32ms (figure 2B: red pin). Sweeping the aortic root with the PentaRay catheter splines (figure 2B bottom right, location data for map construction) pinpointed the CA ostia in the electroanatomic map (CARTO 3, Biosense-Webster Inc, United States). Given the distant location of the CA ostia, radiofrequency applications safely and successfully eliminated PVCs in all cases.

The proximity of the CA ostia to the ablation catheter (figure 1B and figure 2A: circle) is often evaluated by coronary angiography using a dedicated catheter or by infusion of iodinated contrast through the ablation catheter (off-label use). These procedures increase overall risk given the need for a second arterial access or the use of contrast. The use of intracardiac echocardiography has been proven safe but is expensive and invasive. The floppy PentaRay catheter splines safely provide anatomic information with zero-fluoroscopy and no contrast infusion.

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ETHICAL CONSIDERATIONS

Patients provided consent to publish the images of this article. This work has taken the SAGER guidelines into account. This work did not require approval by an ethics committee.

STATEMENT ON THE USE OF ARTIFICIAL INTELLIGENCE

Artificial intelligence has not been used in the production of this work.

AUTHORS' CONTRIBUTIONS

All authors have significantly contributed to this work.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

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