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CASE REPORT

Unusual dual-loop reentry during cavo-tricuspid isthmus–dependent atrial flutter

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A 70-year-old man underwent catheter ablation of symptomatic atrial flutter (AFL). During the AFL, 3-dimensional electroanatomic mapping (RHYTHMIA, Boston Scientific, Natick, MA, USA) demonstrated a dual-loop reentrant propagation, one propagating inside the cavo-tricuspid isthmus (CTI) and the other around the tricuspid annulus in a clockwise direction (Fig. 1). The common pathway of both reentrant circuits was the anterior part of the CTI. Entrainment mapping at a posterior site of the CTI demonstrated a longer post-pacing interval (PPI) than the tachycardia cycle length, suggesting that the intra-isthmus reentrant circuit was not involved in the dominant AFL. Further entrainment mapping at the anterior part of the CTI and along the tricuspid annulus indicated that this tachycardia was a typical clockwise AFL. Radiofrequency applications targeting the anterior CTI alone interrupted the AFL.

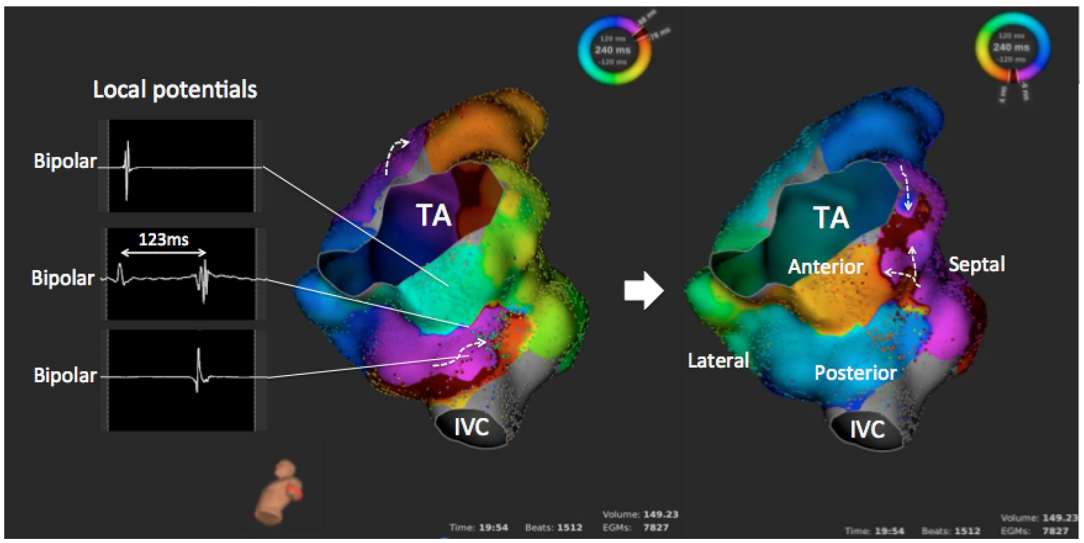

Fig. 1 An endocardial propagation map showing dual-loop reentrant circuits during atrial flutter in the left anterior oblique caudal view. Note that a double potential with an interval of 123 ms was recorded at the central cavo-tricuspid isthmus. TA tricuspid annulus, IVC inferior vena cava

Ultra-high-density 3D mapping with a high spatial resolution may delineate an unusual double-loop circuit associated with double potentials at the CTI and a long PPI at the posterior part of the CTI.

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