

New discovery of left atrial macroreentry tachycardia: originating from the spontaneous scarring of left atrial anterior wall

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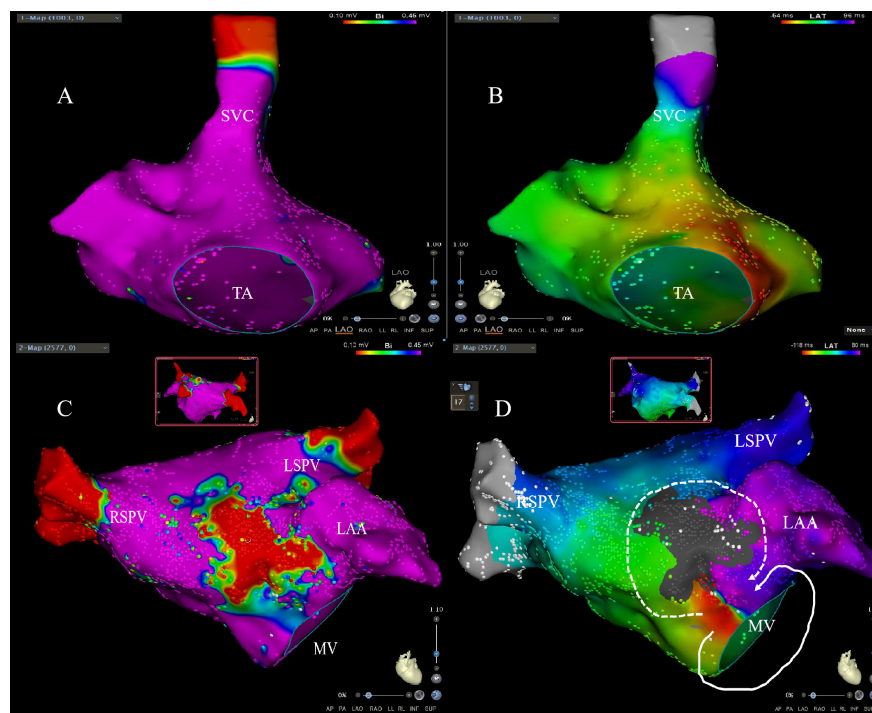
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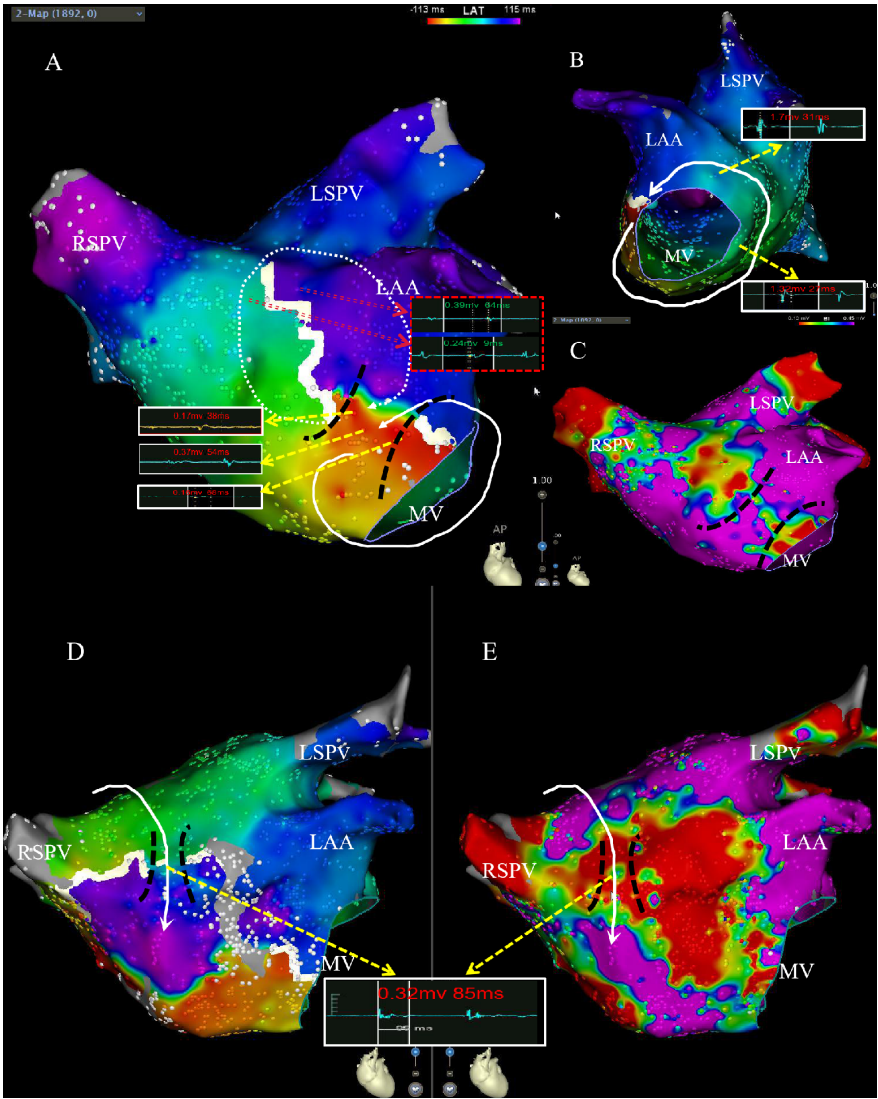
Abstract

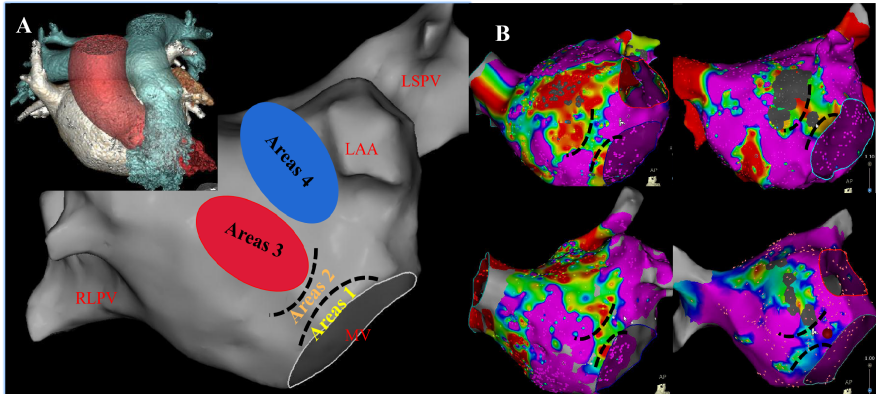
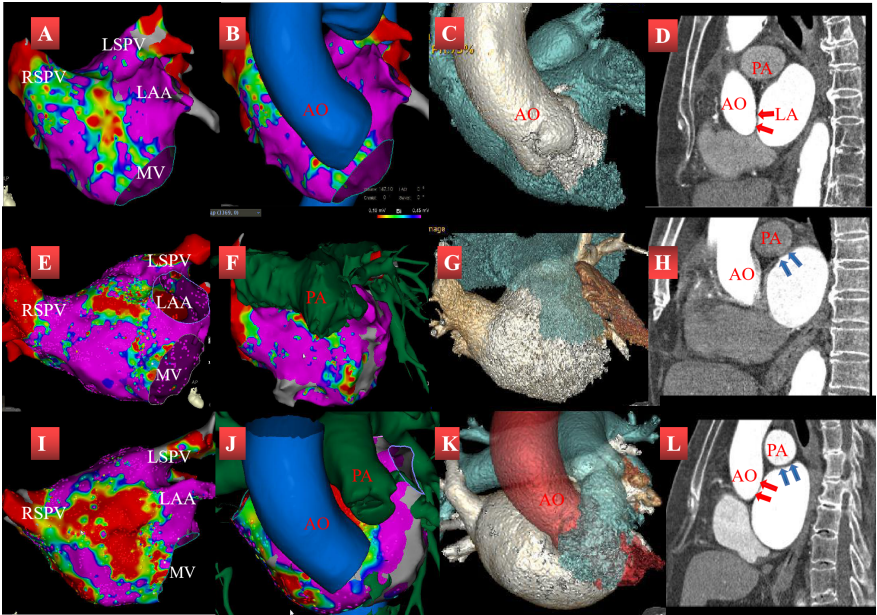
Aims: This study sought to describe originating from the spontaneous scarring of left atrial anterior wall (LAAW) left atrial macroreentry tachycardia (LAMRT) clinical and electrophysiological characteristics, mechanisms, the formation of substrates. **Methods and Results:** 9 of 123 patients (89% female, age 79.78 ± 5.59 years) had LAMRT originating from the LAAW and no cardiac surgery or prior left atrial (LA) ablation. The mean tachycardia cycle length (TCL) was 241.67 ± 38.00 milliseconds. Spontaneous scars areas and low voltage areas (LVAs) in the LAAW were found in all patients. Successful ablation of the critical isthmus caused terminated of the LAMRT and was not inducible in all patients. Arrhythmogenic substrates of LAMRT were the spontaneous scars of LAAW, which matched with the aorta or/and pulmonary artery contact area. The area under the curve (AUC) of age and combination of gender and age for predicting the LAMRT originating from the LAAW were 0.918 and 0.951, respectively, with a cutoff value of $[?]73.5$ years of age and gender (female) predicting LAMRT with 88.9% sensitivity and 89% specificity. **Conclusion:** Combination of gender and age provides a simple and useful criterion to distinguish LAMRT from cavo-tricuspid isthmus (CTI) -dependent atrial tachycardia in macroreentry atrial tachycardia (MRAT) in patients without a history of surgery or ablation. Aorta or/and pulmonary artery contacting LA may be related to spontaneous scars. Ablation the isthmus eliminated LAMRT in all patients.

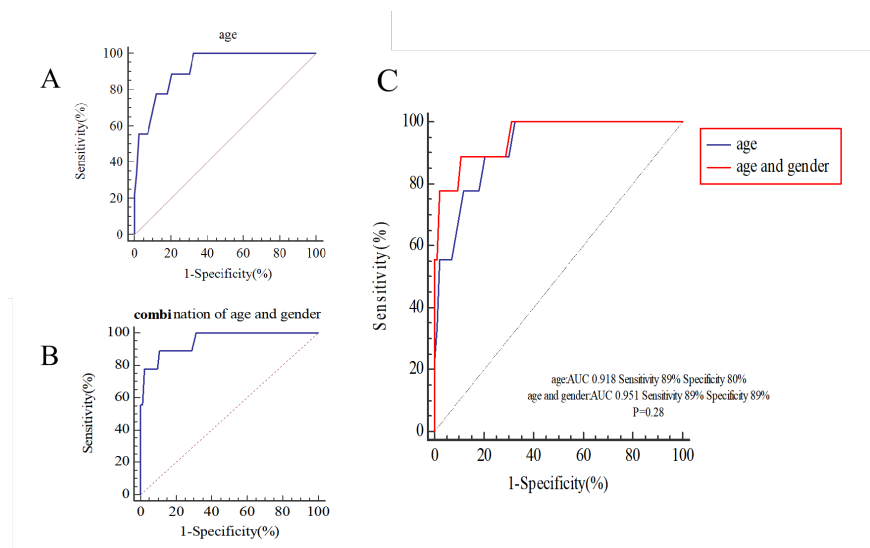
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