







Substrate-based ablation of idiopathic atypical atrial flutter: a case report

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Introduction: Atypical atrial flutter usually occurs in the setting of prior ablation or cardiac surgery where iatrogenic scars serve as the electrophysiologic substrate for re-entry. Idiopathic atypical atrial flutter is an uncommon variant. Whether the standard anatomical or substrate ablation approach is the best treatment option for this type of arrhythmia remains a debate^{1,2}.

Case report: A middle-aged female patient with a history of ischemic heart disease and percutaneous coronary intervention, ICD implantation for secondary prevention, and no prior history of atrial fibrillation, cardiac surgery, or ablation presented with new onset persistent atrial flutter (**Figure 1**). An electrophysiology study was conducted with entrainment suggesting atypical atrial flutter from the left atrium. 3-dimensional mapping of the left atrium using the Carto 3 system and multipolar catheter (Biosense Webster) was performed, showing a scar with the zone of slow conduction (critical isthmus) on the anterior wall near the roof and the left superior pulmonary vein (**Figure 2**). Ablation of critical isthmus terminated tachycardia (**Figure 3**). A few additional lesions for substrate ablation were applied avoiding linear anatomical lines. After ablation, tachycardia was non-inducible.

Conclusion: There are still no clear recommendations regarding ablation of atypical atrial flutter and our case highlights the need for an individual approach when considering between anatomical or substrate ablation approaches, thus potentially avoiding excessive ablation lines.

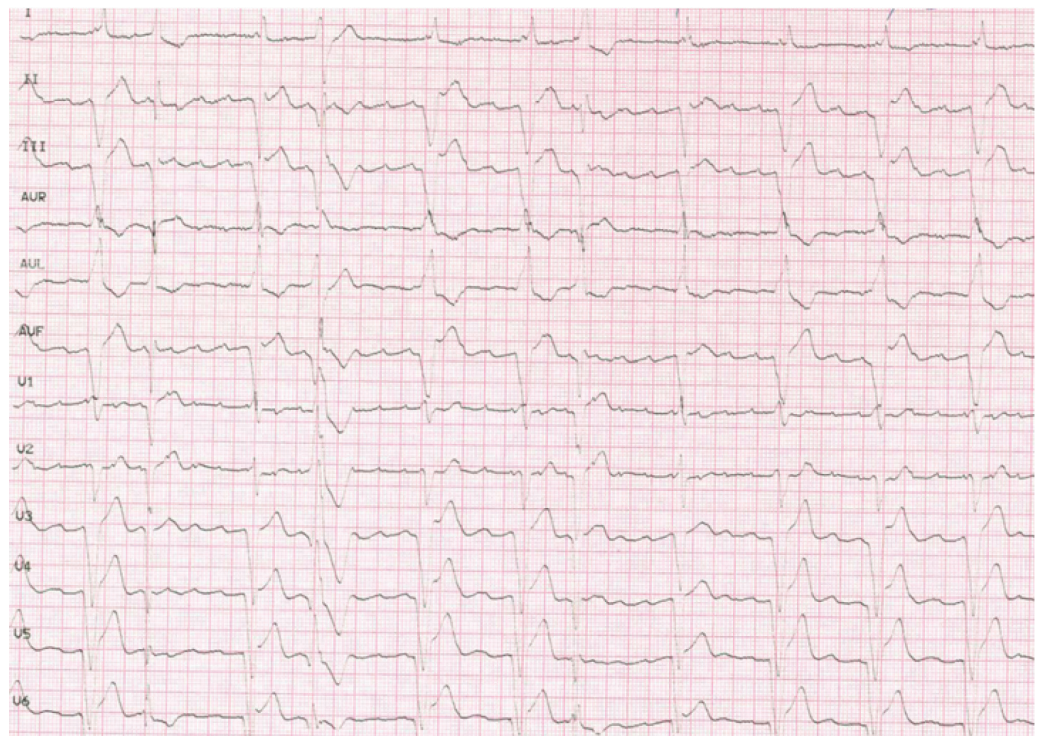


FIGURE 1. 12-lead electrocardiogram showing atrial flutter on admission.

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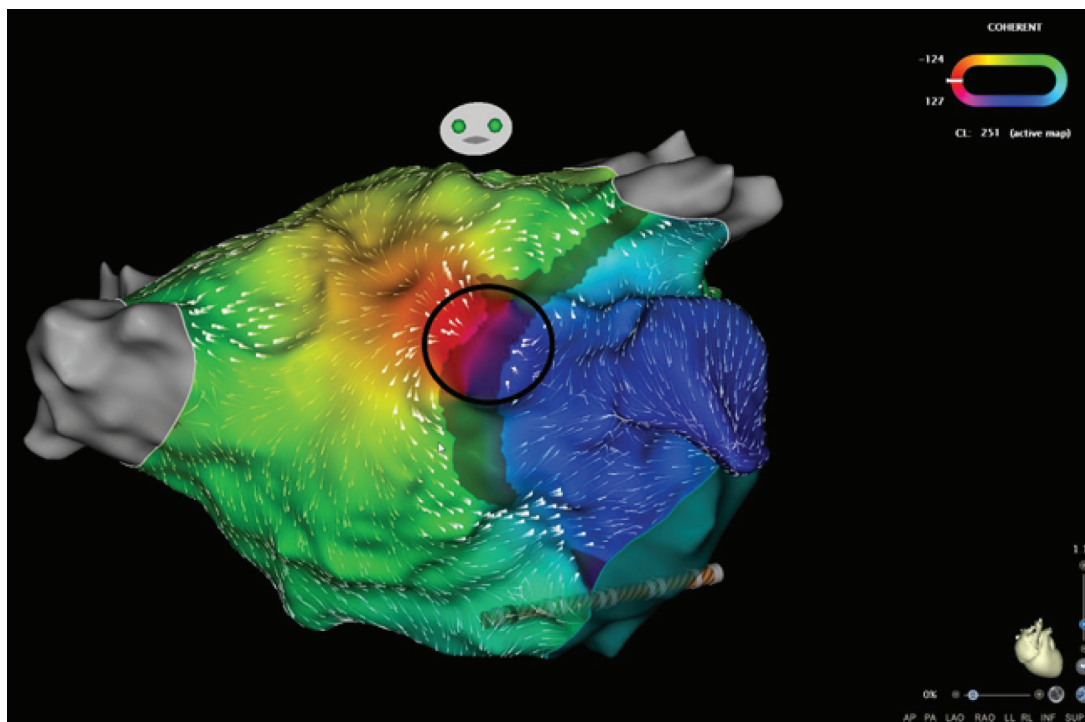


FIGURE 2. Coherent mapping of the left atrium with a zone of slow conduction and critical isthmus (black circle) for atypical flutter.

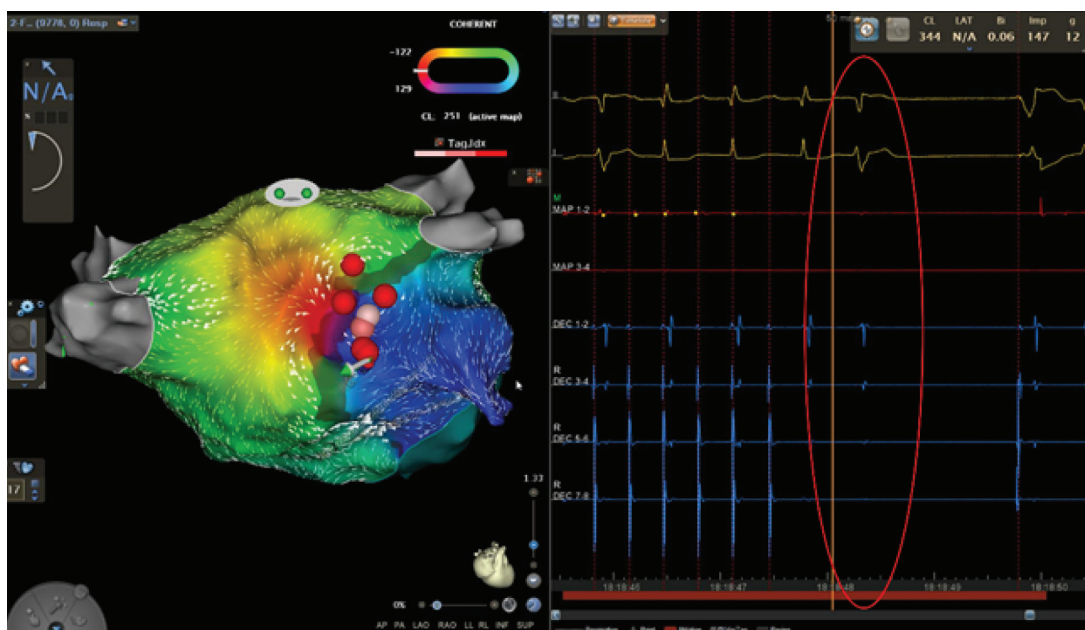


FIGURE 3. Termination of tachycardia during critical isthmus ablation (green arrow on the left part and the red circle on the right part of the picture).

LITERATURE

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