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IMAGE IN CARDIOLOGY

Ablation of stable complex fractionated atrial electrogram defined by dynamic overlaid mapping in persistent atrial fibrillation

Mapas de sobreposição dinâmica na fibrilhação auricular persistente: ablação de um eletrograma complexo fracionado estável

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We describe the case of a 64-year-old woman with persistent atrial fibrillation (more than one year's duration) referred for ablation. Three-dimensional electroanatomical mapping of the left atrium was performed using the Ensite NavX™ system (St. Jude Medical, Minneapolis, MN) and a Constellation™ 64-pole basket diagnostic catheter (Boston Scientific, Natick, MA). A stable complex fragmented atrial electrogram (CFAE) was identified in 5-min time-frame windows using novel proprietary software (Figure 1). A localized radiofrequency application over the CFAE near the left pulmonary vein ostia modified electrical activity in the posterior wall of the left atrium, increasing cycle length until interruption (Figures 2–4). This case highlights the importance of finding areas that are critical in maintaining electrical fibrillatory activity. A precise ablation target was identified (stable CFAE).

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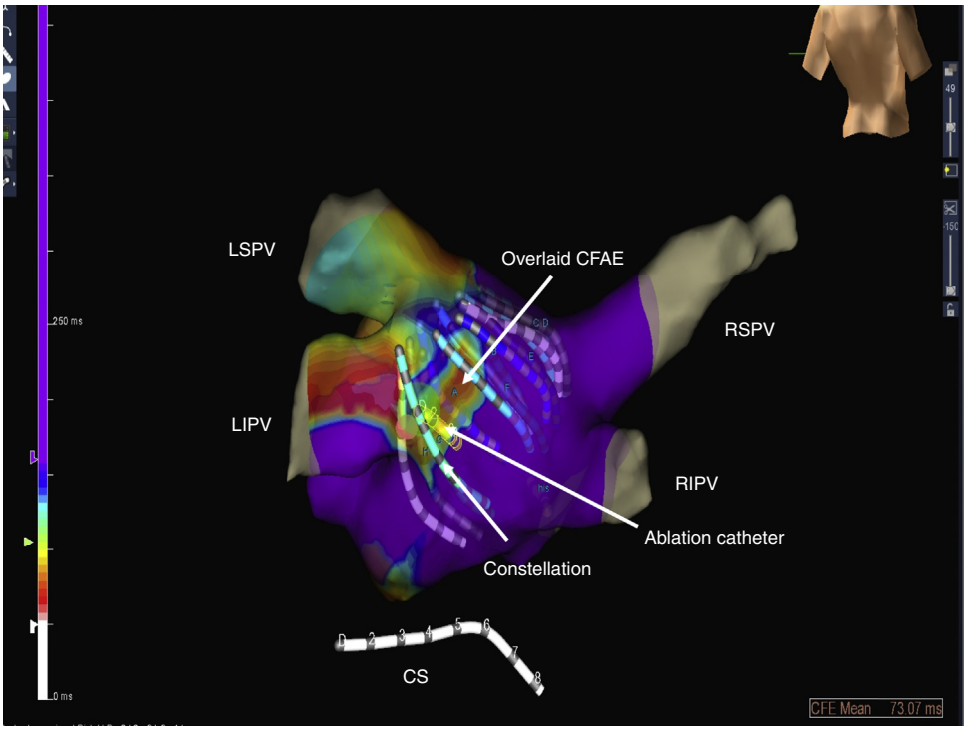

Figure 1 Posteroanterior view of the left atrium showing a stable complex fragmented atrial electrogram (CFAE) defined by dynamic overlaid mapping. Anatomy defined by the Ensite NavX™ system; electrograms recorded by basket catheter (Constellation, Boston Scientific); ablation performed by ablation catheter (yellow) located over the area of a stable CFAE (white arrow). CFAE: complex fractionated atrial electrogram; CS: coronary sinus; LIPV: left inferior pulmonary vein; LSPV: left superior pulmonary vein; RIPV: right inferior pulmonary vein; RSPV: right superior pulmonary vein.

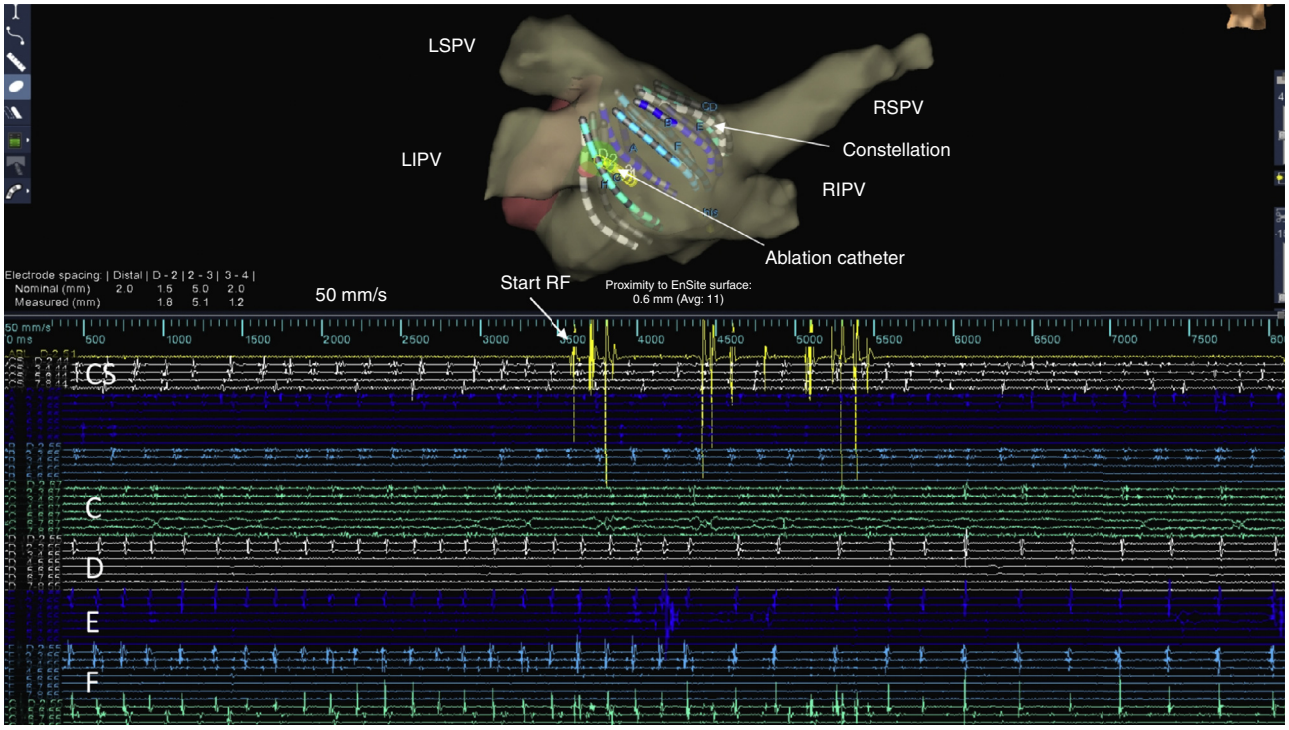

Figure 2 Above, anatomical mapping of the left atrium with the Constellation catheter and the ablation catheter. Below, coronary sinus electrograms and electrograms from the splines of the diagnostic catheter. The posterior wall is represented from splines C to F. Immediately after initiation of radiofrequency application, an increase in cycle length in the posterior wall is noted (scale 50 mm/s). LIPV: left inferior pulmonary vein; LSPV: left superior pulmonary vein; RF: radiofrequency; RIPV: right inferior pulmonary vein; RSPV: right superior pulmonary vein.

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