

## Highlights from:

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Shah et al. Heart Rhythm Case Reports, Nov 2018 DOI: 10.1016/j.hrccr.2018.10.011

# Long standing persistent atrial fibrillation ablation without use of fluoroscopy in a patient with cor triatriatum

## INTRODUCTION

- ▶ This report describes a fluoroless technique for transeptal puncture and radiofrequency (RF) catheter ablation in a patient with persistent atrial fibrillation and cor triatriatum sinister, a fenestrated membrane dividing the left atrium into two chambers.

## METHODS

### Fluoroless image guidance setup

- ▶ EnSite™ Velocity™ Cardiac Mapping System (St. Jude Medical) was used to recreate cardiac geometries and visualize the RF **NRG™** Transseptal Needle (Baylis Medical®).
- ▶ The RF needle was visualized on the EnSite™ Velocity™ Mapping System via connection to the **DuoMode™** Extension Cable (Baylis Medical®), and assigned as a 15F single-electrode catheter with no electrode spacing on the mapping system pin box (Figure 1).

### Transeptal puncture

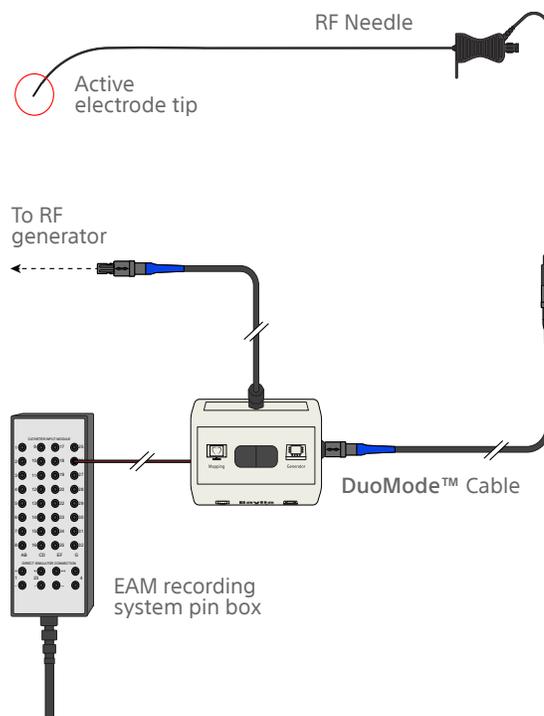
- ▶ After positioning the transeptal assembly in the superior vena cava (SVC), the active tip of the RF needle was exposed past the tip of the dilator to visualize on the EnSite™ Velocity™ 3D Map.
- ▶ The atraumatic RF needle tip allowed the needle to remain exposed for tracking on the 3D map during dropdown from the SVC to the fossa ovalis.
- ▶ Intracardiac echocardiography (ICE) was used to confirm needle position before applying RF energy for puncture.
- ▶ A second transeptal puncture was performed using the same technique.

### RF catheter ablation

- ▶ Circumferential wide area and left atrial roof line ablations were performed to isolate all four pulmonary veins.
- ▶ Right atrial flutter ablation was also performed.

## DISCUSSION AND CONCLUSIONS

- ▶ Despite increasing efforts to reduce radiation exposure in catheter ablation procedures, transeptal access is still regarded as a challenge to performing completely fluoroless procedures.
- ▶ In this case with complex cardiac anatomy, nonfluoroscopic transeptal puncture and catheter ablation were achieved with little difficulty and no intraoperative complications.
- ▶ Direct 3D visualization of an RF needle under electroanatomic mapping and ICE guidance enabled a completely fluoroless technique and minimized uncertainty associated with 2D fluoroscopy.
- ▶ Sinus rhythm was maintained and symptoms improved up to 12 months post-ablation.



**Figure 1.** Graphical adaptation of the nonfluoroscopic RF needle visualization setup described by Shah et al.

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EP-1583107-AA