

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

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Shah et al, Heart Rhythm Case Reports, 2018. In press.

INTRODUCTION

- ▶ This report describes a fluoroless technique for transseptal 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™ (St. Jude Medical) was used to recreate cardiac geometries and visualize the RF NRG® Transseptal Needle (Baylis Medical Company).
- ▶ The RF needle was visualized using EnSite™ by setting up as a 15F single-electrode catheter with no electrode spacing, and connecting to the mapping system pin box using the DuoMode™ extension cable (Baylis Medical Company) (Figure 1).

Transseptal puncture:

- ▶ After positioning the transseptal 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™ 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.
- ▶ ICE was used to confirm needle position before applying RF energy for puncture.
- ▶ A second transseptal 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, transseptal access is still regarded as a challenge to performing completely fluoroless procedures.
- ▶ In this case, with complex cardiac anatomy, transseptal puncture and catheter ablation were achieved without the use of fluoroscopy with little difficulty and no intraoperative complications.
- ▶ Direct 3D visualization of a 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.

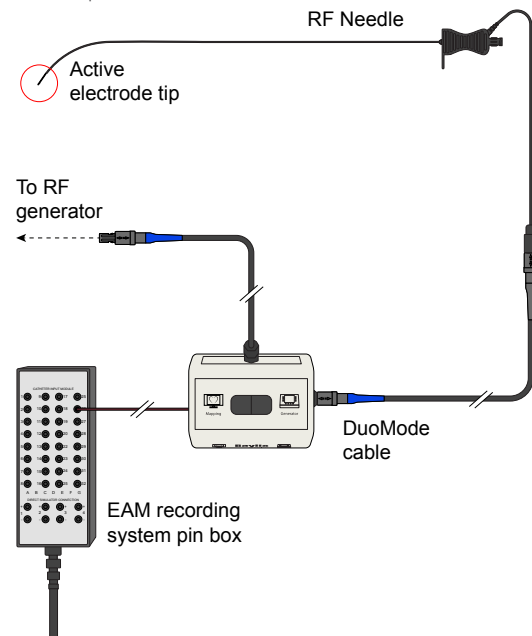


Figure 1 Graphical adaptation of the nonfluoroscopic RF needle visualization setup described by Shah et al.