

A Large Case Series Demonstrating Safety and Effectiveness of a Novel Fluoroless Transseptal Puncture Technique for Lead-Free Catheter Ablation

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Salam et al., Journal of Innovations in Cardiac Rhythm Management, Volume 26, Issue 5, April 2020.

INTRODUCTION

- ▶ This large series of 382 consecutive cases demonstrates the safety and effectiveness of fluoroless transseptal puncture (TSP) and radiofrequency (RF) ablation using 3D electroanatomic mapping (EAM).

METHODS

Visualization setup

- ▶ NRG® Transseptal Needle (Baylis Medical) was visualized on the CARTO®3 system (Biosense Webster) using the DuoMode™ extension cable† (Baylis Medical), Figure 1.
- ▶ An esophageal temperature probe was sutured to a quadripolar catheter to track on EAM.
- ▶ Devices were visualized using preset catheter definitions (20B 4F quad 2-5-2 mm fixed) and by enabling “extended features raw data” on the CARTO®3 system.

Transseptal puncture and catheter ablation

- ▶ Femoral access was used to introduce the ThermoCool SmartTouch® catheter (Biosense Webster) for mapping the SVC and right atrium, marking the His bundle, coronary sinus and fossa ovalis.
- ▶ The transseptal sheath was then re-positioned in the SVC to introduce the NRG® needle.
- ▶ The sheath and dilator were pulled back to expose the round NRG® needle tip for positional tracking on the CARTO® system during dropdown onto the septum (DuoMode™ cable set to “mapping mode”).
- ▶ Intracardiac echocardiography (ICE) was used to confirm needle position on the fossa ovalis before RF puncture (DuoMode™ cable set to “generator mode”).
- ▶ Left atrial mapping and RF catheter ablation were performed as per usual protocol.

RESULTS

- ▶ Double or single TSP was achieved 100% successfully and without fluoroscopy within 28 ± 15 min.

- ▶ Total procedure time was 135 ± 34 min without significant complications.
- ▶ Recurrence rate was 27% at 3 ± 1 month follow-up.

DISCUSSION & CONCLUSIONS

- ▶ This study demonstrates the safety and effectiveness of non-fluoroscopic TSP using the NRG® RF transseptal needle, 3D-EAM and ICE.
- ▶ The atraumatic electrode tip of the RF needle allowed exposure during drop-down for positional tracking from the SVC to the fossa ovalis, unlike the sharp tip of a mechanical needle.
- ▶ Dedicated RF transseptal needles improve safety, efficiency, precision and TSP success in diverse septal anatomies, offsetting the material costs.
- ▶ Use of electrified mechanical needles is not characterized and presents risks of injury.

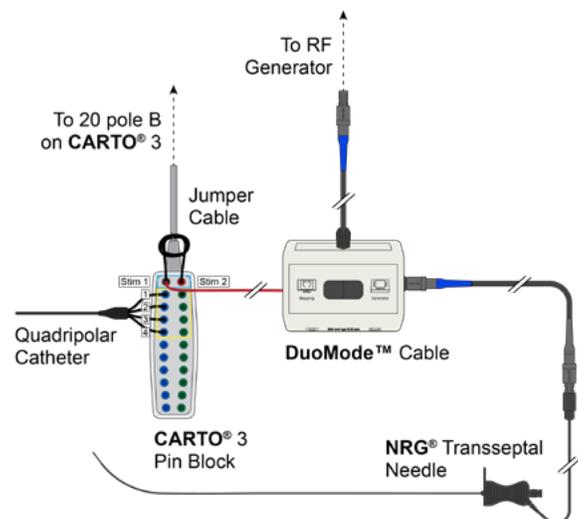


Figure 1 Graphical adaptation of the equipment setup used by Salam et al for device visualization on EAM.

† Consult your mapping system's user manual for connectivity and configuration instructions prior to DuoMode™ Cable use.

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