The Office of Scientific Affairs Presents Highlights from:

Direct Hepatic Vein Puncture and Transseptal Access for Atrial Flutter and Fibrillation Ablation in a Patient with Prior Ligation of the Inferior Vena Cava

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INTRODUCTION

- This case report describes a novel technique for left atrial (LA) access and radiofrequency ablation using hepatic vein access in a patient with surgically ligated IVC.

METHODS

Hepatic vein access

- The middle hepatic vein was punctured along the right costal margin between the midclavicular and right anterior axillary line under ultrasound guidance and support from interventional radiology.

Transseptal puncture

- First attempt to access the septum using the Agilis™ EPI Steerable Introducer (Abbott) failed to position the sheath tip on the septum from the challenging hepatic vein trajectory.
- Second attempt using the SupraCross® Steerable Sheath (Baylis Medical) with flexible dilator supported access of the dedicated Baylis RF pigtail wire* on the septum.
- Transseptal puncture was performed using the Baylis RF wire* under intracardiac echocardiography guidance.
- The SupraCross® sheath was advanced into the LA over the RF pigtail wire for mapping and ablation.

Catheter ablation

- Three-dimensional electroanatomic maps (EAM) of the left and right atria were created using the CARTO® 3 system (Biosense Webster).
- Pulmonary vein isolation and cavo-tricuspid isthmus ablation for right atrial flutter were performed using the Thermacool Smarttouch® SF (Biosense Webster) catheter.

Access site closure

- Approx. 4cm Gelfoam® (Pfizer) plug was pushed through 12F sheath to seal the hepatic vein entry site.

DISCUSSION & CONCLUSIONS

- Hepatic vein access can be used for left atrial catheterization in patients with surgically ligated IVC.
  - This is facilitated by an inferior approach that is familiar to operators experienced using femoral access but requires catheter manipulation to reach the septum.
- SupraCross® sheath with flexible dilator provided a tight angle of curvature to enable positioning on the septum.
- While force translation may be impacted by altered catheter trajectory, the use of a RF transseptal system minimized force and tissue tenting.
- RF puncture reduces the risk of complications in comparison to conventional mechanical needles.
- RF wires improve workflow efficiency by allowing repositioning on the septum without rewiring.
- Use of a steerable sheath with flexible dilator and RF wire for TSP can improve the feasibility and safety of transhepatic approach for LA access to allow more patients to receive treatment.

* RF transseptal puncture was performed in the case described in this article using the SupraCross® RF Wire (Baylis Medical).

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