Miniaturized Octopolar Catheter For Mapping In Cardiac Veins: Early Experience Guiding Ethanol Infusion In The Vein Of Marshall And LV Summit Veins

INTRODUCTION

- Cardiac vein mapping enables characterization of ventricular arrhythmogenic substrates arising deep in the septum for left ventricular (LV) summit ventricular arrhythmias or epicardially from the vein of Marshall (VOM).
- Small vein mapping also enables verification of ablation during venous ethanol infusion.
- Previously, small multipolar catheters were not available for small vein mapping. This study tests the utility of the 2F catheter for small vein mapping in the VOM and septal veins in the LV summit.
- Coronary venous angiogram-guided mapping was performed in 12 consecutive cases using the octopolar EPstar 2F Fixed Electrophysiology Catheter (Baylis Medical*).

RESULTS

- Vein of Marshall:
  - The EPstar 2F Catheter was used to assess endo-epicardial activation in mitral isthmus via VOM (n=7)
  - Successful cannulation of VOM revealed endo-epicardial dissociation with opposite propagation direction
- Septal veins:
  - The EPstar 2F Catheter was used to successfully cannulate and map ventricular arrhythmias arising from the LV summit (n=4)
  - Mapping identified target veins for ethanol infused ablation
- Epicardial veins:
  - Mapping using the EPstar 2F Catheter identified ventricular tachycardia substrates (n=1)
- Cannulation of small veins post-ethanol infusion allowed for confirmation of eliminated local electrograms.

DISCUSSION AND CONCLUSIONS

- The EPstar 2F Catheter enabled successful mapping and pacing through small veins (e.g. VOM, LV summit, and epicardial veins) to:
  - Detect activation patterns
  - Characterize epicardial signals
  - Verify ethanol induced ablation

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Brief Summary | **EPstar Fixed Electrophysiology Catheter**

CAUTION: Federal law (USA) restricts this device to sale by or on the order of a physician. Rx only. Prior to use, please see the complete “Instructions for Use” for more information on Indications, Contraindications, Warnings, Precautions, Adverse Events, and Operator’s Instructions.

INDICATIONS FOR USE: The EPstar Fixed Electrophysiology Catheter is intended for electrogram recording and pacing during diagnostic electrophysiology studies.

CONTRAINDICATIONS: The EPstar Fixed Electrophysiology Catheter is recommended only for use in cardiac electrophysiological examinations.

ADVERSE EVENTS: Adverse events that may occur while using the EPstar Fixed Electrophysiology Catheter include:

- Air embolism
- Difficulty in catheter retraction
- Death
- Cardiac tamponade
- Sepsis, infections
- Vascular tear, perforation or dissection
- Arrhythmia with hemodynamic collapse
- Ventricular fibrillation/tachycardia
- Myocardial infarction/angina attack
- Cerebral infarction/cerebrovascular disorder
- Thromboembolism
- Hemorrhagic complication
- Pneumothorax
- Pericardial effusion
- Pneumonia
- Skin disorder by defibrillation
- Distal embolization (air, tissue, thrombus) in the lung
- Malfunction of implantable pacemaker/ICD
- Cardiac valve damage such as valve insufficiency or valve incompetence
- Hypertension/hypotension
- Subcutaneous hematoma formation
- Ecchymosis formation
- Bradycardia including atrioventricular block
- Laeotration, perforation and dissection of blood vessel
- Difficulty in retracting other concurrently-used medical device from product
- Excessive bleeding.

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