Cleveland Clinic Innovations

**PRODUCT**
RF-assisted microcatheter system

**INDICATION**
Pericardial access-based procedures such as epicardial ablation, lead placement/ removal, left atrial appendage ligation, pericardiocentesis, and drug delivery.

**VALUE PROPOSITION**
- Minimally Invasive
- Dedicated tool to aid access to pericardial cavity
- Enables safer sub-xiphoid approach
- Reduces Fluoroscopy Time/radiation

**DEVELOPMENT STAGE**
- Prototype

**INTELLECTUAL PROPERTY**
Patent pending

**CONTACT INFORMATION**
Partha Paul
Director, Business Development and Licensing
(216) 672– 1664
paulp2@ccf.org

IDF 2023-015

# Radiofrequency-assisted atrial wall perforating microcatheter

*Pasquale Santangeli, MD, PhD*

## UNMET NEED

Minimally invasive epicardial mapping and ablation using a percutaneous subxiphoid approach to access the pericardial cavity is not a widespread technique due to significant complications associated with subxiphoid puncture. Subxiphoid puncture is a blind puncture, due to the pericardial cavity not easily distinguishable in x-ray, leading to high complication rates (6% to 25%, including pericardial bleeding, inadvertent RV puncture, tamponade, injury to tissues (liver, lungs, etc.)/epicardial vessels/phrenic nerve, etc., and excessive fluoroscopy time. There is a lack of dedicated technology for safe and reliable access to pericardial cavity and intrapericardial navigation around the beating heart.

## SOLUTION

Radiofrequency (RF) micro-catheter system designed to facilitate perforation of the atrial wall to safely access the pericardial cavity in order to augment separation between parietal and visceral pericardial layers via $CO_2$ insufflation, and thereby facilitate subxiphoid percutaneous epicardial access and subsequent mapping/ablation procedure using standard approach. The RF micro-catheter perforation and $CO_2$ insufflation system used in conjunction with fluoroscopy provides a standardized, time-efficient way to reliably, safely and precisely access the pericardial cavity by a sub-xiphoid approach, thus enabling physicians to work on the outside surface of the heart muscle and drive the market for pericardial access-based procedures such as epicardial ablation, lead placement and removal, left atrial appendage ligation, pericardiocentesis, and drug delivery.