Docket #: S20-441

Epicardial and endocardial catheter system

Stanford researchers have developed a self-aligning two-sided (epicardial and endocardial) ablation system for treatment of atrial fibrillation (AF). Although several ablation systems for treatment of AF exist, this new two-sided system reliably achieves full transmural lesions, is easier and faster to use, and has a closed loop feedback system. This invention can potentially provide more effective treatment as compared to the systems used today.

Related Technology

Stanford docket S19-081 "Biopolar Magnetically Self Aligned Sheath for Ablation"

Figure description - Example design of self-aligning two-sided (epicardial and endocardial) ablation system. Image credit:

Wang Lab

Stage of Development

- Proof-of-concept in open chest animals.
- Continued work to finalize prototype and test in a closed chest animal

Applications

- Arrhythmia/AF ablation

Advantages

- **Full thickness ablation** across the cardiac tissue
- **Perfect alignment** of the epi and endo ablator catheters across the tissue where bipolar energy is delivered only across the tissue at the target
- **Automated, self-alignment** due to series of magnets
- **Closed loop feedback system** - series of ablation elements in communication with endo elements to adjust ablation intensity (time) depending on the tissue thickness
- **Reduced procedure time by ~80-90%**
- **Simplified hardware** by elimination of vacuum system
- **Optimized components**

Patents

- Published Application: WO2022093840

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