

Esophageal Deflection Device

Tech ID: 32144 / UC Case 2017-223-0

BACKGROUND

Cardiac ablations are common medical treatments for people with atrial fibrillation (Afib). During the ablation procedure, a cardiac electrophysiologist will thermally ablate, or burn off, defective heart tissue with radiofrequency or cryoablation technology. The esophagus is often in close proximity to the left atrium. Since the left atrial tissue is approximately 2mm thin, the heat can transfer through it to the esophagus in contact and cause thermal damage / lesions on the esophagus. In worst-case rare scenarios, an atrio-esophageal fistula, or hole between the esophagus and the heart, can occur which has a ~75% mortality rate. It would be ideal to move the esophagus away from the heart before or during the ablation procedure preventing thermal damage.

TECHNOLOGY DESCRIPTION

Researchers at UC San Diego have developed the esophageal deflection device to be a relatively simple, easy to use, and low cost medical device to move the esophagus away to safety. This device consists of a precurved outer tube and insertion rod. The device is assembled (straightening the outertube and providing a bit more rigidity), inserted orally into the esophagus and deployed by retracting the insertion rod. This allows the outer tube to reassume its initial pre-defined curvature and deflect the esophagus. The device can be further equipped with electrodes for detecting temperature rises.

APPLICATIONS

Cardiac ablation procedures, electrophysiology, gastroenterology

ADVANTAGES

Compared to the state of the art, this technology is very easy to use and easy to manufacture.

STATE OF DEVELOPMENT

Various prototypes have been developed and tested in the Talke biomedical device lab.

INTELLECTUAL PROPERTY INFO

A US patent application is in prosecution.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	0029822-A1	01/30/2020	2017-223
Patent Cooperation Treaty	Published Application	2018165435	09/13/2018	2017-223

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OTHER INFORMATION

CATEGORIZED AS

- **Biotechnology**
 - Health
- **Medical**
 - Devices
 - Disease: Cardiovascular and Circulatory System

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