Epicardial Pacemaker

A fully epicardial pacemaker together with means for percutaneous implantation and fixation on the outside surface of the heart

IP Status
Patented

Seeking
Licensing, Development partner
Background

Ever since their introduction in the ‘50s, cardiac pacemakers have taken the form of a surgically implanted pulse generator connected to flexible lead(s) passing through major veins into the right atrium and/or right ventricle, where they are anchored to the myocardium by a corkscrew electrode. This invasive approach is either impractical or non-ideal for many patients, including the very young (under age 3-5), those with clotting disorders, those with conduction defects requiring direct left ventricular pacing, as well as those in poor general health.

Tech Overview

A fully epicardial pacemaker together with means for percutaneous implantation and fixation on the outside surface of the heart. This novel design eliminates the need for surgical opening of the chest (Figure 1). A novel hinge and sheath design enables pacemaker implantation. A special lead design minimizes dislodgement and fracture issues. This invention also permits fetal pacing, which has never been successful due to reliance on adult technologies.

Further Details

- Circulation: Arrhythmia & Electrophysiology (Jul 2018)

Benefits

- Minimally invasive, percutaneous implantation
- No endocardial lead placement
- Pacemaker not in contact with blood flow
- Works for more patients, including younger and sicker patients

Applications

- Pediatric patients
- Juvenile patients depending on anatomy
- Elderly patients
- Contraindicated adult patients, including those with clotting disorders or those requiring direct LV pacing

2013-009
Appendix 1

Figure 1

Epipace is an epicardial system (placed outside the heart through subxyphoid approach)