

Percutaneous Size-Adjustable Tricuspid Valve Repair Device and Delivery Platform in Patients With or Without Pre-existing Pacemaker or Defibrillator Leads

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Technology description

Introduction

Tricuspid regurgitation (TR) is a disorder in which the tricuspid valve does not close tightly enough, causing blood to flow backward into the right atrium when the right ventricle contracts. In the U.S. alone, 1.6 million patients are estimated to have TR. If left untreated, TR can lead to heart enlargement, heart failure, and death, yet less than 1% of TR patients are treated.

A large proportion of patients with significant TR also have a preexisting pacemaker or implantable cardioverter defibrillator (ICD) lead. The lead can pass through the tricuspid valve and interfere with closure of the valve leaflets, thereby causing or exacerbating TR. There are currently no existing percutaneous tricuspid valve repair technologies that address patients with pre-existing leads.

Technology Description

Dr. Robert Siegel and Dr. Richard Cheng have developed a percutaneous tricuspid valve repair device and delivery platform that can be used in patients with or without pre-existing pacemaker or ICD leads. A novel wire, snare, clasp, and anchor method is used to deliver and secure valve repair devices to a preexisting pacemaker or ICD lead. Further, the treatment device can be customized to each patient to ensure a good fit with a given patient's anatomy.

Application area

Tricuspid valve repair in patients with or without pre-existing pacemaker or defibrillator leads

Advantages

Minimally-invasive

Expands patient population eligible for treatment

Treatment device (balloon occluder) is adjustable to each patient's anatomy by filling or withdrawing filler material from a proximal port on the skin of the patient

Novel wire, snare, clasp, and anchor method can be used to deliver other directed therapies to the tricuspid valve or proximal to the pulmonary arterial system

Institution

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