

Annuloplasty Ring & Methods for Tricuspid Valve Repair

Two types of tricuspid annuloplasty rings, which are designed specifically for the tricuspid annulus.

Inventors at Georgia Tech have created an invention that involves two types of tricuspid annuloplasty rings, which are designed specifically for the tricuspid annulus. The rings range in stiffness from complete flexibility, to some components being flexible and some rigid, to complete rigidity. The first type of ring is made of a rigid material and is triangular in shape. The second type is an adjustable annuloplasty ring. Adjustment of the ring can be made during or after the surgery so that it can conform to the geometry of the patients' tricuspid annulus. The acute angle between the two edges can be adjusted by reducing the length of the third edge. This adjustability characteristic allows for independent control over individual leaflets. Since tricuspid regurgitation is usually the result of the leaflets not being in sync with each other, this adjustability feature helps the surgeon bring the leaflets in sync. Both of these rings are designed to prevent any manipulation to the AV node, which could cause heart block.

Summary Bullets

- **Specificity**- aligns with specific landmarks only found on the tricuspid annulus
- **Unique**- attains an anterior, posterior, and septal segment that conform to the anterior, posterior, and septal sections of the native tricuspid annulus
- **Regulatory**- adjustable annuloplasty ring, which facilitates independent control over individual leaflets.

Solution Advantages

- **Specificity**- aligns with specific landmarks only found on the tricuspid annulus
- **Unique**- attains an anterior, posterior, and septal segment that conform to the anterior, posterior, and septal sections of the native tricuspid annulus
- **Regulatory**- adjustable annuloplasty ring, which facilitates independent control over individual leaflets.

Potential Commercial Applications

Medical applications for heart valve repair

- Specifically for the tricuspid valve, but due to its flexibility, can also be used for other valves in the heart, including the bicuspid valve

Background and More Information

Valve annuloplasty is a repair technique used by surgeons to correct valve regurgitation, during which the valve annulus is stabilized or reduced in size by suturing a prosthetic annuloplasty ring onto the annulus. Tricuspid regurgitation has always been considered a benign finding that did not require surgical correction. However, a study conducted in 2005 concluded that tricuspid regurgitation resulted in increased mortality and accelerated the progression of heart failure. Due to the fact that tricuspid repairs are rarely performed, surgeons tend to use mitral valve annuloplasty rings for tricuspid valve repair. This results in what is considered suboptimal care because the annuloplasty rings are specific for a bicuspid valve and not a tricuspid valve.

Inventors

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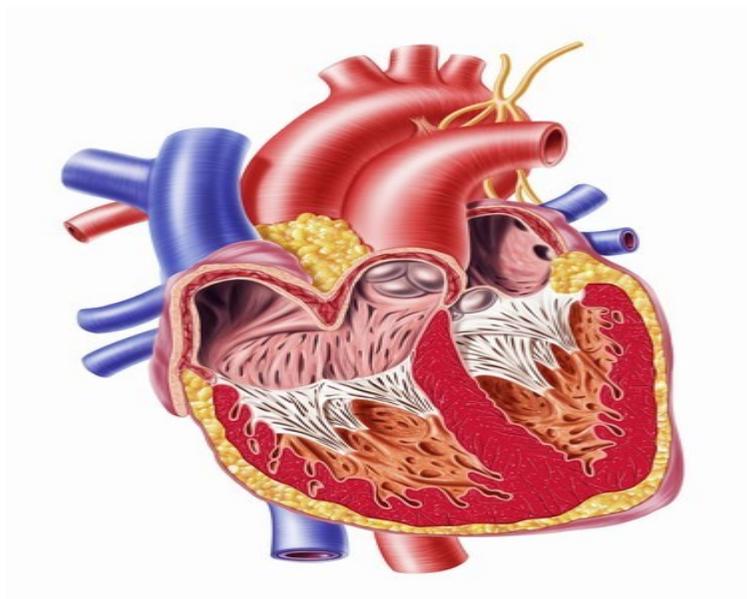
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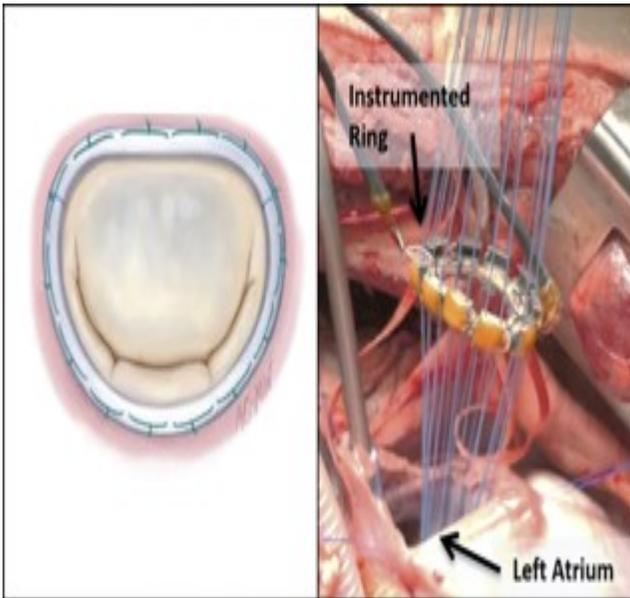
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