Catheter Balloon Device for Heart Disease: Development of a Partial Occlusion Device to Aid in Coring and Anastomosis of the Aorta (19030)

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Technology description

Heart disease is the leading cause of death in the United States, accounting for roughly 1 in 4 deaths. Patients who have reached end-stage heart failure typically have a left ventricular assist device (LVAD) surgically implanted while they wait for transplant or to improve their quality of life.
This procedure requires attaching an inflow pump to the left ventricular apex and the outflow of the pump, a fabric graft, to the ascending aorta. This procedure requires the surgeon to cross-clamp the aorta which leaves the patient at high risk for associated hazards both intraoperatively and post operatively.
To increase patient safety, researchers at the University of Louisville developed a suture-less quick connect device (Uniti) to attach to the outflow graft of the aorta. To supplement this technology, the inventors developed a second balloon catheter device to aid in the deployment of Uniti. The balloon catheter device will partially occlude the ascending aorta, allowing partial perfusion to the rest of the body, while also creating a sealed pocket area where the aortic wall will be cored and opened without the risk of blood leakage.

Advantages

This novel technology will enable LVAD patients to benefit from a safer, more reliable approach.
Balloon catheter device partially occludes the ascending aorta, allowing partial perfusion to the rest of the body;
Technology reduces the risk of blood leakage;
A less invasive approach compared to current market standards.

Institution

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