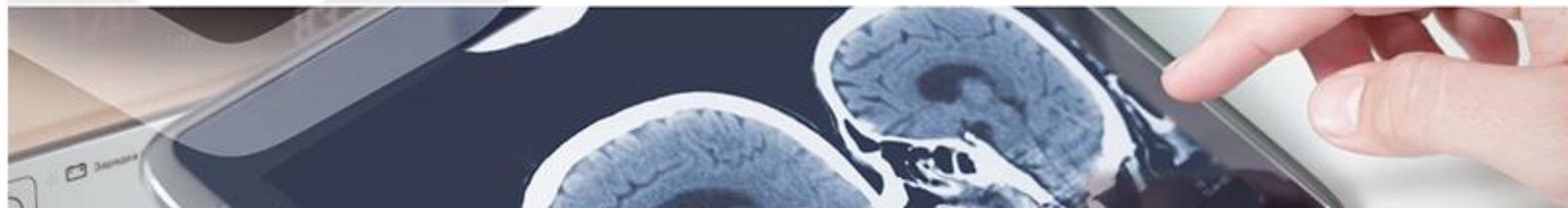


Medical devices

Device to control the blood flow over a blood vessel

A group of researchers of the Andalusian Public Health System, in collaboration with the University of Seville, has developed a device to control the blood flow over the pulmonary artery in congenital heart disorders with high flow.



Description

Congenital heart disorders with a high flow over the pulmonary artery produce a reshaping of the endothelial lay of the arterial wall, which ultimately generates an irreversible arterial hypertension, discouraging the performance of any type of restorative surgery over the heart disorder and it severely worsens the prognosis.

Currently, *banding* is used which consists in the placement of a cloth band around the pulmonary artery, causing an increase in the resistance and, ultimately, a balance in the intracardiac blood flow. The problem of using *banding* is that, once surgery is over, the rib cage is closed up and the control over the cloth band is totally lost, being exposed to a major hemodynamic change over the pulmonary artery's flow. This may lead to complications and the rib cage may need to be promptly reopened to adjust the band. This operation increases the patient's risk of death by 10%.

To solve these problems, some adjustable banding devices from outside the chest cavity have been recently developed, such as ABS (Silimed, Brazil) or Flowwatch (Endoart, Switzerland). However, none of these devices has achieved to fully solve the problems described.

The present technology consists of a chain of stainless steel balls coated with several silicone tubes of different sizes and a silicone box that is placed above the rib cage. The opening or closing of the contraction chain of balls over the pulmonary artery is caused by a traction-retraction system. The device also works as a band, but it enables to control the flow in the pulmonary artery from outside of the chest cavity.



Advantages

- Control of the pulmonary artery blood from outside the chest cavity.
- Increased containment time than conventional band.
- Allows operating patients with higher weight and size.
- The implantation technique is simple and reproducible.
- Materials are resistant and low priced.
- Reduces the risk of decubitus complications.



Intellectual property

This technology is covered by a Spanish patent application with possibility of international extension.



Aims

We are looking for a partner interested in a license and/or a collaboration agreement to develop and exploit this innovative technology.



Classification

Field: Medical devices
Technology: Other
Pathology: Blood and lymphatic system