

Delivery Device for Percutaneous Heart Valve

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Technology description

Summary

Delivery and recapture system and method for transcatheter prosthetic devices.

Technology

About one third of elderly patients with symptomatic aortic stenosis are judged too weak to withstand the stress associated with open heart surgery; and the number is rapidly rising due to the increasing longevity of the population. Transcatheter aortic valve implantation (TAVI) is a novel procedure offering a solution to this group, as it allows delivering a valve substitute through a catheter inserted from a peripheral vessel, avoiding the need for open heart surgery. A major limitation of the current procedures used so far has been the inability to adjust the valve positioning after release. This technology relates to an apparatus and method to deliver endovascularly a transcatheter prosthesis, enabling it's retrieval into the apparatus and repositioning.

The main advantage of this delivery device is the ability to recollapse the valve for repositioning or complete retrieval. Additionally, the valve release is progressive and easy to control, it is easy and cheap to manufacture and structurally more robust than competing solutions. It is adaptable to most popular transcatheter valve solutions and stented grafts for aortic aneurism correction, easy to operate (does not require mechanisms for actuation) and enables easy loading of the prostheses, without the need of complex devices or specific training of the operators.

Market Opportunity

More than 200,000 aortic valve surgical replacements are performed worldwide each year, with an annual growth rate of approximately 7%. This number however, does not include the third of potential patients with severe cardiac aortic valve disease, currently excluded from surgery. A recent analysis of the heart valve market (Millennium Research Group, 2008) forecasts an increase in TAVI procedures from less than 1% in 2008, to 41.1% in 2012, with a rise in relative market value from about \$100m to \$700m.

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