

BACKGROUND

Wallstent by Boston Scientific



Existing stent graft in general consists of an expandable scaffold to which a membrane or fabric cover is attached. Most manufacturers simply attach a soft cover around an existing stent

with the expectation that the expansion of the stent would automatically deploy the cover into the desired shape.

However, such approach often leads to *incompatibility* between the stent and its cover. The cover has to be attached to the stent at discrete points by bonding or stitches so that the combined structure can be expanded. The cost of manufacturing tends to be very high. Subsequently, the deployment of the stent graft involves the cover sliding with respect to struts of the stent. It is not uncommon that uneven distribution of stresses, rupture or entanglement occur during expansion of a stent graft.

TECHNOLOGY

The **ORIGAMI StentGraft** concept is developed to deal with the problem of *incompatibility*. For the first time, a stent graft has been designed without reliance to an existing stent design. The technique of origami has been employed to generate a set of folding patterns enabling the stent graft being folded up into a small volume for delivery to locations in human body just as existing stent grafts. The stent graft then expands to form the desired profile and folds disappear. The folds and cover are completely compatible and the costly and problematic incompatibility between the stent and its cover is no longer an issue.



THE MARKET

The world market for stents is at present \$2b and expanding rapidly.

According to the *American Heart Association's 2003 survey*, aortic aneurysms are responsible for more than 16,000 deaths annually in the United States and contributed to 24,000 deaths each year. Most of countries have shown a rising trend in oesophageal cancer over the last three decades and more than 80% of patients die within 5 years. In the treatment of both diseases, stent grafts are most commonly used. Several big medical companies have already actively pursued their business in this field.

None of them however produce stent grafts with an integrated cover.



COMMERCIAL OPPORTUNITIES

Our team have been working on expandable/retractable structures for many years and have a proven track record for innovative ideas.

Due to the rapid expansion of the medical expandable device market, we feel that time is ripe to set up a company to exploit commercially these ideas, in particular, the **ORIGAMI StentGrafts**.

We strongly believe that further development of this concept could add substantial commercial value and we have a plan to realise it.

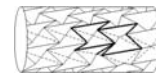
Please contact the project manager if you would like to have further discussions.

CHARACTERISTICS

of the **ORIGAMI StentGrafts**

small packaging volume for easy delivery;

integrated enclosure without additional covering to prevent problems associated with existing stents:



geometrical simplicity and full compatibility leading to

more reliable expansion and lower manufacturing cost;

greater generality based on generic solutions enabling them to be easily modified for applications at specific locations and different anatomic shape where the current ones are unable to work;

a pure structural concept so that both existing materials and drug coating technologies can be adopted.

PROJECT TEAM

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