

MEDIA RELEASE

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NATIONAL HEART CENTRE SINGAPORE UNVEILS NEW TECHNIQUES FOR HEART PATIENTS AT ITS ANNUAL CARDIOLOGY CONFERENCE

New stent on the way

Heart patients with small, difficult to treat vessels requiring stenting procedures may soon have another viable option to treat coronary artery disease. Known as the CardioMind® Sparrow™ Drug-Eluting Coronary Stent System, this stent is 70% smaller in diameter than any other currently approved stent and targets at blood vessels smaller than 2.75mm in diameter (see figure 1).

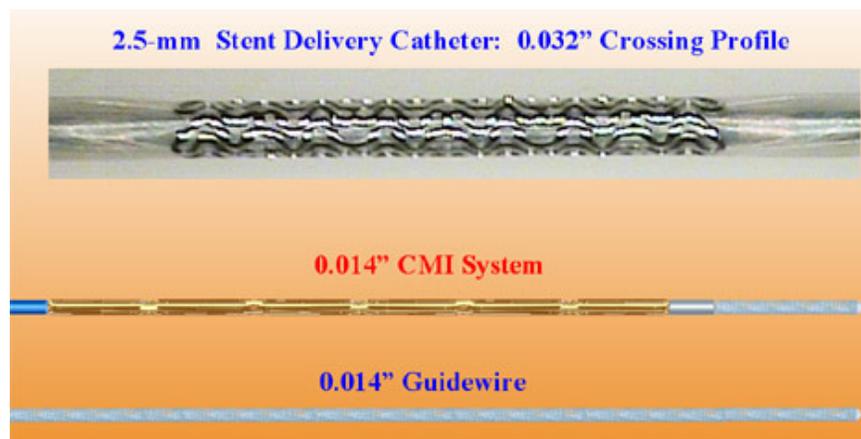


Figure 1 - Comparison of a normal stent (top), the CardioMind (CMI) Sparrow Stent (middle) and a normal guidewire (bottom).

The Sparrow Stent System is an improved version of the current stents in the market. Conventional balloon-expandable stents travel over guidewires to the lesion in the artery. The Sparrow Stent is incorporated into the distal end of the guidewire itself, therefore having the same outer diameter and flexibility as the guidewire. The stent travels as part of the guidewire to the site of the lesion. The cardiologist then releases the stent and allows it to self-expand and support the vessel wall. The tightness of fit of conventional stents, as well as their inflexibility and the forces delivered by the balloon expansion, may contribute to increased vessel trauma, which in turn leads to less favourable long-term results. The

Sparrow Stent also offers more flexibility than the current stents, making it especially adaptable to the treatment of small, tortuous blood vessels often associated with diabetes, which represent 40% of the patients who require a stenting procedure. Over time, the polymer of the Sparrow Stent will gradually biodegrade away and return the stent to a bare metal state. Biodegradable polymers for drug-eluting coronary stents are thought to contribute to a reduction in late stent thrombosis rate.

The centre estimates that 10% - 30% of the patients requiring percutaneous coronary interventions (PCI) may benefit from this revolutionary stent.

The Sparrow Stent is currently being evaluated in a clinical trial known as the CARE II Study. This multi-site randomised trial will test both the drug-eluting and bare-metal versions of the Sparrow, plus a competitive stent in 220 patients. The National Heart Centre Singapore is currently the only Asian site to have started in the CARE II Study. Four patients have been treated since the trial started here in September 2008.

“All four patients had uncomplicated procedural and hospital outcomes. I see a great potential for this stent since many of our diabetic patients have small vessels.” said Associate Professor Koh Tian Hai, Medical Director, National Heart Centre Singapore and also the Principal Investigator of CARE II in Singapore.

The Sparrow Stent implantation procedure will be showcased at the centre's annual cardiology conference, the Singapore LIVE 2009 (Live Interventions in Vascular Endotherapy) in a live telecast from the NHC catheterisation laboratory to an estimated audience of 1,000 delegates at the Suntec Singapore International Convention and Exhibition Centre.

Novel technique for patients with chronic total occlusion

Chronic total occlusion (CTO) is present in 20% - 30% of patients diagnosed with coronary artery disease who undergo diagnostic coronary angiography. This is a condition whereby an artery has been completely blocked for more than three months.

Approximately 5% - 10% of all percutaneous coronary interventions (PCI) are CTO interventions. In the prevalent method via the antegrade approach, the wire is pushed

forward against the blocked segment in an attempt to cross the 100% occluded artery. Once successful, a balloon catheter is introduced to dilate the blocked segment and stenting performed subsequently. However in this approach, the wire after crossing the occlusion may not enter the true lumen of the artery beyond the occlusion, resulting in failure of the procedure.

Generally, success rates with CTO using the conventional 'front' or 'antegrade' approach have been unsatisfactory, with only about a 50% success rate, and up to 70% at very good centres.

A new technique known as the retrograde approach has emerged recently, bringing hope to heart patients battling CTO.

In the retrograde approach, feeding branches that collateralise the remaining arterial segment beyond the blocked spot are identified. These constitute the so-called "natural bypass vessels", i.e. there is blood flowing in the blocked artery supplied from another coronary artery in a reversed manner. The guidewire is passed from this other artery, backwards through one of these feeding collateral branches into the artery beyond the blockage, against the direction (backward) of the blood flow through the small collateral channels. This guidewire can then usually penetrate the blocked segment much more easily via this retrograde approach. This method has raised the success rate to more than 90%, a marked improvement of 20% - 40%. This success is more significant when seen in the context of cases that have already failed a prior antegrade attempt, as it will have the same high success rate, when done via the retrograde approach.

The retrograde approach is suitable for patients who had failed antegrade approach and where there are visible collaterals channels, a natural "bypass". In some cases, the retrograde approach can also be considered as the first treatment option when the chance of crossing the CTO via the antegrade approach is low.

Associate Professor Koh Tian Hai, Medical Director, National Heart Centre Singapore said, "This is one of the most significant advances in angioplasty techniques since the advent of stent implantation. With the introduction of dedicated retrograde PCI equipment in the past

one year, the retrograde technique has been refined such that it is now easier and safer to perform these complex procedures.”

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About the National Heart Centre Singapore

The National Heart Centre Singapore (NHC) is a 185-bed national and regional referral centre for cardiovascular diseases. A one-stop facility with the largest heart specialists group in Singapore, NHC treats complex cases and sees the highest volume of heart patients locally.

Each year, we handle over 90,000 outpatient consultations, 6,000 interventional and surgical procedures and 9,000 inpatients. Our outcomes for heart attack treatment, balloon angioplasty with stenting and bypass surgery have been shown to be equivalent to international standards.

NHC is the first heart centre outside USA and in Asia to receive the prestigious Joint Commission International (JCI) since 2005, which is an assurance for safe and quality patient care for our patients.

About the Singapore LIVE

The Singapore LIVE is one of the Asia's premier cardiovascular interventional events and among the oldest live courses in interventional cardiology.

The course, in its 18th year running, attracts over 1,000 overseas and local participants annually. The event aims to introduce and share cutting-edge technology and techniques in percutaneous coronary and vascular interventions with international healthcare practitioners.

The event is backed by an international faculty and a group of Asia-Pacific based thought leaders in the field and the course provides a good platform for understanding more about cardiovascular interventions.

The Singapore LIVE 2009 is jointly organised by the National Heart Centre Singapore and the National University Heart Centre, Singapore.