

# Advanced procedure unblocks arteries

Dr Chris Zambakides, an interventional cardiologist at Netcare Union Hospital, completed the potentially life saving procedures using the BridgePoint system for the first time in South Africa to treat completely blocked coronary arteries, or chronic total occlusions (CTOs) as they are known in medicine. According to Dr Zambakides, all five of these non-surgical interventions were a complete success and the patients are doing well.



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The procedures were performed under the proctorship and guidance of Dr Colm Hanratty of Queen's University in Belfast, Ireland, who has been using the Boston Scientific BridgePoint device for the last two years and has completed several hundred of these procedures. Dr Zambakides is currently the only interventional cardiologist in South Africa to have undergone training on the BridgePoint device and the only one who is registered in its use.

"Evidence from studies shows that the successful restoration of blood flow or the recanalization of the blocked coronary arteries to a viable heart is associated with improved survival rates, an improvement in the functioning of the left ventricular of the heart and fewer symptoms of angina [chest pain or discomfort] and shortness of breath. It saves lives and improves the patient's quality of life," says Dr Zambakides.

"CTOs are by definition blood vessels providing circulation to the heart that have been completely blocked for longer than three months. They are quite common and are detected in approximately 30% of the angiograms that show underlying coronary artery disease. In this country, most of these occlusions are treated with open-heart surgery or with medicine. Only approximately 15% have traditionally been treated by means of a wire guided catheter, or percutaneous coronary intervention, as this procedure is known in medical terms."

Historically one of the major problems with percutaneous coronary intervention has been the difficulty of crossing the occluded or blocked section in the coronary artery and reaching the artery on the other side of the blockage. Dr Zambakides says it is often difficult to trace the path of the artery where it is blocked.

The success rates of opening CTOs were markedly improved with the advent of specialised wires and micro-catheters and with new techniques of joining the two segments of the blocked blood vessel. "Through the use of these specialised wires and micro-catheters, we are able to cross minute micro-channels between an open blood vessel and a closed blood vessel. Using these new techniques and technology, success rates of 90% and more are achieved."

## **Overcoming previous drawbacks**

The procedure still remains a complicated and lengthy one and has been associated with increased radiation exposure in the patient and larger amounts of contrast with potential complications such as renal dysfunction.

The BridgePoint system was developed with the aim of addressing the above issues. It consists of the CrossBoss CTO Crossing Catheter and the Stingray Re-Entry System, which are designed to navigate the blocked section of the artery and restore blood flow. It achieves this in a much quicker and safer way than with previous systems.

"By pushing wires blindly there is a danger of perforating the vessel. The blunt edge of the CrossBoss Catheter allows it to follow the vessel accurately without perforating it. This system is an important new weapon in our armoury against blocked heart arteries. After a thorough analysis, the doctor determines whether the patient's heart is strong enough to have the occlusions re-vascularised. However, for some individuals bypass surgery or medication remains treatments that are more appropriate. For example, patients who have an occlusion as well as significant lesions or damaged tissue in other blood vessels are better suited to open-heart surgery.

"On the other hand, patients with a blockage in only one or two vessels, but whose other arteries are normal, are ideal candidates for the new procedure. So too are individuals who have contraindications to bypass surgery, such as severe emphysema and those who have had one or two bypass operations that have failed and who have re-developed blockages. Doctors will look at each case on an individual basis and decide which treatment is appropriate according to its merits," concludes Dr Zambakides.

Only operators who are already familiar with the different techniques of treating CTOs and who have considerable experience in standard wire techniques should use the BridgePoint system. Besides theoretical training, the operator should also have had some hands on training and then use it under the supervision of a proctor.

Netcare Union Hospital GM, Résa van der Merwe, says the facility is honoured to be able to provide the BridgePoint system as an alternative treatment for blocked blood vessels of the heart, particularly as the therapy has proved to be so effective in appropriate patients around the world. She praised Dr Zambakides for his "dedication to heart medicine and his determination to take the profession forward for the greater good of the community."

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