Medical Xpress

Groundbreaking procedure using novel 'paper-clip' style device to treat high blood pressure

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Researchers at the University of Leicester and Glenfield Hospital have successfully used a novel "paper-clip" sized vascular coupling device to tackle resistant high blood pressure.

The operation was carried out on Monday 16 September at Glenfield Hospital by Professor André Ng, Professor of Cardiac Electrophysiology at the University of Leicester and Consultant Cardiologist at Glenfield Hospital.

The trial – called ROX CONTROL HTN - is a prospective randomized international multicentre study designed to evaluate a novel treatment, called the ROX coupler, in patients with resistant hypertension. The ROX Coupler is a small metal stent made of nitinol which when deployed, acts like a "paper-clip" joining an artery and a vein together in the groin area (called iliac vessels). This allows blood to flow between the high pressure artery and the low pressure vein. The Coupler is inserted and put in place via key-hole procedure at the groin under local anaesthesia.

Professor Ng said: "Our research at the University of Leicester aims to find novel ways of tackling hypertension.

"We carried out this procedure on our first patient, a 56 year old male, here at Glenfield Hospital, which went extremely well. After the initial

preparation, it took me and my team just over an hour to put the implant in place. Almost immediately the patient's blood pressure went down to more acceptable levels which we anticipate to further improve with time. The patient was kept overnight for observation but will be discharged the following day if everything is well."

"Results from the pilot study already done on this new technology look promising. There is a very early response with a reduction in blood pressure in resistant hypertensive patients which appears to be maintained in medium term at least. We hope to uncover the mechanisms by which this works and that is the whole purpose of the randomised trial to establish the safety of this new technology, the characteristics of the response and more insight into the way it works.

The patient, from Leicester, said: "The procedure is remarkable. I know it is still early days but I have already seen a significant reduction in my blood pressure points. I am amazed!"

Professor Ng added: "Uncontrolled hypertension can lead to many other medical conditions with dire consequences. Patients with resistant hypertension have blood pressure way above normally accepted levels despite multiple medications in combination. New forms of effective treatment are always welcome and that is the reason why we, at the University of Leicester and Leicester's Hospitals, are conducting properly designed trials to assess the efficacy.

"We hope this groundbreaking treatment will provide a lifeline to patients who have had all the drugs prescribed and yet their blood pressure remains uncontrolled. It is an example of how research at the University of Leicester is being applied to benefit patients at Glenfield Hospital. We also really like the fact that the procedure is reversible."

Professor Ng said: "It is clear that a novel approach beyond the use of

drugs needs to be developed to treat this condition. That is why this trial between the University of Leicester and Leicester's Hospitals is so important."

Provided by University of Leicester