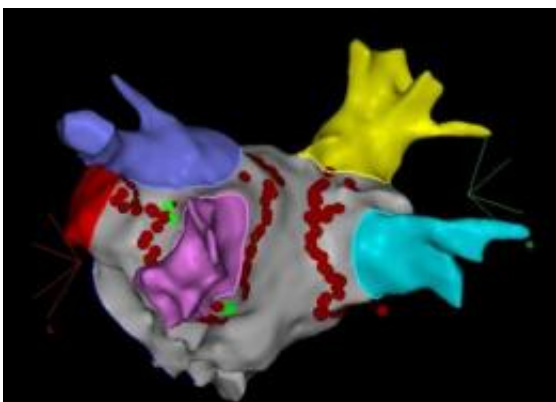


Robo-op marks new world first for heart procedure

November 15 2010



This is a CARTO3 map of the left atrium with pulmonary veins and location of ablation lesions. Credit: University of Leicester

The world's first remote heart procedure, using a robotic arm alongside 3-D mapping, is due to take place at Glenfield Hospital in Leicester.

It comes six months after Dr Andre Ng carried out the first ever remote catheter ablation procedure using the Amigo Robotic Catheter System.

Dr Ng, is senior lecturer at the University of Leicester and consultant cardiologist and electrophysiologist at Glenfield Hospital.

On Tuesday 16 November, Dr Ng will be carrying out another "world first" using the [robotic arm](#) in combination with advanced 3-dimensional

mapping to fix an [irregular heart rhythm](#) called atrial fibrillation (AF).

The patient is a 63 year-old man from Alvaston in Derby.

AF is the commonest heart rhythm disturbance seen in clinical practice, with over half a million sufferers in the UK. It also increases the risk of a person having a stroke by five times and doubles the risk of death.

Patients with AF benefit from catheter ablation which is being used more and more. However, the procedure carried out by hand, can take several hours and results can be variable. The [robotic system](#) is best suited for this type of ablation. Glenfield Hospital started ablation for AF, treating 25 patients in 2002, increasingly steadily to over 200 in 2009.

Catheter ablation procedures involve inserting thin wire catheters into the groin and up to the heart. Electrodes on the catheters help to identify the cause of the heart rhythm problem. Once identified, the doctor can place one of the catheters at the location of the problem and ablate or "burn" the tissue. [Catheter ablation](#) has been used over the past two decades effectively to cure [abnormal heart rhythms](#).

Dr Ng said: "The new Amigo robotic system we have at Glenfield is unique and a new improved version of the original system which can now be used with different types of catheters, especially allowing the combination with the CARTO-3 3D mapping system. CARTO-3 is the latest version of the established and widely used advanced mapping and navigation system which displays and guides precise location of catheter positions in 3D space. We are the first centre in the world to use this new Amigo system and hence the first to be able to combine the two cutting edge technologies together for the ablation procedure. "

Dr Ng and his team are actively involved in the evaluation and

development of this pioneering robotic arm system. The initial experience has demonstrated that the doctor can use the Amigo to move catheters via the remote controller safely in an adjacent room outside the x-ray zone, thereby reducing the radiation exposure and eliminating the need for wearing heavy lead aprons. Dr Ng is to conduct two clinical research trials at Glenfield on the safety and efficacy of the Amigo system in electrophysiology and ablation procedures with the support of the University of Leicester and the Leicester Cardiovascular Biomedical Research Unit.

Dr Ng said: "The initial experience with using the Amigo system suggests that great precision of catheter movement can be achieved using robotic control. Combining this for the first time with the accuracy of placing ablation lesions with the CARTO-3 3D mapping system is a significant way forward. It is hoped that using the two advanced technologies together would improve the efficacy and safety of these complex procedures. The versatility of the new Amigo system also allows for cross-platform use of different types of catheters and different mapping systems which greatly enhance treatment options."

Provided by University of Leicester

Citation: Robo-op marks new world first for heart procedure (2010, November 15) retrieved 19 April 2024 from <https://medicalxpress.com/news/2010-11-robo-op-world-heart-procedure.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--