



ICE Catheter

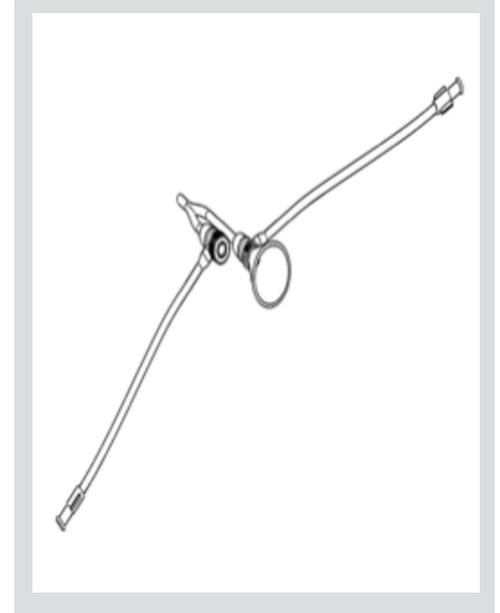
Opportunity

A novel catheter to enable safe positional imaging of the heart at low cost.

The problem

Intracardiac echocardiography (ICE) is a key technique with multiple applications in cardiovascular medicine such as in imaging and repair of structural heart defects, valve replacement and electrophysiology. It aids stroke, heart failure, infection and arrhythmia management. ICE enables visualisation and management of heart conditions without the need for general anaesthesia required for the alternative procedure of transoesophageal echocardiography (TOE) interventions.

This is of particular significance due to the growing number of patients in which general anaesthesia is contraindicated, for example, due to obesity and frailty. However, uptake of ICE is limited as the current devices are difficult to manipulate within vessels safely, pass through heart valves, and can only be used in low pressure vessels. The probes are also high cost single-use, ranging from £1,500 for a 2-D probe to £3,000 for a 3-D probe.



The solution

A novel prototype catheter has been developed which would allow the delivery of the ICE probe without damage to vessels and provide safe passage through the heart and vital organs. The design of the catheter enables the safe positioning of the catheter within vessels, mitigating the

need for blind advancement, and is easily deployed. The catheter may potentially create significant savings for the NHS. ICE reduces the need for anaesthetist time that comes with the TOE procedure, and reduces in-patient and staff costs by facilitating more day-case procedures. Patient benefit is

also significant, allowing procedures under local, rather than general, anaesthetic. There is also improved imaging of the heart at the exact point of delivery of a device, heart valve or electrophysiological lead.

Market

The global catheter market is estimated to reach US\$42.5 billion by 2020, with a Compound Annual Growth Rate of 7.5 per cent up to that point. Cardiovascular catheters account for close to 40 per cent of the total

catheters market revenue, making it the largest revenue-generating segment of the catheter market (Allied Market Research). There were 2,700 catheter structural/valve cases in the UK last year with over

17,000 ablation procedures (NICOR data). Both types of procedures are increasing year-on-year with the European market estimated be 11-fold this year alone.

Technology readiness

- A commercial partner is sought to co-develop the catheter with the clinical team at Leicester's Hospitals.

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