



A lifetime of specialist care

## **PRESS RELEASE**

**9 August 2016**

### **First UK patient has pioneering procedure to fix leaking heart valve**

A cutting-edge procedure to repair leaking heart valves without the need for open-heart surgery has been carried out at Royal Brompton Hospital in a UK first. The innovative technique uses a piece of equipment known as the Harpoon device to repair a leaking mitral valve through a small incision in the chest, replacing the need for major conventional surgery.

Around one in 50 adults in Britain is thought to have mitral valve disease. Mitral regurgitation (MR) occurs when the mitral valve (which separates, and helps control blood flow through, the upper and lower left chambers of the heart) collapses and fails to close properly. As a result, blood flows backwards through the valve when the heart contracts, compromising the function of the heart. The condition can cause breathlessness, fatigue, dizziness, chest pain and, if left untreated, can lead to heart failure and death.

Mr Neil Moat, consultant cardiac surgeon at Royal Brompton Hospital, performed the new technique for the first time in the UK as part of a new clinical trial, with the help of imaging colleague Dr Alison Duncan.

Repairing a leaking mitral valve usually requires open-heart surgery, which involves making a large incision to the chest and dividing the breastbone. Patients require the support of cardiopulmonary bypass, commonly known as a heart-lung machine, so the operation can take place while the heart is not beating.

The new procedure is carried out while the heart is still beating, eliminating the need for a heart-lung machine.

With the patient under a general anaesthetic, a transoesophageal echocardiogram (TEE) – an ultrasound scan of the heart – is undertaken by inserting a tiny camera through the mouth into the oesophagus (gullet), providing a visual guide of the heart

for the surgeon.

A small incision is made in the left-hand side of the chest and the Harpoon device enters the heart's lower left chamber until it reaches the collapsed part of the mitral valve. Once in place, the surgeon releases synthetic chords from the device which attach to the valve. Up to five chords are used and the tension on the chords is adjusted until the valve no longer leaks. The endings of the chords are then secured to the outside of the heart.

Mr Moat said: "We are excited about the impact this procedure could have for many patients with mitral valve disease. Conventional surgery is very effective but is quite invasive. This procedure is truly minimally invasive, not only in terms of the incision, but also in the avoidance of cardiopulmonary bypass and the need to stop the heart beating.

"The new method takes half as long to perform, is thought to halve the time patients spend in hospital and leads to shorter overall recovery times. It is like fixing broken strings of a parachute."

Sixty-three-year-old Jennie Keefe, from Tadworth in Surrey, was the first UK patient to take part in the trial. She was found to have a heart murmur in her 40s and several years later tests at her local hospital revealed she had severe MR.

She explained: "In the last year or two I started to experience symptoms. I was very tired, breathless and couldn't keep up with friends and family when we were out walking. My family and partner were worried because they noticed the difference in me."

Jennie was referred to Mr Moat and had the new procedure at the end of April. Follow-up tests a month later confirmed that her MR had gone.

She said: "The day after I had the procedure my friends and family visited and said I looked better than I had in months. The team at Royal Brompton was brilliant and I was able to leave five days later.

"I'm privileged to be the first person in the UK to be offered this new technique. My recovery is going well and I'm improving every day, which has given me a more

positive outlook. I'm self-employed so the shorter recovery time was really beneficial.”

The early feasibility study is funded by Harpoon Medical, the company that manufactures the device. Royal Brompton is the first UK hospital to be part of the Mitral Trans-Apical Chordal Echo-guided Repair (TRACER) international early feasibility study.

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**Notes to editors:**

- **Royal Brompton & Harefield NHS Foundation Trust** is a national and international specialist heart and lung centre based in Chelsea, London and Harefield, in north-west London. Clinical teams at the Trust offer some of the most complex surgery and sophisticated treatments for cardiac conditions in the world. They care for patients with a wide range of complex cardiac conditions, both congenital (present at birth), inherited and acquired later in life. [www.rbht.nhs.uk](http://www.rbht.nhs.uk)
- Find out more about this clinical study and all ongoing trials at Royal Brompton & Harefield NHS Foundation Trust [here](#)
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