Welcome to the summer 2015 edition of Case Notes

Welcome to the newly refreshed CaseNotes magazine for GPs and referrers to Royal Brompton and Harefield Hospitals Specialist Care.

The latest edition of our magazine features a range of articles to update you on our most recent services and news including the launch of our endovascular surgery services at Royal Brompton Hospital, our refractory angina treatment, and the new cardiac surgery device the ESVS Mesh.

The private patients’ team has gone from strength to strength over the last year, continuing to deliver a first-class service whilst we refurbished the ward and took steps to improve and expand the private patient service. Their dedication is what makes our service a success and helps build on our legacy for being a world-leading centre for specialist heart and lung care. We hope you enjoy reading the latest edition of our private patient CaseNotes magazine.

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David Shrimpton
Private Patients’ Managing Director

Royal Brompton Hospital
Sydney Street
London SW3 6NP
Tel: 020 3131 5384
Fax: 020 7351 8555

Harefield Hospital
Hill End Road
Harefield UB9 6JH
Tel: 020 3131 6858
Fax: 020 7351 8555

privatepatients@rbht.nhs.uk
www.rbhh-specialistcare.co.uk
RB&HH welcomes its newest consultants

Introducing
Mr Aron-Frederik Popov

RB&HH welcomes a new cardiac surgeon Mr Aron-Frederik Popov. He is consultant in heart and lung transplantation, ventricular assist devices, and cardiac surgery.

Mr Popov trained at The University of Göttingen, Germany where he qualified as a cardiac surgeon and attained his doctorate and higher doctorate of medicine and worked as an attending cardiac surgeon at The University of Göttingen then as a transplant fellow at Royal Brompton & Harefield NHS Foundation Trust.

After his fellowship, Mr Popov went back to The University of Göttingen to lead the transplant programme as consultant in the department of cardiothoracic and vascular surgery from 2011 to 2014. He successfully introduced new mechanical circulatory devices and was able to help increase the number of implantations and cardiac transplantations performed there.

His clinical areas of interest and specialist expertise include Complex cardiac surgery, minimal invasive valve implantation, ventricular assist devices, extra corporeal life support, and critical care.

To refer a patient or to contact the Popov please contact the private patient team at Harefield Hospital at +44 01895 828 857.

What’s new at RB&HH

Ground-breaking ‘artificial heart’ transplant demonstration at Arab Health Conference

Dubai, UAE – One of Europe’s leading heart surgeons has performed a revolutionary ‘artificial heart’ surgery demonstration at the 2015 Arab Health conference – marking the first time the pioneering procedure has been showcased in the Middle East.

The highly complex ventricular assist device (VAD) procedure simulation was performed by Mr Andre Simon, Director of Heart and Lung Transplantation at Royal Brompton & Harefield Hospitals (RB&HH), in front of an audience of leading regional and international medical leaders and UAE government officials.

Innovative Treatment To Fight Heart Disease

The latest innovations in heart disease treatment, including revolutionary dissolvable heart stents, were presented at the Kuwait Cardiac Society Conference in March. Professor Carlo Di Mario, one of Europe’s leading cardiologists, outlined a number of revolutionary techniques and therapies, including dissolvable heart stents, that have been delivered at the Royal Brompton & Harefield Hospitals.

World leading surgical techniques highlighted at Gulf Thoracic Congress in Dubai

The revolutionary procedure to treat secondary lung tumours with state-of-the-art laser technology has been introduced with excellent results at the Gulf Thoracic Congress in Dubai this past March. This technique allows for the removal of lung lesions with minimal loss of healthy lung tissue.

In addition, three of the hospitals’ world leading physicians delivered a series of talks focusing on key health issues facing the Gulf Coast Countries population including modern and evolving modalities in lung cancer management, minimally invasive treatment of empyema and malignant pleural effusion, chronic obstructive pulmonary disease (COPD) and sleep apnoea. The presentations were delivered by: Professor Michael Polkey, Consultant Physician and Specialist in Respiratory Medicine, Dr Paras Dalal, Consultant Thoracic Radiologist and Mr Vladimir Anikin, Consultant Thoracic Surgeon (pictured).

Royal Brompton & Harefield Specialist Care Case Notes Summer 2015

Bob Bell named as a top chief executive by Health Service Journal Magazine

Royal Brompton & Harefield Hospitals Chief Executive Bob Bell has been profiled by HSJ Magazine as a leading NHS Chief executive, identifying him as one of the most influential figures in healthcare.

Noting Bob’s ten year tenure at the Trust, the nomination touches on some of the challenges he faces, whilst celebrating his achievements, commenting: “Bob Bell seems to relish this difficult and demanding job... yet he is known for instilling a sense of community among staff.”

In articles published by Hello! magazine, the Evening Standard and the Mail Online, the footballer and his wife explained how their child Finley, who turned one in April, had to undergo a procedure to correct a congenital heart defect at just eight weeks’ old.

Theo Walcott’s son treated by Royal Brompton Paediatric team

Arsenal and England footballer Theo Walcott has described Royal Brompton staff as “fantastic” after his baby had successful surgery at the hospital.

To refer a patient or to contact the Popov please contact the private patient team at Harefield Hospital at +44 01895 828 857.
Introducing our rapid-access arrhythmia clinic

A consultant-delivered rapid access arrhythmia clinic has been launched at Harefield Hospital. This service will allow patients to access the largest electrophysiology team in the country. Patients will be seen within 24 hours by a consultant electrophysiologist with specialist expertise in arrhythmia management.

Clinic appointments last for half an hour and includes:
- Assessing the patient
- Performing an electrocardiogram (ECG)
- Producing a report with recommendations

If further tests are needed, we will liaise with the patient’s GP and help in arranging these tests, usually available on the same day.

Dr Wajid Hussain the consultant cardiac electrophysiologist who is leading the service said; ‘Prompt action to atrial fibrillation saves lives and can prevent disabling or fatal strokes.

This service provides the best access to a multi-disciplinary specialist team dedicated to arrhythmia.

All arrhythmias are managed via this clinic, including atrial fibrillation, all other tachyarrhythmias, and all bradyarrhythmias. A comprehensive range of investigative and treatment options can be accessed via the clinic, including all types of catheter ablation and device implantation.

When should you refer a patient?

With new symptoms, if you suspect a patient’s symptoms may be caused by arrhythmia requiring further assessment or diagnosis.

With established arrhythmia, if you feel further specialist investigation or treatment is required, including ablation or device implantation.

To call our dedicated rapid access line at Harefield Hospital please call 080 9582 8551 or by email at privatepatients@rbht.nhs.uk

New hope for refractory angina sufferers

Angina pain can be reduced and other myocardial functions improved with an innovative new treatment offered by Royal Brompton Hospital

R&H Specialist Care is offering an innovative new treatment for refractory angina.

Refractory angina is becoming more prevalent as people live longer after treatments. The new Neovasc Reducer procedure offers hope to many patients who were previously given pain management as their only option, enabling them to enjoy normal lives again.

The procedure involves inserting a small device called the Neovasc Reducer. This narrows the coronary sinus to reduce symptoms and improve quality of life for patients who were often told there were no other options for them.

The procedure takes approximately 20 minutes, with patients often discharged within 24 hours. It can take up to six months for the patient to feel the full benefits of the treatment. Royal Brompton & Harefield Hospitals is one of a few centres in the world to offer this service, as it is not yet available in the US.

The device received a CE mark in late 2011. The first-in-man study of the Reducer, which followed 15 patients for three years, demonstrated excellent safety and efficacy in terms of reducing angina pain and other improvements in myocardial function.

RB&HH consultant cardiology Dr Ranil De Silva is able to perform the Neovasc Reducer procedure at Royal Brompton Hospital. Dr De Silva was involved in the clinical trials and wrote a paper on the procedure which was printed in the New England Journal of Medicine on 5 Feb 2015.

For people interested in this treatment, the first step is to determine whether or not they are suitable through an assessment from our team. This can either be carried out in person, or by sending bloodwork, a recent angiogram and an MRI perfusion scan or stress echo to the assessment team. From there, the team could recommend this procedure. The length of stay is approximately one week.

What is angina?

Angina is a pain that comes from the heart. Angina occurs when fatty deposits develop in the coronary arteries, causing a temporary shortage of blood to the heart muscle. This can be treated in different ways, including medication, coronary angioplasty, or bypass surgery.

Patients can continue to experience or have recurrence of angina, despite having had treatment with medication, stents, and coronary artery bypass surgery. This is called refractory angina.

Each year about 25,000 people in the UK develop angina for the first time. More than one in three people over the age of 50, and more commonly found in men than women.

Dr Ranil de Silva
Consultant Cardiologist
Dr De Silva’s clinical expertise is in coronary angioplasty, and the management of acute coronary syndromes and advanced coronary artery disease. He is a lead clinical investigator at the National Institute for Health Research (NIHR) cardiac regeneration unit based at the Trust.
Mr Ritchie was rushed to nearby Hillingdon Hospital, and after a couple of days was transferred to Harefield Hospital for specialist treatment. Whilst members of the family travelled from across parts of the UK and California to be near to Mr Ritchie, his attending consultant cardiologists Dr Robert Smith and Dr Mark Mason were preparing him for surgery. When Mr Ritchie arrived at Harefield he had gone into cardiac arrest, from which he had to be rapidly resuscitated. With a history of heart disease and previous bypass surgery, he was given an angiogram to assess any further narrowing of his arteries. The angiogram showed that his previous bypass grafts were severely narrowed, so Dr Smith opened these up and placed two stents to hold it open. It was also clear that another artery was blocked and that this couldn’t be opened- it was therefore recommended that he have an Implantable Cardioverter Defibrillator (ICD) implanted, and that this should be a ‘three wire’ type (biventricular defibrillator, or ‘CRT-D’) which would be able to coordinate the contraction of his heart and make it work as efficiently as possible.

Fiona Wohlman, daughter of Mr and Mrs Ritchie says of her father’s treatment: “Harefield consultant cardiologists Dr Robert Smith and Dr Mark Mason were amazing... Not only did they provide outstanding care for my father, but they managed my mother so well. She was in shock at my dad’s sudden life-threatening condition and so fearful at the thought of losing her prince. I must also comment on the level of care provided by the nurses. Each day my mother and I marvelled at their kindness and professionalism. And they were so funny with my dad... we laughed in room 4 more than we cried.

Finally, I would like to express my sincere appreciation to the RB&HH staff. Each of them created for us like their own family member – Jessica would bring the paper and chat to my dad like she was one of his grand-daughters, and Annalisa would stop by after work just to provide support and encouragement. Private Patients Manager, Gerri, meanwhile helped me negotiate with my parents’ insurance company. Even though we were very glad to be going home, it was difficult to say goodbye. When I arrived at Harefield, I was told that it was one of the best cardiac hospitals in all of Europe. I firmly believe that this is true.”

In July 2014, Mr Richard Richie was on his dream trip to Paris with his wife from their home in the United States. However, their dream soon turned into a nightmare when Mr Ritchie started experiencing chest pain and had a heart attack in the middle of Heathrow Airport.
Cardiovascular (heart and circulatory) disease causes more than a quarter of all deaths in the UK. That's around 160,000 deaths each year.

**Heart disease risks**

Cardiovascular disease

 Coronary heart disease (CHD)

Nearly one in six men and one in ten women die from coronary heart disease.

CHD is responsible for an average of 200 deaths each day in the UK. That's about one every seven minutes.

Statistics are the latest available from the UK’s health and statistics agencies. From the British Heart Foundation Feb 2015

**What is angioplasty?**

A coronary angioplasty is a procedure used to widen blocked or narrowed coronary arteries.

The term angioplasty means using a balloon to stretch open a narrowed or blocked artery. However, most modern angioplasty procedures also involve inserting a short wire-mesh tube, called a stent, into the artery during the procedure. The stent is left in place permanently to allow blood to flow more freely.

**Why is it used?**

Like all organs in the body, the heart needs a constant supply of blood. This is supplied by blood vessels called the coronary arteries.

- **Atherosclerosis**
  In older people, coronary arteries can become narrowed and hardened (known as atherosclerosis), which can cause coronary heart disease.

- **Angina**
  If the flow of blood to the heart becomes restricted, it can lead to chest pain known as angina, usually triggered by physical activity or stress. A coronary angioplasty may be required in severe cases where medication is ineffective.

- **Heart attack**
  Coronary angioplasties are also often used as an emergency treatment after a heart attack.

**How a coronary angioplasty is performed**

A thin, flexible tube called a catheter will be inserted into the artery through an incision in the groin or wrist. This will be guided using a continuous X-ray video.

When the catheter is in place, a thin wire is guided down the length of the affected coronary artery, over which a small balloon will be delivered to the affected section of artery.

**Types of stent procedures**

- **Single stent**
  The most common procedure, where only one stent is placed permanently in the coronary artery.

- **Multiple stent procedure**
  For some patients it may be necessary to place more than one stent in the coronary artery, depending on the length of the blockage.

- **Drug-Eluting Stents**
  In addition to providing structural support to the coronary artery, some newer-generation stents also have a medicated coating to help prevent the vessel from re-narrowing.

- **Dissolvable stents**
  Unlike metal stents that remain permanently in place, bioabsorbable stents soften in one year and disappear in two to three years, allowing the treated artery to regain more normal flexibility to expand and contract.

Royal Brompton Hospital is a world leader in using Absorb Dissolvable stents

Royal Brompton Hospital Specialist Care Case Notes Summer 2015
Establishing a new vascular service

Royal Brompton and Harefield Hospitals Specialist Care moved closer to its vision of running a comprehensive, in-house cardio-vascular service with the appointment of a new vascular surgeon.

Professor Nick Cheshire is a vascular surgeon with a special interest in surgery of the aorta and is working with colleagues on both the Royal Brompton and Harefield Hospital sites to develop the new service. ‘Many patients who need heart services also have problems elsewhere in the circulation. Similarly, patients with vascular disease frequently need the attention of a cardiologist or cardiac surgeon. Around the world, the leading centres have begun to recognise this by bringing teams together. It provides a much more patient-centred service’

The new unit will focus particularly on aortic disease and the use of minimally invasive, stent-graft techniques – so called Endo-Vascular Surgery. ‘Across the UK, there are very few units capable of offering complex patients the complete range of treatment options now available for the aorta’ said Nick Cheshire.

Building work has already begun on the new hybrid operating theatre at Royal Brompton Hospital. This will be an important step in the development of the cardio-vascular unit. The hybrid suite will make available all open and endovascular options for any patient with a cardiovascular problem.

Mt Ulrich Rosendahl, cardiac surgeon says ‘our new joint unit – along with the hybrid lab – offers all open and endo options, for diseases extending from the root of the aorta all the way down to the femoral arteries and beyond, and in patients of any age group. A truly comprehensive cardio-vascular service’

Both surgeons believe that the new RB&HH cardio-vascular unit has much to offer in research and education. ‘Emerging technologies in both open and endo surgery are usually developed in large-scale corporations. These great ideas then need forward thinking surgical teams to safely study how and when these devices are most effective in helping patients’ said Prof Cheshire ‘and a world class centre like RB&HH, working with Imperial College Faculty of Medicine is the perfect place to undertake this type of work.’

One of the first private patients to be treated by the joint unit was very grateful for his treatment, “A routine scan of my heart found that I needed a triple heart bypass before my aneurysm could be treated by Mr Rosendahl. Thankfully he insisted on bringing in Mr Cheshire for the first procedure who is an expert in this area. Throughout my entire journey the two surgeons showed such compassion and nothing was too much trouble, it was a pleasure to see. He added, “I have always enjoyed life but before my surgery even the most simple of tasks was becoming more and more difficult. Since then I have been back spending time doing what I love, running around after my 20 grandchildren. The treatment offered by the team at the Royal Brompton has been nothing short of life changing.”

As the largest cardiovascular hospital in the UK, our expert vascular and cardiac surgical teams work together with the most experienced cardiologists, anaesthesiologists and radiologists to ensure the very best outcomes.
EndoAcab is a minimally invasive approach to coronary artery bypass. By using advanced endoscopic techniques, it avoids a large incision or division of the sternum. The procedure involves using a voice-controlled robotic hand telescope to harvest the internal mammary artery from the chest wall through three 5mm holes. A small incision is then made between the ribs and, without any spreading, the bypass is performed to the left anterior descending artery – the main artery supplying the heart. The procedure is performed off-pump, without the need to stop the heart or use a heart lung machine (cardiopulmonary bypass). Patients experience less pain, minimal scarring and faster recovery times.

Who would benefit from an EndoAcab?
Anyone who has been recommended for a CABG could be considered for an EndoAcab. For patients with just LAD disease, the Endoacab procedure may be all they require. However, if the patient has multiple narrowings in many arteries, the hybrid procedure (below) may be a more appropriate form of treatment.

The hybrid procedure
The hybrid procedure draws together the benefits of both techniques – Endoacab and Stenting of the coronary artery – allowing for the most proven treatment of a LIMA to LAD bypass and drug eluting stents of the remaining less important arteries. This is performed at the same hospital stay.

The advantages of EndoAcab
In a review of our patients when compared to conventional CABG with sternotomy, the Endoacab group was ventilated for a shorter time, bled less and stayed a shorter time in hospital. In addition, patients were resuming normal activity quicker, with more returning to employment.

The eSVS Mesh is designed to complement normal coronary artery bypass graft (CABG) procedures by strengthening saphenous vein grafts (SVGs) and reducing internal thickening of the vein. First the vein is measured, and the eSVS Mesh is sized to support the vein. The mesh itself is manufactured from nitinol wire, which gives it considerable strength, while remaining highly flexible and kink-resistant. By strengthening the SVG and preventing the damaging expansion of the vein graft, the eSVS Mesh reduces or prevents the resulting injury which can lead to SVG failure, and potentially costly and complicated re-interventions for CABG patients.

Angiograms performed six months after the procedure have shown a significant lessening in the internal thickening of the vein. Cardiac Surgeon Mr Tony De Souza said, “The eSVS Mesh is very easy to use and complements our normal CABG procedures. I’m hopeful this new device will give us an advantage in improving outcomes for thousands of patients suffering from coronary artery disease.”

Royal Brompton Hospital is one of the few centres in the world to offer the eSVS Mesh currently. For more information, please contact our private patients team.

Mr Tony De Souza
Consultant Cardiac Surgeon
Mr de Souza is a leading specialist with a busy practice in all aspects of cardiac surgery. His major interest lies in innovative techniques for minimally invasive coronary artery bypass grafting (CABG), and he successfully performed the first robotic endoscopic CABG in the UK. Mr de Souza lectures and mentors internationally on techniques of minimally invasive and robotic surgery.

A new vein graft strengthening device, the eSVS Mesh, offers improved outcomes for coronary artery bypass graft patients.
Re-building my child’s heart

18 month year old Raghad from Kuwait was born with a complex and rare congenital heart defect where the heart chambers and blood vessels supplying the heart are positioned in an abnormal way.

Raghad: “When Raghad was born, the doctors knew there was something very wrong. She had an accelerated heart beat and she was hyperventilating. When we tried feeding her, she was unable to drink any milk… she became very weak and was always tired. She was so ill that I honestly thought she was going to die.”

Raghad was admitted to intensive care and the doctors told us that she would need to have an operation to correct the position of the arteries and the ventricles.

A few days after birth, Raghad had this procedure which literally saved her life. A few months later, she had another operation to prevent too much blood from flowing to her lungs – a common consequence of having this type of heart defect. This second operation was meant to be temporary and allowed her to grow and become a completely different child – her personality is really starting to shine through.

Raghad has recovered very well and has become a completely different child – her personality is really starting to shine through.

Raghad was put on a “heart-lung machine” which takes over the function of the heart and the lungs. This allowed us to operate on the heart whilst the heart-lung machine pumps blood around the body. Once the heart was stopped, we worked to reconstruct a normal anatomy. The operation was highly complex and took over 15 hours.

Wael comments: “Since the operation, Raghad has recovered very well and has become a completely different child – her personality is really starting to shine through. No longer held back by her heart condition, she is now able to enjoy playing again and is able to eat and drink normally. The care we received at Royal Brompton has been outstanding – from the consultants and surgeons to the staff on the paediatric ward. The hospital has everything you need to be comfortable – particularly for those coming from overseas. There is a prayer room and Arabic interpreters, and the ward provides halal meals and Arabic newspapers. We feel as if a burden has been lifted and are very grateful to our surgeon and the staff. We finally have peace of mind that Raghad will go on to live a fully, happy life.”

To watch a video about this patient’s journey, please visit: www.rbhh-specialistcare.co.uk/videos

At a Glance

WHAT PROBLEMS DOES IT SOLVE?
Congenitally corrected transposition of the great arteries (CCTGA) is a rare congenital heart defect in which the heart twists abnormally during foetal development and the ventricles are reversed. Symptoms usually reflect associated cardiac anomalies. The most common presenting features are: (1) bradycardia related to high-degree AV heart block; (2) a single loud second heart sound, which is often palpable to the left of the sternum, arising from the anteriorly positioned aortic valve; (3) heart murmur due to associated ventricular septal defect, pulmonic stenosis, or tricuspid regurgitation; (4) cyanosis; (5) heart failure; or (6) tachyarrhythmia.

Raghad’s case comments: “Raghad was born with a complex and rare congenital heart defect, called ‘Congenitally Corrected Transposition of the Great Arteries’ – or CCTGA for short – means that the arteries and the ventricles are totally inverted. Raghad’s father, Wael, recounts the day when he first found out about his daughter’s condition:

“Raghad was referred to Royal Brompton Hospital in London, overseas. His doctors recommended Royal Brompton Hospital in London, as it has an international reputation for treating rare and complex forms of congenital heart disease unit is one of the largest in Europe.

Professor Francois Lacour-Gayet, the paediatric consultant in charge of Raghad’s case comments: “Raghad came to us with a very complex heart condition. Only a handful of centres perform this type of procedure and Royal Brompton specialises in complex cases cardiac cases. During the operation, Raghad was put on a ‘heart-lung machine’ which takes over the function of the heart and the lungs. This allowed us to operate on the heart whilst the heart-lung machine pumps blood around the body. Once the heart was stopped, we worked to reconstruct a normal anatomy. The operation was highly complex and took over 15 hours.”

Wael comments: “Since the operation, Raghad has recovered very well and has become a completely different child – her personality is really starting to shine through. No longer held back by her heart condition, she is now able to enjoy playing again and is able to eat and drink normally. The care we received at Royal Brompton has been outstanding – from the consultants and surgeons to the staff on the paediatric ward. The hospital has everything you need to be comfortable – particularly for those coming from overseas. There is a prayer room and Arabic interpreters, and the ward provides halal meals and Arabic newspapers. We feel as if a burden has been lifted and are very grateful to our surgeon and the staff. We finally have peace of mind that Raghad will go on to live a fully, happy life.”

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Case Notes Summer 2015
The Royal Brompton and Harefield Hospitals are amongst a handful of centres around the world to use a highly innovative system that allows specialists in treating heart rhythm problems to rapidly and accurately map the complex heart rhythms.

The Rhythmia system (Boston Scientific), now installed at both the Royal Brompton and Harefield Hospitals, allows creation of accurate 3-dimensional maps consisting of tens of thousands of electrical points, usually within 10 minutes, that allow the operator to target and successfully eliminate both simple and complex heart rhythm problems. The device is designed for use in cardiac catheter ablations and other electrophysiology (EP) procedures to treat a variety of conditions in which the heart beats abnormally.

The technique involves a probe being threaded up into the heart via a tiny (2mm) incision in the groin. The area causing the rhythm abnormality is rapidly identified and that tissue is then burned away under local anaesthetic and normal rhythm is restored, meaning patients may be able to go home the same day.

The ability of the system to rapidly and automatically annotate thousands of points, as opposed to the traditional method of acquiring and manually annotating points one at a time, can revolutionise mapping of all arrhythmias, and allow mapping of arrhythmias that cannot be tolerated by patients for more than a few seconds at a time.

Royal Brompton & Harefield Hospital Doctors Tom Wong and Vias Markides were amongst a small number of clinicians around the world to be involved in using and further developing this pioneering mapping system in patients with heart rhythm problems, with outstanding early results.

‘The novel Rhythmia is at the very cutting edge of three dimensional mapping technology to allow electrophysiologists to identify the crux of the heart rhythm problems with unprecedented resolution and efficiency.’

Dr Tom Wong

‘The novel Rhythmia is at the very cutting edge of three dimensional mapping technology and allows electrophysiologists to identify the crux of the heart rhythm problems with unprecedented resolution and efficiency.’

Dr Tom Wong

Other rhythm conditions the new procedure could help include ventricular tachycardia, a rapid heartbeat caused by a malfunction in one of the heart’s ventricles.

Serious cases of this can lead to a cardiac arrest, where the heart stops beating, which in turn stops oxygen-rich blood reaching the brain and other vital organs.

The probe is fitted with dozens of electrodes that capture 20,000 pieces of data in 15 minutes, compared with only 500 in half an hour with a conventional device.

This data allows doctors to build a detailed 3D image of the heart on a computer to identify the precise section of muscle causing the problem. The rogue tissue can then be destroyed in a separate procedure immediately after doctors have ‘mapped’ the heart and identified the problem area.

The Rhythmia system builds a detailed computer image from a probe that is inserted via the groin. The resulting data is collated to create a 3-dimensional map of the heart.