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A message from the President

The European Association for Cardio-Thoracic Surgery is a success story. In 2011, we celebrated the 25th anniversary of this professional organisation that now has more than 2,800 members, not only from Europe, but from all over the world.

In 2012, we will celebrate the 25th anniversary of the European Journal for Cardio-Thoracic Surgery, that now brings to its readers more than 2,500 pages per year, has a print run of more than 5,000 copies per issue and can of course be accessed through the world wide web from practically anywhere, at any time (www.ejcts.org). In addition, two other journals have been founded, the *Interactive Cardio-Vascular and Thoracic Surgery* (www.icvts.org), and the *Multi Media Manual for Cardio-Thoracic Surgery* (www.mmcts.org), and all of them can be accessed through CTSnet (www.ctsnet.org).

The most recent development is the opening of EACTS House. To celebrate its official opening, we held the 2nd Strategic meeting entitled, 'EACTS in the Future' on February 10, 2012. At this occasion, the EACTS Council and delegates of the EACTS Domains (Domain of Thoracic Disease, Domain of



Vascular Disease, Domain of Congenital Cardiac Disease and Domain of Acquired Cardiac Disease) came together with representative thoracic and cardio-vascular surgeons from North America, Asia and BRICS countries, as

well as senior management of the industry in order to find out where to go from here or, in other words, 'to identify challenges and opportunities for the future development of our specialities' (see page 2).

EACTS House was the perfect place to hold such a meeting. Not only does EACTS House put EACTS on the map but it holds also an approximate 300m² for offices, meeting rooms and training facilities. In fact, the first floor on the ground is designed for courses including wet labs and can receive up to 70 participants. The 2nd floor holds meeting rooms and the 3rd floor hosts the EACTS offices and individual work stations.

EACTS House is fully-equipped with the latest audio-visual and video conferencing facilities, as well as a wired and wireless network. Every EACTS member should visit EACTS House, be it for a course in their field of interest,



committee work, and/or to meet colleagues.

Welcome at EACTS House!

Ludwig K von Segesser, MD, FECS, FACS, FESC President EACTS



EACTS meets EU

Last year, the EACTS President and the Secretary General, together with representatives from the ESC and ESCVS were received by the President of the European Parliament, Polish MEP Jerzy Buzek. The meeting was a unique opportunity to raise awareness on the burden of cardiovascular diseases in Europe at the highest level of the EU institution as well as to discuss the challenges met by the profession to promote cardiovascular health. To understand the disease and to improve the management the availability of comparable

data on cardiovascular disease in Europe is crucial and was discussed as one of the main challenges in Europe, at EU and member states levels. Another challenge will be to raise

the funding dedicated to cardiovascular research, to help understand how the diseases develops as well as find treatment and cure. Finally, participants in the meeting shared with

Mr. Buzek the efforts of the profession to improve the quality of care across Europe, hence striving to reduce inequalities in access to optimal care and treatment, and to pro-

vide the best possible level education to medical students as well as to confirmed doctors.

A second meeting with Mr. John Dalli, Commissioner for Health and Consumer Policy of the European Commission was held in February 2012. Over the next few months the members of the European Parliament will be faced with several pieces of legislation that contribute to reducing the burden of cardiovascular health in Europe: the content and budget of the next research framework, the recast of the medical devices directives as well as the revision of the clinical trials directive.



2nd Strategic Meeting – EACTS in the future

The EACTS Strategic Meeting gathered together the EACTS Council members, representatives of each Domain and representative thoracic and cardio-vascular surgeons around the world, as well as industry 'to identify challenges and opportunities for the future development of our specialties'.

EACTS President, **Ludwig von Segesser** (Switzerland), opened the proceedings by welcoming all the invited guests to EACTS House and said that following on from the Association's 25th Anniversary in 2011, "the aim of today was to assess what the Association's role would be in the future." He stated that from his institution's experience in Lausanne, Switzerland, there is increasing competition from

cardiologists, vascular surgeons, intensivists, as CABG and open valve procedures continue to decrease.

EACTS Secretary General, **Pieter Kappetein** (The Netherlands), then showed how the Association and the annual meeting have both grown over the last two decades, not only in Europe, but as a truly international organisation. Furthermore, he emphasized how the EACTS has not only attracted cardio-thoracic surgeons to become members, but also congenital and vascular surgeons, demonstrated by the quality of papers presented within those domains at the annual meeting.

The next presenter was **Paul E van Schil** (Belgium), Chair of the Thoracic Domain, who discussed the future of thoracic surgery. He began by stating that the Domain was dynamic and has several working groups (including Chest wall, Regenerative medicine, Robotic, Thymic etc), as well as playing an

active role in the European School of Cardiothoracic Surgery. The Domain also has a vital role in interdisciplinary cooperation at both national, European and international level with participation in conferences and taskforces. Despite this, Van Schil said that thoracic surgery throughout Europe was varied with specific training in some countries (Spain, Switzerland, Italy) but not in others, whereas in the USA and Asia there were dedicated thoracic centres. In conclusion, he said that in the future thoracic surgery must embrace new technologies and develop and improve technical skills, create a European database for thoracic surgery and through the UEMS have a uniform training programme.

Discussing the future of congenital surgery, Chair of the Domain, **William Brawn** (UK) said that the Domain has continued its very active participation in education programmes not only at the annual meeting but also the EACTS Foundation Courses, as well as international activities such as cooperation with the Association for European Paediatric and Congenital Cardiology (AEPC), AATS and STS, which emphasise multi-disciplinary approach to surgery. He discussed how despite advances in techniques and technologies there were still many issues of congenital surgery that needed

solving such as myocardial protection and cardio-pulmonary bypass. Looking to the future he said that the ability to reactivate resident human cardiac stem cells offers the potential for myocardial regeneration, and advances in mechanical pumps also offers new treatment options. Earlier and more accurate antenatal diagnosis, foetal interventions, maternal blood tests will all have a huge impact on congenital surgery, said Brawn.

Next, Chair of the Vascular Domain, **Martin Czerny** (Switzerland), stated that vascular surgery has in recent years focused on aortic disease and technological advances have expanded treatment options (such as thoracic endovascular



aneurysm repair). He added that the best ways to treat patients would be to have 'Aortic Centres' that are specifically equipped to treat the entire organ and would be staffed by a multidisciplinary team offering pharmacologically, surgically and by endovascular methods. The Domain continues to take a leading role in developing joint positions papers (with the European Society of Cardiology) and has initiated several key scientific projects (EuRADa registry). With regards to international activity the Domain now has a liaison officer to the United States to promote educational exchange.

John Pepper (UK), Chair of the Adult Cardiac Domain, commented over the next five years there are many areas that will change cardiac surgery including: TAVI; hybrid approaches to CABG using LITA to LAD and drug-eluting stents; surgery for heart failure; and imaging advances (such as diffusion spectrum MRI tractography). With regards to training, Pepper added that improvement in medicine have resulted in young surgeons not been exposed to problem arising in intensive care and he said there should be some simulation training and giving them the confidence to deal with such situations. He also called for combined cardiac and vascular training programmes, intensive imaging courses for surgeons and developing a system of cadre surgeons carrying out prospective cohort studies.

Discussing the patient's needs, **Leslie Hamilton** (UK) said that the patient must always be the first concern of any doctor and their actions must best serve the patient. The key of providing optimum patient care is best med-

Continued on page 4

aneurysm repair). He added that the best ways to treat patients would be to have 'Aortic Centres' that are specifically equipped to treat the entire organ and would be staffed by a multidisciplinary team offering pharmacologically, surgically and by endovascular methods. The Domain continues to take a leading role in developing joint positions papers (with the European Society of Cardiology) and has initiated several key scientific projects (EuRADa registry). With regards to international activity the Domain now has a liaison officer to the United States to promote educational exchange.



Official opening of EACTS House

On Friday 10th February 2012, the new headquarters of the Association, 'EACTS House', were officially opened by two of the Association's founding fathers, Professors Francis Fontan and Keyvan Moghissi. Based in Windsor, UK, the new building houses the EACTS Executive Office and has first class educational and business facilities.

In 2012, EACTS House will host many of the Association's Academy Courses and boasts state-of-the-art conference amenities complete with lecture theatre and dining facilities. The official opening of EACTS House came at the end of a busy week at the new headquarters. As well as hosting the first Academy Course, 'Fundamentals in cardiac surgery Part I' in the new venue, EACTS House also held the Second Strategic Conference.



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2nd Strategic Meeting – EACTS in the future

Continued from page 2

ical practice and he identified several mechanisms to achieve this, such as increasing the specialisation of surgical services and centralising those services to high volume centres/surgeons. He argued that this would inevitably require a re-configuration but it would lead to an improvement in patient care.

The next presentation by **Stuart Head** (The Netherlands), examined the role of the 'Heart Team' and emphasized the need for multidisciplinary decision-making so that patients are evaluated by different specialties considering multiple treatment options and finally choosing the most appropriate treatment. He argued that a Heart Team consisting of cardiologists and surgeons can better weigh the advantages and disadvantages of revascularisation strategies, and decide which strategy is preferred for the individual patient. The result is a better understanding of the referral patterns, the clinical decision-making process, an increase quality of care according to the patient and better outcomes.

Balancing the discussions, **Adrian Banning** (UK) presented the view from the interventionist and began by stating that the SYNTAX trial (and the Heart Team philosophy) was a huge advancement. He said that the key to an effective multidisciplinary team was communication between specialists and then providing the patient with 'informed' data. He said that despite surgeons concerns, stents are saving lives, especially in those patients deemed high risk for surgery. He concluded by saying that both specialties need to continue work together in the cath lab/operating theatre and especially in clinical trials.

Representing the Society of Thoracic Surgeons, vice-president **Douglas E Wood** (USA) outlined the current status of

thoracic surgery in the United States. Although performing different procedures, the training pathway for cardiac and thoracic surgeons does crossover. He highlighted that the length of training surgeons was an issue but added that the creation of integrated residencies facilitates dedicated and specialized training (with an intensivist training element if requested). In the US, the future of healthcare is largely dependent on Medicare reform as this could impact quality improvement programmes, healthcare coverage and reimbursement, as well as impacting whether there will be an adequate workforce, concluded Wood.

Presenting the views from the America Association for Thoracic Surgery, current President **Craig Smith** (USA) said that North America is facing specific challenges such as malpractice costs, increasing government regulation, decreasing funding, decreased support from industry and a reduction in an expressed interest in CT training from medical students. He addressed how the AATS has tried to address these concerns including summer scholarship programmes, direct lobbying and academic support through the Association's Academy, and increased co-operation with international organisations.

Walter Gomes (Brazil) then highlighted the current status of the BRIC (Brazil, Russia, India and China) countries, which he explained have a combined population of almost three billion people, over a quarter of the world's land area, more than 15% of global Gross Domestic Product (GDP), and in recent times, the BRIC have also contributed to the majority of world GDP growth. Rather than this growth becoming

an area of confrontation, Gomes said that there are opportunities for cooperation, interaction and partnership. He showed that the BRICS have a much lower cardiac surgery rate (per 100,000 of population) than their G7 counterparts. Moreover, he added that the BRIC CT device market is expected to grow rapidly, as are rates of diabetics, obesity, cancer and cardiovascular disease.

PB Rajesh (UK, on behalf of CN Lee, Singapore) presented a view from the Asian Society for CardioVascular and Thoracic Surgery, and began by stating that practice was more varied than in any other region in the world (different economies, patient diseases/patterns/volumes, healthcare policies/facilities/priorities etc). To address many of the problems the Society established a pan-Asian database project and an Academy. However, more could be done and he said that Singapore has invested in training, technology and next generation equipment, which has enabled them to attract the best students from all over Asia. This model needs to be repeated across the region.

Discussing the future of training in Europe, **Rafael Sadaba** (Spain) focused his presentation around two issues: setting and raising standards; and transcatheter techniques and survival. He said that despite cross board recognition there is a distinct lack of standards, which results in unequal and suboptimal training. He added that the EACTS has a duty and responsibility to play a leading role in addressing these issues and facilitating discussion among the national societies and other stakeholders. The EACTS has also created the 'EACTS Simulation' and 'Excellence in Surgical Training' awards to improve innovation and education in training. In addition, he outlined the importance of sustained innovations compared with disruptive innovations in relation to developing new technologies, adding that the EACTS was taking an active lead with the creation of the EACTS Academy proving training in minimally invasive techniques.

EACTS Robotic Level III Course



Franca Melfi

Franca Melfi Director of Robotic Multidisciplinary Center, University Hospital, Pisa – Italy

Directors: F Melfi, R Casula R Schmid

The 3rd EACTS Robotic Course Level III was held in at the Robotic Multidisciplinary Center of University Hospital, Pisa, Italy. The course, which started a year ago at IRCAD (Strasbourg, France) with training on animal and ca-

daver models and subsequent logon tests, saw the participation of surgeons who have passed the selection for Level III. The Course was attended by cardio-thoracic surgeons from around the world and the Faculty (see below) consisted of experienced surgeons from USA, Germany, Italy, Switzerland and England:

- U Bortolotti – Pisa (Italy)
- RP Casula – London (UK)
- D Douglas – Paris (France)
- F Guarracino Pisa (Italy)

- Kemp H Kernstine – Dallas (USA)
- Franca Melfi – Pisa (Italy)
- Wiley L Nifong – Greenville, North Carolina (USA)
- Jens C Ruckert -Berlin (Germany)
- Ralph Alexander Schmid- Bern (Switzerland)
- Giulia Veronesi – Milano (Italy)

Today, robotic surgery represents the most advanced technological developments in minimally-invasive surgery. However, in cardio-thoracic surgery this technique is well standardized only in very few centres. Scientific societies, such as the EACTS play a key role in advancing surgical training in emerging technologies.

The goal of this course was to improve the performance of robotic surgeons already experts in cardio-thoracic surgery. Sessions were held in two operation rooms of the Multidisciplinary Robotic Center of Pisa. Both these rooms are equipped with the latest da Vinci generation of surgical robotic systems. The system's dual console allowed the faculty to show the operations step-by-step. This session was associated with a pre-clinical phase that involved using a simulator (Skill Simulator). The course included two full days of live surgery followed by a final day dedicated to the interactive discussion, entitled: 'Control-

versal issues; operative consideration and anaesthesiology management for the robotic team'.

Surgeons who attended the meeting came from The Netherlands, Japan, Greece, Ireland, Italy, Iran, Belgium, Switzerland, Portugal, Austria and Finland. Upon completion of

this course, attendees were able to: select patients who would be suitable candidates for robotic cardiothoracic surgery; use the robotic system by acquiring all the fundamental elements (theoretical and practical, the so-called 'skills'); and ensure an optimal outcome for patients.

All participants, both delegates and faculty expressed their enthusiasm and satisfaction for this live surgery course. These are some of the comments:

- "I wanted to thank you for inviting me to your superb meeting. What a great course and an incredible job. It takes great leadership".

Kemp H. Kernstine, Sr., M.D., Ph.D.

Professor and Chairman, Division of Thoracic Surgery University of Texas, Southwestern Medical Center and School of Medicine

- "Thanks very much for the wonderful course. The size of the group was just fine to keep it familiar. This course will keep me stimulated to continue my efforts with robotics in thoracic surgery here in Switzerland..."

James Habicht (Switzerland)

- "I was delighted to participate to your course, thank you once more. The sessions were honest and open to free discussion, it was a real pleasure to follow your and your staff expertise at the OR..."

Ari Mennander Tampere (Finland)

Second
Strategic
Meeting
EACTS
in the
future



EACTS News meets Hans Huysmans



In this issue we talk with Professor Hans Huysmans, founding member of the EACTS and past-president of the Association. We discuss his career in medicine, his memories of the EACTS and the challenges cardiothoracic surgery faces over the next decade...

Why did you decide to pursue a career in medicine?

I come from a family who for six generations before me were doctors, so it seemed it was inevitable that I would continue the tradition. However, probably because of this reason, I had other thoughts and started out studying chemistry, although I changed to medicine in the first year.

When it came to specialising, at first I wanted to study neurosurgery because I was very impressed by the logical way the neurologists studied the function of the brain and how they influenced or manipulated brain function by removing little parts of the brain and thereby restoring normal function. To make sure I was making the right choice before I started my training position, I went to work in a neurosurgical clinic and I was a little shocked that after a few weeks I had not seen one patient going back home 'normal'.

At that time in 1950's, the merit of neurosurgery was less than I had thought. Of course, I saw the potential for improvement, but I realised that I would be psychologically burdened by witnessing so many of my patients not having a satisfactory outcome. I remember that I had to sign a six year contract for the position of a neurosurgeon before I had even started my training. I thought this was unfair and objected, and that was the end of my career in neurosurgery.

So I decided to stay in general surgery, which at the time had many interesting aspects. Several general surgeons performed cardiac surgery and as a student I had performed several cases, but it was not a conscious choice at the time. I was lucky enough to have received part of my training at St Antonius Hospital, (at the time in Utrecht, now part of Nieuwegein hospital)

which was a so-called 'peripheral hospital' and the first hospital to perform cardiac surgery cases in the Netherlands. I had performed lots of cardiac and thoracic procedures, however, I was still of the belief that my future was in general surgery. Then, the day before I was due to leave St Antonius Hospital

to take up new position in general surgery, St Antonius Hospital asked me to stay. So I agreed for one year, then two years, then three by which time I had done more cardiac surgery than most of the Chiefs in the academic departments in the country. I thought it would be a waste to do away with the experience and I thought that there was a real need for cardiac surgeons, even before the advent of coronary artery bypass surgery.

Sometime later, I became the Professor of Cardiothoracic Surgery at Utrecht University, which at the time was an unusual position as cardiothoracic surgery was not yet a specialty, so although I had performed lots of cases I had received no formal training. I was delighted to have gained an academic post, although they were unwilling to invest in the necessary resources and facilities required to ensure this was a leading academic cardiothoracic surgery department. At the same time Leiden University asked whether I would be interested in a similar position at their institution, and I stayed at Leiden for the rest of my career.

Looking back on your career, who were your greatest influences and why?

At the beginning it was a Professor of Neurology who was an excellent teacher who taught an excellent way of thinking. Later in my



Hans Huysmans

could be improved and is exploring new opportunities and directions to develop new treatments.

What are your memories of helping to found the EACTS?

Before the EACTS, there was a European cardiothoracic organisation that held annual meetings but it was not about improving professional or scientific standards. I remember that there was no assessment of abstracts and they accepted scientific papers of a low standard. There were a few of us, including Francis Fontan and Keyvan Moghissi, who complained but our requests fell on deaf ears. So we asked our colleagues from all over Europe what they thought about creating a new organisation, some feedback was positive, some negative. But under the guidance of Francis, we decided to continue and founded the EACTS.

Those were great days and we all felt like we were doing something important. In those days, there was a perception that we had to listen to the Americans that they were the innovators and we had to follow their lead. But we believed many of the innovators and ideas came from Europe. We realised we had the potential.

In the early days it was a struggle, we had to work hard and travelled a lot, for which we paid for ourselves. In the first ten years we were a small collective working hard and believing in something and we never believed 25 years later the Association would be where it is today.

During your career, you were

We need to know what the patient wants from their treatment and I think ultimately, they want a treatment to improve their quality of life.

heavily involved with the European Union of Medical Specialists (UEMS), please can you tell us about your involvement?

I have always felt more European than Dutch and I believe that we were wasting so much time, energy and resources in not harmonising educational programmes. I remember it was proposed that we should approach the European Union (or European Community as it was known) to address these issues, but I said we should not as it would take years, it was slow and bureaucratic. What I proposed was that we should start something ourselves and then approach the EU with an organisation and system in place. So that is what we did and to a certain

extent it worked and we successfully created European Boards to oversee examinations.

However, one of the main problems was one universal training programme for all European countries that would facilitate the exchange of medical professionals across European borders, increasing knowledge and opportunity. The problem

is of course, everybody believed that they had the best model on which a training programme should be based. In the end we got most national societies to agree to a training schedule and brought it before the UEMS, but gaining their approval turned out to be a rather difficult task.

At that time, cardiothoracic surgery as a specialty did not exist in Europe and so were not in the specialties of the UEMS. However, after much deliberation and consultation, we manage to convince the other specialties one by one that cardiothoracic surgery should become a section of the UEMS. After this we faced more formal problems such as having representatives from each of the member states. However, these people were not always appointed by the national society or had different ideas, and so this has become a significant issue over the years in trying to develop and gain universal agreement and progress.

The European Board is functioning more or less by itself, but not as

In those days, there was a perception that we had to listen to the Americans, that they were innovators and we had to follow their lead. But, we believed many of the innovators and ideas came from Europe. We realised we had the potential

career I had some great surgeons who taught me that there was more to surgery than just operating, and as a surgeon you soon realise that the background to surgery is as important as the procedure itself. This means a surgeon is not just performing a procedure but questioning why the procedure is taking place, what

a fully functioning element of the UEMS. As a result, I think the UEMS has lost momentum and so people are less enthusiastic about supporting the Board and sitting the examination. Unfortunately, things have not really progressed as I wished.

What are the biggest challenges facing cardiothoracic surgery over the next decade?

If you look at history diseases and conditions come and go and they are always replaced. For example, years ago the whole of thoracic surgery was based on tuberculosis, now it is lung cancer. One of the challenges the surgeon will face will come from the physician, not from a financial aspect but in terms of providing the treatment the patient requires. We need to know what the patient wants from their treatment and I think ultimately, they want a treatment to improve their quality of life. We all know as we get older things do not function as well as they did, but as professionals we must look at the long term and try and find treatments that are durable. Look at the bypass vs. stenting outcomes and in most cases surgery is better. Yes it takes time, yes it takes a lot of work, but that is what surgeons should do.

Of course it is tempting to make more money by doing a procedure even if it is inferior, but this happens because no one is asking the right questions. For example, none

of coronary stenting studies are examining long term outcomes, why, because all most people are interested in is short term outcomes. As a former Dutch Minister of Health once said to me: "You do realise the cheapest patient is a dead patient!"

You have been retired for a decade or so now, how have you found retirement?

In The Netherlands it is mandatory to retire at 65, but I was quite fortunate as Leiden did not replace me straight away, so I kept busy involving myself in educational programmes examining new techniques in valve surgery. This involved a lot of travelling so I was lucky as I kept busy in my own field. But then, I have seen too many examples of people staying too long and I wanted to enjoy life outside of my surgical career.

I started a role as acting as a mediator for medical complaints in our hospital area, which was quite interesting and I discovered that there are not really that many medical mistakes, but a lot of miscommunication between patients and doctors. This is one aspect that can be addressed during training and education. I enjoyed this role because I maintained patient contact and it was not only cardiothoracic patients but patients in the Leiden area.

Outside of work I still enjoy walking and cycling, one of the advantages of cycling is that you can do



it alone. In our profession with long and sometimes unsociable hours it is an activity you can enjoy alone and I used to have a racing bike some years ago. I still enjoy cycling, but no longer on my racing bike!

Of course, this is all away from

my family of which I am very proud, particularly my 14 grandchildren. If I am ever in need of something to do they keep me very busy. I think it is unavoidable that they will follow in the family profession. We have four children and one adopted son and

two have chosen a career in medicine. My daughter is an epidemiologist and my son in an orthopaedic surgeon. I think like me, he did not want to go in the same direction as his father and decided to make his own name.



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Fundamentals in Cardiac Surgery Part I

From 6-9 February 2012, nearly 40 surgeons-in-training attended the first Academy course to be held at the new offices in Windsor. The aim of 'Fundamentals in Cardiac Surgery (Part I)' was to provide a comprehensive overview of cardiac surgery. The course gave the attendees a unique opportunity to discuss the clinical challenges of cardiac surgery with an experienced faculty from around the world. The curriculum (formerly delivered at the European School for Cardio-Thoracic Surgery, Bergamo) addressed a whole host of subjects from the anatomy of the heart to cyanotic heart disease, and trials and guidelines in coronary revascularization to how to write a medical paper. This report reports some of the key highlights from the four day course.



Professor **William Brawn** (Birmingham, UK) began the proceedings with a brief 'History of cardiac surgery' and highlighted how the heart has been a symbol of life throughout human history from ancient Egypt to Rome. In the middle ages scholars began to make key observations about the anatomy of the heart, culminating in William Harvey (1628) detailing how the heart propels blood around the body. Over the next 300 years, progress was slow with many leading physicians such as Stephen Paget stating that 'surgery of the heart has probably reached the limit set by nature'. Nevertheless this did not stop brave pioneers (Alexis Carrel and Henry Souttar) carrying out experimental surgery and advancing knowledge.

Another pioneer was Robert

Gross who in 1948 grafted artery tissue from one person to another, thus enabling the repair of damaged arteries and in the 1950's Walter Lillehei introduced the cross-circulation technique, which led to the development of the first heart-lung machine by John Gibbon. The 'big ex-

plosion' came in the 1960's with coronary artery surgery and heart transplants. In congenital surgery there have been many pioneers including Senning, Mustard, Glenn and Fontan. The past 20 years has seen the advent of the interventionalist and he added that in the future there will be further advances in robotic surgery and remote surgery (trans-Atlantic). In summary, Brawn concluded, "We can learn from the past however, the future is still totally unpredictable."

The 'Anatomy of the heart' session utilised a video camera and several heart specimens. Professor **Andrew Cook** (London, UK) intrigued delegates analysing the various structures of the heart. "Demonstrating the anatomy has been around for centuries and we believe this is one method of bringing it up to date. The concept of utilising the camera is something we have developed over a number of



years and this method of learning is certainly more interactive and facilitates hands-on learning with the specimens if desired," explained Cook. "Specifically, the 'close up' technique has dramatically improved the experience because it provides a greater perspective than ever before."

In the first of three presentations, **Susanna Price** (London, UK) presented a general assessment of cardiac function with respect to physiological and function in clinical context, as well as examining the roles of the right and left side of the heart in her presentation 'Physiology of the heart'. She emphasized the importance of monitoring pa-



tients as this can forewarn of impending cardiovascular crisis, differentiate causes of haemodynamic instability and shock, and enable ECG monitoring of response to therapeutic intervention. With regards to blood pressure, her take home message was: "Blood pressure does not correlate to cardiac output."

She asked the audience to remember that no monitoring or investigation improves the outcomes unless coupled with a suitable intervention; therefore the interpretation must be in a clinical context as the greatest risk to the patient is misinterpretation. She stressed that the left and right heart are fundamentally physiologically different, they work at different pressures, have



Professor Marjan Jahangiri (London, UK) looked at the techniques of aortic valve replacement and the different valve substitutes, and an overview of TAVI and assessed the other options available to the surgeon.



Dr Philip Kilner (London, UK) discussed the advantages and pitfalls of cardiac MRI and CT



Dr Petrou (Oxford, UK) examined aortic valve disease and the techniques of AoV repair

What the delegates thought...

Ruslan Lazarev

Age: **30**
Location: **Moscow, Russia**
Position: **Studying a PhD**
(Stentless valves in aortic positions)



The EACTS held a course in Moscow two-years ago so I know of the Association's activities. I particularly enjoyed the lecture by Professor Cook on the structure of the heart, as everything could be seen on screen it was very informative regarding the anatomy of the heart. I would certainly recommend the course to my colleagues.

Jiri Nicovsky

Age: **28**
Location: **Prague, Czech Republic**
Position: **Cardiothoracic surgery resident** (third year)



I was looking on the EACTS website and colleagues recommended the course they previously attended in Bergamo. I really enjoyed the aortic valve replacement presentation, as this is the area I find most interesting. I would definitely recommend the course and I am going to attend the 'Advanced' course later in the year.

Thomas Martens

Age: **30**
Location: **Zaffelare, Belgium**
Position: **General surgery resident**



I am a member of the EACTS and saw the course advertised on the website. I was interested in the lecture by Professor David Taggart on CABG and trials results and the congenital aspects of surgery so I enjoyed the presentation by Professor William Brawn. What is impressive is the quality of speakers, they are all real experts in their field.

different filling times, the ejection times maybe different although they also still interact with each other.

In her second presentation entitled, "Intensive Care 1", she outlined the management of cardiogenic shock and presented some clinical examples, which outlined treatment paradigms, complications and outcomes. Through the examples she demonstrated how important it is to know the underlying cause of cardiogenic shock and that stated that "shock is not a diagnosis". Price also said that it was important to assess and treat both sides of the heart independently and then together.

In her final presentation entitled, "Intensive Care 2", Price discussed various imaging modalities and their limitations for the cardiovascular system on the ICU, common complications on the ICU and why other organs impact on the patient's health. In regards to imaging systems she reminded the delegates to make the most of the specialist radiology/nuclear medicine departments in their hospitals and stressed the importance of looking at the lungs, liver and kidneys for signs of systemic disorders. "Each time you get another organ failure your patient is more likely to die and that is why you must not just concentrate on the heart," she concluded.

In the first of two presentations, Professor **John Pepper** (London, UK) discussed extra-corporeal circulation and began by reminding attendees that the way the blood moves around the heart is determined by the fibres and is thrust out in a pulsatile and twisting form. The challenge of cardiopulmonary bypass (CPB) is to pump five litres of blood per minute, oxygenate and remove the carbon dioxide. The solution was to create an anticoagulant (heparin), avoid contact with the pump by keeping the blood in a polyurethane tube. He added that there have been great advances since these early designs, but the principles of CPB remain the same.

Miniaturized CPB does hold 'some promise' but requires an understanding that allows the car-



diac team to balance the appropriate hospital specific advantages with clinical applicability. "So far mCPB studies have proved inconclusive and larger trials involving high risk patients are needed to establish mCPB vs. CPB," concluded Pepper.

In his second presentation, he examined the role of myocardial management, which includes pre-ischaemia, ischaemia, reperfusion, remodelling and repair. He said that the clinical criteria to gauge the efficacy of myocardial protection were operative mortality, perioperative myocardial infarction, stroke rate, use of inotropes and postoperative dysrhythmias. He concluded that myocardial protection is still an issue with older and sicker patients, and recommended that surgeons use a portfolio of techniques for different situations and avoid rigid adherence to one strategy.

Mr **Marcus Haw** (Southampton, UK) began by stating that patent ducts arteriosus (PDA) and are a common cardiac anomaly usually diagnosed in neonates and are more common in females (2:1). Twenty percent of infants weighing less than 1500gm have a PDA although many close spontaneously. Most clinicians treat a PDA with Indomethacin, which has been shown to reduce the blood flow by 30 per cent. However, those neonates that do require surgical closure usually present with one of or a combination of congestive heart failure, sepsis and respiratory distress with failure to wean from ventilatory support. The majority of post neonatal patients are treated medically coupled with

a plug or coil. He stated that there are a very few procedure problems with ligation of a PDA although the national 30-day mortality is quite high at 5-6 per cent, this is because the patients are very ill and present with associated complications from prematurity.

In a second presentation, Haw said that coarctation is a discrete focal narrowing of the aorta classified as peri-, pre- and post-ductal and is associated with diffuse hypoplasia of the arch, is commonly isolated and can be associated with other major intra-cardiac defects (VSD, ASD, bicuspid aortic valve etc present in 50% of diffuse type). The pre-operative management of neonate coarctation must include a full diagnosis with consideration of the complex cardiac and extra cardiac lesions. He recommended that if the ductus is open and isolated then a surgical repair via left thoracotomy is required, although if a ductus is closed then an emergency repair is needed. There are a number of surgical techniques, the most common



Dr Davies (Oxford, UK) looked at the role of drug therapy in CAD and the differing techniques utilised in coronary revascularisation



Carlos Mestres (Barcelona, Spain) examined mechanical complications of myocardial infarction and endocarditis



In two academic based presentations, Roberto Lorusso (Brescia, Italy) explained the key elements of writing a medical paper and a congress paper. In addition, he also explored the role of biological aortic valves.



In two video imaging presentations Dr X Jin (Oxford, UK) examined the fundamentals of ECHO, the pro's and con's of TTE/TEE/ Epi-aortic and assessed aortic valve disease.

is an extended end to end anastomosis, end to end anastomosis, patch aortoplasty, subclavian flap repair and extra-anatomic bypass. The surgical considerations for coarctation include: age, position and length of coarctation segment, vessel wall, previous surgery, clinical status, concomitant congenital cardiac anomalies and concomitant extra cardiac anomalies. Complications for surgery include paraplegia, recurrent nerve palsy, chylothorax, haemorrhage, pulmonary infection, hypertension and complications of the preoperative state, with late sequelae including re-coarctation, false aneurysm, hypertension, ascending aortoplasty and aortic valve disease.

In his next presentation he dis-

cussed patent foramen ovale (PFOs), atrial septal defect (ASDs) and ventricular septal defect (VSDs). PFOs are present in 15-25% of the population and may provide a conduit for intra-cardiac shunting in specific situations and its significance is its association with cryptogenic stroke. However, Haw argued that there is still an absence of prospective randomised studies to determine whether closing a PFO after a cryptogenic stroke with reduce will reduce a patient's stroke risk. Indeed, in 2011 the American Heart Association said there was 'insufficient evidence' to recommend closure.

Isolated ASDs are normally congenital but maybe acquired later

Continued on page 11

Goncalo Pauperio

Age: 30

Location: **Coimbra, Portugal**

Position: **Cardiac surgery resident** (third year)



Three of our colleagues attended the Bergamo school and they recommended the EACTS courses. Professor Cook presentation on the anatomy was excellent because he presented the surgical view, a second presentation was the means of diagnosis (Professor Jin) as we see a lot of echo-cardio in our institution so it was very useful for us to have a higher level of knowledge to see what we are looking for on Echo. The course is perfect for three or four year residents as the course is intense and it is important to know what information to filter out.

Lorena Diez Solorzano

Age: 29

Location: **Spain**

Position: **Cardiac surgery resident** (final year)



I was looking on the EACTS website and colleagues recommended the course at they attended the previous courses in Bergamo. I really enjoyed the aortic valve replacement presentation by Professor John Pepper as my centre sees a lot of these cases. Professor Roberto Lorusso's lecture on writing and presenting medical papers was both entertaining and interesting, and it was nice to see because it is rare to have advice on how to write, submit and present, it was very useful. I would strongly recommend the course

Juan Fernando Biguria

Age: 33

Location: **Malaga, Spain**

Position: **Cardiothoracic surgery resident** (third year)



I knew of the Bergamo School and was looking on the EACTS website for information and found this course advertised. I really enjoyed the post-operative care presentation and loved her focus on the right ventricle which is something everyone neglects. All the lectures are presented in a way that it is not a lecture, but a specialist sharing their experiences with you. I have already signed up for attending the second course.

Two-year PARTNER trial cohort B: What are the implications and how do the results compare with SOURCE?

Olaf Wendler

King's College Hospital/King's Health Partners;
Department of Cardiothoracic Surgery, London, UK

Early results from Cohort B of the PARTNER Trial demonstrated that Transcatheter Aortic Valve Implantation (TAVI) is superior to standard medical treatment in inoperable patients with severe aortic stenosis (AS). Interestingly the mortality of surgical aortic valve replacement (sAVR) in PARTNER was estimated by the involved interventional cardiologist and cardiac surgeon. Patients were classified as inoperable and therefore selected for Cohort B, if their expected mortality from sAVR was >50%. However, there is only limited information available on how the inoperable group of patients was different to patients considered only high-risk for surgery (Cohort A), which makes comparison with other TAVI investigations challenging.

Recently presented two-year outcome data from Cohort B not only confirmed that TAVI remains superior during follow-up, but also demonstrated an incremental benefit with an overall survival of 56.7% compared to only 32.4% with standard treatment. The number of patients which need to be treated to save a patient's life decreased from five at one-year follow-up to four patients at two years and is expected to further decrease over time.

Direct comparison with the largest European TAVI Registry, the SOURCE Registry, in which the same device, the Edwards SAPIENTM transcatheter heart valve (Edwards Lifesciences Inc) has been used, is hampered in that Cohort B of the PARTNER trial consists only of inoperable patients, whereas SOURCE is an "all comers" registry. Therefore it is not surprising that the two-year survival for the total SOURCE cohort of 2307 patients with 67.7% is higher. It is also important to keep in mind that all Cohort B patients were treated using only the

transfemoral (TF) approach. Interestingly the study design of the PARTNER trial did not consider transapical (TA) TAVI treatment in inoperable patients with unsuitable peripheral vascular access. Therefore we currently miss any randomized information on how patients who undergo TA TAVI compare in outcome to standard medical therapy. In contrast, the SOURCE Registry includes TF (n=920) and TA patients (n=1387), in an attempt to make TAVI treatment available for all high-risk patients with severe AS irrespective of their peripheral vascular access. Interestingly the difference in two-year survival between patients with suitable vascular access undergoing TF TAVI (72.2%) and patients with TA TAVI (64.7%) is small and mainly attributed to the initial difference noted during the first two months.

In PARTNER Cohort B, TAVI patients benefited not only from an increased survival, but



Olaf Wendler

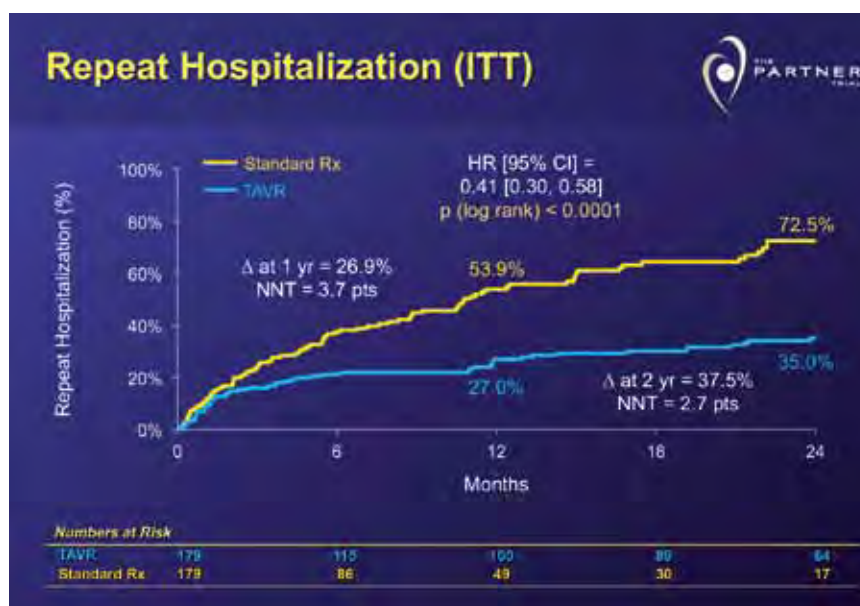
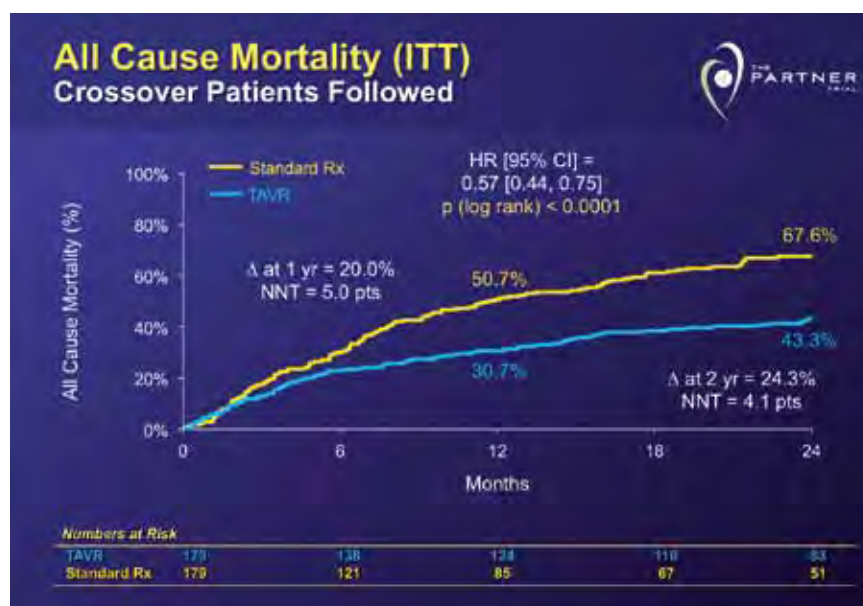
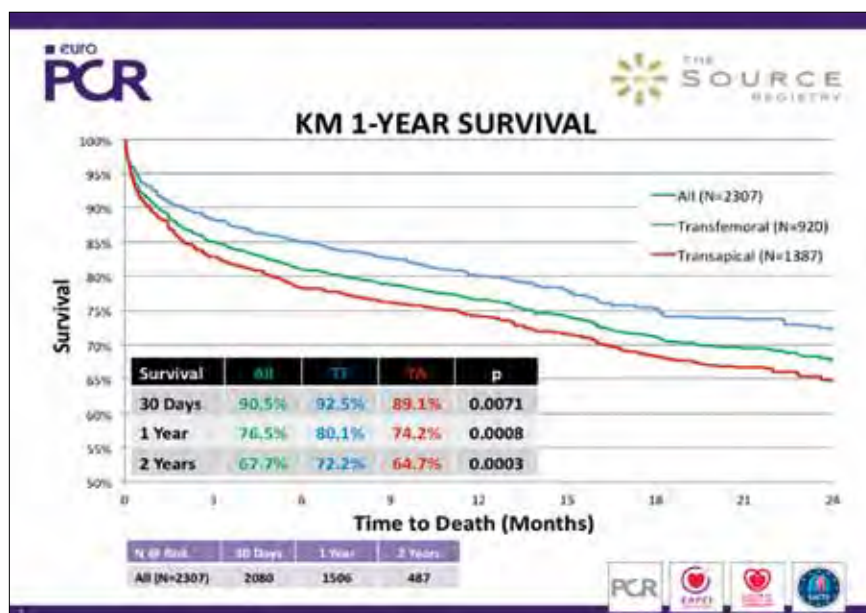
were in fact also less often admitted for in-hospital treatment during follow-up. The large difference in repeat hospitalizations between the two groups at two years (TAVI 35% vs standard therapy 72.5%), has not only major implications for patients quality of life, but will also have significant impact on the economic benefit achieved using TAVI and future analyses are awaited.

The incidence of stroke in the Cohort B TAVI cohort was one of the main concerns

at thirty days, resulting in discussions on the need and efficacy of embolisation protection devices. Hemorrhagic strokes did not play a major role at that early time after TAVI. However, at two years the difference in stroke frequency is largely due to an increased number of hemorrhagic strokes in the TAVI group.

This raises again the question which kind and duration of antiplatelet treatment should be considered after TAVI. There is currently no adequate scientific information available to answer this question and treatment is mainly based on experience from early feasibility trials. In this respect patients who are on additional anticoagulation for other reasons such as atrial fibrillation, are a particular challenge. The two-year results from Cohort B clearly indicate that there is a need for future studies to identify the optimal postoperative antiplatelet/anticoagulation treatment after TAVI.

In summary the two-year results from PARTNER Cohort B demonstrate that TAVI is highly superior to standard treatment in inoperable patients with severe AS in the mid-term course. Given that only TF access was used in this Cohort, it is unclear what the outcome of inoperable patients without peripheral vascular access, who undergo TA TAVI or standard treatment would be. However, given the small difference in survival between TF and TA access in the SOURCE Registry, one would suggest that this group of patients would benefit in a similar way.



Fundamentals in Cardiac Surgery Part I

Continued from page 9

in life secondary to left atrial distension. The natural history of the condition shows that the patient's health will decline with mortality in their 50's as anything that increases the shunt decreases the patient's lifespan. The vast majority of ASDs are asymptomatic and whether the hole is suitable for percutaneous device closure depends on the size of the hole (generally <25mm). The surgical approach to ASD closure is through a median sternotomy, although they can be closed via a minithoracotomy or port access procedures. A complication from surgery can include pericardial effusion, which Haw recommended should be assessed with an echo-cardiogram before they are discharged. In summary, he said that both de-

vice and surgical closure have merits, although late complications from device closure have not reduced despite the increase in operator experience.

VSDs can be either congenital or acquired, single or multiple and symptomatic or unsuspected, and they can be located in the sub-arterial, muscular or perimembranous. The VSD can present as anterior or posterior, the latter is associated with other cardiac anomalies and may lead to late post repair sub-aortic stenosis. He said there were a few special VSDs that cause physiological problems, for example a small muscular VSD may cause jet lesions in the mid-RV cavity and multiple small VSDs may cause a significant shunt, but often close spontaneously. Complications from

surgery can include damage to the aortic valve, failure to close the defect and reduced ventricular function, with late complications including endocarditis and clarification of the patch. In conclusion, Haw said that VSD closure was incredibly safe and insisted that a full understanding of the morphology and thorough investigation helps surgical planning.

In an examination of Cyanotic heart disease (shunts, TGA, TF4), William Brawn began by stating that there are various shunts utilised for the relief of cyanotic heart disease including but not limited to Blalock-Taussig (BT), Pott's and Waterston-Cooley. Complications arise from the procedures can include stenosis (distortion of the pulmonary arteries), nerve palsy, phrenic, recurrent

laryngeal and Horner's syndrome, as well as lymphatic leak, shunt occlusion and endocarditis, among others. It is also important to consider the location of the shunt. "Except in a few situations in congenital surgery, there is no such thing as a cure and it is always important to think about the next operation," explained Brawn.

In his first presentation, Professor **David Taggart** (Oxford, UK) looked at conduit selection for coronary revascularisation and why certain conduits are chosen in certain situations. Introducing his lecture he emphasized that CABG is still the best therapy for most patients with severe coronary artery disease (CAD). This statement is supported by both the SYNTAX trial results and the Joint ESC/EACTS Guidelines for Myocardial Revascularisation 2010. Despite its benefits, conventional CABG does have two limitations; the damaging effects of bypass; and vein graft failure. Taggart explained that the routine use of the internal mammary artery is paramount (although not in obese diabetics) and advised that the radial artery should be used as a third arterial graft. He also recommended the use of off-pump CABG (the benefits are greatest in the elderly and high risk patients) and emphasized the necessity to confirm graft patency.

In his second presentation, Taggart examined the clinical evidence in cardiac surgery by looking at the trials and guidelines in coronary revascularization. The evidence base consistently shows that patients (79% SYNTAX results) with three-vessel disease and patients with left main disease (65% SYNTAX results) who undergo CABG



have superior survival, freedom from myocardial infarction and repeat revascularisation at three years. "PCI maybe the best treatment for ostial or mid shaft left main disease, the subject of the EXCEL Trial, and does have an important role in patients who are unfit for or refuse CABG," said Taggart. "However, the Heart team approach must ensure that patients receive appropriate information and that their genuine informed consent is provided."



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Report on the course of “Minimal invasive techniques in adult cardiac surgery”

Peyman Sardari Nia,
MD, PhD Course
Director, Department of
Cardiothoracic Surgery,
Amphia Hospital, Breda,
Netherlands



The course was organized at St Antonius Hospital, Nieuwegein, Netherlands

Dates: 13-15 February

The organizer: Surgical Training and Manpower Committee

Why was the course organized?

The success of the cardiac surgery is based on the consistency and the excellence of the results of the conventional techniques that have been the subject of scientific scrutiny for decades. The illusion within the cardiac surgery is that the operative techniques that have been developed during the past 40 years will continue to compete with new developments and techniques in coming decades. The challenge is to embrace and incorporate the new techniques in a responsible manner that no compromise is made with regard to excellence of the results and the patient safety.

The cardiac surgery is very dependent on the developments in related speciality of cardiology. The fast amount of resources and effort that are being applied in research and new developments in the field of cardiology are incomparable with our efforts. Therefore, the survival and growth are speciality will probably be dependent on our ability to take the lead on the innovation in the field and on our ability to train the young generation of the surgeons in minimal invasive techniques.

The STMP committee of EACTS recognizes the importance and urgency of this issue and therefore the initiative of this course

What was the incentive behind the course program and why was the course organized in a hospital?

The course focus was the technical aspects of different minimal invasive procedures. The course was designed to provide the participants with a platform and a basis for starting the same program at their own institute. That is why the course was organized in a hospital where these procedures are performed on

the daily basis. As the focus of the course was the technical aspects, these procedures were shown and explained through different presentations and live-surgery. As cardiac surgery is resultant of a team work, cardiologists, perfusionists and anesthesiologists were invited to present the technical aspects of their contribution to the procedures discussed. The faculty was mostly from the hospital so that the participants would see the same team presenting the techniques and performing the operations.

Report on the course:

The maximum capacity of the course was 100 people. The course was fully booked and we had to stop the registrations few days before the start of the course. The participants were

from more than 25 different countries and came from Far East, Middle East, Europe and America.

The course was divided in six different parts. The first part was the Access part, whereby the different accesses used in minimal invasive techniques were presented in technical details. The five other parts were dedicated to 5 different minimal invasive procedures, namely Heartport, TAVI, Mini-AVR with MECC, Mini-maze and TEVAR. In each part external faculty gave presentations about the procedures in general, the comparison with conventional techniques and results so far known in the literature. In each part the faculty from hospital gave presentations about the technical aspects of the procedure. The presentations were given about the anesthesi-



What the delegates thought...

Feedback from residents who attended the ‘Minimal Invasive Techniques In Adult Cardiac Surgery’ Course, 13-15 February, Nieuwegein, The Netherlands

Tine Philipsen, MD

University of Antwerp, Belgium

I am currently in my last year of training for cardiac surgery, meaning the 8th year after my general medicine diploma.

I preferred the sessions on minimally invasive mitral valve repair because this highly interests me. But

I think the entire course was very enriching, especially in the format of ‘tips and tricks’, what to do and what not to do, what in case of problems.

I already attended the level A and C cardiac courses from EACTS, and I hope to be able to extend my knowledge in the future by attending the other cardiac courses.

Wouter van Leeuwen, MD

Erasmus University Medical Center, Rotterdam, The Netherlands.



I am a resident in the fifth year of my training so after this year another training year follows

Live cases are always very interesting as it is very instructive to see how procedures are performed in other institutes with a lot of experience with certain procedures. Especially for a resident in training “the hands on” sessions are very important and therefore I liked them most.

My overall impression was that the course was very well organised and the offered programme gave a complete survey of minimal invasive cardiothoracic surgery. I noticed however that the proportion of residents participating in the course was very low, so maybe in the future the organising committee should give more publicity for this course among this group of young surgeons.

I have planned two other EACTS courses for this year: Advanced Module Coronary Surgery and Fundamentals in Cardiac Surgery Part II.

Lucio Careddu, MD

University of Bologna, Italy



‘For Lucio Careddu the course in Nieuwegein was a bit of coming home since he worked in Nieuwegein as a trainee a year ago’

I’m in my fifth and last year of training I have more than six month to fully complete my residency. At the end of this year I will be a cardiac surgeon

What session did you like most and why

This is a difficult question, because all the course was really interesting and all the session well explained but if I have to choose one I think the most important was the TAVI session because is one of the future pathways of cardiac surgery and I have to improve my knowledge as a surgeon in training

What was your overall impression of the course

Overall impression is really positive, even if I know most of the topics and I’ve work together with Robin Heijman, Alaadin Yilmaz, De Kron and Dr Morshuis, everything was well explained and clear. The location and the accommodation were great.

Lucio is planning to attend more EACTS courses.



ological preparation of the patients, the considerations regarding the perfusion, technical details of the procedure and instrumental necessities. Each part contained one or two live-surgical procedures to show the techniques in details.

The course was very interactive and after each presentation many questions of the participants were discussed and addressed. During the live-surgery there was a constant interaction between, moderators, surgeons and the audience. On Monday and Tuesday the program was concluded with live-heart team,

whereby the surgeons, cardiologists and the participants discussed cases and choices of treatments.

On Monday there was also a social program organized. There was a walking dinner arranged in the City of the Utrecht. The participants were transferred by a bus to Utrecht to have their first course of the diner. After the first course, the participants were divided in small groups of 10 people with a guide who showed them the historical center of Utrecht and guided them to the next restaurant for the main course.

The desert was consumed in different restaurant after second guided tour through the city.

We had asked each presenter in advance to send two questions regarding their presentations. These questions were compiled into a survey and were sent to participants through email prior to the course. After the course, the same assessment was sent to participants together with an evaluation of the course. These pre-and post-assessments will be used to evaluate the quality of the course and whether the course could significantly enhance the knowledge of the participants in objective terms.

Overall the quality of course was assessed excellent and the participants indicated that live-surgery was very important part of the course. Some results of the evaluation of the course are depicted below.

Acknowledgements:

The organization of this course would have been impossible without the help of many people involved. I would like to thank the organizing committee, St Antonius Hospital, invited faculty, the EACTS office, the participants, the sponsors and the patients operated on during the live-procedures for their support, help and participation. Please find a full list of their names below.



Organizing Committee:

- Pieter Kappetein, Rotterdam, Netherlands
- Rafael Sadaba, Pamplona, Spain
- Peter Krieg, Jena, Germany
- Mathias Siepe, Freiburg, Germany
- Peyman Sardari Nia, Breda, Netherlands
- Thom De Kroon, Nieuwegein, Netherlands
- Alaaddin Yilmaz, Nieuwegein, Netherlands

EACTS Office:

- Kathy McGree
- Paul Lehain

From Hospital:

- Sharon Pidgeon
- Amanda Cameron
- Rianne Kalkman
- Helga Visser, Coordinator of the department of cardiothoracic surgery

Surgeons:

- Wim Morshuis
- Wim-Jan Van Boven
- Thom De Kroon
- Robin Heijmen
- Alaaddin Yilmaz
- Uday Sonker
- Edgar Daeter

Perfusionists:

- Peter Barselaar
- Frans Waanders
- Anesthesiologists:
- P. Noordzij
- E. Scholten
- L.P Reusen

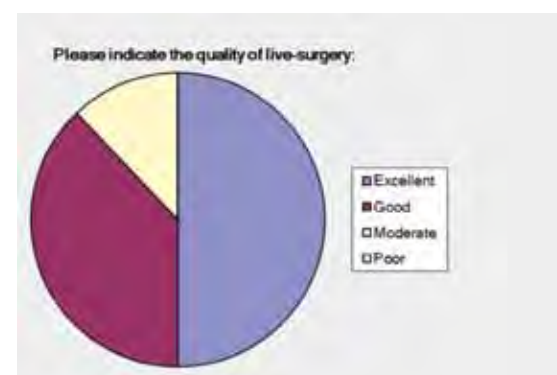
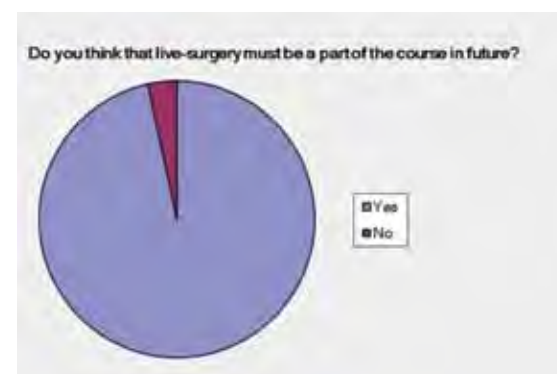
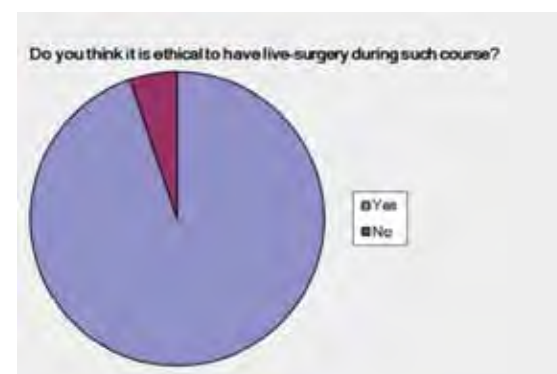
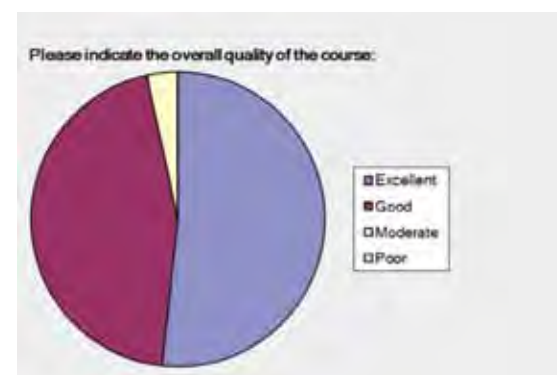
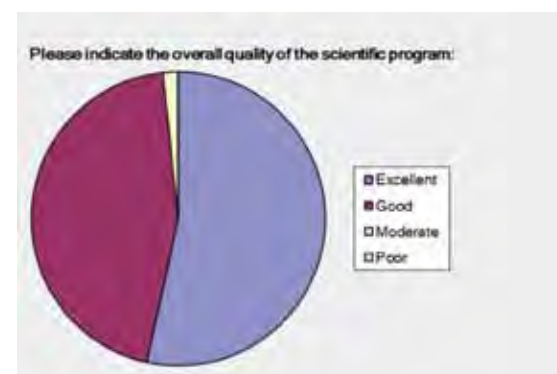
Cardiologists:

- E. Mast
- J. Van der Heyden
- External Faculty:
- Mattia Glauber, Massa, Italy
- Ivo Deblie, Aalst, Belgium
- Pieter Kappetein, Rotterdam Netherlands
- Filip Casselman, Aalst, Belgium

- Martin Czerny, Bern, Switzerland

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Hans H. Sievers, MD University of Luebeck, Department of Cardiac and Thoracic Vascular Surgery, Lübeck, Germany

the big

Is the Ross procedure an option when treating

Yes

Aortic valve replacement in young patients remains a major problem for patients and surgeons due to the shortcomings of commonly used substitutes.

On one hand there is a considerable risk of reoperation in bioprostheses, around 50% after 10 years in patients less than 40 years of age and on the other hand there is the risk of bleeding and thromboembolism with mechanical valves occurring unforeseeably and potentially leading to lifelong disability. The only exceptional substitute is the pulmonary autograft, being living, autologous tissue morphologically similar to the aortic valve, able to adapt to systemic pressure¹ and as such theoretically providing the best prerequisite for lifelong physiological function, which is the ultimate goal of therapeutic efforts. Nevertheless this method has not found widespread application and still remains of matter of debate.

Operative technique of Ross procedure

The operation can be performed in three different techniques, the original subcoronary, the full root, and root inclusion technique. The full root technique is most often used. Bicuspid aortic valves are generally no contraindication for the Ross operation, however, rheumatic heart disease, uncontrolled hypertension and malformed pulmonary valves are considered as contraindications. An aortic annulus of more than 26 – 28mm in diameter (depending on the size of the patient) should be tailored and reinforced. Replacement of the dilated ascending aorta allows for adequate tailoring and fixation of the sinutubular junction if necessary. One result of the German-Dutch Ross registry comprising of more than 2000 patients with systematic follow-up is the fact, that the reinforced full root procedure provides excellent results compara-

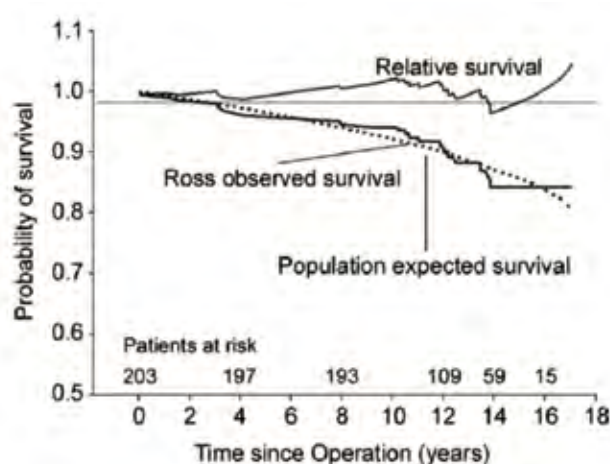


Figure 1: Expected versus observed survival in Ross patients (solid line, actuarial estimates) and age- and sex-matched normal population (dotted line). Relative survival is the ratio of observed and expected survival: 1.0 represents the line of identity.⁴

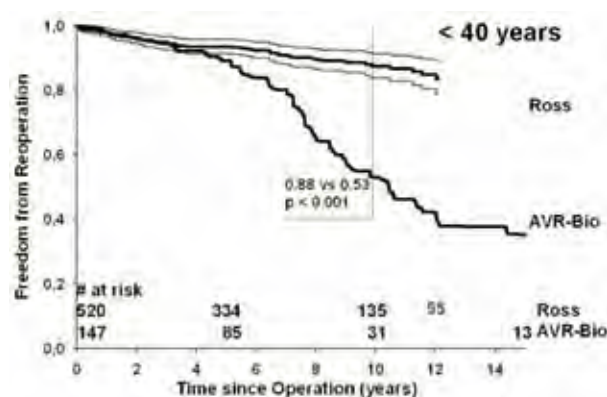


Figure 2: Compared to bioprostheses (10) the freedom from reoperation in patients less than 40 years of age is significantly higher for the Ross group at 10 years follow-up. (AVR-Bio: aortic valve replacement - bioprosthesis)

ble to the original subcoronary technique⁴. Nevertheless it must be considered that the surgical technique is more complex than that of other valve substitutes.

In general, judgement of valve replacement methods should take into consideration outcomes like survival, adverse events, reoperation, valve function and quality of life.

Survival

In experienced centres hospital mor-

tality in Ross operations is low, around 1%². Up to 15 years after the Ross operation survival is comparable to the general population as shown by different groups^{2,3}. In most publications, however, the mean follow-up is less than ten years. But also in the second decade after the Ross operation survival seems to be comparable to the general population as recently reported (Fig 1)⁴. Whether this outcome is also valid for bioprostheses and mechanical

Figure 3: Probability of lifetime risk for reoperation depending on age at the Ross operation assuming linear occurrence rate and zero excess mortality of Ross patients.

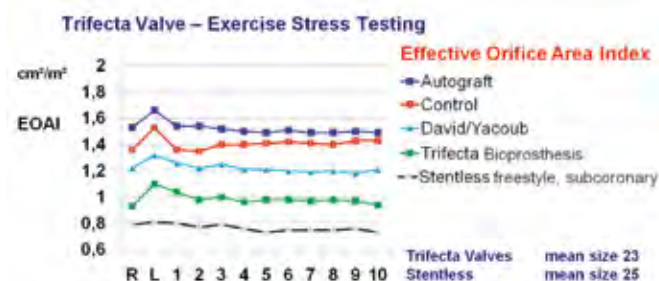
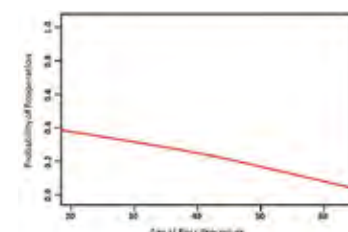


Figure 4: Effective aortic valve orifice area index at rest and exercise showing the normal functional capacity of the autograft after the Ross operation compared to other substitutes. R: rest, L: maximal load

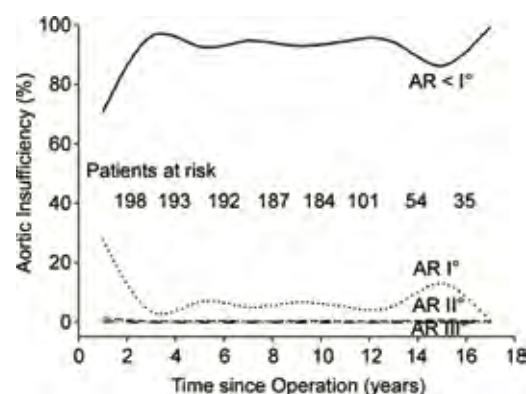


Figure 5: Multinomial ordinal mixed effect model of the aortic insufficiency as a function of time. The percentage of patients being in each of the four aortic insufficiency grades with time is shown. No significant evidence of a systematic increase in aortic insufficiency with time could be observed. (AR: aortic regurgitation) (ln: (4))

valves is questionable, although it seems possible for patients with mechanical valves to have a comparable survival if their anticoagulation is optimally and continuously controlled⁵. In this study, however, the mean follow-up was only 6.3 years⁵. Furthermore this sophisticated anticoagulation surveillance is not routine in general practice. Altogether the survival advantage after the Ross operation seems to be real also in the second decade after the operation.

Major adverse events

Compared to other substitutes the rate of major adverse events such as thromboembolism and bleeding which come unforeseeable and suddenly and may cause lifelong disability is very low in Ross patients with a composite endpoint of thrombosis, embolism and bleeding of 0.35%/patient-year⁶. In addition the incidence of cerebral microembolism, the clinical significance of which is still un-

question

Ad Bogers Professor and Director of Cardiothoracic Surgery,
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Are the best preferred aortic valve disease?

known, is very low or not present in the majority of patients⁷.

Reoperation

One potential shortcoming of the Ross operation is the fact, that two valve substitutes are at risk for failure, the autograft and the homograft. In experienced centers the reoperation rate is roughly 1%/patient-year for both valves combined up to 12 years of follow-up and is definitely lower compared to bioprostheses at young age less than 60 years (Fig 2). Reoperations can be performed with low risk².

Taking into consideration the natural survival curve, the lifetime risk for reoperation decreases with increasing age at operation provided the reoperation rate will continue to be linear after 10 years of follow-up which seems to be the case⁴. For example the life time risk for reoperation, including autograft and homograft reoperation, is around 20% if the Ross operation is performed at age 40 (Fig 3).

Function

The pressure gradient across the aortic valve and effective orifice area are normal after the Ross operation at rest and exercise underlining the physiological function as shown in figure 4, not achievable by other substitutes. The number of patients with aortic regurgitation grade II and more is low with a remarkable stability of autograft function up to 16 years after the Ross operation (Fig 5). Although speculative, this favorable hemodynamics may add to a significant left ventricular mass regression almost approaching normal values at two years postoperatively⁸.

Quality of life

Quality of life in patients after the Ross operation is superior to other substitutes like the mechanical valves⁹. No anticoagulation is necessary, there is no valve noise and lifestyle is unrestricted. Especially in young patients the risk of reoperation is significantly less compared to bioprostheses, a fact which may also increase quality of life.¹⁰

Conclusion

The results of the Ross operation in experienced centers are excellent and are not achievable after at least 15 years of follow-up by any other substitute especially in the young patients up to 60 years of age. Future refinements of surgical techniques, strict adherence to lower blood pressure especially during the first six months postoperatively, careful endocarditis prophylaxis, usage of decellularized homografts ready for endothelialization, and catheter based techniques for failed homografts may improve the outcome of this procedure.

The concept of the Ross operation is ingenious. The surgical realization is the major challenge.

Literature

1. Carr-White GS, Afoke A, Birks EJ, Hughes S, O'Halloran, Glenen S, Edwards S, Eastwood M, Yacoub MH. Aortic root characteristics of human pulmonary autografts. *Circulation* 2000; 102(suppl III): III-15-III-21
2. Sievers HH, Stierle U, Charitos EI, Hanke T, Gorski A, Mischel M, Bechtel M. Fourteen years' experience with 501 subcoronary Ross procedures: Surgical details and results. *J Thorac Cardiovasc Surg* 2010; 140:816-22
3. El-Hamamsy, Eryigit Z, Stevens LM, Sarang Z, George R, Clark L, Melina G, Takkenberg JJM, Yacoub MH. Long-term outcomes after autograft versus homograft aortic root replacement in adults with aortic valve disease: a randomised controlled trial. *Lancet* 2010; 376:524-31
4. Charitos EI, Stierle U, Hanke T, Schmidtke C, Sievers HH, Richardt D. Long-term results of 203 young and middle-aged patients with more than 10 years of follow-up after the original subcoronary Ross operation. *Ann Thorac Surg* 2012; 93:495-502
5. Mokkhesmm, Koertke H, Stierle U, Wagner O, Charitos EI, Bogers AJJC, Gummert J, Sievers HH, Takkenberg JJM. Survival comparison of the Ross procedure and mechanical valve replacement with optimal self-management anticoagulation therapy: Propensity-matched cohort study. *Circulation* 2011; 123:31-38
6. Sievers HH, Stierle U, Charitos EI, Hanke T, Mischel M, Bechtel JFM, Gorski A, Franke UFW, Graf B, Robinson DR, Bogers AJJC, Dodge-Khatami A, Boehm JO, Rein JG, Botha CA, Lange R, Hoyer J, Moritz A, Wahlers T, Breuer M, Ferrari-Kuehne K, Hetzer R, Huebner M, Ziemer G, Takkenberg JJM, Hemmer W, on behalf of the German-Dutch Ross Registry. Major adverse cardiac and cerebrovascular events after the Ross procedure: A report from the German-Dutch Ross Registry. *Circulation* 2010; 122(suppl 1): S216-S223
7. Noetzel A, Droste DW, Hagedorn G, Berndt S, Kaps M, Graf B, Sievers HH. Circulating microemboli in patients after aortic valve replacement with pulmonary autografts and mechanical valve prostheses. *Circulation* 1997; 96:1843-1846
8. Duebener LF, Stierle U, Erasmi A, Bechtel JFM, Zurakowski D, Boehm JO, Botha CA, Hemmer W, Rein JG, Sievers HH, on behalf of the German Ross Registry. Ross procedure and left ventricular mass regression. *Circulation* 2005; 112(suppl 1): I-451-I-422
9. Noetzel A, Hueppe M, Schmidtke C, Bloemer P, Uhlig T, Sievers HH. Quality of life in aortic valve replacement: Pulmonary autografts versus mechanical prostheses. *J Am Coll Cardiol* 2001; 37:1963-6
10. Chan V, Malas T, Lapierre H, Boodhwani M, Lam BK, Rubens FD, Hendry PJ, Masters RG, Goldstein W, Mesana TG, Ruel M. Reoperation of left heart valve bioprostheses according to age at implantation. *Circulation* 2011; 124(11 Suppl):S75-80

No

Already in 2007 we described that the full root autograft procedure initially fulfils the prospect of excellent long-term survival and avoidance of anticoagulation therapy. During follow-up, endocarditis and thrombo-embolic complications are uncommon, bleeding events and valve thrombosis do not occur. Especially children, patients living an active lifestyle and women wanting to become pregnant may benefit the most from this operation. However, with time we also observed an increase in reoperations related to the pulmonary autograft operation. These reoperations may be complex, but can be performed with low risk. The increased proportion of reoperations confirmed the scepticism about the superior durability of this procedure, necessitating a selective application of this procedure.

In our ongoing prospective cohort study, the survival of patients who undergo an autograft operation indeed is excellent, seems to be favourable compared to patients with other valve substitutes and is comparable with the general age- and gender-matched population. The question remains if this can be ascribed solely to the autograft procedure. An autograft procedure is only performed in a small proportion of patients needing aortic valve surgery. Patient selection bias is not unlikely since our (adult) autograft patients are mainly those who undergo elective surgery, are not too old, present with no or mild symptoms of dyspnoea, usually have isolated aortic valve or left ventricular outflow tract disease, and a normal preoperative cardiac rhythm.

On the down side we observed a worrisome increase in autograft reoperations starting in the second decade of follow up. The main cause for reoperation after the autograft operation is dilatation of the neo-aortic root. Due to this dilatation, co-

Has the Trojan horse revealed all of its secrets?

adaptation of the cusps is lost and aortic regurgitation occurs. As we and others observed a small but persistent increase in root dimensions and neo-aortic root regurgitation over time, we previously anticipated that more reoperations would be necessary during longer follow-up.

By now we have observed that this dilatation not only involves the autograft per se, but in a significant number of patients the native ascending aorta as well. The association of this dilatation with a bicuspid valve is widely acknowledged and this dilatation is not prevented with an autograft procedure, full root or not. Microscopic evaluation of explanted pulmonary autografts reveals media abnormalities including local disintegration, intimal proliferation, and adventitial fibrosis suggestive of chronic exposure to high pressure.

Of course, technical factors should not be issue. As with all surgical procedures, the autograft root replacement technique requires surgical expertise and includes some critical success factors. The autograft should be inserted at annular level, after scalloping the muscle to only a small rim below the valve cusps. In our experience continuous sutures are used for the proximal suture line. The length of the autograft beyond the sino-tubular junction should be kept to a minimum. We are aware of the arguments to insert the autograft as an inclusion cylinder or as a sub-coronary implant, to have the native aorta supporting the pulmonary autograft and thus possibly preventing autograft dilatation. However these techniques cannot be applied in children and in patients with a relevant size mismatch between the

pulmonary and aortic annulus (either positively or negatively). Claims of series involving these techniques of better results are all hampered by just running into their second decade. All autograft research unfortunately lacks controlled randomized studies and most often concerns patient selection. Therefore, the claim of better results should always be interpreted in relation to the length of follow up. It is likely that with any technique results will deteriorate when the series extends into the third and fourth decade.

The pulmonary allograft in the autograft procedure is until now well preserved and seems to be doing better than right-sided allografts implanted for other disease. Since we expect these allografts to show some failures on the long run, we are carefully monitoring our cohort into the third and fourth decade.

By now the previous worldwide enthusiasm for the autograft procedure, has developed into a small area of specific application. In children the autograft procedure remains an important tool in aortic valve surgery. In adults for most indications there are alternatives with at least an equal risk-benefit ratio. Continuation of meticulous long term follow up is mandatory to reveal all ins and outs of the different autograft procedures.

Key references

1. Klieverik LMA, Takkenberg JJM, Bekkers JA, Roos-Hesselink JW, Witsenburg M, Bogers AJJC. The Ross operation: a Trojan horse? *Eur Heart J* (2007); 28:1993-2000.
2. Takkenberg JJM, Klieverik LM, Schoof PH, van Suylen RJ, van Herwerden LA, Zondervan PE, Roos-Hesselink JW, Eijkemans MJ, Yacoub MH, Bogers AJJC. The Ross procedure: a systematic review and meta-analysis. *Circulation*. 2009; 119:222-228.

THE RESIDENTS' PAGES

Fontan prizewinner 2010

Gábor Veres M.D., PhD graduated from Semmelweis University in 2005 and then undertook his cardiac surgery residency in Uppsala under the supervision of Stefan Thelin (2005) and in Budapest under the supervision of Zoltán Szabolcs, Ferenc Horkay and István Hartyánszky (2005-2011).

"When I was medical student, I was determined to be a cardiac surgeon. Why? Because I spent my first year of clinical training in the Department of Cardiac Surgery, and saw my first CABG procedure. During my medical training I also worked as a nurse in the cardiac surgery intensive care unit to gain an understanding of the full spectrum of cardiac surgery". Having decided to be a surgeon, I became fully involved in clinical practice (assisting as a second assistant of the full spectrum of cardiac surgery).

At the beginning of my residency I spent four wonderful months in Uppsala as a novice cardiac surgeon and learnt not only how to do an operation with precision, but also experiencing the friendly training philosophy. I am eternally grateful for the guidance of the Uppsala's team!

Meanwhile I applied for a cardiac residency in Budapest at Semmelweis University. I spent five years in Budapest, at first assisting in the full spectrum of cardiac surgery, but little by little the leading surgeon allowed us to do our first bypass anastomoses. I was able to learn and progress quickly and my mentors (Ferenc Horkay and István Hartyánszky) allowed me to do many procedures very early on. I am especially grateful to them for their supervision of my surgical practice and their communicating of the necessary mental skills when conducting surgery. 80-90% of the CABG procedures were carried out as off-pump procedures, which are very complex and extremely difficult. Under these mentors I learned how to perform them accurately and quickly.

I was very lucky, as besides my surgical training, I was encouraged to undertake high-level research under my research mentor, Professor Gábor Szabó working at Heidelberg University.

I continued to work on my PhD, through research, in Heidelberg where Professor Szabó, the head of the Experimental Laboratory for Cardiac Surgery took over my supervision. By the time I was awarded the Fontan Prize, I had completed eight relevant, large, animal based studies (for example with cGMP activator, phosphodiesterase-5-inhibitor and a new HTK cardioplegic solution) in cardio-protection with the Heidelberg team. All of the studies were performed as a co-operation between the teams in Heidelberg



Gábor Szabó (left) and Gábor Veres

and Budapest.

I applied for the Fontan Prize in 2010, in the hope that I would benefit from the increased opportunities which would arise for research work with the Heidelberg research team and to gain further experience in cardiac operations (for example for mitral valve plastic, aortic surgery and VAD implantation, Heidelberg is the second biggest centre for heart transplantation in Germany).

Fellowship in Heidelberg

Throughout the year 2010-2011 I undertook daily clinical practice as well as working in the clinical heart failure program, which included heart transplantation and the implantation of assist devices. I observed my first 'David' operation under Professor Matthias Karck, the head of the Cardiac Surgery Department and worked in the cardiac laboratory with both small and large animal models of cardiac transplantation and cardiopulmonary bypass. I also became familiar with the basic methods of molecular biology analysis (PCR, Western Blot).

Our first study concentrated on the reduction of bleeding during CPB. The withdrawal of aprotinin, which was successful in the reduction of bleeding, caused difficulties as it had significant negative side effects. Because of its withdrawal, in combined,

high risk cardiac operations it was very difficult to reduce post-operative bleeding to an acceptable level. We had to find alternatives and continue to do so. We therefore continue to work on new drugs with an equivalent effect to aprotinin but with anti-thrombotic properties, which effectively reduces post-operative blood loss, but also decreases the risk of graft occlusion after CABG.

The primary aim of our study has been to investigate the efficacy of the new synthetic serine-protease in-

hibit, which may protect against early thrombosis, one of the concerns which arose in connection with the use of aprotinin. We believe that these substances may offer a true alternative in the "post- aprotinin" era.

A further major research goal was to develop a novel cardiac preservation solution to extend the safe cardiac preservation time beyond ten hours. This would improve the success rate in heart transplantation, to increase the geographical access radius to transplantable material and ultimately improve the better preservation of cardiac and endothelial function. This will provide our patients with a greater opportunity of having any particular cardiac operation with an improved chance of survival.

The recently discovered pathomechanisms in the development of ischemia/reperfusion and cold conservation injury provide new molecular targets for the better protection of the donor heart.

In current clinical practice, Custodiol (also known as histidine-tryptophan-ketoglutarate or Bretschneider's solution) is the most widely used solution. Based on recently discovered processes, considerable modifications have been made to its composition. Based on our previous excellent results with storage in Custodiol-N after 4 hours of ischemia,

we attempted to lengthen the storage time. We therefore performed heart transplantations with 8 or 12 hours of ischemia (the maximal available ischemic storage time in the case of hearts is currently only 4 hours). In the old Custodiol group, we observed the development of typical stone heart syndrome after 8 or 12 hours of ischemia. The new Custodiol N, on the other hand, effectively protects the heart from this damage for up to 12 hours of ischemia, since contractile function of the hearts returned spontaneously. The left ventricles of the hearts stored in the new solution were capable of providing stable circulation in the recipients following the 2-hour reperfusion and detachment from the heart-lung machine.

It is important to emphasize, that these studies were undertaken under the supervision of my mentor, Professor Gábor Szabó, who is not only an excellent cardiac surgeon, but also an excellent and highly regarded researcher. He has built up a friendly, ambitious and intelligent team in Heidelberg. Within Professor Szabo's team, Tamás Radovits, advised me closely on conducting research, particularly to retain the necessary strict protocols. His friendship has become a valuable aid to develop and improve my work in Heidelberg.

Conclusion

During my surgical and research training, I have found that a friendly, cohesive, ambitious team and a strict, supportive supervisor are the most important things to ensure that we learn and make swift progress. Another important lesson comes from Professor Szabó: "Doing a cardiac operation is not the most important thing in the early phase of the cardiac training. Gaining an understanding of and the knowledge of the background of pathophysiology of the processes is absolutely essential."

I must thank my colleagues, the 'team', who assisted in the research with me. Last but not least, I must acknowledge the massive support given of my wife and family who, without complaint, enabled me to devote sufficient time to ensure the project's completion.

I would recommend that any young ambitious colleague, who wishes to discover, or help to discover new techniques and who wishes to experience the wisdom of the philosophy of well-reputed surgeons, should enter the competition for the award of the Fontan Prize. From the beginning of the process of application, through to the completion of the research project I have gained valuable new insights. I trust that anyone reading this will be inspired to do the same.

During my surgical and research training, I have found that a friendly, cohesive, ambitious team and a strict, supportive supervisor are the most important things to ensure that we learn and make swift progress.

hibitors on blood loss in comparison with bovine aprotinin in a canine model of extracorporeal circulation. We demonstrated that the novel synthetic small molecule serine-protease inhibitors significantly reduced post-operative blood loss after CPB even in comparison with aprotinin. In contrast to aprotinin, serin protease inhibitors have an additional factor Xa and stronger factor XIa inhibitory af-

THE RESIDENTS' PAGES



The differences in cardiac surgical training between Germany and The Netherlands



Léon M. Putman, M.D. M.Sc.

Department of Cardiac & Thoracic Vascular Surgery, Lübeck

Cardiac surgery is one of the more 'special' fields of medicine and surgery. To me it is fascinating every time seeing the heart, being able to perform surgery in cardioplegic arrest, ventricular fibrillation or beating heart surgery and afterwards continuing as if nothing happened.

Having made a change in surgical clinic and country, due to private circumstances, I can give my thoughts and opinions on Cardiac Surgical Training in the Netherlands and Germany, both for approximately one year.

In The Netherlands I've worked in a Tertiary Care University Hospital with the full spectrum of cardio-thoracic surgery, including paediatric cardio-thoracic surgery and both heart and lung transplant program. In Germany I also worked in a Tertiary Care University Hospital, with an adult program without transplant.

My first job as a medical doctor after finishing my studies was in the Department of Cardio-Thoracic Surgery, Erasmus University Medical Centre, Rotterdam in The Netherlands. Here, I have learned a lot from the basics of surgery, pre- and postoperative rounds, intensive care, pediatric cardiac surgery up to heart failure therapy, and had the possibility (due to a very good relation with the surgical staff) to perform, on my last day there, my first s in a patient with an ascending and aortic arch aneurysm. As in most cases 'the first' will not be forgotten. Despite my lack of experience, I was able to assist in the entire spectrum of cardio-thoracic surgery. This was for only one year and therefore cannot cover the entire cardiac surgical care.

My ambition is to eventually be able to continue in a paediatric cardiac surgical clinic as the clinical possibilities and technical spectrum within this subspecialty are very appealing to me. Also the decision-making process in, (re)operation within children and congenital heart defect patients can be very difficult and interesting. In Rotterdam I have

been able to witness these processes. Also the decision-making in adults with more and more co-morbidities is not always as easy and I think this is an interesting part of our specialty besides the technical possibilities.

Due to my excellent start, for which I am very grateful to my (former) colleagues in Rotterdam, and one year training I could progress relatively quickly in Germany. This

means that within the first few months there I was first surgical assistant, as was standard in The Netherlands. I often perform sternotomy and sternal closure, and have done a few cardiopulmonary bypass cannulations. Nowadays I can, depending on type of procedure, start the operation, perform the sternotomy before the surgeon comes in and close the sternotomy with the surgeon already out of the operating theatre.

My research activities include two publications concerning adult congenital heart surgery and were both written in my time in Rotterdam. In my current clinic we have quite a large experimental laboratory besides the clinical data, for instance in the German-Dutch Ross Registry.

Concerning the specialty itself there are differences to begin with. In

The Netherlands it is cardio-thoracic Surgery, that means for training purposes pulmonary surgery is included as well, although not all centers perform pulmonary surgery. In Germany the specialty is cardiac surgery, which does not include pulmonary surgery. In The Netherlands one year of general surgery during the six-year training is required and three months in cardiology and pulmonology, respectively. In Germany the six-year program consists of the first two years 'Common Trunk' surgery, this time can however be spent in the cardiac surgical unit.

In The Netherlands only one Resident is chosen every two years, in a training center, to start the cardio-thoracic surgery training. He/she then has this six-year program where the clinic has the responsibility to offer

the required number of procedures etc. In Germany there is no such selection, this means that 'everybody' has a chance, but also means that nobody has an exact date of formal training ending. In my opinion the Dutch system is preferable, not everybody has the possibility but those that do get a proper training within a specified time frame. Also, the added training in cardiology and Pulmonology has clear advantages in pre and postoperative management of cardio-thoracic surgical patients. The German system 'appears' open to everybody but nobody knows upfront if and when their training will finish.

There are, of course, also a lot of equalities. The number of required procedures during the training is comparable in both countries with a defined number of coronary bypass surgeries, aortic valve surgeries and so on.

Concerning the job as Physician and the relationship to others, nurses, OR-team etc. there are clear differences. There is for instance more hierarchy in Germany than there is, at least in my former clinic, in The Netherlands. What I also notice, and pity, is the less interaction between disciplines, the Cardiologist and surgeon are a bit more apart here than they were in Rotterdam, there is no shared 'coffee-room' in the OR, that means after surgery is finished everybody goes their way. From what I have seen in Rotterdam I know that the working climate and working together can be improved by sharing a coffee and talking about other things besides those that are discussed during surgery. Here in Germany the daily routine on the ward for instance includes all the blood sampling, whereas this was done by the nurse in the Netherlands.

Where do I see myself in the future? I could be in both countries, here the personal circumstances also come in to play. From my perspective I, as Dutchman, prefer The Netherlands probably on both personal and professional level. That, however, does not mean I couldn't work in Germany for a longer time period. The first goal is continuing and finishing my surgical training.

Léon M. Putman



Members views

If you would like to comment on any of the aspects concerning training and education, express your opinion regarding the outcomes from the SYNTAX trial or discuss the ESC/EACTS guidelines, *EACTS News* would be delighted to publish your views.

Please send your comments to:
communications@e-dendrite.com.
We will publish as many of your comments as possible.

EACTS 2012 Thoracic Domain Programme

Paul E. Van Schil

Chair Thoracic Domain

For several years a specific thoracic track has been provided at the EACTS Annual Congress, which is of specific interest to thoracic and cardiothoracic surgeons. Following the successful 2011 meeting a similar outline is used for the 2012 congress in Barcelona from October 27 till 31.

Improvement of quality in thoracic surgery will be an integrated part of this year's programme. This comprises quality of different surgical procedures and their comparison with alternative interventions, quality of training, databases and evaluation of long-term surgical results. Traditionally, mortality has been considered as main outcome measure to evaluate surgical results. However, more refined parameters are necessary taking into account pulmonary, cardiac function and other comorbidity factors in our patients. More prospective data are certainly needed, especially when comparing open thoracic procedures to alternative treatment modalities or minimally invasive approaches. The latter are the main subject of



the thoracic Technocollege which will focus on advanced procedures in minimally invasive interventions with thoracoscopic and robotic live pulmonary and mediastinal surgery from Nieu-

wegein, the Netherlands and Pisa, Italy.

For the Postgraduate Course a new format will be introduced with interactive voting and the audience seated in a semi-circle with the presenters walking around to encourage active participation. Topics to be treated are trauma, complex oncological cases and empyema.

The thoracic Focussed Session will cover acute and chronic pulmonary embolism with Philippe Darteville as chair, who has an extensive experience with pulmonary thromboendarterectomies. The Thoracic Young Investigators Award will be awarded to the best thoracic abstract will be awarded the annual thoracic prize. Staging of lung cancer and experimental thoracic surgery will be dealt with in the Professional Challenge session. Interesting thoracic cases will be presented by surgical residents under supervision of a tutor in the Learning from Experience session which represents the end of the thoracic part of the congress.

Overall, an attractive thoracic programme is put forward and we hope to stimulate active participation from all thoracic and cardiothoracic EACTS members.

Vascular Domain programme 2012

Martin Czerny

Chair EACTS Vascular Domain

This year's Vascular Domain programme will start with a common session of all domains on Sunday morning. The concept of common efforts of different domains is a new implementation from which we do expect a high acceptance rate by participants. As an initial theme, we have chosen infections of the cardiovascular system where we want to expand the discussion on active infective cardiac proc-

esses to the entire cardiovascular system. We will present highly innovative and effective approaches to treat native and prosthetic aortic graft infection from the root to the bifurcation.

Sunday afternoon will be dedicated to a critical reflection of the impact, effectiveness and failures of both open and endovascular techniques in the last ten years and participants will be able to gain a broad insight into goes and no-goes of both the open and endovascular technique.

Monday morning will contain a Pro-

fessional Challenges session where participants will get a thorough understanding on the evidence and options for the treatment of acute and chronic aortic arch pathology. This session will contain lots of video presentations addressing all issues of open, endovascular and combined therapy so that participants can take a very practical oriented message with them.

The afternoon session will focus on vascular trauma and the purpose is to expand attendee's knowledge beyond the well-known issue of aortic injury at the level of the left subclavian artery.

Tuesday will start with a combined effort together with the adult cardiac domain addressing all issues concerning the aortic root, providing plenary lectures on biological, mechanical, auto, homo and xenograft repair and replacement and will provide participants with a thorough understanding upon pathology mechanisms and options of treatment of the aortic root.

The next session will feature be a combined session with the aim of harmonising basic science and clinical application in adult cardiac and aortic surgery, where a direct relation between basic science findings and their implementation into clinical routine will be presented and discussed.

The afternoon session will focus on dissections with a special asset of linking weather conditions to acute aortic syndromes, an issue which causes ongoing discussions over decades.

On Wednesday, we are happy to enable participants with the unique opportunity to train on a system for individual planning and determining prosthetic sizes for thoracic endovascular aneurysm repair (TEVAR) in order to further get into practice and sharpen skills.

In summary, we are convinced that the educational level of this year perfectly meets actual needs and will follow the tradition of continuously elevating standards and directing the future of aortic surgery.

Techno College: Preliminary Programme

27 October 2012

Volkmar Falk *Chair EACTS New Technology Committee*

- Session 1:** Percutaneous aortic valve implantation, alternate access and new implants for aortic valve replacement
- Session 2:** Image guided interventions, robotics and new developments in coronary surgery
- Session 3:** Innovative concepts for heart failure treatment – smaller devices and new approaches
- Session 4:** New approaches for mitral valve repair or replacement

Techno College continues to provide an overview of the latest developments in the field of cardiovascular and thoracic surgery. This year's Acquired Cardiac Disease programme will feature interesting live cases both in humans and pre-clinical work in animals, high-quality video presentations and talks presented by some of the most innovative leaders in the field.

Techno College was the first meeting ever to present a TAVI case live and continues to promote and present emerging technologies for the treatment of aortic valve disease. This also includes access related device developments and alternative implant technology.

This year there will be a focus on new imaging modalities and robotic assistance as well as new technology for sutureless coronary anastomosis, a field that after a period of limited development may regain some interest. The rapid evolution of smaller mechanical circulatory assist devices, transapical implantation of LVADs and alternative surgical heart failure treatments will be discussed.

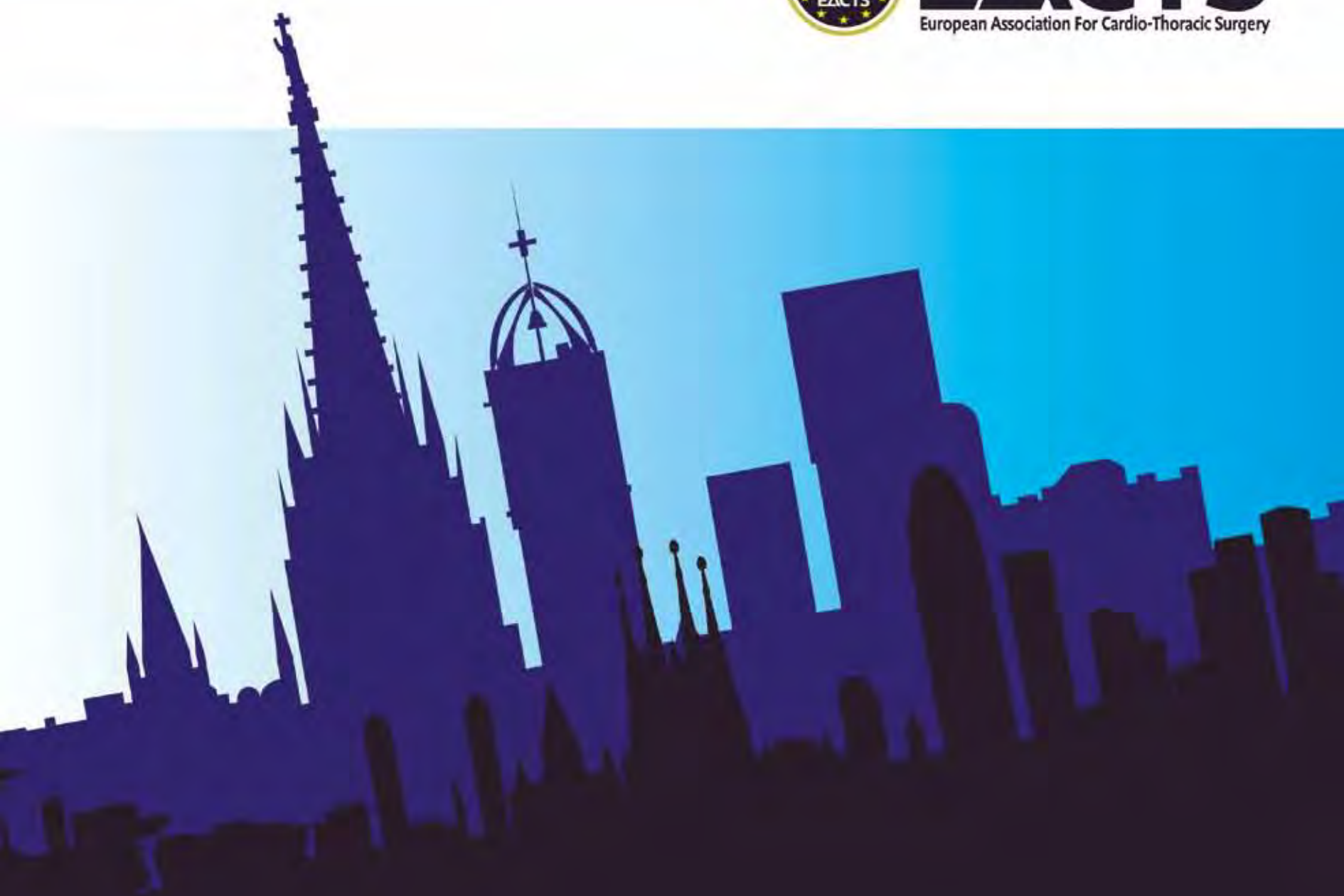
Finally, the latest developments for mitral valve repair and replacement will be covered, including, but not limited to, new approaches for percutaneous mitral annuloplasty and facilitated surgical repair techniques.

Join us for another interesting Techno College that gives you a glimpse of the future in cardiovascular surgery.





EACTS
European Association For Cardio-Thoracic Surgery



26th EACTS

Annual Meeting

Barcelona, Spain

27th - 31st October 2012

To find out more or to register for the event visit:

www.eacts.org

Raising Standards through Education and Training

Message from the Editor in Chief

A new look for EJCTS, ICVTS and mmCTS: better service for our readers with the support of our new publisher, the Oxford University Press

Friedhelm Beyersdorf

Editor in Chief, EJCTS & ICVTS

All three scientific publications of the European Association for Cardio-Thoracic Surgery (EACTS)—the European Journal of Cardio-Thoracic Surgery (EJCTS), the Interactive CardioVascular and Thoracic Surgery (ICVTS) and the Multimedia Manual of Cardiothoracic Surgery (MMCTS)—have been exceedingly successful over the last many years¹⁻³. In the light of this, we shall now take the next steps in the evolution of our successful journals with our new publisher, Oxford University Press (OUP). One of the major changes will be that OUP will publish all three journals together. This will allow us to develop a common strategy but—at the same time—diversify, further specialize and concentrate on the strength of each product. Marko Turina will stay on as the Editor-in-Chief of themmCTS and I will be the Editor-in-Chief for the EJCTS and the ICVTS. These changes, which we are now going to implement, are a result of comments and suggestions from the readers, the publishers, the Editorial Office, the Councillors of the EACTS and from various other persons. I would like to take this opportunity to thank them all for their input and thoughtful ideas.

In the EJCTS, the following changes will be put into place:

- A new website.
- A new cover design.
- 'Editor's Choice' article—these will be articles chosen by the



Editor-in-Chief as being particularly topical and/or interesting and will be made freely available.

- Supporting material such as additional data or videos can be made available by the publisher as online-only content⁴ linked to the online article.
 - Free colour figures at the discretion of the Editor.
 - Changes in the layout - clearly delineated sections within each issue (Thoracic, Adult Cardiac, Congenital, TX & MCS, etc.) with dynamic thumb tabs, - article type (Original Article, Review, etc.) above the title, on the top right corner, - 'camera' symbols will indicate when there is video content available online.
 - A new set of instructions for authors providing guidance on the latest experimental and publishing ethics.
 - A new EJCTS App in 2012. Our launch of the EJCTS App in April 2011⁵ has generated positive responses from our readers. As such we will continue to develop and build up our offerings with our new publisher to provide greater functionality through our App. Readers will be informed once the new App is up and running.
- In the ICVTS, the changes are as follows:
- Same layout and style changes as for EJCTS.
 - More interactive features will be made available.
 - Access to advance content of the corrected proof.

In themmCTS, the format of the videos will be changed.

In addition to these primary changes, we strive to continually improve and develop our journals to meet the expectations of our readers as much as possible. Further comments would be greatly appreciated.

'If you think adventure is dangerous, try routine. It's lethal'

Paulo Coelho

References

- 1 Beyersdorf F, von Segesser LK. Editor-in-Chief of EJCTS and ICVTS from 2000 to 2010. Eur J Cardiothorac Surg 2011;39:6-7.
- 2 Fontan F, Moghissi K, Borst H, Turina M. 25th Anniversary of the foundation of the European Association for Cardio-Thoracic Surgery. Eur J Cardiothorac Surg 2011;40:535-7.
- 3 Beyersdorf F. European Journal of Cardio-Thoracic Surgery/Interactive Cardiovascular and Thoracic Surgery—reach out for the next decade. Eur J Cardiothorac Surg 2011;39:147-8.
- 4 Beyersdorf F. New in EJCTS: e-only articles. Eur J Cardiothorac Surg 2011; 39:439.
- 5 Beyersdorf F. The future is here: the European Journal of Cardio-Thoracic Surgery presents its first app. Eur J Cardiothorac Surg 2011;39:617-8.

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Advanced module: valve surgery including transcatheter

Professor Gerard Fournial

Course Director

This advanced module: valve surgery including transcatheter valve implantation is as part of the "Foundation cardiac surgery courses".

This module is designed for beginners in valvular reconstruction and repair but also for the surgeons involved in TAVI programme and more widely for those who have some interest in the new field of transcatheter valve treatment.

Besides conventional lectures, the different experts are going to present clinical cases and some surgical recorded cases to provide discussion and interactivity between senior and younger surgeons as well as cardiologists.

At the end of the course, the attendees will be able:

- to understand and evaluate the different mechanisms of valvular insufficiency
- to know how to select the different surgical techniques for valve repair
- to understand the role of a complete "Heart valve Team" and to provide the best treatment for each particular patient according to the new trans catheter approach and how to build the team
- to know how to follow up on the patients after valve repair.

The content of this module is broken into four parts:

- 1 Basics in echocardiography and imaging (CT-MRI)
- 2 Atrioventricular valve repair
- 3 Aortic valve and aortic root repair
- 4 TAVI session is going to involve a cardiac surgeon and an interventional cardiologist who are both going to illustrate how a



Clockwise from top left: Gerard Fournial, Patrick Perier, Francesco Maisano, Carlo Antona, Thomas Modine and Fillipo Civaia

"Heart Team" works.

Part 1: is designed by Dr Mathieu Gautier (cardiologist specialized in echo, Toulouse-France) and Dr Fillipo Civaia (cardiologist specialized in radiology, Monaco).

Based on interactivity with the attendees, the different presentations are going to achieve the following aims:

- to analyse heart structure for a better understanding of valve insufficiency mechanisms
- to observe the aorta wall and major vessels and then to choose the best access for TAVI
- to select the best imaging according to the valve pathology.

Part 2: is to be lead by Dr Patrick Perier (Bad Neudstadt-Germany) who is one of the best

experts on mitral valve repair. This session is going to be focused on degenerative mitral valve regurgitation in order to achieve the following aims:

- to observe the different anatomical situations
- how to select the right surgical technique supported by numerous recorded cases.

Dr M Gautier (echocardiographer) is going to discuss lesion analysis with the attendees step by step.

Less invasive approaches are going to be discussed by Dr Francesco Maisano (Milan-Italy). He is also going to present the different new transcatheter technologies.

Part 3: is chaired by Professor Carlo Antona (Milan) and Dr Andrea Mangini who have developed numerous scientific studies on clinical research in the field of aortic valve insufficiency and aortic root repair.

They are going to present a step by step approach how to understand plan aortic valve and root repair.

Part 4: TAVI session will be animated by Dr Nicolo Piazza (Munich-Germany) a well known interventional cardiologist expert and Dr Thomas Modine (Lille-France), a cardiac surgeon who has been very committed to this new field from its beginning. They are going to show how the "Heart Team" works on selecting the patient and choosing the best access to perform the operation, how to avoid complications, follow up on the patient and evaluate long term results.

Join us from 17th to 21st september 2012 in Windsor for the next advanced module: Valve surgery course including transcatheter valve implantation as part of the "Foundation cardiac surgery courses."



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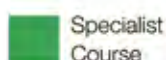
EACTS Events 2012

Dates	Title	EACTS Domain	Course	Location
1 April	Deadline: Abstract Submission, 26th Annual Meeting			
1 April	Deadline for Receipt of Applications for the EACTS Young Investigator Awards, Hans G Borst Award for Thoracic Aortic Surgery C Walton Lillehei Young Investigator's Award			
16-20 April	Thoracic Course I	Thoracic Disease		Windsor, UK
15 May	Deadline for Receipt of Applications for the Francis Fontan Prize and the Thoracic Prize			
11-15 June	Fundamentals in Cardiac Surgery Part II	Acquired Cardiac Disease and Congenital Heart Disease		Windsor, UK
22-23 June	4 th International Chest Wall Group Workshop on Chest Wall Diseases	Thoracic Domain		Istanbul, Turkey
1 July	Deadline Early Registration: 26th Annual Meeting			
1 Sept	Deadline: Techno-College Innovation Award			
10-14 Sept	Teach the Teacher	General		Windsor, UK
17-21 Sept	Advanced Module: Valve surgery, including transcatheter heart valves	Acquired Cardiac Disease		Windsor, UK
27-28 Sept	Evidence-based surgery	General		Windsor, UK
1-5 Oct	Advanced Module: Congenital Surgery	Congenital Heart Disease		Windsor, UK
8 Oct	New oncologic concepts and targeted therapies for lung cancer	Thoracic Disease		Windsor, UK
12-13 Oct	Reconstruction of the chronically dysfunctional left ventricle	Acquired Cardiac Disease		Windsor, UK
25 Oct	Deadline pre-registration 26th Annual Meeting			
27-31 Oct	26th Annual Meeting	General		Barcelona, Spain
12-16 Nov	Advanced Module: Heart failure: state of the art and future perspectives	Acquired Cardiac Disease		Windsor, UK
28-30 Nov	Chest wall diseases	Thoracic Disease		Windsor, UK
3-7 Dec	Thoracic Course II	Thoracic Disease		Windsor, UK
14-15 Dec	3 rd EACTS Meeting on Cardiac and pulmonary regeneration	Acquired Cardiac and Thoracic Disease		Berlin-Brandenburgische Akademie Berlin, Germany
<i>tbc</i>	Second postgraduate workshop on leadership for cardiovascular and thoracic surgeons	General		Windsor, UK
<i>tbc</i>	Course for industry partners: Basic knowledge in cardiothoracic surgery, statistics, etc	General		Windsor, UK

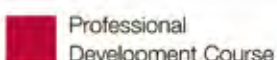
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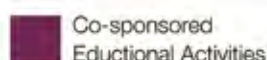
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Mechanical Ventricular Assist Devices

R. Hetzer, MD, PhD *Deutsches Herzzentrum Berlin, Germany*

Mechanical ventricular assist devices (VAD) were introduced into temporary clinical application in the 1960s and into clinical routine in the 1980s. During the most recent years they have matured to become established therapeutic tools for long-term and even permanent treatment of otherwise fatal heart failure.

Initially these were extracorporeal, pulsatile, pneumatically driven pumps and large either stationary or wheeled drive systems and were mostly used for bridge to later transplantation or as a rescue device post open heart surgery failure, aiming at cardiac recovery. In some elderly patients these systems helped to prolong life for more than five years. Today these extracorporeal systems still have their place in very advanced cardiogenic shock in a biventricular configuration and, in particular, in small children where the Berlin Heart pediatric device, which was developed in Berlin since 1990, remains the only presently available system for infants and small children worldwide. Extracorporeal systems, which offered only limited quality of life, were followed by implantable,



rather large electromechanical pulsatile pumps, which have also reached long-term application for up to more than five years.

In 1998 an entirely new concept was introduced into clinical practice, that of the so-called rotary blood pumps, i.e. small continuous-flow systems consisting of valveless, high-speed turbines, which was first applied in humans in Berlin on 13 November 1998. This was the Micromed DeBakey pump, which was then followed by a variety of designs by several manufacturers: the InCor by Berlin Heart, the Jarvik 2000

FlowMaker by Jarvik, the HeartMate II by Thoratec, the DuraHeart by Terumo and the HeartWare system. These pumps made use of either the axial flow or the centrifugal flow principle. The bearings of the rotors are either mechanical, hydrodynamic, magnetic or formed by a combination of these designs. Rotary pumps need considerably less energy than the pulsatile pumps, are completely silent and offer a highly improved quality of life and safety for several years. However, they are all designed for left ventricular support only.

In addition to the bridge-to-transplant concept, the bridge-to-recovery has gained great interest since it was observed that even chronic dilative cardiomyopathy could be brought to complete restitution of cardiac function, and several patients have now lived for up to 17 years with their own hearts following explantation of the pumps after a few months of support. However, the criteria that would make such recovery likely and the durability of heart function after recovery have remained largely in the dark.

Permanent implantation, so-called destination therapy, has now become by far the most frequent concept due to transplant organ short-

age and by extending the scope into patient groups not qualifying for heart transplantation for medical reasons and for advanced age (up to now nearly 90 years). There are now many patients who have enjoyed life with the various designs of rotary pumps for more than five and up to eight years.

With some minor experimental modifications the HeartWare system has also been made applicable for right heart support and thus biventricular application has become a reality when needed in the patients.

Although most clinical cases can be handled sufficiently with such variations, there are attempts to create a total artificial heart, some based on pulsatile and some on continuous flow pumps. These devices are still in a developmental stage and are not yet available for clinical use.

Continuous flow, which is *prima vista* unphysiological, may be responsible for some new pathologies that have been observed, such as aortic valve incompetence, intestinal microvascular bleeding, and some coagulation disorders, and it is unclear which further sequelae may appear after an even longer time of continuous VAD application.

Most VAD-producing companies are now striving at smaller pumps,

greater efficiency and less traumatic implantation and it can well be expected that VAD implantation will soon become a widespread treatment modality, like pacemaker and automatic defibrillator implantation.

Because of the high incidence of driveline complications seen with prolonged assist duration, the development of transcatheter energy transfer systems (TETS) for inductive energy supply of fully implantable pump systems is currently a key focus of many research and development programs.

Intermacs, a government supported US registry for VAD patients and systems was introduced to collect data for large-scale research studies and surveys. In Europe, where we have access to a much wider spectrum of systems than in the US, a similar registry, Euromacs, was founded in 2009 and is now well established; data collection has been started. This endeavor has attracted great interest in most European centers and also from several countries outside Europe.

The symposium will present the current state of ventricular assist devices for long-term support, which have become the best and readily available treatment option for end-stage heart failure.



euromacs

European Registry for Patients with Mechanical Circulatory Support e.V.

The Euromacs Registry has been designed to collect procedural and outcomes data for patients receiving mechanical circulatory support.

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Fundamentals in Cardiac Surgery Part II

Congenital Day

Tjark Ebels Course Director

The vast majority of students for the June course are in training to become cardiac surgeons and will spend their professional lives dealing with non-congenital adult patients. Previous courses have made clear that the Monday starter on congenital cardiac surgery may well be one of the few times this area of cardiac surgery is ever brought under attention of trainees. The major object of this one day



Tjark Ebels

prelude to congenital cardiac surgery is to increase awareness of the existence of congenital problems also in the adult population. In addition to awareness we shall bring across the existence of types of circulation and elements thereof that are fundamentally different from normal. One of the bottom lines of this day will be that it is unadvisable to embark upon "casual" surgery for congenital problems without having had full and proper training in this area of cardiac surgery. On the other hand, for those trainees enticed by the course and interested in congenital cardiac surgery, it might be a reason to divulge further into this area.

Increasingly national training programs around the world recognise that for acceptable congenital cardiac surgery a spe-

cialised training is a prerequisite. These programs result in qualified and certified surgeons, well capable to deal with all aspects of congenital cardiac surgery. In various countries the training for congenital cardiac surgeons is already formalised into existing and functioning programs, such as Poland and the USA. Other countries are well under way to organise training programs in recognition of the need for specialised surgeons. Similar evolutions are preceptible in cardiology, pediatrics, anaesthesia and intensive care medicine, which gradually produce comprehensive teams dealing with congenital cardiac problems as well in children as in adults. Because it has become clear that the teams dealing with adults with congenital heart disease are the same as the teams dealing with children.

The contents of the one-day prelude to congenital cardiac surgery is a mixture of subjects starting with an overview of the steadily increasing group of Grown-Up Congenital Heart disease (GUCH) patients that calls for challenging surgery. As an example embarking upon ostensibly straightforward coronary bypass surgery in one of the many patients that have had surgery for Tetralogy of Fallot, might end in a surprising disaster if not carried out with the knowledge and insights of the congenital team.

Subsequently we will deal with various forms of the so-called Fontan Circulation, which is iatrogenic in nature increasing the quality of life in single ventricle patients, however on the other hand creates baffling problems that need extremely specialised attention. Finally we shall deal with operations such as the Ross procedure that have interesting implications for adult life and particularly for the surgeons having to deal with them. This day will prove to be an interesting starter to congenital cardiac surgery, both enticing interested trainees and giving insight into the complexities of congenital patients.

Adult Cardiac

Tuesday 12th/Friday 16th June, 2012

Roberto Lorusso

This Course will represent the second appointment at the EACTS House for the EACTS School and its attendees for the Courses of Fundamentals in Cardiac Surgery.

The four-day adult-oriented programme is rather ambitious, since many major fields will be explored and discussed with reknown European experts.

On day 2 (Tuesday), day 1 being usefully devoted to congenital-related aspects, participants will have an unique opportunity to listen to presentations and be part of discussions on basic yet up-to-date information with regards to mitral and tricuspid valvular anatomy and assessments, surgical treatment (including reconstructive procedures and minimally invasive approach) and factors intimately linked to perioperative complications (right ventricular function).

On day 3 (Wednesday) percutaneous procedure to treat mitral insufficiency will be presented and debated, as well as management of atrial fibrillation with interventional or surgical procedures, details for surgical access during reoperations and, finally, discussion about fundamentals in aspects related to management of cardiac rhythm or A/V conduction disturbances.

A free afternoon on Wednesday will be offered to take advantage of the nice location of the EACTS House in Windsor, giving the opportunity to enjoy Windsor attractiveness or London city.

Day 4 will be characterised by an extremely interesting programme, ranging from aortic vessel anatomy and diseases, open or endovascular treatment of aortic injury, management of chest trauma (lung and heart), and diagnosis and treatment of acute or chronic pulmonary embolism. Finally, always on day 3, an important discussion about data collection, risk assessment and performance evaluation will be carried out at the EACT

School, based on the current and expected future pressure that many parties will devote to our profession regarding quality control and professional audit.

The last day of the Fundamental Course Week will deal mainly with heart failure issues (transplant and alternative techniques), but pericardial disease and ethical aspects of our profession will be also addressed to provide a rather comprehensive programme for young surgeons in training or at the beginning of their professional career as specialists in cardiac, cardio-thoracic, or cardiovascular surgery.

The first Fundamental Course (Part 1) held



Roberto Lorusso

last February, on the occasion of the official opening of the EACTS House in Windsor, was a real success, with a sold-out participation of young surgeons coming from all over Europe and outside the European countries. We are therefore confident that also the upcoming Part 2 will attract many attendees committed to our specialty and eager to experience a real "college" atmosphere, sharing knowledge and skill with invited speakers who will provide also many practical inputs, video presentation of technical aspects, and scientific reviews about the topics scheduled in the programme which will certainly enhance the participant armamentarium for their difficult, but fascinating professional life to which EACTS hopes to represent a constant reference point for education and training with the highest standard and quality.

SAVE THE DATE

8 June 2012

EACTS National Societies Meeting

EACTS House, Windsor (UK)

For further information please contact the Secretary General's office via email: Rianne.Kalkman@eacts.co.uk



Rectification

In an article featured in issue 4 of the *EACTS News* newsletter, Professor William Brawn discussed the importance of the new EACTS offices in Windsor. In the printed newsletter, we incorrectly quoted Professor Brawn as saying: 'I cannot understand the importance of the move'. We acknowledge that in fact the article should have read: "I cannot underestimate the importance of the move."

We apologise to Professor Brawn for any embarrassment or confusion this error may have caused.

EACTS Working Group on Pleural Diseases together with Forlanini Hospital organizes the

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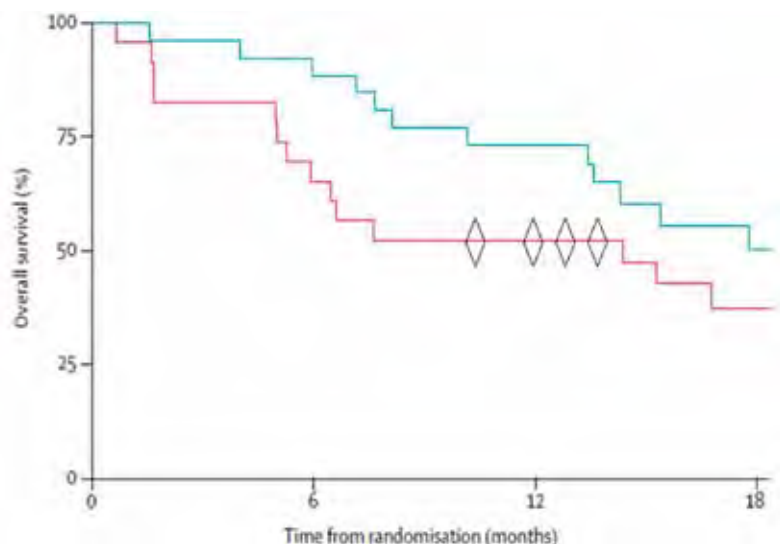
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BTOG awards MARS a Lifetime Achievement Award



The survival of patients in MARS: the red line is for patients allocated to EPP. The superposed markers show the median (50%) survival times: 10, 12, 13 and 14 months from MD Anderson, New York, Brigham and Memorial respectively.



Tom Treasure

University College, London

At its annual meeting in Dublin the British Thoracic Oncology Group recognised the Mesothelioma and Radical Surgery (MARS) trial as a notable achievement despite its small size – only 50 patients randomised. When first proposed MARS was widely predicted to fail: there would be no randomisations many

said. Perseverance and determination from a large number of people, clinical trials staff, research nurses and doctors throughout the British Isles kept up the momentum and MARS slowly, but eventually, reached its target – and a result. BTOG's award suggests that the result merits attention. It also merits scrutiny. First up, naturally, the surgical results.

The survival plot of patients randomised to extrapleural pneumonec-

tomy, is marked by a long plateau at 50% survival. That depicts the median survival. It provides an opportunity to view, alongside MARS, survival in large institutional series, reporting during the same time. They are not directly comparable but the published survival data are not dissimilar to MARS. What is different about these observational studies is the absence of any control data to indicate how those patients might have fared if they had not been operated on.

In MARS, eligible patients were randomised to not have EPP. These non-operated patients fared better.

In the words of the methodologist, Richard Lilford, some unbiased evidence is clearly better than none. Bias was excluded in MARS: the chief investigators played no part in allocation, intervention, or data analysis.

But, what about the power calculation? Power calculations are a necessary methodological precau-

tion to ensure that efforts are not needlessly wasted. For his power calculation the statistician relied on estimates of benefit from previous clinical reports. Put technically, its purpose was to avoid a beta error. That is to say that the researchers might erroneously conclude that there is no difference, based on too few patients. In the event, MARS showed a bigger difference than estimated, and in the opposite direction.

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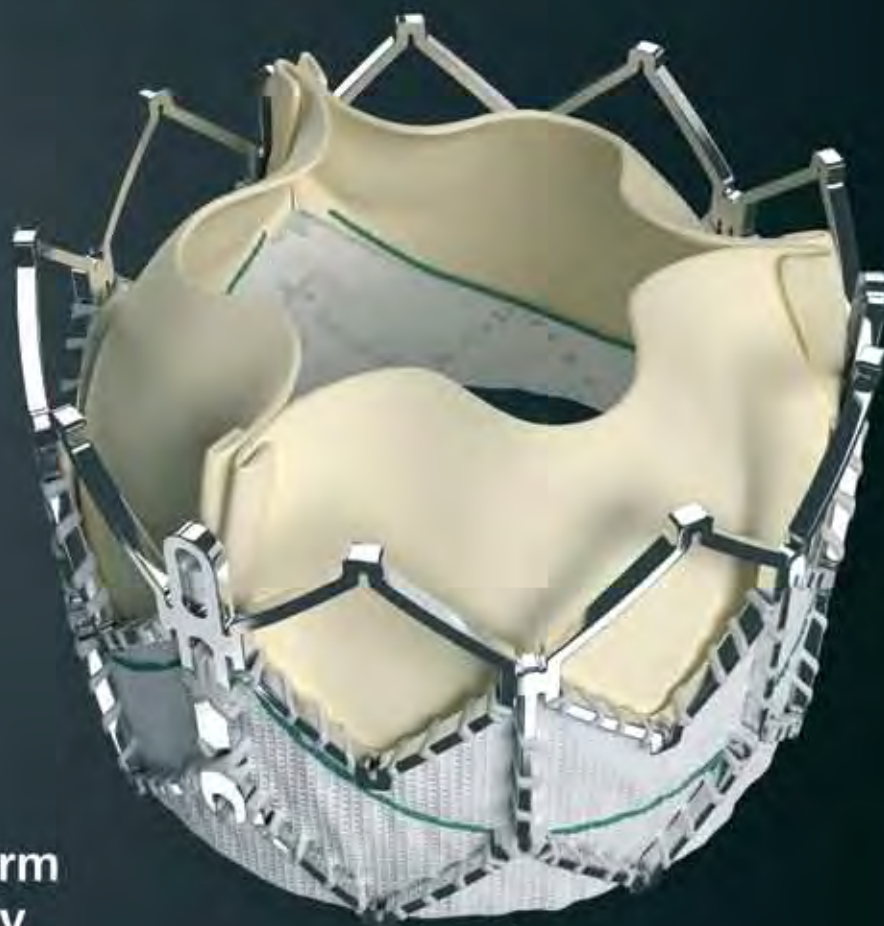
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