Is there a role for surgery in acute pulmonary embolism?

Wolfgang Harringer
Thiakis, Braunschweig, Germany

Although Tendelenburg first described surgical embolization for acute pulmonary embolism back in 1908 the procedure has only found its break through through the last decades. This becomes most obvious in the fact that guidelines on the surgical pulmonary embolectomy in case of severe hemodynamic instability and high risk, failure or contraindication for systemic anticoagulation.

The low acceptance of the Tendelenburg procedure is mainly attributed to the very high mortality that initially even reached 100%. As lysis for acute coronary syndromes has lost its merits over the last decade through the improvement of catheter techniques that introduced the possibility of a more goal directed treatment of culprit lesions the evolution of surgical know how could likely change our treatment perspectives for acute pulmonary embolism. Hence giving a greater role for surgery in hemodynamically stable patients with right ventricular dysfunction in whom lysis remains the golden standard. This view seems justified by the radical drop of mortality in association with surgical treatment, mortality rates as low as 6.4% being described nowadays. Crucial for achieving such excellent results are a high surgical rate and to a rapid decision making for which an interdisciplinary team approach between cardiologists and surgeons appears mandatory. Extra- corporal membrane oxygenators could play an important role in this setup offering an excellent bridging technique between stabilization (severely hypovolemic patient), and relief of right ventricular dys-function) and definite surgical treatment. Progress made in this field have made these devices readily available, easy to apply and reduced the associated morbidity to acceptable levels. Minimization of perioperative complications have resulted in a reduction of severe postoperative complications, bleding complications and in inflammatory response. Minimized perioperative complications have followed a similar philosophy may also contribute to the success of surgery especially considering a reduction of inflammatory response which may play an underestimated role in the pathogenesis that follows pulmonary embolism.

In conclusion a rapid diagnosis and interdisciplinary decision making for best treatment strategy will promote a more aggressive surgical treatment even in hemodynamically stable patients with right ventricular dysfunction. The lack of science-tific evidence in terms of prospective randomized trials remains the main obstacle for a more liberal choice for surgery. This barrier will only be overcome through a heart team approach.

Wolfgang Harringer

Cardiac: Abstract 14:15-15:45 Room 114

Nitinol flexigrip stenosis closure system and standard sternal steel wire: Insight from a matched analysis comparison

Jonida Bajko, Tomaso Bottolo, Vincenzo Tarzia, Marco De Francesco, Giuseppe Caputo, Michele Galli, Massimo Cazorla, Gino Garcia Institution: University of Catania, Catania, Italy

Sternal wound instability (SWI) and its role in severe complications in cardiac surgery. The pathogenesis is not yet fully understood and many authors identified several factors, patient or surgeon related, as possible triggers. The flexigrip (Praxisa, Boslogna – Italy) is a sternal closure system, composed of three shaped reactive alloy of nickel and titanium with a memory effect, as which a bridge acts making together the sternal ostomy. We compared the incidence of two different sternal closure techniques in preventing sternal wound instability in high risk patients. Between January 09 and February 12, 2,088 consecutive cardiac patients have been prospectively collected in our database. Based on the observation that in the vast majority of cases of sternal wound infection some degree of sternal instability is always present, we compared the results observed in two population of matched patients, with two different sternal closure techniques were adopted, using the same triple layer suture for fascia, subcuta- neous tissue and skin. The 561 patients in whom Nitinol Stent System (Flx-grip) (Bajko) have been used (Group A), were matched 1:1 with 561 patients who received a standard para-sternal wire technique (Group B).

Two groups were well matched, although different for bilateral internal thoracic har- vering, chronic obstructive pulmonary disease, renal insuf- ficiency, and congestive heart failure with NYHA class III or IV being markedly more frequent in Group A. At 30-days of follow-up, the association of wound-stabilization and sternal stability was insignificantly less frequent in Group A (p=0.02) versus Group B (p=0.1) and a trend to be significantly different in Group A (2% versus 5.1%) (p=0.28). In presence of wound failure, a sternal wound instabil- ity was never observed in Group A (p=0.06). Overall costs were about €8,701,854 and €9,243,702 in Group A and B, respectively, thus flexigrip closure technique offered a 5.4% cost saving. Flexigrip used in high risk pa- tients showed a lower incidence of sternal wound instability with no need of sternal re-wiring in any case of wound failure. Wound flexigrip proved to be also cost-effective.

Tomaso Bottolo

Cardiac: Focus Session 16:15-17:45 Room 120/121

Antibiotic prophylaxis for infective endocarditis: Time for a definitive answer?

Bernard Prendergast
John Radcliffe Hospital, Oxford, UK

Infective endocarditis is an elusive and dangerous condition which challenges all those involved in its management. Cardiologists and cardiac surgeons, who encounter patients with severe complications of the disease destined for complex cardiac surgery or post mortem, fear its consequences. The evidence to support this stance is limited and revised European and American guidelines reflect this. The area resulted in a major shift of emphasis in this contentious area. Moreover, guidance on the prevention of infective endocarditis for healthy individuals and Health and Clinical Excellence (NICE) published in 2008 abolished this practice completely with no adverse conse- quences to date. Is it now time for further evaluation and a definitive randomised controlled trial?

Changing epidemiology and evidence to date

The clinical profile of IE is changing with increasing frequency of Staphylo- coccus aureus and falling incidence of IE secondary to oral streptococci. IE often arises in patients without previously documented cardiac disease when the question of prophylaxis is irrelevant. Even if antibiotic prophylaxis is ap- plied appropriately, the evidence to support its efficacy is limited to case- control analyses. Even if these studies are negative, they also fail to demon- strate that antibiotic prophylaxis is ineffective. They do, however, sug- gest that a huge number of prophyl- axis doses are necessary to prevent a very low number of IE cases and that the risk of developing IE after an un- modified dental procedure is extremely low. Whilst a randomised placebo controlled trial to address the benefit of antibacterial prophylaxis in preventing IE is desirable, such a study would be a massive undertaking, re- quiring large numbers of patients in each arm to provide adequate statis- tical power. The heterogeneity of the underlying cardiac conditions and in- vasive procedures would make stratifi- cation extremely difficult but a trial fo- cusing on the highest risk groups (e.g. those with a prosthetic valve) could be achieved with sufficient statistical power to allow extrapolation to other lower risk cohorts. The UK is the only nation where such a trial could be eth- ically performed and preliminary plans are currently being conceived.

Guidelines and philosophy

The original “test all” philos- ophy was based upon an understand- able fear of infective endocarditis and its complications. However, the number needed to treat for effective prevention is exceedingly high and routine antibi- otic administration is not risk free. Ana- lytics to -lactam antibiotics occurs in 15-40 per 100,000 uses and there are legitimate concerns regarding commu- nity-acquired resistance. Moreover, the cost-effectiveness of routine use of antibiotic prophylaxis is questionable. The European and US guidelines ad- vocate the “number needed to treat” or “bang for your buck” philosophy, re- stricting use of antibiotic prophylaxis to patients at the highest risk of IE under- going the highest risk procedures. An- tibiotic prophylaxis is no longer recom- mended for patients with native valve disease nor for any gastrointestinal or genitourinary procedures.

Going one step further, the UK NICE guidelines espouse the “proof of princi- ple” philosophy and recommended an end to the practice of antibiotic prophyl- axis altogether. To date, this seemingly radical recommendation has not been accompanied by the predicted surge in the incidence or mortality of infec- tive endocarditis in the UK. The continued prescribing to high risk groups seems likely may be a confounding source of positive reassurance.

Let’s test the hypothesis...

Notwithstanding the current paucity of evidence, it is clear that the efficacy of current practice is restricted to the coagulase negative Staphylococci used to treat a single case if, with po- tential for overall harm. A shift of the fundamental question from “Who is at risk?” to “Who might benefit?” there- fore seems appropriate. National or in- ternational registries may provide useful information and previous ethical concerns obscuring the required randomized controlled trial have now been removed. Whether, there will be suffi- cient political imperative and enthusiasm to undertake such a major endeavour remains to be seen.
Complete EACTS Membership Applications for 2012

We are pleased to confirm that we have received 547 complete EACTS membership applications for 2012. These applications have been formally accepted by the General Assembly on Monday, 29 October.

From now on, we are happy to receive new EACTS Membership Applications for the year 2013. Please, spread the word amongst your colleagues. EACTS Membership provides access to a network of knowledge and the opportunity to develop your own expertise and share this with fellow professionals.

http://www.eacts.org/content/membership-application
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Continued from page 34

Learning objectives:

• At the end of this wetlab, the candidate will be able to:
  • Describe the techniques used to repair the mitral valve using Gore-tex neochords and a mitral ring
  • Explain the reasons why one technique might be used in place of another
  • Perform the techniques in a wetlab environment

Programme: (50 minutes per iteration)

9:00

Welcome

M. Lewis

Academy of the mitral valve (10 minutes)

F. Porcu, W. C. Nagrodi R

9:10

Summary, feedback and close

M. Lewis

Limited to 40 participants

12:00

Session ends

8:30

Congenital Heart Disease

Advanced Techniques in Cardiovascular and Vascular Surgery

Wetlab Training Session

9:00

Operative techniques – aortic valve repair

M. M. M. Iannelli

and M. MAZE procedure

Rooms 129/130

Learning objectives:

• To understand the aortic valve repair procedures and the maze procedure pertaining to congenital heart malformations

Programme:

- Different techniques for aortic valve repair: V. Yussak, Sarat, Austria; C. Briand, Melbourne

- Maze procedure: B. Braun (Birmingham), S. Tiao (Chicago), A. Coane (AtriCure)

Target Audience:

• Surgeons performing congenital heart surgery in patients from infancy through to adulthood

Limited to 40 participants

Advanced Techniques

9:00

Part I: Aortic valve repair for the non-expert: a stepwise approach

8:30

Interesting cases and series on orphan aortic diseases and pathological mechanisms

8:30

A traumatic danger in the Alps: acute type A aortic dissection in young skiers: K. Fischer, J. Hohil, M. Schröderberger, A. Stucke, M. Grimm (Austria)

8:45

Usefulness of cell treatment for type 1 endoleak in thoracic endovascular aortic repair using a fenestrated endograft: K. Hanacek, T. Schwalbe, M. Garcia, J. Keil (Lappe)

9:00

Arteria basilaris as a risk factor for apical cord ischemia: T. Berkovitz, V. Tskhovrebov, A. Grigoryan (Russian Federation)

9:15

Endovascular stent graft repair of the ascending aortic aneurysm: assessment of a specific novel stent graft design in phantom, cadaver and clinical application: M. Fornes, M. Popov, I. Efman, J. Laman (Kuwait)

9:30

Acute rebleeding type A aortic dissection after completion of patching of the supra-aortic branches and stent grafting of the transverse aortic arch: M. Lewis, C. E. L. Lernjakoll, F. Rossi, M. Burger (Berlin)

Discussions with Prof. Lewis

9:45

Break

10:00

Clinical tips and tricks in vascular access for open and endovascular therapy

10:00

Apical access

10:15

Ascending aortic access

10:30

Carotid access

10:45

Subclavian access

11:00

Inferior access

11:15

Renopetal access

11:30

 Femoral access

11:45

Percutaneous access using closure devices

M. Fornes (Nizza)

Limited to 30 participants

12:00

Session ends
27th EACTS
Annual Meeting
Vienna, Austria
5 - 9 October 2013
Deadline for Abstracts - 1st April 2013

To find out more or to register for the event visit:
www.eactts.org

Raising Standards through Education and Training
EACTS events

Advanced Module: Heart Failure – State of the Art and Future Perspectives
12–17 November 2012 – 2 days of wetlabs
EACTS House, Windsor, UK
Course Directors: G Gerosa, Padua; M Morshuis, Bad Oeynhausen
The course will be organised in 10 modules:
1 Epidemiology/Pathology
2 Diagnostic Imaging
3 and 4 Optimal Medical Therapies; Revascularization
5 Cardiac Surgery (Indications, Techniques, Results)
6 Heart Transplant (Indications, Techniques, Results)
7 VAD/VIAD (Indications, Techniques, Results)
8 HTx/AVAD in Paediatric Population
9 Stem Cells Regenerative Medicine
10 Wet laboratories in a Box/Group Projects
Course Objectives:
To update knowledge of theoretical and technical issues of surgery for heart failure.
Leadership and Management Development for Cardiovascular and Thoracic Surgeons
20–23 November 2012
EACTS House, Windsor, UK
Course Directors: J L Pomar, Barcelona
The Leadership and Management Development Program is an intensive five-day programme in two parts with a three day initial training session followed by a further two days of training scheduled six months later. The course will utilise a mix of pre and post programme activities and each delegate will be tasked with exploring leadership best practice during the break between the two parts of the programme.
Course Objectives:
Improve, enhance and maximise your leadership attributes.
Thoracic Surgery Part II
3rd – 7th December 2012
EACTS House, Windsor, UK
Course Directors: P Rajesh, Birmingham
The course programme includes:
■ Tracheal Surgery
■ Tracheobronchial injuries
■ Tracheal main bronchus obstruction
■ Esophageal Cancer – Staging, preoperative
■ Esophageal cancer
■ Thoroscopic techniques
■ Mediastinal treatments
■ Metastatic disease
■ Chest wall reconstruction
■ Case presentations.
Course Objectives:
To gain more insight and up-to-date knowledge on different aspects of thoracic surgery related to tracheal, pleural, mediastinal and oesophageal disease.

Chest Wall Diseases 28–30 November 2012
M Yakut, Course Director, Istanbul
EACTS House, Windsor, UK
Chest Wall Interest Group (CWIG) is a group belonging to the EACTS Thoracic Domain. It was founded during the Second International Nuss Procedure Workshop held in Istanbul in June 2009.
We have set out to establish a channel of communication across different continents with a view to allow the exchange of knowledge among those experienced practitioners who are studying, developing and innovating methods to treat chest wall diseases. In June 2010, we got together again in terni, for the Third International Workshop on the Minimally Invasive Repair of Pectus Deformities under the custody of EACTS. The Workshop was a great success and we had the chance to discuss the future projections of the CWIG.
Our next important meeting in the calendar was The Fourth International Chest Wall Interest Group Workshop on Chest Wall Diseases which was held in Istanbul on June 22 – 23, 2012, under the custody of EACTS, with the participation of 35 invited faculty from around the world.

Introducing the Future of Transapical TAVI - the Medtronic Engager System*

Since our entrance into the TAVI market, Medtronic has always been committed to providing multiple TAVI platforms. Heart teams need options to best treat their patients. By offering multiple valve platforms and access route options (transapical, transfemoral, direct aortic, and subclavian), Medtronic can help your team achieve the best outcome for each patient.

Filling this vision, the interim results from the Medtronic Engager European Pivotal Trial were presented yesterday during the Late Breaking Abstract Session. The early clinical experience is positive and demonstrates that the Engager System successfully puts you in control for precise positioning, tight annular sealing, and true anatomic alignment.

Precise Positioning
Engager’s unique control arms provide tactile feedback as they are placed into the sinuses of the native valve, securing the valve throughout deployment. With tactile control, deployment is simple and repeatable during the Pivotal Trial. 100% devices were implanted in the correct anatomic position and there were no embolizations, second valves implanted, or annular ruptures.

PVL Minimized
While the self-expanding frame conforms to the native anatomy, Engager further seals the annulus by capturing the native leaflets between the control arms and the frame. An independent echo core lab found no PVL greater than trace at 30 days during the Pivotal Trial.

True Anatomic Alignment
Transcatheter valves must recreate hemodynamic function in every patient regardless of aortic shape or size. The Engager valve is designed to align with and conform to the native anatomy. Fixation of the native leaflets and true commissure-to-commissure alignment provide clearance for the coronary ostia while supra-annular valve position minimizes frame deformation at the leaflets to optimize coaptation in non-circular anatomy.

Please join us today for the Medtronic TAVI Symposium (Room 113 12.45–14.00) to learn more about the future of TAVI, including a live-case with the Medtronic Engager Transapical TAVI System and an introduction to the CoreValve Invata surgical access delivery system.

We look forward to sharing the future with you.

*US calendar: “Month-Day”

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**Sizing in Valve Repair: Less Approximation/More Accuracy.**

Tuesday 30 October, 12:45–14:00
Level P1, Room 111
Find
Opportunity in Change

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