

EACTS Day in the new EACTS House[†]

Ludwig K. von Segesser*

Department of Surgery, CHUV, Lausanne, Switzerland

* Corresponding author. Department of Surgery, CHUV, Rue du Bugnon 45, CH-1005 Lausanne, Switzerland. Tel: +41-21-3142279; fax: +41-21-3202442; e-mail: lk@segesser.com (L.K. von Segesser).

Received 24 March 2012; received in revised form 19 April 2012; accepted 29 April 2012

Summary

There is no doubt that the European Association for Cardio-Thoracic Surgery is a success story. In 2011, we celebrated the 25th anniversary of this professional organization. In 2012, we will celebrate the 25th anniversary of the European Journal of Cardio-Thoracic Surgery. In addition, two other journals have been initiated, Interactive CardioVascular and Thoracic Surgery and the Multimedia Manual of Cardio-Thoracic Surgery, and all of them can be accessed through CTSnet (www.ctsnet.org). The most recent development was the birth of EACTS House, and it was to celebrate the official opening of EACTS House on 10 February 2011, that we held the second Strategic meeting, 'EACTS in the Future'. On 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 Adult Cardiac Disease) came together with representative thoracic and cardio-vascular surgeons from North America, Asia and BRICS countries as well as senior managers from industry in order to decide where to go from there. As a basis for starting the discussions, a sector analysis of the activities of the Department of Cardio-Vascular Surgery at CHUV in Lausanne, Switzerland was performed in order to identify the trends in the activities of our group of surgeons by pulling the consolidated data for the period running from 1 January 1995 to 31 December 2010. Interestingly enough, the most frequent procedures like coronary artery bypass graft and valve repair/replacement did not increase despite a growing programme. In our setting, the compensation came mainly from vascular surgery and mechanical circulatory support. These data have to be put in perspective by the reports provided by the EACTS domain chairs in order to identify the challenges and opportunities for the future development of our specialities.

Keywords: Cardiac surgery • Thoracic surgery • Vascular surgery • Endo-vascular surgery • Education

EACTS IN THE PAST AND PRESENT

There is no doubt that the European Association for Cardio-Thoracic Surgery is a success story. In 2011, we celebrated the 25th anniversary of this professional organization [1], which counts now more than 2600 members, not only from Europe, but from all over the world. In 2012, we will celebrate the 25th anniversary of the European Journal of Cardio-Thoracic Surgery (EJCTS) [2], which brings to its readers more than 2500 printed pages per year, has a print run of more than 5000 per issue, and can of course be accessed through the world wide web from practically anywhere at any time [3]. In addition, two other journals have been initiated, Interactive CardioVascular and Thoracic Surgery (ICVTS) [4, 5], and the Multimedia Manual of Cardio-Thoracic Surgery (MMCTS) [6], and all of them can be accessed through CTSNet (www.ctsnet.org).

The most recent development was the birth of EACTS House (Fig. 1), and it was to celebrate the official opening of EACTS House on 10 February 2011, that we held the second Strategic meeting 'EACTS in the Future'. On 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 Adult Cardiac Disease) came together with representative thoracic and cardio-vascular surgeons from North America, Asia and BRICS countries as well as senior managers from industry in order to decide where to go from there or, in other words, to identify the challenges and opportunities for the future development of our specialities.

In accordance with Winston Churchill's saying 'The farther backward you can look the farther you are likely to see' [7], a search of the clinical database at the Department of Cardio-vascular Surgery at CHUV in Lausanne, Switzerland was performed in order to identify the trends in the activities of our group of surgeons by pulling the consolidated data for the period running from 1 January 1995 to 31 December 2010. This cardiovascular surgery department functions as a multisite organization operating in six different hospitals as reported previously. Overall, the activities of our group of surgeons at the Department of Cardio-Vascular Surgery, CHUV, Lausanne, Switzerland (current staff surgeons of The Cardio-Vascular Surgery Group: I. Bruschweiler, D. Delay, E. Ferrari, M. Hurni, B. Marty, P. Ruchat, P. Tozzi, L.K. von Segesser) as documented by the number of operations/procedures per year have been increasing (Fig. 2) from ~1000 to more than 1600 over the study period.

However, the development of the number of procedures in the main domains of activity has not been uniform over time. As

[†]Presented at the 2nd Strategic Meeting of the European Association for Cardio-Thoracic Surgery, Windsor, UK, 10 February 2012.



Figure 1: EACTS House, Madeira Walk, Windsor, Berks, SL4 1EU, UK. The EACTS House puts EACTS on the map and features an approximate 300 m² for offices, meeting rooms, training facilities, etc.

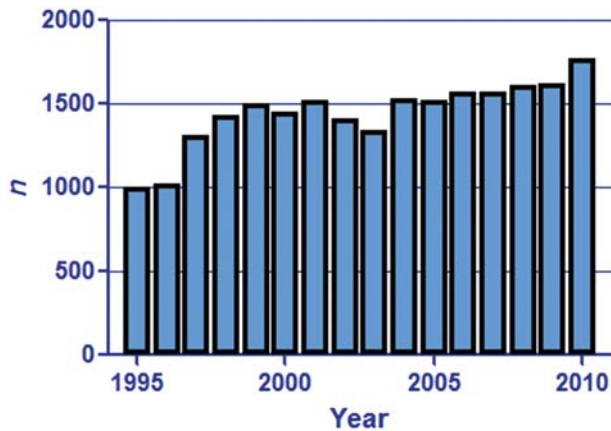


Figure 2: The number of procedures performed per year by the Cardio-Vascular Surgery Group has increased steadily.

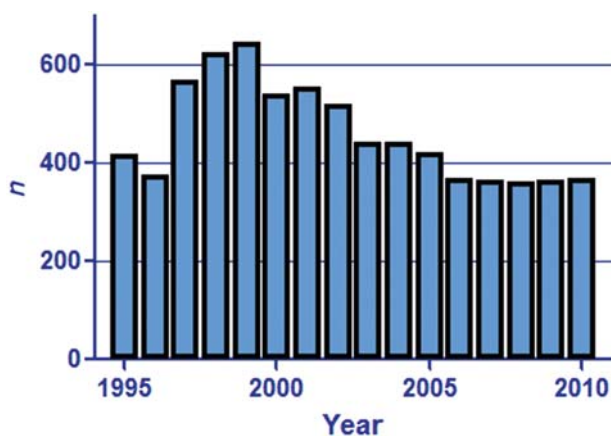


Figure 3: The number of patients operated by the Cardio-Vascular Surgery Group for coronary artery bypass graft (CABG) increased at the beginning of the observation period, but has been on the decline ever since, even if it appears to have stabilized.

a matter of fact, the operations for coronary artery bypass graft (CABG) decreased several years ago (Fig. 3) and stabilized at a level below the beginning of the observation period.

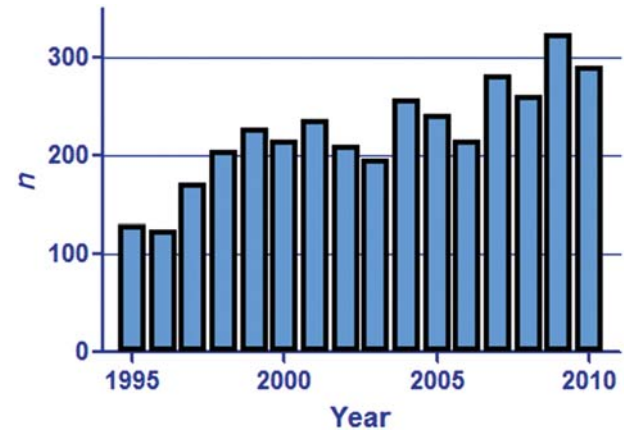


Figure 4: The number of operations performed per year by the Cardio-Vascular Surgery Group for aortic valve disease increased up to the year 2009 but has decreased since, despite the inclusion of catheter valves in this activity. Whether this observation is a temporary fluctuation or the beginning of a trend remains to be seen in the future.

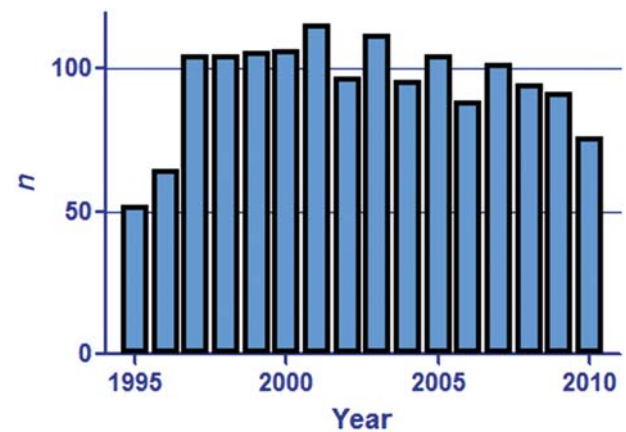


Figure 5: The number of operations performed per year by the Cardio-Vascular Surgery Group for mitral valve disease doubled at the very beginning of the observation period, but numbers began to decrease at an earlier timepoint than that observed with aortic valve operations i.e. prior to 2009. (see also Fig. 4).

Interestingly enough, we have not seen a significant increase in the frequency of CABG (also for 2011) despite the recommendations by the recent EACTS-ESC guidelines on coronary artery revascularization [8], which gave much more weight to surgical revascularization in the decision-making process as compared with the interventional procedures [8, Table 9], or the results of the SYNTAX trial, which have been updated several times [9, 10]. This is in contrast to surgical units in other areas that report an approximate 10% increase in surgical revascularizations since the publication of the guidelines [8].

Operations for aortic valve disease have more than doubled over the last 15 years (Fig. 4), peaking in the year 2009, and have been decreasing since (confirmed for 2011). This is despite the fact that the implantation of catheter valves has been included in this graph and that our group has been active in the experimental setting since 2002 [11] and in the clinical setting since 2006 [12]. In contrast, the operations for mitral valve disease (Fig. 5) increased substantially at the very beginning of the observation period but dropped off again at an early stage to that which is seen for the aortic valve procedures. Whether this

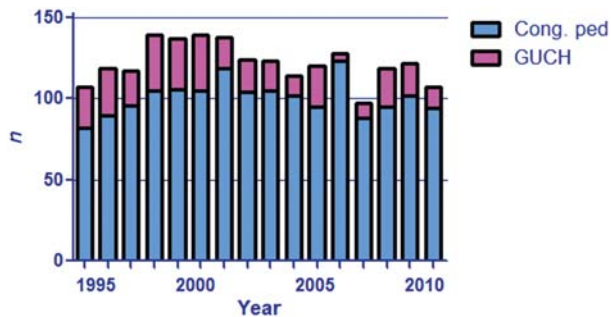


Figure 6: The number of operations performed per year by the Cardio-Vascular Surgery Group for congenital heart disease in paediatric (Cong. ped) and grown-up patients (GUCH) has been fluctuating, but is relatively stable overall.

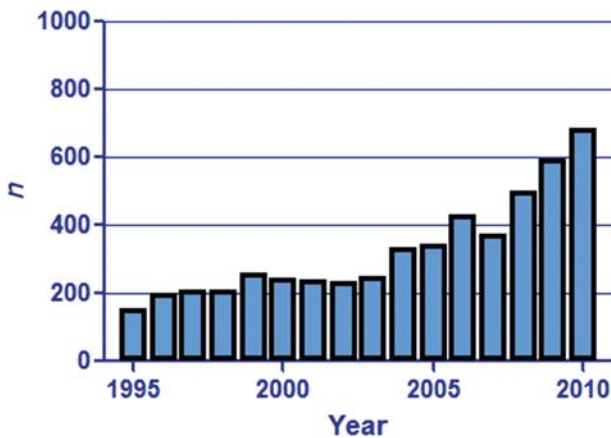


Figure 7: Operations performed per year by the Cardio-Vascular Surgery Group for vascular disease including procedure on the entire aorta and its branches have increased during the observation period and have certainly compensated for some of the decreases in other areas. Endovascular procedures introduced in 1996 have contributed to this development.

observation is due to the increased number of players in the field, introducing various types of percutaneous devices [13] or whether the perception of the potential introduction of such therapies can provide a sufficient explanation remains to be seen.

Another important part of our activities are the operations performed for congenital heart disease (Fig. 6) in the paediatric and the grown-up age groups. It was recognized quite some time ago, that the improved outcome in paediatric congenital heart surgery is a driver for surgery of congenital heart disease in adults (grown-ups), the so-called GUCH-population [14], and it can be shown here that the total number of patients operated on for congenital heart disease in the paediatric and GUCH groups has remained relatively stable overall.

Figure 7 displays the development of vascular operations including operations on the ascending aorta, the aortic arch, the descending thoracic and thoraco-abdominal aorta as well as the supra-aortic arteries, visceral, renal and peripheral arteries. Some of the increase demonstrated is due to endovascular aneurysm repair for abdominal aortic aneurysms introduced in 1996 [15] as well as thoracic endovascular aneurysm repair and its variations [16]. However, there are also modifications in consolidation due to changes in practice and/or the main location of the individual

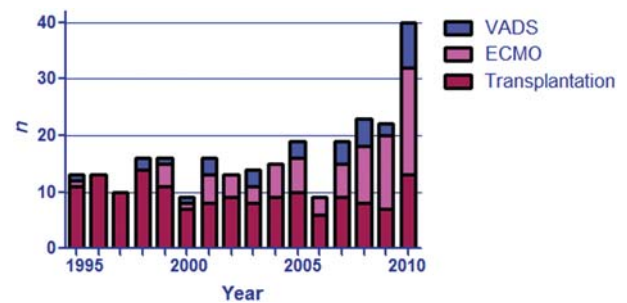


Figure 8: Operations performed per year by the Cardio-Vascular Surgery Group for terminal heart failure including procedures such as heart transplantation, ECMO and VADS. While the number of heart transplantations has recovered in 2010 to levels of the earlier part of the observation period, procedures involving implantable assist devices and ECMO have steadily increased in recent years. There appears to be an opportunity here for further development.

surgeons of our group. Overall, the vascular operations and procedures represent a growing part of our activities and have been a door opener for more complex catheter-based techniques like transcatheter aortic valve implantation without angiography [17, 18].

Another area of growth in our field appears to be terminal heart failure. As a matter of fact, heart transplantation suffered from low numbers mainly due to donor shortage for several years, but recovered in 2010 and has been at similar levels since (Fig. 8). In contrast, mechanical circulatory support with implantable devices [19] has steadily increased over the years, and even more so has extracorporeal membrane oxygenation (ECMO), although there are also indications for respiratory support [20] included in this graph, because this service is provided by our group.

Based on the numbers provided, we feel that there is increasing competition in the treatment of traditionally surgical fields, which include not only coronary artery disease, but also valvular disease, congenital heart disease, aortic disease, arrhythmias (not shown in detail here) and heart failure. For low numbers of heart transplantation, it may be modern drug therapy and resynchronization that delay the decision-making process in addition to the lack of organ donors. However, the latter should not limit the use of implantable assist devices that have become not only more reliable and user friendly, but also smaller. In combination with ECMO for the acute setting, there seems to be a real opportunity here for the future of our specialties. The following manuscripts [21–24] will provide a detailed analysis of the challenges and opportunities of the four EACTS Domains, namely the Domain of Thoracic Disease [21], the Domain of Vascular Disease [22], the Domain of Congenital Cardiac Disease [23] and the Domain of Adult Cardiac Disease [24].

Conflict of interest: Ludwig K. von Segesser is founder and shareholder of Smartcanula LLC, Lausanne, Switzerland.

REFERENCES

- [1] 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.

- [2] Savunen T. Cardiovascular abnormalities in the relatives of patients operated upon for annulo-aortic ectasia. A clinical and echocardiographic study of 40 families. *Eur J Cardiothorac Surg* 1987;1:3-9.
- [3] Beyersdorf F. A new look for EJCTS, ICVTS, and MMCTS: better service for our readers with the support of our new publisher, Oxford University Press. *Eur J Cardiothorac Surg* 2012;41:1.
- [4] Von Segesser LK. Surgical technique versus technology for surgery: a plea for an open mind towards new technology. *Interact CardioVasc Thorac Surg* 2002;1:1-3.
- [5] Beyersdorf F. A new look for EJCTS, ICVTS, and MMCTS: better service for our readers with the support of our new publisher, Oxford University Press. *Interact CardioVasc Thorac Surg* 2012;14:1.
- [6] Czerny M, Pfannmüller B, Borger MA, Schmidt A, Mohr FW, Grabenwöger M. Hybrid debranching technique for aortic arch replacement. *Multimed Man Cardiothorac Surg* 2011; 10.1510/mmcts.2011.005108.
- [7] Naef AP, von Segesser LK. Thoracic and Cardio-Vascular Surgery. From the Magic Mountain to Rocket Science. Windsor: European Association for Cardio-Thoracic Surgery, EACTS House, publisher, 2010, 5.
- [8] The Task Force on Myocardial Revascularization of the European Society of Cardiology (ESC) and the European Association for Cardio-Thoracic Surgery (EACTS). Guidelines on myocardial revascularization. *Eur J Cardiothorac Surg* 2010;38:S1-52.
- [9] Head S, Mack MJ, Holmes DR, Mohr FW, Morice MC, Serruys PW *et al*. Incidence, predictors and outcomes of incomplete revascularization after percutaneous coronary intervention and coronary bypass grafting: a subgroup analysis of 3-year SYNTAX data. *Eur J Cardiothorac Surg* 2012;41:535-41.
- [10] Taggart DP. Incomplete revascularization: appropriate and inappropriate. *Eur J Cardiothorac Surg* 2012;41:542-3.
- [11] Corno AF, Zhou J, Tozzi P, von Segesser LK. Off bypass implantation of a self expandable valved stent between inferior vena cava and right atrium. *Interact CardioVasc Thorac Surg* 2003;2:166-9.
- [12] Ferrari E. Transapical aortic 'valve-in-valve' procedure for degenerated stented bioprosthesis. *Eur J Cardiothorac Surg* 2012;41:485-90.
- [13] Alfieri O, Denti P. Alfieri stitch and its impact on mitral clip. *Eur J Cardiothorac Surg* 2011;39:807-8.
- [14] Vouhe PR. Adult congenital surgery: current management. *Semin Thorac CardioVasc Surg* 2011;23:209-15.
- [15] Marty B, von Segesser LK, Schöpke W, Muntwyler J, Turina I. Morphology of abdominal aortic aneurysms with reference to endovascular blood vessel prosthesis. *Swiss Surg* 1996;2:219-22.
- [16] Shen K, Tang H, Jing R, Liu F, Zhou X. Application of triple-branched stent grafts for Stanford type A aortic dissection: potential risks. *Eur J Cardiothorac Surg* 2012;41:e12-7.
- [17] Ferrari E, Sulzer C, Marcucci C, Rizzo E, Tozzi P, von Segesser LK. Transapical aortic valve implantation without angiography: proof of concept. *Ann Thorac Surg* 2010;89:1925-32.
- [18] Ferrari E, Sulzer C, Marcucci C, von Segesser LK. The 'dumbbell technique' for improved echocardiography guided transapical aortic valve implantations. *J Thorac Cardiovasc Surg* 2010;140:1428-9.
- [19] Haneya A, Philipp A, Puehler T, Ried M, Hikler M, Zink W *et al*. Ventricular assist device implantation in patients on percutaneous extracorporeal life support without switching to conventional cardiopulmonary bypass system. *Eur J Cardiothorac Surg* 2012;41:1366-70.
- [20] Beurtheret S, Mastroianni C, Pozzi M, D'Alessandro C, Luyt CE, Combes A *et al*. Extracorporeal membrane oxygenation for 2009 influenza A (H1N1) acute respiratory distress syndrome: single centre experience with 1 year follow-up. *Eur J Cardiothorac Surg* 2012;41:691-5.
- [21] Van Schil PE. The present and future of thoracic surgery within the European Association for Cardio-Thoracic Surgery (EACTS). *Eur J Cardiothorac Surg* 2013;43:219-22.
- [22] Czerny M, Bachet J, Bavaria J, Bonser R, Borger MA, De Paulis R *et al*. The future of aortic surgery in Europe. *Eur J Cardiothorac Surg* 2013;43:244-8.
- [23] Brawn WJ. Domain of congenital heart disease: past, present and future. *Eur J Cardiothorac Surg* 2013;43:249-51.
- [24] Pepper JR. The acquired cardiac disease domain: the next 5 years. *Eur J Cardiothorac Surg* 2013;43:241-3.