The present and future of thoracic surgery within the European Association for Cardio-Thoracic Surgery (EACTS)

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Summary

On 10 February 2012, a Strategic Conference was organized by the European Association for Cardio-Thoracic Surgery (EACTS) in Windsor during the inauguration of the newly acquired EACTS house. In this review, the present and future of thoracic surgery are discussed. With the creation of the Thoracic Domain, thoracic surgery has been strengthened and made clearly visible within the general EACTS structure. A clearly identified thoracic track is provided during the Annual Congress. Specific working groups have been created that deal with varying topics of thoracic surgery and diseases of the chest. The European School of Cardiothoracic Surgery has been restructured, providing not only theoretical but also practical education in thoracic surgery. At national and international levels, interdisciplinary cooperation is encouraged. Harmonization of thoracic training within Europe is necessary to allow better exchange between different countries. Guidelines dealing with specific thoracic procedures should be further developed. The Thoracic Domain of EACTS will remain a key player in promoting thoracic surgery in Europe and internationally, and in providing high-level scientific output, education and training in thoracic surgery and diseases of the chest, which requires continuous, close cooperation between thoracic and cardiothoracic surgeons.

Keywords: Thoracic surgery · Staging · Diagnosis · Treatment · Education · Research

INTRODUCTION

In this review, the present and future of thoracic surgery are presented as discussed during the second European Association for Cardio-Thoracic Surgery (EACTS) Strategic Conference in the EACTS house in Windsor on 10 February 2012. The activities of the Thoracic Domain are listed in detail. Some specific characteristics of thoracic surgery in Europe are discussed, followed by future perspectives of the Thoracic Domain in 5 and 10 years. The main objectives of the Thoracic Domain are to advance education in the field of general thoracic surgery, promote research in thoracic physiology, pathology and therapy, correlate and disseminate the results thereof, and organize the thoracic scientific programme of the EACTS annual meeting. The current members of the Thoracic Domain are listed in Table 1.

ACTIVITIES THORACIC DOMAIN TILL 2012

Thoracic track annual congress

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 will be used for the 2012 congress, which will take place in Barcelona from October 27–31.

Improvement of quality in thoracic surgery will be an integrated part of this year’s programme. This comprises the 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 the 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 with alternative treatment modalities or minimally invasive approaches. The latter are the main subjects of the thoracic Technocollege, which will focus on advanced procedures in minimally invasive interventions with thoracoscopic and robotic live pulmonary and mediastinal surgery from Pisa, Italy.

For the Postgraduate Course, a new format will be introduced with the audience seated in a semi-circle and 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 Dartevelle as chair, who has an extensive experience with pulmonary thromboendarterectomy. The best thoracic abstract will be awarded the annual thoracic young investigator award. Staging of lung cancer and experimental thoracic surgery will be dealt with in the professional

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Working groups within Thoracic Domain

Specific working groups were created within the Thoracic Domain focusing on specific topics in thoracic surgery. These are listed in Table 2 with the current chairs and subjects studied in each working group. Figure 1 shows the chest wall interest group at the Izmir meeting in June 2010.

European school of cardiothoracic surgery

Currently, the so-called Bergamo school has been reshaped and transferred into the EACTS house in Windsor. The theoretical thoracic course is divided into two parts, the first addressing lung pathology and the second, trachea, oesophagus, pleura and mediastinum. This course is coordinated by Kalliopi Moghissi, Michael Dusmet and Pala Babu Rajesh. The third level consists of on-site visits to dedicated centres organized by Erino Rendina from Rome.

Symposia thoracic surgery

Several symposia and courses were set up by the Thoracic Domain. Selected ones are listed in Table 3.

Interdisciplinarity cooperation

To increase awareness of thoracic surgery, interdisciplinary cooperation with oncologists and respiratory physicians at national and European levels has been established. Examples include European Society of Medical Oncology, International Association for the Study of Lung Cancer (IASLC), and United Kingdom. This underscores the role of the Union Européenne des Médecins Spécialistes (UEMS) and recently, a start-up meeting of a thoracic division was held in Brussels on 24 February 2012.

Also, patient care is generally not standardized, with thoracic surgery being performed in university hospitals, private and community hospitals by general, thoracic and cardiothoracic surgeons. To harmonize diagnosis and treatment, specific recommendations have to be put forward. Examples include guidelines on preoperative and intraoperative nodal staging of lung cancer, which were developed by the European Society of Thoracic Surgeons [1, 2]. There is certainly also a need for prospective national and European databases to evaluate the number of procedures performed and their short-term and long-term results. However, many centres in Europe only perform a limited number of procedures, which gives rise to quality concerns. Even in dedicated centres, guidelines are not always followed, making specific education and training necessary [3].

THORACIC SURGERY IN EUROPE

Within the European Union, there is no uniformity regarding training in thoracic surgery. In Belgium, thoracic surgery is not a separate specialty, but part of a general surgical training programme. A specific outline for a special competence that already exists for peripheral vascular and cardiac surgery has recently been proposed (Fig. 2).

Another example represents the Netherlands, where a specific thoracic training is provided in Switzerland, Italy and United Kingdom. This underscores the role of the Union Européenne des Médecins Spécialistes (UEMS) and recently, a start-up meeting of a thoracic division was held in Brussels on 24 February 2012.

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Thymic Malignancies Interest Group (ITMIG) and International Association for the Study of Lung Cancer.


5-YEAR FORECAST FOR THE THORACIC DOMAIN

EACTS and its Domains remain established authorities in cardiothoracic surgery. EACTS represents a unique combination of thoracic and cardiothoracic surgeons with many common interests and goals, as well clinically as scientifically. Mutual cooperation remains necessary to maintain high-quality standards of care and to prepare for future developments and challenges. Close collaboration between cardiac and thoracic surgeons has already been established in many different aspects of our specialties [4–9]. Cardiac and pulmonary physiology are clearly interrelated as, for example, shown in a recent study evaluating coronary artery blood flow in an experimental setting of lung ischaemia and reperfusion [4]. Thoracic transplantation requires intense collaboration in multidisciplinary teams including cardiac and thoracic surgeons. This certainly holds true for combined heart-lung transplantation performed in patients with combined cardiopulmonary disorders such as pulmonary hypertension [5]. Robotic surgery has recently been introduced in thoracic as well as cardiac surgery. New fascinating developments will be of benefit to both specialties [6]. In some instances, thoracic surgeons will make use of cardiopulmonary bypass, extracorporeal circuits or assist devices as a bridge to transplantation. Examples include severe respiratory insufficiency, technically demanding operations such as lung transplantation in patients with a single lung, or isolated organ perfusion to deliver high doses of loco-regional chemotherapy [7, 8]. Combined cardiac and pulmonary operations such as coronary bypass procedures in patients requiring simultaneous lung resection in case of suspected lung nodules are other examples requiring fine-tuning of both disciplines [9].

In the next 5 years, this cooperation will give rise to better understanding of cardiopulmonary physiology, the birth of new technical developments and better perioperative patient care, especially in high-risk interventions.

Table 3: Selected symposia and courses organized by the Thoracic Domain

<table>
<thead>
<tr>
<th>Topic</th>
<th>Location</th>
<th>Year</th>
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<tbody>
<tr>
<td>Thymic tumours</td>
<td>Antwerp</td>
<td>2008</td>
</tr>
<tr>
<td></td>
<td>Amsterdam (ITMIG)</td>
<td>2011</td>
</tr>
<tr>
<td></td>
<td>Padua</td>
<td>2013</td>
</tr>
<tr>
<td>Robotic course (three parts)</td>
<td>Geneva</td>
<td>2010</td>
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<td></td>
<td>Strasbourg</td>
<td>2011</td>
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<tr>
<td></td>
<td>Pisa</td>
<td>2012</td>
</tr>
<tr>
<td>Chest wall</td>
<td>Strasbourg</td>
<td>2009</td>
</tr>
<tr>
<td></td>
<td>Izmir</td>
<td>2010</td>
</tr>
<tr>
<td></td>
<td>Istanbul</td>
<td>2012</td>
</tr>
<tr>
<td>Thoracic oncology</td>
<td>Milano</td>
<td>2011</td>
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<tr>
<td></td>
<td>Windsor</td>
<td>2012</td>
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<tr>
<td>Lung cancer, pleura</td>
<td>Rome</td>
<td>2011</td>
</tr>
<tr>
<td></td>
<td>Rome</td>
<td>2012</td>
</tr>
<tr>
<td>Regenerative medicine</td>
<td>Bern</td>
<td>2008</td>
</tr>
<tr>
<td></td>
<td>Vienna</td>
<td>2010</td>
</tr>
<tr>
<td>Thoracoscopic course</td>
<td>Thessaloniki</td>
<td>2010 and 2012</td>
</tr>
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Special competence – proposal Belgium

Figure 2: Proposed training schedule for cardiac, thoracic and vascular surgery in Belgium.
EACTS is a financially healthy society. Three major publications are currently properties of the society: European Journal of Cardio-Thoracic Surgery, Interactive CardioVascular and Thoracic Surgery and Multimedia Manual of Cardio-Thoracic Surgery. Contributions from thoracic surgery comprise a substantial part and only high-quality submissions are selected.

Similar to other disciplines, thoracic surgery is continuously evolving and thoracic surgeons should prepare for constant change. Thoracic surgery currently represents an integral part of multidisciplinary teams discussing thoracic oncology, infections and chest wall pathology.

Multiple grey zones remain, especially related to the use of minimally invasive techniques for the diagnosis and treatment of thoracic pathology. Examples include staging and treatment of lung cancer. The specific role of positron emission tomography (nuclear medicine), needle aspiration (thoracic radiology) and minimally invasive techniques such as endobronchial ultrasound (pulmonary physicians) and mediastinoscopy (thoracic surgery) has not been established. Treatment of small, early stage lung cancers remains controversial. Prospective studies are needed to define the relative role of limited resection (thoracic surgery), stereotactic radiotherapy (radiation oncology) and radiofrequency ablation (thoracic radiologists).

Expert technical skills are required to obtain the best results and further education is necessary, also on surgical issues such as intraoperative lymph node staging and dissection [3]. Thoracic surgeons should be able to cope with new technical challenges such as, e.g. salvage surgery for recurrent disease after high-dose chemoradiation for locally advanced lung cancer [10]. Thoracic surgeons should also be aware of new developments in molecular biology giving rise to more personalized treatment.

The cost of minimally invasive techniques becomes an important issue, especially with the introduction of advanced thoracoscopic and robotic procedures. Thoracic surgeons should be involved in prospective trials comparing these new developments with alternative techniques such as stereotactic radiotherapy and radiofrequency ablation [10].

Quality of life and patient satisfaction issues become increasingly important. Thoracic surgeons should participate in registries and databases and should be involved in the analysis and evaluation of results.

10-YEAR FORECAST FOR THE THORACIC DOMAIN

Regarding the perspectives in 10 years, only the future will tell whether our current dreams will become true. Ideally, a common society of cardiothoracic surgery has been created with integrated structures and mutual respect between cardiac, thoracic, cardiothoracic and vascular surgeons. A common European school of thoracic surgery exists, providing high-level theoretical and practical training sessions. One European database of thoracic surgery has become active, incorporating most thoracic procedures in Europe with yearly reports that not only list mortality but also provide outcome data according to different clinical parameters. UEMS provides a uniform European training in thoracic surgery, delivering universally recognized certificates in thoracic and cardiothoracic surgery.

Thoracic surgery will remain a fascinating, passionate, stimulating and rewarding specialty requiring dedication, high-level technical skills and profound empathy for our patients presenting with thoracic pathology.

Conflict of interest: none declared.

REFERENCES