

The development of General Thoracic Surgery

Geschichte und Entwicklung der Thoraxchirurgie

Heikki Toomes¹
Lothar Swoboda²

1 Abt. für Thoraxchirurgie,
Klinik Schillerhöhe, Gerlingen

2 Hamburg

Text

The development of General Thoracic Surgery

At the beginning of the 19th century, the development of chest surgery was initiated by the purposeful experimentation of French, German, and other European surgeons. The discovery of the **low-pressure method** is linked with names such as Brauer, von Mikulicz, and Sauerbruch in 1904. The accurate experiments of the last-mentioned led to the development of the decompression chamber - Sauerbruch's cabinet.

The **high-pressure method** and the introduction of **endotracheal anaesthesia** by Kuhn in Germany, - Auer, and Meltzer working in the Institute of Physiology at the Rockefeller Institute - followed in the years between 1901 and 1909.

Advances in anaesthesia with **endotracheal ventilation** made increasingly extensive thoracic surgical interventions possible, as positive pressure could be maintained in the lungs and collapse on opening the chest avoided. Following the first **atypical pulmonary resections** for tuberculosis at the end of the 19th century by Delorme, Doyen, and Tuffier in France - Heidenheim undertook the first **lobectomy** in Worms in Germany in 1901. In 1931 Nissen successfully performed the first **pneumonectomy** on a child with bronchiectasis and Graham, in 1933, carried out the first pneumonectomy to remove a bronchial carcinoma.

Anatomically isolated preparation of the hilar structures was undertaken by Rienhoff in 1933, whereby considerable reduction in complications was achieved.

Lung surgery progressed rapidly so that the anatomical segmental resection was employed clinically by Churchill and Belsey in 1939 in England.

Edwards established the thoracic tradition of the Brompton School in London, and his first assistant Price Thomas performed the first **bronchial sleeve resection** in 1947.

An important prerequisite for lobectomy was the introduction of suction drainage of the pleural cavity for the reexpansion of the residual lung. This was achieved using the siphon drainage developed by von Bülow in 1890.

After the Second World War General Thoracic Surgery in Germany advanced. Resection procedures became increasingly important.

Special scope of General Thoracic Surgery

General Thoracic Surgery comprises operative measures in cases of congenital anomalies, malfunction, diseases and injuries of the thorax, the pleura, the tracheobronchial system, the lungs, the diaphragm, esophagus, and mediastinal organs.

Because of high proportion of cancer patients - about 70% - thoracic surgery today in Europe is a largely oncological surgery.

Knowledge of the diagnostic procedures in radiology, nuclear medicine, internal medicine, and pneumology is therefore necessary, and evaluation of the relevant findings must be practised so that preoperative tumour staging can be undertaken.

Operative success is depending on the indication and choice of surgical technique. At the beginning the risks must be ascertained; especially the functional effect of an intervention involving reduction of pulmonary capacity must be considered in terms of the immediate and later postoperative phases.

The **organ-saving techniques** used in lung surgery as well as the special possibilities of intensive postoperative treatment give good chances of survival even to high-risk patients.

The new **multimodal therapies** including neoadjuvant combined chemo-radiotherapy of malignant tumours in advanced stage presuppose technical skill of the thoracic surgeon and give the patients a fair chance of survival. These therapies are getting more complex and imply a high level of special knowledge.

Extended resections of Pancoast and chest wall tumours combined with reconstruction with major flaps and "sandwich" prostheses yield good results and long-term salvage.

Tracheal resection and reconstruction, and **oesophageal surgery** are other fields of thoracic surgery requiring special knowledge and extensive experience.

Videoassisted thoracoscopic surgery was introduced about 1990 and has experienced a furious development. In many departments nearly half of the thoracic surgery is performed per VATS. This kind of surgery also presup-

poses technical skill of the thoracic surgeon and special equipment.

The role of **laser-, cryo-, photodynamic therapies** in the treatment of thoracic malignancies, like stenting and interventional endoscopic procedures, increases every year.

Specialization

A comprehensive and well-grounded training over several years is necessary for specialization in Thoracic Surgery. With the introduction of Thoracic and Cardiovascular Surgery as a separate surgical speciality in 1976 in Germany, a specific and organised programme for training was initiated.

In spite of this programme for specialization, the training for General Thoracic Surgery and the development in the field of General Thoracic Surgery were not satisfactory.

The German Society for Thoracic Surgery was founded in 1991 to take care of the special interests of Thoracic Surgery. These efforts led to the introduction of Thoracic Surgery as a **monospeciality**, which was accepted by the German Medical Assembly in 1992.

Since introduction of the monospeciality we have had an increase in quality of Thoracic Surgery.

In 2003 the German Medical Assembly accepted the **Common Trunk** as a basic training programme, and in 2004 the **Federation of Surgery** (Figure 1), with all surgical specialities equally ranked, was accepted.

To take care of the scientific interests and as Official Organ of the German Society for Thoracic Surgery the electronic journal Thoracic Surgical Science (TSS) was founded in 2004 in the setting of German Medical Science.

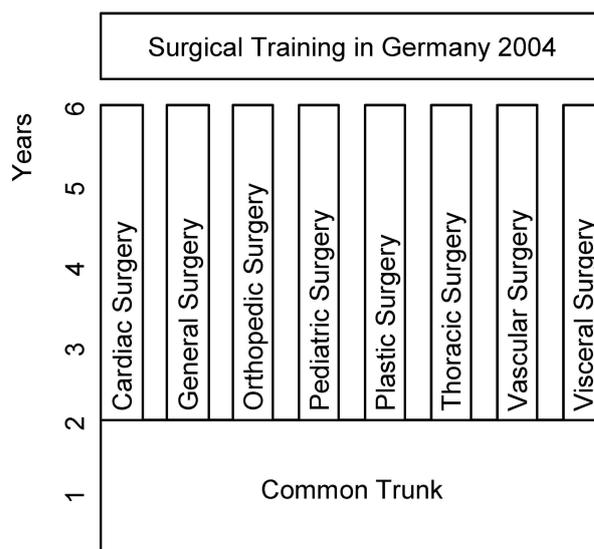


Figure 1: Surgical monospecialities and training time

Corresponding author:

Prof. Dr. Heikki Toomes
Abt. für Thoraxchirurgie, Klinik Schillerhöhe, Solitudestr.
18, 70839 Gerlingen
toomes@klinik-schillerhoehe.de

Please cite as

Toomes H, Swoboda L. The development of General Thoracic Surgery. *Thorac Surg Sci.* 2004;1:Doc01.

This article is freely available from

<http://www.egms.de/en/journals/tss/2004-1/tss000001.shtml>

Published: 2004-10-01

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