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EDITORIAL

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# 145 years of *Langenbeck's Archives*: the oldest journal worldwide in scientific surgery

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On 25 February 1860, Bernhard von Langenbeck, Professor of Surgery, Berlin founded the journal *Archiv für Klinische Chirurgie* together with Professor T. Billroth, Zürich and Dr. E.G. Gurlt, Berlin.

Von Langenbeck and Billroth were convinced about the natural sciences being the fundament of surgery. Thoughts behind the establishment of a scientific journal are the need for a forum to discuss reports of surgical treatment in the community of surgeons and to teach evident new knowledge.

In the second half of the 19th century surgeons were mainly concerned with understanding the processes of wound healing, management of bleeding, surgery of abscesses and treatment of war injuries. However, at that time, neither asepsis nor antibacterial treatment, nor pain control during surgery, was established.

"I operated on you, may God cure you," was the attitude reported by many famous surgeons of the time. A terrible contrast, however, existed between successful application of surgical procedures and the results.

The development of surgical science in the second half of the 19th century is based on the evolution of medical specialities, e.g. anatomy, topography, pathology and pathophysiology, including nerve functions and hormone regulations. After the introduction of ether narcosis—in 1846 by Samuel Wells in Boston—and antisepsis—in 1867 by Lister in Edinburgh—surgeons from Germany extended, with breathtaking speed, operative treatment to almost any organ: in 1881 Billroth performed the first successful resection of the stomach, in 1896 Rehn was successful with the first suture on the beating heart, in 1904 Sauerbruch introduced surgical treatment on the open thorax, and Walter Kausch performed the first successful pancreaticoduodenectomy in 1909 in Berlin.

Surgical pioneers introduced their ideas about new operations in surgical practice after studying surgical techniques on corpses and by application of surgical procedures in animal experiments. However, uncertainties about indications to apply new surgical techniques, and deficits in knowledge about the nature of the disease, resulted, sometimes, in critical comments; the editors of the *Deutsche Zeitschrift für Chirurgie*, in which, in 1882, Rüdiger published results of his first successful resection of the stomach for severe ulceration, commented on the report in a footnote: "Hopefully the last one".

"Permanent fortune in surgery, privileged surgeons who always have good cards, don't exist. Knowledge and skills are the only factors which decide the results."
(Volkmann in 1874, *Archive für Klinische Chirurgie*.)

Today, scientific contributions are mostly derived from non-surgical specialities. Biochemistry, immunol-

ogy, cell physiology, molecular oncology, molecular biology and biomechanics are the sciences that have the strongest impact on progress in medicine. Only in organ and tissue transplantation, biomedical techniques, development of minimally invasive surgical procedures and artificial organs, do surgeons contribute significantly to the high level of medical–surgical treatment of diseases.

The specific structures and functional qualities of tissues and organs and the rapid evolution of knowledge in medicine, the half life of experimental and clinical data and the high expectations of patients with regard to maintenance of quality of life, resulted in the specialisation and super-specialisation of surgery.

The volumes of *Langenbecks Archiv für Chirurgie* between 1930 and 1980 reflected the development of surgical specialities, particularly in the field of general and GI-tract surgery, trauma surgery, neurosurgery, plastic surgery and surgical research.

The development of surgical sciences in the 21st century is characterised by globalisation of knowledge: the gaining of knowledge electronically at any time and at almost any location. The standardisation of treatment principles that are based on decisions of national and international consensus boards, and assessment of treatment modalities of medical as well as surgical treatment by means of prospective controlled randomised trials, resulted in the development of evidence-based medicine.

As a consequence of the global development of medical sciences, and because English is the language of science, *Langenbecks Archiv für Chirurgie* has, since 1998, been published exclusively in English, beginning with volume 383.

The evolution of knowledge in the molecular biological understanding of inflammatory, neoplastic and congenital diseases, and the profound understanding of the influence of neuronal networks and neuroregulation of almost each function, has resulted in a holistic view of human beings and their diseases. As a consequence of this new paradigm of diseases, medical *and* surgical treatment, no longer medical *or* surgical treatment, has become the most effective treatment modality. As a consequence of the growing number of evidence-based data about the understanding of diseases and concerns about treatment, *Langenbeck's Archives of Surgery* focuses, in each issue, on papers about current concepts in surgery, including molecular biological data of understanding diseases, medical and surgical treatment modalities and outcome results.

Reflecting the translation of basic research knowledge into surgical treatment modalities, *Langenbeck's Archives of Surgery* established a section called *New Surgical Horizons* for papers focusing on new data about the understanding of diseases and the evolution of new surgical treatment modalities. Two further sections of each issue are concerned with *How To Do It*, written by the most experienced surgeons, and *Mastery in Surgery*, reflecting the history of the development of modern surgical treatment that stands on the shoulders of pioneer surgeons from the past, keeping in mind the little contributions of present surgery.

In 1997 Springer Publishers introduced electronic publishing and "Online First" publication in 2000, resulting in a very short period between acceptance and electronic publication. *Langenbeck's Archives of Surgery* belongs to one of the best electronically equipped and effective group of surgical journals because, in 2000, Springer Publishers also introduced "Electronic Supplementary Material", which allows the authors to add a video-clip about histology or surgical techniques to the electronic version of the paper. The video-clip of 3 min is of particular interest in papers that present data about the change of new techniques, from open-access to minimally invasive surgery. The transmission and mediation of surgical knowledge by the electronic publishing modalities has become the main mode of international dissemination of the data published in *Langenbeck's Archives of Surgery.*

Specialisation of knowledge resulted in specialisation of scientific journals. *Langenbeck's Archives of Surgery* has, since 2003, published papers concerned only with diseases of the GI-tract, endocrine surgery, and general surgery as well as minimally invasive surgery. *Langenbeck's Archives of Surgery* mirrored, in the early years, the activities of the brilliant surgical school founded by Bernhard von Langenbeck at the University of Berlin. However, in the 145 years, the 390 volumes of *Langenbeck's Archives of Surgery* have additionally mirrored the flourishing of surgery in Germany and the progress of surgical specialities in the society of surgeons.

*Langenbeck's Archives of Surgery* has become an international journal with a high ranking. In 2002, for the first time, *Langenbeck's Archives of Surgery* was ranked among the top ten worldwide leading journals in the field of general and GI-tract surgery. In 2002 *Langenbeck's Archives of Surgery* scored an impact factor of 1.77.