Introduction

The Neurochirurgische Universitätsklinik Zurich was founded more than 60 years ago, in 1937 by Professor H. Krayenbühl. The most recent historical highlight is that his successor Professor Yasargil who is working in the Medical Center of the University of Arkansas in the USA, after his emeritation in Zurich, has been designated in the Journal “Neurosurgery” November 1999 as Neurosurgery’s man of the century together with Professor Cushing, world founder of neurosurgery, for his immense contribution to modern microneurosurgery [1] (Fig. 1). With this short report an outline of the historical development of the neurosurgical department along with traditional topics of clinical work and related research implying further development will be presented.

Historical Development

The development might be divided into four eras:

1. The era before the foundation of the neurosurgical department
2. Direction by Professor Krayenbühl
3. Direction by Professor Yasargil and
4. The present

1. Pre Professor Krayenbühl’s era:

   Around the turn of the 1900 century, the beginning of modern neurosurgery was observed in the developed countries. In Bern, the young Cushing stayed several months as visiting fellow with the famous surgeon Professor Kocher, who was awarded the Nobel Prize and whose interests besides thyroid pathology were also surgery aimed at the treatment of epilepsy and intracranial pressure. Professor Cushing was engaged in experimental work concerning intracranial pressure later designated as Cushing’s law at that time in Bern [19, 27]. During the same period, in Zurich around 100 km east from Berne, one of the professors of the department of surgery was Professor Krönlein, whose name is important to us neurosurgeons for his major contributions to neurosurgery:

   a) Retrobuccal transection of the mandibular nerve for trigeminal neuralgia [15].
   b) The craniometer useful to identify the central sulcus, Sylvian fissure and also useful for trepanation for epidural hematoma [13].
   c) The temporal approach (Krönlein’s approach) for removal of intra-orbital tumor [14].
2. Professor Kraeynbühl’s era:

It was in 1937 that Professor Kraeynbühl began to work as a neurosurgeon at the Hegibach Station in Zurich. He had previously studied for two years in London under Professor Cairns, a pupil of Cushing, [16, 18, 20, 33]. As is known, Professor Kraeynbühl had to setup the new unit at his own expense. Even today, we still use the traditional surgical instruments that were brought over from London: the Penney-backer bone rongeur, nerve root hooks, and angled scissors.

In 1941, he attained the academic rank of Privatdozent “PD” by submitting a thesis on cerebral aneurysms [11] (Fig. 2). This work contains a beautiful documentation of carotid ligation as a method of treatment. He was also interested in epilepsy surgery. The author still remembers the time, the beginning of 1970, when SEEG (stereotactic electroencephalography) was frequently used during surgery. This led to the later development of selective amygdalohippocampectomy SAHE by Prof. Yasargil as the surgical treatment for medically refractory epilepsy. Thus, vascular neurosurgery and epilepsy surgery both have a special, traditional significance in Zurich.

Early introduction of angiography to daily clinical work enabled publication of “Die Zerebrale Angiographie” by Kraeynbühl and Yasargil [12]. It was accepted worldwide as the textbook of angiography (Fig. 3). This was revised by the late Professor Huber, prominent neuroradiologist in Berne.

Professor Kraeynbühl was a person who promoted postgraduate education by holding the First European Congress of Neurosurgery in Zurich in 1959 [20, 34]. Also he was the managing editor of the “Recent Advances and Technical Standard of Neurosurgery” from 1972 to 1983 [18, 20]. Furthermore many well known neurosurgeons in Switzerland, Europe, USA and Japan were trained in Zurich at that time.

3. Professor Yasargil’s era:

The next technical advance was microsurgery. Professor Yasargil had already contributed to some of the important developments in neurosurgery under Professor Kraeynbühl, such as angiography, stereotactic surgery etc. [20]. More decisive, however, was the introduction of microsurgery, which he learned from Professor Donaghy in Burlington, Vermont (USA), in 1965, at the behest of Professor Kraeynbühl, and then he developed it further with enthusiasm [3, 20]. It was Professor Yasargil who turned Zurich into the Center of microsurgery. The author was one of the pilgrims; many neurosurgeons from around the world also made the pilgrimage to Zurich. Thanks to microsurgery, including 4- to 25-fold magnification, improved lighting, micro-instrumentation, and corresponding surgical techniques, it became possible to