Axel Perneczky

Axel Perneczky (1945–2009), a Hungarian stemming consultant of neurosurgery at the University of Vienna.

In Vienna he was at that time a recognized neurosurgeon in the field of vascular microsurgery. The philosophy of minimally invasive surgery suited very much his general neurosurgical concept. His ambition was to minimize as much as possible the intraoperative trauma for the patient respecting also the cosmetic aspects. This could be achieved by careful and thorough preoperative planning of the best approach which was based on a detailed analysis of individual anatomy and topographic relationships of the lesion visible in the radiological images. The lowest functional intraoperative trauma required sometimes new and unusual approaches such as the contralateral approach to the suprasellar region or through the lateral ventricle. The new approaches required detailed knowledge of topographic anatomy, which he acquired while working as demonstrator at the anatomical institute in Vienna and in the late 70th while working at the laboratory of Gazi Yasargil in Zurich.

Perneczky understood neurosurgery as applied neuroanatomy. In 1988, Perneczky became Chairman of the Neurosurgery at the Johannes Gutenberg University in Mainz. There, he organized a team of neurosurgeons which started to realize his idea of minimally invasive neurosurgery. The clinical application preceded work in basic research.

With his friend Manfred Tschabitscher, anatomist at the University of Vienna, Perneczky studied the anatomy of the ventricles and the basal cisterns from an endoscopic view [1)]. The neurosurgeon Klaus Resch completed in Mainz the anatomical study by postmortem endoscopic inspections. He convinced also Perneczky of the superiority of rigid endoscopes over flexible endoscopes for neurosurgery due to the much better image quality. Additionally, a laboratory was established for anatomical studies on cadavers. The first meeting in Mainz in 1989 on the subject of minimally invasive neurosurgery was too early and not successful. The breakthrough of this new technique in neurosurgery was the international meeting in Wiesbaden in 1993 for minimally invasive neurosurgery. This meeting, organized by Perneczky, gathered for the first time all neurosurgeons involved worldwide in neuroendoscopy and was also attended by many internationally recognized neurosurgeons. Their basic approval of this new method had a stimulating effect for the irradiation of these new techniques and philosophy around the whole world. During this meeting a society for minimally invasive neurosurgery (MIN) was established with international conferences every 2 years and a journal with the same name. The spark of minimally invasive neurosurgery spread also to the industry and with Minop1 and Minop2 projects for development of minimally invasive technology, instruments became supported and sponsored by many companies. For Perneczky minimally invasive neurosurgery comprised not only endoscopy. The endoscope was only a tool during the operation or a part of the operation. Minimally invasive neurosurgery comprised all surgical instruments or devices and operative techniques which helped to diminish the intraoperative trauma including 3-D operation planning workstations, navigation devices, and endoscopes. He demonstrated that by the key hole effect also huge deep seated brain tumours can be satisfactorily controlled and removed through a small craniotomy [2) 3)].

Perneczky was not the founder of minimally invasive methods in neurosurgery. These ideas started to be realized even by the pioneers of the neurosurgery. Interestingly, the great historic neurosurgical personalities were usually creative spirits not only in one but also in several neurosurgical fields. However, Perneczky deserves the merit of bundling and further developing all the new technical developments existent in the late 80th under a common neurosurgical concept of minimally invasive neurosurgery. Although Perneczky was one of the protagonists of this new philosophy, he would not

be successful if not other neurosurgical centres in Europe and in other continents had at the same time simultaneously similar ideas and intentions [4].

1)
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2)
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