Ladislau Steiner—memories of a mentor and friend

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Professor Ladislau Steiner passed away on February 27, 2013. He was a unique person and my respected teacher, mentor, and friend. Tributes to his lifetime achievements have already been given by a number of distinguished colleagues in the most respected journals of neurosurgery. It is unique that a neurosurgeon who was never the president of any international or national organization and never the chairman of a neurosurgical department has been bestowed such accolades from so many colleagues. Fortunately, he also received due international respect in his lifetime in the form of numerous awards and honorary memberships in societies.

In 1974, I was called to a meeting with Dr Steiner in his office at the Karolinska Hospital. His friend, Professor Robert Grossman, had told him that I was applying for a residency in the department of neurosurgery at the University of Texas Medical Branch in Galveston. I met a physically small person radiating authority, assertiveness, and compassion. At once, I had confidence in him. I never asked him how this brief meeting could open the doors to UTMB in Galveston for me, but I am sure it did. The result was, also, that I was later accepted to finish my neurosurgical residency at the Karolinska Hospital in Sweden.

It soon became clear that it was a privilege to serve as a resident under Ladislau. He ruled over his ward of 20 beds with the authority of knowledge and skill. As long as there was a vacancy, all neurovascular cases were admitted to the ward under his command, but patients with a variety of other difficult problems were also admitted. There was no other clinician so well-respected in the department as him. Not only was he well respected by colleagues but also by the staff and patients. A token of this was that most of the staff would

address him as Dr. Steiner rather than with his first name, which is commonly done regardless of your position at any workplace in Sweden. The loving admiration he received from nursing staff and young residents was mixed with a touch of fear. He would not hesitate to reprimand a wrongdoer and cause what he called “a small scandal” or even, if there was a need, “a big scandal.” Such a “scandal” occurred after I had allowed a young resident to remove a cortical metastasis from a patient under my guidance without his knowledge. I do not remember if it belonged to the category “small” or “big” but it certainly had a well-deserved impact on me. In a hospital where science sometimes took precedence over compassion, it was acceptable to leave emergency situations even during daytime to colleagues “on call.” In another incidence in my early career, leaving one of my patients in the recovery room in the hands of the “on call team” caused me another reprimand by Ladislau. It never happened again. Ladislau would see his patients every day after surgery until they were in a stable condition. Literally, he would do anything to get the patients back on their feet. On many occasions, he asked a nurse about the patient’s state of consciousness and got the reply that the patient was comatose or obtunded. Minutes later you might see the patient walking down the hallway physically supported by Dr Steiner. Regardless of age, most patients loved him but some feared him, but they all respected him. He was a champion for his patients in many ways. In the days where there was no neuroradiologist on call in the hospital, and the anesthesiologist were hard to convince that a patient with a ruptured aneurysm needed emergency craniotomy, it took the personality of Ladislau’s to successfully revolt against the system. There was a special neurotrauma unit in the Karolinska Hospital but postoperative intensive care for other patients was usually administered on Ladislau’s ward in cooperation with the anesthesiologists. Of course, this put a particular strain on the nursing staff and many were the occasions when the head nurse would come crying into Ladislau’s office. On one such occasion, he received

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complaints with attention and understanding, although he did not exactly allow the nurse “to cry on his shoulder.” When she left, a rare remark, which I will never forget, slipped his tongue. Thinking of this remark still makes me smile, and from that moment I felt that Ladislau was not only a humanitarian but also humane. The head nurse continued to respect Dr Steiner and work hard for us for years.

It may come as a surprise to many that the operating theater was the “main stage” for Dr Steiner rather than the Gamma Knife unit. As a matter of fact, he was the vanguard for microsurgery in the department (Fig. 1). The vast majority of neurovascular procedures were performed by himself or later by his protégés.

Some of them went on to become head of neurovascular or neurosurgery departments. In keeping with his commitment to neurosurgical training and his general competence in neurosurgery, he made sure that his residents were trained to perform a large variety of procedures. He also encouraged us to visit leading neurosurgical centers in Europe and the USA. In a small country, like Sweden, international contacts are essential for the advancement of small medical specialties. Ladislau realized this better than anyone else in the department. To further international contacts, he created the Olivecrona lectureship and fund. Initial funding came from donations made by Ladislau’s patients. Many established Scandinavian and European neurosurgeons came to visit the Karolinska for the 3 days of the Olivecrona memorial event. One of the highlights on the social program was when Drs. Melita and Ladislau Steiner opened their home to Ladislau’s colleagues and friends. He later continued this popular practice in Virginia after initiating the Lars Leksell lectureship, which became a well-attended annual event in Charlottesville. At other times, talented international colleagues were invited to spend time in the Karolinska sharing “hands on” experience. Prof. Vinko Dolenc (Olivecrona lecturer in 1996) was a regular visitor, coaching us in advanced skull-base surgery. The collaboration with Prof. Dolenc continued when Ladislau

Fig. 1 Two pioneers in aneurysm surgery. L.S. and Prof. Gösta Norlén (1906–1992) founder of the 4th Neurosurgery department in Sweden (in the Sahlgrenska Hospital, Gothenburg). Picture from the 1970s

moved to the University of Virginia. Undoubtedly, Ladislau admired the achievements in the operating room of his contemporary microsurgical colleagues. This admiration was, of course, shared by most of his colleagues, propagated to his disciples, and reflected in the choice of the first ten Olivecrona lecturers 1977–1985 (Mullan, Drake, Yasargil, Malis, Symon, Pertuiset, Wilson, Jannetta, Sugita, and Jane). Ladislau strived to bring the latest surgical techniques to the department, and he spared no efforts to achieve his goal. In the surgical wound, he showed, even for a neurosurgeon, unusual tenacity. Whereas contemporary neurosurgeons even had specially designed surgical chairs or other supportive devices, Ladislau would be standing without any support hours on end keeping his focus on removing an AVM, skull-base meningioma, or whatever the challenge was. For those who had the resolve to watch his procedures, it was a rewarding experience, but for those who found an excuse to leave the theater, it was usually the beginning of the end of a career in microsurgery. For those of us, who eventually learnt to offer Ladislau an intermission for rest, it was easier to prevail. Such an offer was usually reciprocated by “I understand; you need a break. Please, go and come back.” The nurses assisting during surgery changed according to their own schedule and you could then sometimes sense a tinge of irritation from Ladislau. He might then ask the leaving nurse, why she was leaving for lunch, when she already had breakfast. This passed as a joke, but I am not sure, that it always was. Despite his demanding and sometimes harsh behavior, the experienced nurses had more respect for him than for any of the other senior neurosurgeons. Over the years, Ladislau accumulated a very large microsurgical experience and bailed many faculty colleagues of lesser experience out of difficult situations. Sometimes, this required an unusual effort on his part. This was the case in 1978 when a colleague was struggling to clip an aneurysm of the anterior communicating artery. Only a few days earlier on his way to the airport to pick up the Olivecrona lecturer, Charles Drake, icy road conditions brought his car off the road. Surgery was required for the trimalleolar fracture, which he sustained. Nevertheless, on being summoned to the operating room, he took a taxi from his home, and he arrived in a wheel chair into the operating room to help his colleague clip the aneurysm and save the patient’s life. On another rare occasion, he saved a colleague from his surgical dilemma by thinking “out of the box.” The colleague had stereotactically inserted a needle into the brain of a child in order to aspirate the fluid from a large craniopharyngioma cyst, when suddenly, a thin stream of bright red fluid started pumping out of the needle. It could not be taken for anything else but arterial blood. The surgeon, who had the reputation for keeping calm in the most difficult situation, injected some X-ray contrast material into the needle, which confirmed his suspicion that he had accidentally punctured the basilar artery. (This was probably the world’s first percutaneous basilar arteriogram). What was there to do

but to call Ladislau? He arrived promptly and advised the attending anesthesiologist to lower the blood pressure as much as possible. In those days, it was commonplace to lower arterial pressure by i.v. injections of nitroprusside in order to minimize the risk of aneurysm rupture during surgical manipulations. The needle was removed after the blood flow had abated and the blood pressure was kept at a low level for another half an hour. There were no neurological sequelae for the child after this nerve-racking experience.

In 1977, the results of the treatment by the Multicobalt Unit of Leksell's (this was the original name of the Gamma Knife) of 30 cases of cerebral arteriovenous malformations were reported at the 6th International Congress of Neurological Surgeons in Sao Paulo. Steiner and Leksell had treated the first case already in 1970 but the accumulation of patients went slowly as the outcomes of only a few patients were awaited, before he treated any new patients (Fig. 2). I suppose it was the presentation in Sao Paulo that resulted in the international breakthrough for radiosurgery, and the number of patients and visiting doctors to the Karolinska multiplied. AVM patients came from all over Europe, from the Americas, and from Asia even as far away as from Japan.

Ladislau paid unusual personal attention to visiting patients as well as to colleagues, which created bonds, which were long lasting (Fig. 3). This is probably the reason why he had an unusually good track record of follow up information even on his foreign patients. Many were the neurosurgeons who left from visits with Ladislau with plans to open their own neurosurgical center with the Gamma Knife or with a linear accelerator. The first Gamma Knives outside Sweden were set up in Buenos Aires, Argentina, and in Sheffield, England, in 1985. The unit in Buenos Aires received substantial support from the Karolinska neurosurgeons and especially from Ladislau. These two units were custom made, and there was no

Fig. 2 L.S. with Prof. Lars Leksell (1907–1986). A patient is prepared for treatment in the prone position for an occipital lesion. It may be the first AVM patient treated in 1970. The Gamma Knife is the first “Multicobalt Unit of Leksell.” The space in the collimator helmet was too confined for the stereotactic frame, hence the plaster of Paris helmet on the patient

Fig. 3 L.S. with Prof. Kintomo Takakura (1932). Prof. Takakura installed the first Gamma Knife in Japan in 1990 at Tokyo University Hospital. Picture taken 2009 when L.S. visited Prof. Takakura at Tokyo Women's University Hospital

production line for further delivery of more Gamma Knives. Prof. Leksell had the ambition to bring radiosurgery to at least ten well-known academic centers in the world, and at a seminal meeting in a small restaurant in Stockholm in 1985, Dr. Steiner agreed to support such efforts. He had already been an unofficial ambassador for the Gamma Knife by his invited appearances at a large number of institutions all over the world. The next year, 1986, at the age of 66, his career was curtailed by the rules of the Karolinska Hospital prohibiting anybody over this age to continue working. Fortunately, there were many institutions prepared to ask for his services and he joined the University of Virginia to head the Lars Leksell Gamma Knife Center after a period as a visiting professor at the University of Pittsburgh. In his new position, he became focused on radiosurgery and even more influential in his unofficial and unendorsed position as the emissary for the Gamma Knife. His career at the University of Virginia is a separate story that needs to be told by someone else.

Despite his success in the role as an emissary for the Gamma Knife, he always emphasized that the Gamma Knife was just one tool in the neurosurgeon's armamentarium (Fig. 4). It should not be abused, which he thought it was indeed by some users. When, in his experience and judgment, microsurgery was a better alternative, he would recommend this treatment for the patient. He would even break existing referral patterns to find the best available microsurgery if need be. Often he quoted the late Charles Drake “be honest so that it hurts.” On many occasions, he heeded this principle rather than the greed of colleagues to find the very best treatment for his patients. He continued to advocate that the best radiosurgery is performed by a neurosurgeon who has personal and

Fig. 4 Relaxing with the author and Dr Dan Leksell at the EANS meeting in Lisbon 2003

continuing experience of advanced general surgery. He also realized the danger for the neurosurgeons in training to focus on equipment rather than disease.

Professor Ladislau Steiner was in the positive sense a unique neurosurgeon in many ways, and I find it appropriate to end this article on my mentor and friend by the words about Ladislau from another of his friends, and my first teacher of neurosurgery, Prof. Robert Grossman: “We will not see his like again.”

Comments

Rudolf Fahlbusch, Hannover, Germany

Since his time in Stockholm and Charlottesville, Ladislau Steiner enriched my “pituitary life” over decades. Could I imagine that this would continue locally, as he became my next door neighbor at the INI Hannover?

His always enjoyable open-mindedness opened doors to different scientific disciplines and cultures and led to a unique worldwide network of colleagues, patients, and friends that found advices, help, and human understanding from him. As a world citizen within world neurosurgery, he could feel being at home everywhere, but he never lost sight of his roots to his origin in Romania.

We miss him a lot; we miss the way he could enjoy neurosurgery in his advanced age including distinguished honors and decorations for his outstanding contributions in neuroscience.

Madjid Samii, Hannover, Germany

On February 27th, 2013, we have lost not only an outstanding neurosurgeon, but also a very good friend, who has received the highest recognition for his life achievements during the last decades.

Ladislau Steiner, 92, was born and grew up in a small Transylvanian city at the foot of the Carpathian Mountains. At that time one could still meet on the slopes peacefully pasturing lambs with craniotomies for extirpation of epidural ticks carried out by shepherds using their pocket knives.

Dr. Steiner graduated at the medical Faculty of the University of Cluj-Napoca. As a student, he served as “extern” after he successfully passed

the examination test for “Extern of University Hospitals.” As fellow in the physiological laboratory of the local section of the Romanian Academy of Science, he published, still as a student, papers in the *Annals of the Academy* on biological estimation of acetylcholine and its presence in the CSF of schizophrenic and epileptic patients.

Following a period in the Department of Neurosurgery Berlin-Buch with Professor Friedrich Weickmann, he left 1962 through Checkpoint Charlie to Stockholm and started to work in the Department of Neurosurgery Karolinska Institute and “Sophia Hemmet” with Leksell and Olivecrona as teachers. In 1973, he defended his Ph.D. Thesis at the Karolinska Institute in Stockholm. From 1962 to 1987, he was successively resident, associate professor, docent, and Neurosurgeon in Chief of the Division of Neurosurgery established by Olivecrona through Royal decree for his closest associate. Steiner was nominated for this position following Sjökvist, Norlén, Leksell, and Herlin. Steiner had this position until 1987 when he was invited to be Professor of Neurological Surgery University of Virginia USA. With his leave, that position was reincorporated into the Department of Neurosurgery. In Virginia, Steiner established the Lars Leksell Center of Gamma Surgery and became its director. He soon became Alumni Chair and Professor of Neurosurgery and Radiology and Director of the Lars Leksell Center for Gamma Knife Radiosurgery. In 2000, he was invited by Professor Madjid Samii, President of the newly established International Neuroscience Institute, to be Professor of Neurosurgery and Director of the Center for Gamma Knife Radiosurgery. However, for personal reasons, he could not follow the call. In July 2010, he tended his resignation from the position at the University of Virginia and joined the International Neuroscience Institute in Hannover, Germany, as Professor of Neurosurgery, senior advisor for Neurosurgery and Radiosurgery. Dr. Steiner published experimental and clinical papers, book chapters, and books on subarachnoid hemorrhage, aneurysm, arteriovenous malformations, vasospasm, pituitary adenomas, meningiomas, and vestibular schwannomas. He initiated and introduced gamma knife treatment for arteriovenous malformations. He reported on metastatic brain tumors and low- and high-grade astrocytomas. He published about immunology in gliomas. With Nobel Prize laureates Bergstrom and Samuelson, he published papers on prostaglandins and leukotrienes. He devised the first hemostatic titanium clip together with von Holst, and among other neurosurgical instruments, a laser stereotactic guide for microsurgery and an instrument for reconstruction of the aqueduct. He performed both microsurgery and gamma knife procedures on close to 15,000 patients from 57 countries of 6 continents. His decisions in the selection of treatment methods—surgery or gamma knife radiosurgery for the best interest of the given patient, his strict long-term follow-up of the clinical and imaging outcome of his management, his principled professional endeavor inspired friendships but generated also loathe.

Ladislau Steiner was founding, corresponding, or honorary member or president of numerous national and international neurosurgical societies. He was a frequently invited lecturer, guest professor, panelist, or chairman to international events around the world. He was editor, peer reviewer, or invited writer of editorials. He was honored with the Sheline Lectureship by the University of San Francisco, the Leksell Lectureship by the Karolinska Institute, and by the Lars Leksell Gamma Knife Society as well as with the Geoffrey Jefferson lecture by the Society of British Neurosurgeons. He received the Sugita Award of the International Society for Neurosurgical Technology and Instrument Invention. The World Federation of Neurosurgical Societies honored Dr. Steiner with the Gold Medal of Honor in 2003. He had with his late wife Melitta Steiner MD two sons: Eugen M.D. Ph.D. and Michael Ph.D. in mathematics. With his personality, performance, and experience, he has left not only at our institute but also worldwide a remarkable legacy.