Reflections on 40 Years as a Juntendo Neurosurgeon**

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The author traces his development as a neurosurgeon for 40 years from his formative years of clinical training at Juntendo University and to an experience on his thesis work and basic research at NIH, USA, and ultimately into operative neurosurgery at Juntendo University, East Tokyo Metropolitan and Juntendo University Urayasu Hospitals. It provides a personal perspective of his scientific mind and surgical craft. In this article, the author will attempt to clarify the following five issues. (1) Clinical training with special emphasis of my personal mentorship. (2) Basic research: reappraising the concept of surgeon scientist and of neurosurgery with “scientific mind”. (3) Operative neurosurgery: my special area of interest including skull base surgery, spinal and spine surgery, brainstem surgery, intraorbital tumor surgery, and intraventricular tumor surgery, pediatric epilepsy surgery, and neurovascular decompression. (4) Medical English including the experience of simultaneous translation in medical meetings. (5) Socioeconomic issues: the study on the difference of health care systems between U.S. and Japan.

Key words: Neurosurgery, operation, spinal surgery, medical English, socioeconomic issues

Introduction

When I began neurosurgical residency training in 1972, there were no such things as "CT or MRI", only angiography and pneumoencephalography. It was rare that anyone specialized in any particular aspect of neurosurgery. There were few neurosurgery subspecialists in any domain. Most were general neurosurgeons. In contrast, over the past 2 decades, a high degree of subspecialization gradually developed. The growth of surgical techniques and technology has been exponential (Figure-1). I had the opportunity to enjoy the advances in surgical techniques and technology over a period of 40 years. My life as a surgeon–scientist has been fantastically rewarding. In addition to clinical neurosurgery, I mention basic research, medical English and socioeconomic issues.

History of Juntendo Neurosurgery

Susumu Sato, MD

Dr. Susumu Sato, the third president, CEO of Juntendo, studied abroad at the Faculty of Medicine at the Frederick William University as it was then called (the predecessor of the Humboldt University of Berlin). He was the first person to obtain an official Japanese passport issued by the new Meiji government. Dr. SATO Susumu took leadership in...
the introduction of German and Western medical education, and contributed to the popularization of Western medicine in Japan. Dr. Susumu Sato carried out a “Brain operation” for the first time in our country’s history, during the domestic South-Western War in 1877. He operated on a soldier to remove bone fragments and the pus of an abscess caused by a gunshot wound. The neurological signs and symptoms subsided soon after the operation but, unfortunately, the patient died of acute pneumonia. This case was described in “Igaku-kakuron” (Figure-2).

Kenji Tanaka, MD—1968

Professor Kenji Tanaka initiated the Neurosurgical Clinic as a clinical unit in Juntendo University’s Department of Surgery. He served as president of the 10th annual meeting of the Japan Neurosurgical Society in 1953. He and the Juntendo group wrote on intraoperative use of ultrasonography as early as 1961. Oscar Sugar and Sumio Uematsu in Chicago are known to be the first in using ultrasonography intraoperatively.

Shozo Ishii, MD: 1968–1988, the early stage

Professor Katsumi Kaketa invited Dr. Shozo Ishii, an associated professor of neurosurgery, University of Chicago, to be the first professor of Neurosurgery at Juntendo University (Figure–3). Professor Ishii founded the Department of Neurosurgery in Juntendo University. He established the science of neurosurgery, and trained a number of neurosurgeons including myself. He gave many young neurosurgeons, myself included, the opportunity to study abroad. He served as president of the 38th annual meeting of the Japan Neurosurgical Society in 1979.

Kiyoshi Sato, MD: 1988–2002, the period of maturity

Professor Kiyoshi Sato received residency training in pediatric neurosurgery under Professor Anthony Raimondi in Chicago. His particular field of interest was pediatric neurosurgery and acoustic neuroma surgery. He trained a number of neurosurgeons and directed their thesis works. He increased the number of neurosurgical operations of the Juntendo group to more than 3000 per year. He also gave many young neurosurgeons the opportunity to study abroad.

Hajime Arai, MD: 2002–the further developing period

Professor Hajime Arai introduced new modalities such as endoscopy, endovascular surgery, image-guided surgery, and spinal surgery to Juntendo. His particular field of interest is pediatric neurosurgery and skull base surgery including acoustic neuroma surgery. He developed new cutting edge medicine in pediatric neurosurgery and functional neurosurgery, and initiated deep brain stimulation and spinal surgery. Currently he is leading a number of scientific projects over a range of subjects including immunotherapy of brain tumors, PET, functional MRI, CNS regeneration, dysraphism, and hydrocephalus.

My early days

Neurosurgical clinical training and mentorship

We are influenced by mentors and teachers, and also by our training environment. In 1972, I started my neurosurgical training in the new ward and operating room when Building 2 of Juntendo University was newly built. In that year, the
Department of Neurosurgery became independent from the Department of General Surgery. Professor Ishii initiated a new neurosurgical training system. Professor Ishii was a stage setter. A great number of international neurosurgeons from the U.S., Europe, and Asia visited us, gave lectures, made ward rounds, and even conducted surgical operations. We young neurosurgeons were given opportunities to study clinical or basic science abroad. We were given opportunities to study clinical or basic science abroad. We were very happy to be exposed to world-class neurosurgery and neuroscience. We use a tiered approach to education. We are all both teachers and learners. Teaching involves much more than simply the transmission of information.

**Basic research : Thesis work**

Neuroscience attracted most of us in our formative years. My thesis work was the experimental study on cerebral vasospasm. We had special interest in clarifying the mechanism of cerebral vasospasm and its pharmacological treatment. It was my first experience of experimental research. Prof Ishii presented our work in the first world symposium on cerebral vasospasm held in Amsterdam, and we published it in the monograph. 

**Basic research : NIH**

I was sent to the Laboratory of Cerebral Metabolism, NIH, Bethesda, U.S.A. by Professor Ishii. I worked there as a surgeon scientist for about 4 years. Louis Sokoloff, M.D. was the chief of the laboratory, a world-famous neuroscientist, and Laskar Award winner. Figure-4 shows "Sokoloff's equation" to measure local cerebral glucose utilization (μmoles/100g/minute). Charles Kenney, M.D., Professor of Pediatrics at Georgetown University, was a guest scientist in our laboratory and gave me invaluable insights into neuroscience (Figure-4). I will not go into the detail about the individual papers published, but it was extremely fortunate for me to have been involved in a number of scientific projects and resulting publications. Our work was a sort of translational research from animal autoradiography to human PET scans. I learned a lot about how to write scientific papers in English and how to cope with reviewers' criticisms. After coming back to Japan I was given the opportunity to write one chapter of the textbook "新日本生理学" in Japanese. Kazuo Uemura, M.D., a world famous radiologist and a developer of a made-in-Japan PET scanner, kindly invited me to the Research Institute for Brain and Blood Vessels Akita (Akita-Noken). And I am very honored to have had the privilege to set up an experimental system for quantitative autoradiography, the C14-2-deoxyglucose method.

**Basic research and being a surgeon**

When I returned from NIH to Juntendo University and switched my workplace from the laboratory to the operating room, it became difficult to continue basic research. There is an American saying that says "Who cares that your surgeon published papers in "Science" or "Nature". This saying may well be true from the patient’s standpoint, but from the physician’s standpoint, I believe that the experience of conducting basic scientific work is invaluable and essential for a clinician. I started to realize the concepts of "surgeon scientist" and "operative neurosurgery based on a scientific mind".

**Operative neurosurgery**

**Neurosurgical operation**

Figure-5 shows the schematic presentation of how microsurgical operations are performed with one’s eyes, brain, and hands and fingers. The introduction of increased magnification and im-
proved illumination of the operative field with the use of an operating microscope or neuroendoscoope has many benefits. One can grasp the neuroanatomy of the operative field by integrating knowledge of brain anatomy with our understanding of brain function. Here you find “the marriage” of technique, technology and judgment in performing surgical procedures, a combination that requires hard work and constant adaptation to stay successful. We teach and learn in an enriched environment as we become better and better at the learning and teaching process.

Skull base surgery

If you remove a small piece of brain tissue from the frontal lobe, it does not cause any symptoms at all. In contrast, the surgical manipulation of the skull base, brainstem and spinal cord could cause serious neurological deficits. The base of the skull contains numerous critical structures including major arteries and cranial nerves passing through holes in the skull base. Skull base surgery is challenging and tough. Among skull base lesions, Table-1 and Figure-6 show the neoplastic and vascular lesions of the craniovertebral junction that we have surgically treated. If you go back to Kempe’s textbook of operation published in 1968, which was considered the authoritative source throughout the 1970’s, he described only the posterior approach to a foramen magnum meningioma located ventral to the medulla. Inasmuch as there is medulla in your way posteriorly, you have to retract the medulla.

Table-1  Cases with lesions of the craniovertebral junction treated with anterolateral or posterolateral approaches.

<table>
<thead>
<tr>
<th>Age/G</th>
<th>Symptom</th>
<th>Diagnosis</th>
<th>Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>63/M</td>
<td>tetraparesis</td>
<td>Cyst</td>
</tr>
<tr>
<td>2</td>
<td>63/M</td>
<td>gait disturbance</td>
<td>C2 schwannoma</td>
</tr>
<tr>
<td>3</td>
<td>56/M</td>
<td>gait disturbance</td>
<td>C2 schwannoma</td>
</tr>
<tr>
<td>4</td>
<td>73/M</td>
<td>dysesthesia</td>
<td>angioma</td>
</tr>
<tr>
<td>5</td>
<td>73/M</td>
<td>dysesthesia</td>
<td>meningioma</td>
</tr>
<tr>
<td>6</td>
<td>3/M</td>
<td>SAH</td>
<td>AVM</td>
</tr>
<tr>
<td>7</td>
<td>0/F</td>
<td>SAH, resp arrest</td>
<td>AVM</td>
</tr>
<tr>
<td>8</td>
<td>42/M</td>
<td>Hemimotor,hiccup</td>
<td>Cav malformation</td>
</tr>
</tbody>
</table>

Figure-5  Illustration showing operative neurosurgery: the marriage of technique, technology and judgment in performing surgical procedures.

These procedures may cause brainstem injury. In such a case of foramen magnum meningioma located ventral to the medulla oblongata you can make spaces for entering the lesion ventral to the medulla laterally without retracting medulla by drilling and removing the skull base bone, the condyle. This has now become the basic concept of skull base surgery. A memorable case in Juntendo Urayasu was of a 53 year-old man who presented with right arm dysesthesia. MRI and 3DCTA showed a foramen magnum meningioma ventral to the flattened medulla oblongata (Figure-7). Such a meningioma may engulf vertebral arteries and lower cranial nerves. We used the skull base surgery technique and approached the tumor without
retracting the medulla, and successfully dissected the tumor from cranial nerves and vertebral arteries, and finally achieved gross total removal without postoperative neurological deficits (Figure-7). Postoperative MIR demonstrated gross total removal. There has been no recurrence during the intervening 7 years. Figure-8 illustrates another example of skull base surgery. A 41 year-old woman with petroclival meningioma was operated on using the skull base surgery technique. Gross total removal was achieved with transient oculomotor palsy.

Skull base surgery has been an established neurosurgical discipline since the late 1980s. The enthusiasm for achieving total removal of a seemingly inoperable lesion by novel skull base surgery led many neurosurgeons to use radical surgery. The accompanying high morbidity was accepted as inevitable. Over the years, many started questioning this philosophy, and the last decade saw the pendulum swing to the other extreme with the increasing popularity of endoscopic surgery and radiosurgery. Thus, minimally invasive neurosurgery has become the fashion. However, it is important to remember “the pearl” that inadequate treatment through a less invasive approach is maximally invasive. The realization has now dawned that endoscopic surgery, endovascular treatment, and radiosurgery cannot replace, but instead should complement, skull base surgery. A judicious use of skull base approaches with appropriate adjuncts and radiosurgery is the best way forward in dealing with various skull base lesions. The philosophy is that of optimally invasive skull base surgery, individualizing the approach to suit the given patient with a goal of achieving maximal result with minimal damage. Neuroendoscopy, image guidance, endovascular therapy, and radiosurgery are used as pillars on the foundation of microsurgery.

**Brainstem surgery**

The brainstem is one of the toughest structures to approach surgically since it is so deeply situated and is enclosed by the cerebrum on both sides, the cerebellum behind and by the throat in front. This area used to be called “no-man’s-land”. Brainstem surgeries are very delicate operations that require a very skilled team of doctors and nurses. Many avenues have been developed to approach the brain stem, each having its own advantages and disadvantages. We are always scared to make an incision into the brainstem. Brainstem cavernous malformation is known to be a potentially fatal disease if it bleeds. The problem is that brain stem surgery itself may cause brainstem damage, even intraoperative cardiac arrest. We operated on three patients in Juntendo Urayasu with preparation of extracorporeal pacing and neurophysiological moni-

![Figure-7](image1.png) A case of foramen magnum meningioma. The skin incision (upper right). The preoperative 3DCT angiography and pre- and postoperative Gd-enhance MRI.

![Figure-8](image2.png) A case of petroclival meningioma. Successful removal was achieved with the skull base surgery technique.
toring. Figure-9 illustrates the cases of (1) an 18-year-old male (bled x2, mRS = 5 ⇒ 0), (2) a 36-year old female (bled x4, mRS = 5 ⇒ 3), and (3) a 39-year old male (bled x2, mRS = 2 ⇒ 4). An extracorporeal pacing shock wave was prepared to apply in case of intraoperative cardiac arrest. Thanks to the innovation of microneuroanatomy, a telovelar approach was used in the case of a 19-year-old male with brainstem astrocytoma in order to achieve gross total removal without making any incision into the cerebellar vermis.

**Intramedullary spinal cord tumor**

Intramedullary spinal cord tumor is a rare disease with a prevalence of 1/1,000,000. Figure-10 shows our surgical cases. As the tumor is located within the spinal cord, you have to make an incision into the spinal cord (myelotomy), and have to dissect it from the surrounding cord in order to remove it. Postoperative aggravation has been reported to be 30% or more. Our problem is we should fully inform the patients of this concern. The advancement of intraoperative neurophysiological monitoring has reduced the risk of the aggravation dramatically.

A memorable case at Juntendo Urayasu was of 1 year 6 month-old boy, who presented with progressive tetraplesia and respiratory disturbance. MRI showed a Gadolinium-enhanced intramedullary spinal cord tumor from C1 down to C7 with extensive edema both rostrally and caudally. After osteoplastic laminotomy without making a lateral gutter (Hungarian method), the posterior median sulcus was incised and separated by tweezers (Figure-11). I personally prefer to use Dr. Epstein’s plated bayonet (Figure-11). Intraoperative neurophysiological monitoring was used to prevent intraoperative spinal cord damage. No one cannot fear the danger that the incision and dissection might cause spinal cord damage. After removing the tumor, we reapproximate the pia mater of the spinal cord for closing.

**Cervical disc disease**

Neurosurgery treats not only brain diseases but also spinal and peripheral nerve diseases. In the U. S., among about 2 million operations, 38 percent were cranial surgeries, whereas 62 percent were spinal surgeries. American neurosurgeons operate on more spinal than brain cases. In our county, the recent number of spinal surgeries by neurosurgeons has increased dramatically. I began a
practice of spinal cord surgery as a subspecialty in the 1990’s. We have treated a number of cases with cervical and lumbar degenerative diseases, especially with cervical disc disease. There are mainly anterior and posterior approaches for the surgical decompression and fusion for cervical spondylotic myelopathy. I have preferred to adapt anterior approaches. More than 501 cases were operated on using an anterior approach, whereas 171 cases by posterior approach in my personal series. I usually use cylindrically threaded titanium cages for cervical intervertebral fusion (Figure-12). For cases with kyphosis and instability, I use a cage and cervical plate (Figure-13). Other cases were treated with corpectomy and fusion with a meshcage (Figure-14)

A memorable case in Juntendo Urayasu was of a 93 year–old man who was having difficulty with using chopsticks and walking. In February, he became unable to use chopsticks, unable to write letters, and unable to hold a karaoke microphone. By May, he could not use a spoon or fork, could not walk even with a cane, and became wheelchair-bound and then bed–ridden. MRI showed severe cervical cord compression by cervical spondylosis (Figure–15). I thought this 93 year–old man was in a no–win situation. I thought, “Inaction is the best action”. I would say, “It’s not a doctor you need, but rather Jesus Christ”. However, this patient wished to undergo surgery accepting all these risks. I thank Professor Kamiyama and his colleagues for anesthetizing this high–risk patient safely. We performed anterior cervical discectomy and fusion. What a surprise! Over the following three months, he recovered the ability to walk with a cane, to use chopsticks, and to hold a karaoke microphone (Figure–15). He is 99 years old now. He takes dictation of newspapers everyday, has a good appetite, and drinks beer, and at his 99th birthday party he sang karaoke songs. What lesson did we learn from this patient? Even a 93 year–old–man can have the capability to recover from spinal cord

Figure-12 Anterior approach, ACDF (anterior cervical decompression and fusion), and posterior approach, laminoplasty.

Figure-13 A case with cervical spondylosis with instability treated with cylindrical cages and cervical plate.

Figure-14 A case with cervical ossification of posterior longitudinal ligament treated with a mesh–cage and cervical plate.

Figure-15 A case of a 93 year–old man with cervical spondylotic myelopathy who was treated with ACDF with an unexpectedly favorable outcome.
sscompression damage. This must be a man of special longevity (super-aged-man).

Cerebral aneurysm

The first direct operation on an intracranial aneurysm was performed by Norman Dott, who wrapped a ruptured aneurysm in 1933. The first obliteratorive clipping of an aneurysm was performed by Walter Dandy in 1938. The results of surgery improved dramatically when the operating microscope was introduced in the 1960s and a subsequent improvement followed the use of an antispasmodic agent and the maintenance of a high fluid intake to lessen the risk of delayed cerebral ischemia. I was engaged in research on experimental cerebral vasospasm during 1977~1979. For many years clipping of a ruptured aneurysm was regarded as the definitive mode of treatment, but the development of the GDC coil in 1990 allowed an alternative approach that avoided the hazards of open surgery. In the latter half of the 1990s, as experience of endovascular techniques spread, this form of treatment began to displace open surgery and the International Subarachnoid Aneurysm Trial (ISAT) was set up to compare the efficacy of the two forms of treatment. The Juntendo Neurosurgery group shifted their policy of treatment from clipping to coiling in the 1990’s when Dr. Hidenori Ohishi came back to Juntendo University after completing his clinical training of endovascular surgery under Dr. Makoto Sonobe of National Mito Hospital (Figure–16).

The current margin in favor of endovascular treatment is likely to increase in the future. Not only is the microtechnology constantly improving, but also more and more interventionists are acquiring and honing their skills in this field. Therefore, increasing proportions of aneurysms are proving amenable to endovascular treatment. By contrast, the technology of surgery has been static for many years and, after the quantum leap in results provided by the introduction of the operating microscope and associated microinstrumentation, it is difficult to see how the techniques of open surgery could be further improved. Furthermore, as the use of endovascular techniques extends, so surgical expertise will be lost. Already the pool of very experienced surgeons is draining away as a result of death and retirement, and as these surgeons disappear the advantages of endovascular treatment will become greater still. The number of cases unsuitable for endovascular treatment will shrink to the point where there will be a residue of difficult and complex cases for which only surgery is available. However, it is by no means certain that surgery would be justified in such cases. These are likely to be patients with, for example, giant and complex aneurysms in inaccessible situations where even at present surgical as opposed to conservative treatment may be difficult to justify. This will be still truer when the surgical skills honed through hundreds of more straightforward cases have been lost15.

There are no randomized trials available to compare various treatment methods for giant aneurysms. But cerebrovascular microsurgery, skull base approaches, bypass techniques, and endovascular treatments (proximal occlusion, stent /coils, flow diversion) are fundamental tools in the armamentarium of cerebrovascular surgeons dealing with these complex lesions such as giant aneurysms. My hopes lie with young neurosurgeons of our department for further technical development16.

I frequently visited Johns Hopkins University in Baltimore where Dr. Sumio Uematsu (Figure–17)
was an associate professor of Neurosurgery at that time. He is a Juntendo University graduate and kindly arranged for me to take a one–week course for microvascular anastomosis in Johns Hopkins University.

**Medical English**

My starting point for medical English was preparing and taking the ECFMG examination in 1972 when I was a medical student. It was a kind of tradition for Juntendo Neurosurgeons to take the ECFMG examination. My first publication in English was a case report, published in English in the official journal of the Japan Neurosurgical Society. We were using a mechanical typewriter for writing papers in the 1970’s. There were no personal computers available at that period. My first oral presentation in English was made in the Annual Meeting of the American Academy of Neurology held in Washington, DC in 1982. Professor Hirotaro Narabayshi, Chairman of Neurology Juntendo University, presented his paper on stereotactic surgery in the same meeting. When I returned to Japan from the US, Professor Sugita, a world famous master neurosurgeon, invited me to Matsumoto and asked me to give a special lecture on cerebral metabolism. I played a subordinate part to Professor Sydney Peerless, London, Canada. And thereafter, I started to enjoy presenting clinical papers in the Ski conference in France, WFNS meeting in India, and the conference in San Marino Italy (invited talk), and on and on.

In 1987, I was scouted by Professors Kenichi Uemura and Shigeaki Kobayashi to become a simultaneous translator for the Japan Neurosurgical Society. I was enrolled in the simultaneous translation group as an active member and then served as subchief. What is the role of simultaneous translation in medical meetings? When Japanese speakers are making presentation in Japanese, we simultaneously translate their speech from Japanese into English so that the foreign guest speakers with headphones understand what Japanese speakers are saying and can make comments or ask questions in English.

In 2008, we held a Japan Neurosurgery English Forum in Maihama, Urayasu city. In this conference, young neurosurgeons present and discuss their papers in English. I asked Dr. Michiko Sudo, Juntendo University to give a special lecture on English Phonation, and Dr. Shizu Sakai, Juntendo University on the medical history of Japan. As a joint meeting, we also held a training course in simultaneous translation. We set up three booths for simultaneous translation training. Speeches in the Gala party were also given in English.

I have devoted myself to medical English education. Young neurosurgeons who had been working in Juntendo Urayasu were asked to give a talk in English at the end of their rotation. I will serve as president of the 16th annual conference of the Japan Society for Medical English Education that will be held on July 20 & 21, 2013 at Urayasu City. I am also devoted to the development of “Examination of Proficiency in English for Medical Purposes”.

**Socioeconomic issues**

I was asked by Professor Kobayashi, Chief of international committee of JNS, if I would be willing to give a talk about the health insurance system in Japan in English in the Japanese–American Friendship Conference held in San Diego in 2003. It involved a lot of hard work to gather information on medical socioeconomic issues including special terminology. The comparison of health insurance systems between the U.S. and Japan is illustrated in Figure–19. The consumers cannot select the insurer, and the insurer cannot select the hospital or provider in the Japanese mandatory health insurance system (Figure–19A). The coverage of ser-
vice is officially fixed, and the premium and co-payment are officially fixed. Quality of medical care is limited within the range of official prices (Figure-19A). In contrast, in the U.S.-style market-based system, there are numerous health insurance plans and numerous fee schedules (Figure-19B). The patients can select insurers with high coverage of service, or low premium and out-of-pocket expenses. The insurer can select hospitals of providers with high quality and low-cost services (Figure-19B). Managed care organizations limit access and perform strict utilization reviews in U.S. managed care plans. Reimbursement system to both doctors and hospital are quite variable (Figure-19C).

The second neurosurgical friendship symposium of the US and Japan was held at Nagoya's "Nogaku-do". I was asked to make a 15 minute comment on Dr. Bean's speech. "Health Insurance System in Japan" was published in English \(^{19}\). The socioeconomic issues were also presented in JNS meetings and published in Japanese \(^{19} - ^{21}\). The background of this comparative study can be justified by the following phrase by Shiba Ryotaro, a Japanese author best known for his novels about historical events in Japan. "The spotlight should be placed in America, not in Japan in order to see the true figure of Japan".

Conclusions

I chose neurosurgery because it is complex and challenging. We give a lot to our profession and to our patients. At the same time, we receive much more in turn. This is an exciting time to be a neurosurgeon when we can enjoy the numerous advances in surgical techniques and technology. We look forward to a fertile future of the science of Neurosurgery. I am very happy and honored to have been able to work in various places in Juntendo University and its affiliated institutions.

References

順天堂の脳神経外科医としての40年間

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私は石井昌三教授、佐藤潔教授の薰陶をうけ、40年間にわたり国際的レベルの脳神経外科学の習得および国際性を享受し、国際的な脳神経外科の臨床、手術、教育、研究に携わることができた。本講演において、感謝をこめて懐古談として英語で口演させていただく。

本邦の脳神経外科学は他科に比べその歴史は新しく、順天堂大学においては1968年（昭和43年）に石井昌三教授により脳神経外科学講座が創設された。1972年（昭和47年）に現2号館の落成とともに入居したが、この年に「外科学講座」から独立し、新修研プログラムが発足。新脳外科棟と新術室で診療ならびに手術を開始した。本学脳神経外科の創設期、成熟期に本学助教授、講師、助教授として石井、佐藤両教授の下で仕事をし、東京都保健医療公社病院の部長、本学浦安病院の教授としてOperative Neurosurgeryを実践することができた。現在、新井一教授を中心に当教室は着実に発展の道をたどっている。本講演では、1）脳神経外科臨床研修とmentorship、2）基礎医学研究と外科医（Surgeon Scientist）について、3）臨床脳神経外科学の数値解釈の進歩とparadigm shift、1970年代にはほとんど行われていなかった頭盖底外科、脳幹部腫瘍の外科、脊髄内腫瘍の外科、脳外科の行う脊髄脊髄の進歩について自験例を中心に解説した。また、脳神経外科以外の分野においても研究する機会を得たので、4）国際留学と医学英語習得と教育、医学英語検定試験の立ち上げと実施。学会における同時通訳の役割と同時通訳研修法、5）社会医学として米国の医療制度、医療保険の比較研究について概説した。

キーワード：脳神経外科、手術、脊髄手術、医学英語、社会経済問題