



Interview

Dr. Osvaldo Oscar Betti

Neurosurgery Professor at the University of Buenos Aires (UBA)

Excerpts

Professor Betti, why Neurosurgery?

I remember that my father used to tell me that I, aged 10, told him that I wanted to be a neurosurgeon. Why? No idea.

Like other kids at the time, I wanted to be an aviator, a historian and to devote myself to the letters. When I studied Latin I was really keen and when I finished high school I gave lessons to the kids who had failed Latin and Literature. I developed an interest in a number of subjects, but Neurosurgery remained the central idea to which over time I would totally devote myself. When I finished high school at *Colegio Nacional*, I enrolled in medical school at the University of Buenos Aires.

Who were your teachers when you started Neurosurgery in Argentina?

I started to take contacts with the Chair of Neurosurgery during my military conscription. At the time my chief was an exceptionally good person, who helped me a lot, as I did not miss the opportunity to study during my 14 months of conscription. He forced me psychologically to give all the subjects under the "threat" that he would make me a deserter... An excellent personality Lieutenant Colonel. Rodolfo D'Onofrio.

Dr. D'Onofrio sent me to Dr. Raul Floreal Matera, then deputy director of the Institute of Neurosurgery. I did not enter then and there, but one year later at "Costa Buero", spearheaded by Prof. Don Ramon Carrillo, then Minister of Public Health under President J. D. Peron. I started as an intern in haemotherapy, making intra-arterial transfusions in the operating room. One day Professor Matera asked me whether I liked surgery and my enthusiastic response prompted him to pronounce "next week you will help me". That's how it all started.

At some point the conventional surgery changed and veered towards functional and radiosurgery. Stereotactic surgery had already been known since 1949 by Jean Talairach, when I was still at Costa Buero.

In 1955, before receiving me and following the Latin American Congress of Neurosurgery in Montevideo, Dr. Talairach came to Buenos Aires to give a conference at the Institute of Neurosurgery on the human thalamus and its integrative function...I approached him and asked him whether I could attend, to which he agreed. I was not a doctor yet, but I found the subject very fascinating.

And Carrillo and Matera...?

Don Ramón Carrillo was known at the Institute as "The Tsar", which describes him rather well, as he commended great intellectual respect. Like other peers that I met at Costa Buero, Don Ramón was a person of vast knowledge and culture, spoke with precision and richness of vocabulary, but he was unparalleled: when he spoke, whatever the subject, his eloquence was magnificent. The Institute became a top-notch Peronist centre. Despite my opposite political orientation I was never censured, just gently reprimanded, now and then...

When did you become involved with the Atomic Energy Commission?

In 1958 I attended the first course on radioisotopes for doctors and biologists that took place at the National Atomic Energy Commission. That's where the first contacts were established with experts that were then to become important for the development of stereotactic surgery, for instance Dr. Jaime Pahissa Campá. In 1965 CNEA officially presented a particular product, a brain tumors detector making use of positrons, developed by Dr. Jaime Pahisa Campá, electronics student E. Rosales and myself, in collaboration with the CNEA team of micromechanics. Later on, owing to economic grounds, the price of the radioisotopes, we started using it to detect the passage of isotopes in the radiocardiogram.

When did you arrive in France?

I graduated in '55 and the following year I went to Spain with a scholarship, there I spent three months with Don Sixto Obrador, neurosurgeon in Madrid. From there I traveled to Paris and then, after working at Ste. Anne under Prof. Marcel David, I attended the First Congress of Neurological Sciences, which was attended by leading figures from all specialties: neurology, neuropathology, neurophysiology, neuroradiology, neuropsychology, neuro-oncology, neurosurgery, stereotactic surgery, neuroanatomy, etcetera, hence I got to meet all the most prominent members in the broad spectrum of neurology.

Did you develop most of the specific equipment?

Jean Talairach had already developed several stereotactic systems. Since we lacked funds, we imitated his and incorporated some variants. In 1981 we got a loan from *Institutos Médicos Antártida*, with which we bought all the equipment of Talairach. We managed to meet the deadline, actually we returned the loan sooner than agreed upon.

When did the first radiosurgery system with linear accelerator arrive?

In 1976-77 I returned to the Sainte-Anne group and remained 5 more years in France, where I worked with my friend Gabor Szikla, who had been Dr. J. Talairach's first assistant and was by then Neurosurgery Professor.

Under the leadership of J. Talairach the centre had become the world's largest stereotactic surgery center, including various treatments like diabetic retinopathy, parkinsonism, dystonia, and other movement disorders, epilepsy surgery, various types of tumors, and diagnosis by brain biopsy...

In 1977 the book by Gabor Szikla; et al, *Angiography of the Human Brain Cortex* (Springfield Verlag), was published and awarded two prizes: a scientific one and an aesthetic one, owing to its formal beauty.

This was considered to be the most important post-war achievement in French Neurosurgery, as a French colleague told me. Sainte-Anne was a top-notch team. Dr. Marcel David brought together the most spectacular team of neuroscientists including specialists like Talairach J, Tournoux P, De Ajuriaguerra (professor of child neurology, neuropsychiatry and histopathology), J. Bancaud, first Professor of physiopathology at SNC, Fishgold, Ruggiero, and many others.

Dr. Betti, since you tried both systems: which one do you prefer, Novalis or Gammaknife?

If the indication is correct, planned and carried out in compliance with the state of the art requirements, there are no major differences.

Nowadays there are more interesting systems, like Cybexknife, making use of robotics to improve certain conditions. We were the first to make use of high-energy linear accelerators (from 6 to 18 MeV). Following its use in Buenos Aires, we took similar equipment to Paris, where cases diagnosed at Sainte-Anne were subsequently irradiated at Tenon hospital. A few years later the largest radiotherapy center in France, Centre Oscar Lambret in Lille, acquired equipment that was similar to the one in Buenos Aires, where it debuted with a waiting list of 180 patients ready to be treated.

What future do you envision in neurosurgery?

Functional neurosurgery - specifically stereotactic neurosurgery - is not only part, but also the forerunner of today's "minimally invasive surgery". There ensued some technological changes, like the use of robotics. I remember operation number 1000, performed with a neurosurgical robot developed by Claudio Munari (first Professor of stereotactic Neurosurgery in Italy), of the Sainte-Anne team, who co-founded the Epilepsy Surgery Centre in Grenoble and went on to open the first Regional Centre for Epilepsy Surgery at Niguarda Hospital in Milan, which is now named after him. There are still many aspects to be further developed, like the nano-technologies, robotics, and a wealth of other aspects. The only limit is imagination...