

The History of Radiosurgery in ... Spain

The pioneer of Radiosurgery in Spain was Dr. Juan Luis Barcia-Salorio, Neurosurgeon, Professor at the University of Valencia (Spain). After visiting with Dr. Lars Leksell, at the beginning of the 1960's, he produced a stereotactic frame of his own design. In 1975 he performed the first radiosurgical treatment with a Tele-Cobalt machine in the Hospital Clinico de Valencia. The treatments were conducted on weekends in collaboration with Dr. Gregorio Hernández, a radiation physicist. The system was operational until 1990. The creativity and dedication of Prof. Barcia made the realisation of this project possible, event with very limited resources. At a time when Radiosurgery was in its infancy with very few operative systems around the world, and little or no recognition by neurosurgeons, he made original contributions in the application of radiosurgery for the treatment of Epilepsy, pain, Parkinson's Disease and Carotid-Cavernous Fistula.

The birth of modern Radiosurgery in Spain took place in 1991 with the installation of a linear accelerator based system (the Linac Scapel) in the Hospital San Francisco de Asis in Madrid. This system was originally developed by W. Friedman and F. Bova at the University of Florida in Gainesville (USA).

Dr. José Samblás, neurosurgeon of IMO Group (Instituto Madrileño de Oncología) and his colleagues, took the decision to create a modern radiosurgical service in Madrid. They visited several sites around the world evaluating the systems available in the market at the end of the 1980's. Those included the gamma knife, several systems based on linear accelerators (O. Betti's in Buenos Aires and Paris, K. Winston and W. Lutz's in Boston, F.Colombo's in Vicenza, Podgorsak's in Toronto and the later adaptation of a radiotherapy planning system in Bordeaux), and finally decided to acquire the University of Florida system. His decision was based on the high mechanical accuracy provided by the system (+/- 0,2mm maximal deviation from isocenter). The planning system, SRS-200, was based on a strong algorithm and modern graphics, and was one of the first FDA-approved radiosurgery systems. The system in Madrid was the second Linac Scapel installed in Europe. Since then the San Francisco de Asis Radiosurgery Unit has retained its status as the most active radiosurgery center in Spain. The following people took part in this pioneer radiosurgery team: Dr. J.C.Bustos, Dr.J.A.Gutierrez Diaz, Dr. J.M.Delgado, Dr. Santos, Dr. Ortiz De Urbina and Dr Carmen Peraza.

The second radiosurgery equipment, (GE) was installed in the Hospital Puerta de Hierro of Madrid in 1993, which belongs to the National Insurance Service. Prof Gonzalo Bravo, Dr. Roberto Martinez, Dr. Rosa Magallon and the Radiation Physicist Dr. Nuñez, configured the initial group. The installation of Radiosurgery in a public hospital resulted in a substantial increase in the number of indications and treatments. The first Gamma Knife in Spain was installed in a private institution Hospital Ruber Internacional, also in the city of Madrid. The team included Dr. Burzaco, Dr. Bravo and Dr. Martinez, along with the Radiation Physicist Dr. German Rey. This center has become an important focus of radiosurgery in Spain, which has expanded with the acquisition of a Cyber knife for fractionated and extracranial indications. Subsequently other equipments were introduced in most of the regions as in the "Instituto De Radiocirugia De Barcelona" (Radionics System) created in 1994 by Dr. F. Vila.

Currently, 30 radiosurgery centers are operational throughout the country.

In 1994 "The Spanish Society of Radiosurgery" (SER) was founded following an initiative of Dr J. Samblás and including Neurosurgeons, Radiation Oncologists, Physicists, and Neuroradiologists among its 20 founding members.

From the beginning the main purpose of the society was to create a communication forum among the specialists involved in radiosurgery, reinforcing therefore the multidisciplinary nature of this therapeutic modality. The Spanish Society of Radiosurgery www.sociedadderadiocirugia.com organises its own Conference every two years in different Spanish cities. The eleventh meeting took place in Barcelona in April 2010. The XII Conference is planned for 2012 in the city of San Sebastian. The Spanish Society of Radiosurgery (SER) writes the regulations and the requirements needed for accreditation of Radiosurgery Centers (a list of which appears on its website) and it is also working to introduce in every unit a check system for quality assurance of mechanical accuracy and methodology, indications, equipment, and radiotherapeutic safety).

The past Presidents have been Dr. J. Samblas (1995-2001) and Dr. J.C. Bustos (2001- 2006). The current President is Dr. L Larrea. The society counts 120 registered members, and all the subspecialties are represented.

The relationship with the International Stereotactic Radiosurgery Society (ISRS) has been always diligent. In 1997, IMO Group was honoured to organise the 3rd ISRS Meeting, in Madrid, which was attended by more than 500 specialists from all over the world. Spanish representatives have actively participated in all the ISRS Conferences since the first ISRS Conference in 1993 in Stockholm.

The Board of Directors of the Spanish Society of Radiosurgery has begun the formalities in order to reach agreements with the ISRS in issues of continued education and the organization of another future ISRS Conference in Spain.

Of the 30 Spanish radiosurgery centers, 12 treat more than 100 cases per year. Low volume centers engage usually in the treatment of AVMs, Acoustic Neurinomas and Meningiomas. Larger centers extend the spectrum of indications with the treatments of metastases, gliomas, trigeminal neuralgia, and epilepsy. However, it is of note that radiosurgery for brain metastases has still very low penetration in Spain as compared with other European countries, Japan and the USA.

The importance of Radiosurgery in Spain is testified by the widespread network of working units and the early adoption of new technologies (such as the Cyber Knife and the Gamma Knife Perfexion in the Hospital Ruber Internacional and the Tomotherapy Hi Art System and more recently the new Cyber Knife VSI in the IMO Group).

Dr. Kita Sallabanda Diaz MD.PhD.

Neurosurgeon, ksallabanda@grupoimo.com