

European Neurosurgery **A history of the department of neurosurgery at the Evangelismos Hospital, Athens**

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Published online September 13, 2004
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Introduction

Evangelismos Hospital is the largest hospital in Greece and located in the center of Athens (Fig. 1). The Hospital started to operate in 1884. Initially, there were two divisions, a Medical and a Surgical. The hospital gradually expanded, and in 1902 the Department of Obstetrics was added. By 1914, there were two Departments of Surgery. In 1950s, a new eleven-story building was inaugurated after a large financial contribution by the AHEPA organization (American Hellenic Educational Progressive Association).

The history of neurosurgery in this hospital can be divided into 5 periods:

Period 1 (1914–1933). The early period when basic neurosurgical procedures were performed in limited numbers by general surgeons.

Period 2 (1933–1951). The second period when complex neurosurgical operations were performed regularly by general surgeons under the supervision of the Professor of Neurology in the University of Athens.

Period 3 (1951–1970). The third period during which a proper Department of Neurosurgery was created and operated with Vassilis Griponissiotis as its Director.

Period 4 (1970–1999). The fourth period which was characterized by the development and expansion of the Department under Peter Karvounis (1971–1995) and Evangelos Singounas (1995–1999).

Period 5 (2000–present). The fifth period, during which the Department became officially the University of

Athens Department of Neurosurgery with Damianos E. Sakas as its first appointed Professor.

Period 1: the beginning

Initially and until 1930's the general surgeons M. Makkas and M. Kotsonopoulos performed operations for head trauma, brain abscess, hydrocephalus, posterior root section for spasticity, and spinal abscess and trauma [2, 3].

Period 2: the pioneering general surgeons

Neurosurgery continued with a few pioneering general surgeons who performed more demanding operations on the brain and spinal canal. Drs. N. Sbarounis, G. Karagiannopoulos, and P. Kokkalis who were Chiefs of the three Departments of General Surgery operated on frequently under the guidance of Dr. John Patrikios, Chief of the Department of Neurology, an outstanding neurologist who later became Professor of Neurology at the University of Athens [2, 3] (Fig. 2). According to Dr. D. Lazaridis, Emeritus Professor of General Surgery (a resident in Evangelismos Hospital in 1936), Dr. Patrikios supervised all neurosurgical procedures carried out by the surgeons Sbarounis and Karagiannopoulos between 1930 and 1936. This was the tradition of French Medicine, where Patrikios had received his training. Later, after the arrival of Peter Kokkalis, a distinguished Professor of General Surgery (Fig. 3), Professor Patrikios handed all operating over to him.



Fig. 1. Evangelismos Hospital, Athens, Greece



Fig. 2. John Patrikios, pioneering neurologist

The records of Evangelismos Hospital identify important cornerstones such as:

- 1) In 1931, Patrikios performed the first air ventriculography for tumor diagnosis.
- 2) In 1933, the Department of Neurology was established under the directorship of J. Patrikios.
- 3) In 1935, descriptions of 30 air ventriculographies, 21 operations for brain tumor or abscess and 6 spinal procedures are included in the Hospital Statistics.
- 4) Between 1932–1939, the following procedures were performed: 138 ventriculographies, 100 operations for brain tumor, 3 for hydatid cyst, 2 for brain abscess drainage, and 25 for spinal tumor.
- 5) In 1935, Kokkalis successfully removed a “Thoracic Psammoma” in a paraplegic woman. According to the



Fig. 3. Peter Kokkalis, general surgeon, pioneering neurosurgeon, and the founder of the department

publication, there was a 3-year history of leg weakness and a T7 level of hypoesthesia. A Lipiodol, suboccipital myelogram showed a complete block at T7. Professor Kokkalis performed a T5–T8 laminectomy under local anesthesia and removed a subdural “hazelnut-like psammoma”. The patient made a full recovery.

- 6) In 1940, Professor Kokkalis reported a 7 year-old girl with hemiparesis and increased intracranial pressure. Ventriculography revealed a left parieto-occipital tumor (“cystic ependymoma”) which was successfully removed under local anesthesia.
- 7) In 1942, Professor Kokkalis operated on a pontine tuberculoma, under local anesthesia, via a posterior fossa approach. Unfortunately, the patient died after a few hours.

In the official publications of the Greek Surgical Society one reads:

- 1) Karagiannopoulos–Patrikios. “Technical conclusions on 21 brain tumors” (1926–1933). In this article, we read that, although the preoperative neurological condition of all patients was bad, ten of them survived. The procedures were performed under local anesthesia, using the cautery and an electrical drill for large decompressive craniectomies. The operations were completed after ventricular puncture without any effort for tumor removal. Sitting position was preferred for posterior fossa lesions.
- 2) Kokkalis. “Successful Removal of a Cerebellar Glioma” (1930).
- 3) Patrikios–Karagiannopoulos. “Successful Removal of Occipital Meningioma” (1932).
- 4) Sbarounis–Patrikios. “Hydatid Cyst of Occipital Lobe Successfully Removed” (1934).
- 5) Kokkalis–Patrikios. “Successful Partial Removal of Glioma of the Vermis” (1934).
- 6) Sbarounis–Patrikios. “Large Meningioma of Fronto-parietal Area Successfully Removed” (1935).

A study of all these records shows that Professor P. Kokkalis was the first surgeon to practice independent, complex neurosurgery in Greece as part of his overall surgical practice. It is not, therefore, surprising that Professor Kokkalis suggested to Dr. Vassilis Griponissiotis, one of his best residents, that he should specialize in neurosurgery. Griponissiotis received his initial residency training under Kokkalis in Evangelismos and subsequently received training from Tonnis in Berlin, Olivecrona in Stockholm, Dandy in Baltimore and Bailey in Chicago, from 1947 to 1949.

Period 3: the department of neurosurgery at the Evangelismos Hospital

The Department of Neurosurgery at the Evangelismos Hospital was officially established in 1951 under the directorship of V. Griponissiotis, who had also become an Associate Professor of Surgery in the University of Athens (Fig. 4).

Dr. Griponissiotis was the first officially trained neurosurgeon and practiced in Evangelismos Hospital for almost 15 years. He performed an extensive range of neurosurgical procedures including operations on patients with astrocytomas, glioblastomas, meningiomas, hematomas, hydrocephalus (valve insertions) and abscesses. He also performed more complex procedures such as:

- 1) resections of acoustic schwannomas, other posterior fossa tumors and tuberculomas
- 2) transcranial approaches for large pituitary tumors
- 3) cranial nerve resections in the middle fossa for trigeminal neuralgia and posterior fossa for Meniere’s disease
- 4) leucotomies for pain disorders
- 5) chordotomies for cancer and phantom limb pain
- 6) laminectomies for neurinoma and disc prolapse

In the Departmental Statistics for 1953, Griponissiotis reported a 23% mortality rate for intracranial operations, 13% for benign and 44% for malignant lesions. From 1939 to 1965, he published more than 100 articles in Greek and a thesis which examined ventriculography in the diagnosis of brain tumors. He also produced several international publications in the field of neurophysiology, based on work in the Department of Neurology



Fig. 4. Vassilios Griponissiotis, the first chief (1951–1970)

and Neurological Surgery of the University of Chicago. These publications include: “Cortico-cortical connections of the wall of the superior temporal sulcus in the monkey”, with the co-operation of O. Sugar and L. Amador, in 1950 [4], and articles on the treatment of cerebral hydatidosis, in 1957 [5]. The first colleagues of Dr. Griponissiotis were Drs. G. Tavridis and G. Hadjidakis. They received their neurosurgical training in Evangelismos and then in the UK and Scandinavia. Later, they became chiefs of neurosurgical departments in other Greek hospitals.

Period 4: the modern era

In 1971, Dr. Griponissiotis was succeeded by Peter Karvounis (Fig. 5), who had been trained in the USA, at the New Jersey College of Medicine and Dentistry and subsequently became an Associate Professor at the same college [2, 3]. Dr. Karvounis developed neuroradiology (myelograms and angiograms) and introduced new operative techniques for aneurysm surgery and total macroscopic tumor resection. He also introduced fenestrations for disc removal and the surgical microscope (1985). In 1987, Dr. Karvounis became an Associate Professor of Neurosurgery in the University of Athens. By that time, the yearly numbers of admissions and operations were 800 and 400 respectively. Dr. Karvounis remained the Chief of the Department until his untimely death, in 1995. He was succeeded by Evangelos Singounas who remained as the Chief of the Department until the end of 1999. Dr. Singounas introduced stereotactic neurosurgery and prepared the ground for the creation of the epilepsy surgery service. In addition, he



Fig. 5. Peter Karvounis, the second chief (1971–1995)

introduced intracranial monitoring in the management of trauma and stroke patients.

Period 5: the beginning of an academic department

Dr. Karvounis paved the way and created the legal framework for the conversion of what was originally a National Health System Department to a University Department. In 1996, soon after his death, the University of Athens advertised the post of Professor of Neurosurgery, for the first time in its history. After a lengthy process, Dr. Damianos E. Sakas was elected in May 1999. Prof. Sakas had received his residency training at the University of Athens Department of Neurology and the Department of Neurosurgery at the Evangelismos Hospital under the late P. Karvounis (1982–1986). From 1986 to 1993, he worked at the Massachusetts General Hospital, Harvard Medical School under Professors Zervas and Moskowitz, the Institute of Neurological Sciences, Glasgow under Professors Jennett and Teasdale and the National Centre for Neurosurgery, Dublin. From 1993 and up to his return to Athens in 2000, to take over as the chairman of the department, Dr. Sakas worked as a Consultant Neurosurgeon in England, at the Midland Centre for Neurosurgery, University of Birmingham and, subsequently, as the Lead Neurosurgeon at the University Hospital Coventry and Warwickshire and Honorary Senior Lecturer at the University of Warwick.

In the modern period, the Department of Neurosurgery at the University of Athens is committed to a policy of standardization of good neurosurgical practice, expansion, and subspecialization. In addition, the numbers of annual admissions and operations have increased to 1200 and 750, respectively.

The current clinical and research interests can be divided as follows:

- 1) Neurotrauma/Cerebral Protection, 2) Neuro-otology, 3) Epilepsy, 4) Movement Disorders, 5) Neuro-orthopedics, 6) National Research Centre and Database for Neurotrauma and Functional Neurosurgery.

Influence of the department on neurosurgery in Greece throughout the years

In many respects, the creation of the Department of Neurosurgery at the Evangelismos Hospital contributed, directly or indirectly, to a wider interest in neurosurgery among young Greek physicians and, hence, to the creation

of other Departments in Athens and Thessaloniki, the capital of Macedonia and the second largest Greek city. These Departments include:

- 1) The Department of Neurosurgery at the AHEPA Hospital in Thessaloniki. In 1967, after he left Evangelismos Hospital, Dr. Griponissiotis became the first Director of the Department and also the first Professor of Neurosurgery, at the Aristotelian University of Thessaloniki [1].
- 2) The Department of Neurosurgery at the Athens Polyclinic Hospital was founded in 1953, under Doros Economou. Dr. Economou had been trained under Clovis Vincent and Demartel in Paris and later worked as a research fellow with Penfield in Canada. He was a pioneering surgeon who introduced procedures such as aneurysm clipping, transphenoidal approach, stereotaxy, Cloward's technique, epilepsy surgery and fenestrations for discectomy. During the next 32 years he treated surgically more than 3000 brain tumors [2, 3].
- 3) The Department of Neurosurgery at the Saint Savvas Athens Cancer Institute. This was originally established as a small neurotrauma unit in 1940 under Dr. Konstantinos Eliades [2, 3]. Later, it evolved to a neuro-oncology department under John Taptas who had been trained in France and is well known for his pioneering work on the cavernous sinus [6].
- 4) The Department of Neurosurgery at the Athens General Hospital. It was established in 1973, under G. Hadjidakis as its first director, a junior colleague of Griponissiotis at the Evangelismos Hospital. Its current Director A. Leventis was trained by Dr. Economou. He later became Deputy Director in the Department of Neurosurgery at the Evangelismos Hospital prior to becoming the Director of Neurosurgery at the Athens General Hospital.
- 5) The Department of Neurosurgery at the Athens KAT Trauma Hospital. It was established in 1968, under A. Apostolou. Its current Director, D. Anagnostopoulos,

also worked at the Evangelismos Hospital for many years prior to his appointment at KAT Trauma Hospital.

- 6) The Second University Department of Neurosurgery at the Aristotelian University of Thessaloniki. It was established in Hippocrateion Hospital and was headed by Dr. Tavridis, who had also been a junior colleague of Dr. Griponissiotis at the Evangelismos Hospital.

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Comment

The article by Stranjalis and Sakas is a brief report on the history of Neurosurgery at the traditional Hospital Evangelismos in Athens.

The paper is short, well written and instructive.

This article closes the series of similar publications which appeared in *Acta Neurochirurgica* in response to an initiative of the Historian of the EANS during the period from 1999 to 2003 (M Brock).

This initiative should be continued. Tradition is the backbone of every society. Memory is essential for tradition. Memory is lost if information is not stored. Articles such as the present one constitute a major contribution to strengthening the understanding of future generations for the achievements of the founders of our specialty. Progress is when past achievements become routine.

This often neglected fact is brought back to our minds by the present article.

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