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Martin George Netsky: teacher in medical school

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Martin George Netsky, a teacher in the Medical School, was interested in neurology and pathology especially neuropathology and medical education. He helped to develop medical education at Chiang Mai Medical School, and neuropathology and immunohistochemistry at Chulalongkorn Medical School. For this, Dr Netsky arranged for Thai neuropathologists and an immunohistochemist to be trained in the United States. These persons, upon their return, established satisfactory services, teaching and research in neuropathology and immunohistochemistry. The immunohistochemistry was first utilized in neuropathology only but later was put to service in anatomic pathology by the Department of Pathology. Today, immunohistochemical laboratories have been set up in several places in Thailand.

Keywords: Immunohistochemistry, medical school, neurology, neuropathology, teacher in medical school, tumor.

In August 2001, Dr Martin G. Netsky had a cerebrovascular disorder at home and was hospitalized. Subsequently, he went into a nearby nursing home and lived with his wife, Margaret Netsky, until his death in August 18, 2005 at 88 years of age. He left behind his then 90-year-old wife. At this writing, she is 93-year-old.

Dr Martin G. Netsky was born in Philadelphia in 1917. He obtained his Doctor of Medicine (MD) from the University of Pennsylvania in 1943 and served as intern and resident in neurology at the same University Hospital. He was certified by the American Board of Neurology and Psychiatry. He was trained in neuropathology with Dr Harry M. Zimmerman at Montefiore Hospital at New York, one of the dominant teaching centers, particularly in neuropathology. Together they produced several academic publications [1-4]. Subsequently Dr Martin G. Netsky served as Professor of Neurology and Neuropathology at Bowman Gray School of Medicine, the Wake Forest College (1955-61), Professor of Neuropathology of the University of Virginia, School of Medicine (1961-75) (**Fig. 1**), and Professor of Pathology of Vanderbilt University (1976-81). He was named Emeritus Professor of Pathology of Vanderbilt University after his retirement in 1981 (**Fig. 2**). He was a member of the American Association of Neurologists and Neuropathologists.

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Fig. 1 Professor Martin G**.** Netsky (1917-2005) at 48 years of age.

Dr Martin G. Netsky was interested in neurology, pathology especially neuropathology, neuroanatomy and medical education. His numerous publications were almost all related to the nervous system including the evolution of the nervous system [5], congenital anomalies [1, 6-8], vascular malformations [2, 9], neoplasia [3, 4, 10-15], vascular disorders [16], retrogressive disease [17, 18], neuroepithelial (colloid) cytes [15, 19-21], histogenesis of choroid plexus in man [22], xonthogranuloma of choroid plexus [23], choroid plexus and paraphysis in lower vertebrates [24], studies on the choroid plexus [25], choroid plexus

Fig. 2 Emeritus Professor Martin G Netsky at 84 years of age. The photograph was taken with Dr Shanop Shuangshoti, a young Thai pathologist who is the son of Dr Samruay Shuangshoti.

in health and disease [26], medical education [27-30], pigments [31], trace elements [32], and immunohistochemistry [33]. Dr Netsky was a capable, kind and sincere teacher who liked to encourage students to ask questions and he answered them tirelessly. He emphasized the 2-way learning process, that is, student and teacher learn from each other; the suggestions made by students should be used to guide teaching [27, 28].

Dr Netsky believed that a clear definition helps to understand and remember things easily. So he liked to define words for students. For example, this is his definition for the "brain". A vertebrate brain is that part of the central nervous system in the skull connected to the spinal cord, the seat of sense, motion, thought, and human speech, comprising two contiguous hemispheres connected by the gray matter, surrounds both white matter and various subcortical neuronal clusters [34]. In my view, it is more simple and understandable than those definitions of the brain encountered in general medical dictionaries.

Dr Netsky came to be familiar among Thais in 1959 when he was at the Bowman Gray School of Medicine, the Wake Forest College in North Carolina. A seminar course was arranged for Thai scholars preparing themselves to be medical teachers at the new Chiang Mai Medical School. Dr Netsky was one of the participants in that seminar. A Thai scholar told me about a statement of Dr Netsky that impressed him, - that is to put the right man on the right job at the right time creates achievement (Yongyoot Sujjavanich - personal communication). In 1961, Dr. Netsky came to Chiang Mai Medical School as Visiting Professor of Pathology for 6 months to help medical education [29]. He also visited briefly the Faculty of Medicine, Chulalongkorn University at Bangkok, where he received a very warm welcome from Dr ML. Kashetra Snidvongse, the Dean of the Faculty of Medicine.

I studied neuropathology two times with Dr Netsky at the University of Virginia, School of Medicine at Charlottesville, Virginia, USA for three and half years. The first time was during 1964-1966 for two and half years when I was a Fellow in Neuropathology under a training grant of the National Institute of Health (NIH) at Bethesda, Maryland, USA. In 1965, Dr Netsky arranged a conference on medical education for foreign scholars in the medical sciences. Scholars from 20 countries of five continents joined the conference. Dr Yongyoot Sujjavanich and I were invited as scholars from Thailand (**Fig. 3**). My second participation with Dr Netsky occurred in 1969-1970, when I served as an NIH international postdoctoral research fellow at the University of Virginia School of Medicine for one year. Dr Vira Kasantikul was another Thai scholar who was trained in neuropathology and immunohistochemistry by Dr Netsky at Vanderbilt University School of Medicine, Nashville, Tennessee, USA. He later moved further training in neuropathology and immunopathology to the Department of Pathology at the University of California of Los Angeles, USA.

The first case of brain tumor in Thailand underwent immunopathological study in 1983. It was a cerebellar neoplasm of mixed mesenchymal and neuroepithelial origin (combined rhabdomyosarcoma and medulloblastoma with glioblastomatous differentiation) or medullomyoblastoma. The glial component within the tumor was demonstrated by the positivity to glial fibrillary acidic protein (GFAP) in immunostained sections of the neoplasm, the work being kindly performed in the laboratory of Dr Netsky at my request [35].

Fig. 3 Photograph of annual conference on medical education for foreign scholars in the medical sciences arranged by Professor Martin G Netsky (the first row, eighth from the left) in 1965. Drs Youngyoot Sujjavanich and Samruay Shuangshoti, the scholars from Thailand, were in the second row (ninth and tenth from the left).

In 1986, an immunohistochemical laboratory was set up for the first time in Thailand at the Department of Pathology, Faculty of Medicine, Chulalongkorn University by Dr Vira Kasantikul who returned from the United States. The first case of extraneural metastases of the cerebellar medulloblastoma in Thailand was diagnosed during the life of the patient utilizing GFAP immunostaining for confirmation [36]. This instance was later included in a series of 35 cerebellar medulloblastomas undergoing immunohistochemical study with particular reference to cellular differentiation [37]. Moreover, Shuangshoti, Chaiwun and Kasantikul studied 39 retinoblastomas immunohistochemically for determination of cellular differentiation [38].

They noted neurons and various types of glias in both medulloblastoma and retinoblastoma. They interpreted these findings to suggest that both types of neoplasms originate from the primitive stem cell neuroepithelium which possesses capacity to differentiate in both neuronal and neuroglial directions, the conclusion being that both medulloblastoma and retinoblastoma are primitive neuroectodermal tumors [37, 38].

Thus, the first application of immunohistochemistry in Thailand has intimate association with Drs Martin G Netsky, Vira Kasantikul, and Samruay Shuangshoti. At that time, Dr Prayoon Sukhonthamarn was the head of the Department of Pathology, Faculty of Medicine, Chulalongkorn University. Subsequently, the immunohistochemical service, which was first used in neuropathology, was extended to anatomic (general) pathology when the head of the Department of Pathology was changed from Dr Prayoom Sukhonthaman to Dr Prasarn Jimakorn. Currently, immunohistochemical laboratories are widely set up in Thailand, especially in the medical schools.

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