



Obituary: John Ching-Kwong Kwok

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OBITUARY

Professor John Ching-Kwong Kwok, the reputable neurointerventionist and neurosurgeon giant and mentor to many in Hong Kong and Asia, has left peacefully on 9th April 2020 in the presence of his family.

John was born in Hong Kong on the 14th of February of the year 1951, and he was the elder of three. John was being described by his siblings as a fanatical experimenter and inventor that brought fear and surprises. In fact, John was described by his secondary education schoolmates as the “Crazy Seven”. His well-remembered invention was to make a workable gun that could indeed shoot down a bird. From sourcing the materials, decompressing the different components and mechanisms, and bringing everything back together, John revealed his talent as an inventor and his character of being meticulous and his perseverance at a very early time.

John was a medical graduate of the National University of Ireland Galway (1973–1979) and received his postgraduate medical and neurosurgical training at Richmond Surgical Hospital and the Jervis Street Hospital in Dublin. He obtained the Fellowship of the Royal College of Surgeons of Glasgow and Edinburgh and returned to Hong Kong

in 1985. After attaining his professional surgical qualifications, John returned to Hong Kong in 1985 to work alongside Dr. Hsiang-Lai Wen, the Father of Hong Kong neurosurgery, at Kwong Wah Hospital (KWH)'s Department of Neurosurgery. He was promoted to be the consultant-in-charge of KWH in 1986, and became the Chief of Service of the Department in 1989, and thereafter, devoting his entire career to developing both KWH's neurosurgical department and Hong Kong's neurointerventional services. His tremendous input to public healthcare and society has earned him many awards, including the Ten Outstanding Young Person in 1991 and the Hospital Authority (HA) Outstanding Staff award in 2000. All his colleagues and mentees were moved by his niceness and courtesy despite calamities and toughness faced during operations and undeniably recognized his amazing technical skills in operations. He retired in 2012, at the age of 61.

Since the early 1990s, Professor Kwok recognized the limitations of open neurovascular operations and envisioned a paradigm move to endovascular treatment. With his strong conviction, he pioneered and mastered the use of endovascular intervention, not only to overcome a lot of technical hurdles, but also those related to administrative

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and financial issues. In order to provide the best neuro-endovascular service in Hong Kong, he worked closely with the Tung Wah Hospital Group to convince and equip the hospital with the most upfront advanced equipment in KWH. As a pioneer and leader in endovascular neurointervention, he introduced Guglielmi detachable coils into Hong Kong, which proved to be one of the cornerstones of modern Neurointervention.¹ Professor Kwok was one of the pioneers in advocating flow diversion as a primary treatment for intracranial aneurysms and was the first in the Asian-Pacific region to report on the use of the Pipeline Embolization Device for treatment of wide-necked internal carotid artery aneurysms treated between October 2008 and June 2009.² As a result of professor Kwok's open-mindedness and knowledgeable nature, in conjunction with his personal mission to share and teach, many young, enthusiastic doctors were inspired and trained to become neurointerventionists, and it was my fortune to be one among them. Professor Kwok envisioned a future of virtual simulation training for intervention and, in fact, started such a program more than 10 years ago. Miraculous recoveries after operations were frequently encountered and drew him clinics packed with patients and celebrities. John was renowned for his treatment of the Hong Kong police inspector who survived being shot in the head by armed robbers in 1992 and who went on to become the famous "tasteless detective".³ Professor Kwok was an advocate for raising the neurointerventional reputation of Hong Kong internationally and managed to organize the 5th Conference of the Asian-Australasian Federation of Interventional Therapeutic Neuroradiology in November 2002. Subsequently, he contributed to the Council of the Asian Australasian Federation of Interventional and Therapeutic Neuroradiology as Treasurer until 2014. These experiences encouraged John and us to establish the Hong Kong Society of Interventional and Therapeutic Neuroradiology in 2006, where he was the founding president until 2013. Professor Kwok was also the founding president of the Hong Kong Stroke Society, and a Life Member and former Vice President (1990–1994) of the Hong Kong Neurosurgical Society.

Professor Kwok was a man of many talents. In addition to mastering multiple musical instruments, the renowned neurosurgeon and neurointerventionist was also a true artist and architect. His drawings earned respect from a lot of celebrities and colleagues, and, as one of his patients quoted, were indispensable to show how he understood the problem and

illustrated to her that she could give confidence to proceed with the operation. Professor Kwok indeed had also performed on an evening television fund-raising program playing an electronic keyboard with a band. Moreover, Professor Kwok was an esteemed member in the field of information technology and was awarded the Hong Kong IT Achiever in 1993. In the early 2000s, he successfully developed a prototype for the current territory-wide electronic patient record (ePR) system for the HA. In addition to the above achievements, Dr. Kwok was the first to develop a filmless operation theatre setup in HA hospitals. Professor Kwok was also actively involved in healthcare administration education for the locals.

After his retirement from the full-time position in HA in 2012, Dr. Kwok continued to contribute as a part-time consultant in KWH and started to devote more time to research as an adjunct professor in the Biomedical Engineering Department of the Hong Kong University of Science and Technology (HKUST). John further shined his talent as an inventor. John and others went on to pioneer the development of a patented novel radio-thrombectomy device for acute ischemic stroke due to large vessel occlusion.⁴ The idea stemmed from the observation that distal embolization might occur because of loose fragments produced during maceration and engagement. The naturally coagulated thrombus was fragile and had poor binding with a thrombectomy device. Improvement of thrombus-device binding could hence reduce fragments breaking loose during wire pull and enhance protein crosslinking in the thrombus that could increase fragmentation resistance. These led to the groundbreaking work of the use of in-situ RF-treatment to reduce distal embolization in mechanical thrombectomy. John and others subsequently developed and experimented with a low hemorrhage-risk endoluminal patch that could dissolve intracranial blood clots within 20 minutes with potential for application in acute ischemic stroke Patients.⁵ John also had the vision to produce a platform for neurointerventional research and adopt the human placenta as an ex vivo vascular model to carry out studies for anatomical similarity to human cerebral vessels, simulation of stent-assisted coiling and flow diversion on an aneurysm model, simulation of intra-arterial thrombolysis, simulation of embolization of arteriovenous malformation with glues, simulation of mechanical thrombolysis and comparison of different devices, and a vascular model for training neurointerventionists.⁶

Dr. Kwok dedicated his whole career to enhancing Hong

Kong's public healthcare, mentoring next generations of medical, nursing, and radiology mentees, and developing and advancing neurointervention. He won the respect of others, not only by his excellent operative skills and humility, but also by his commitment and dedication. Hong Kong has lost a wise and dedicated soul. Dr. Kwok's beliefs and legacy will forever guide and inspire us to work towards a better future.

Conflicts of Interest

The author has no conflicts to disclose.

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