



# Morris Simon



Morris Simon, MB, BCH, died suddenly and unexpectedly on January 17, 2005, one day after his 79th birthday. At the time of his death he was professor emeritus at Harvard Medical School and working regularly in the Department of Radiology at the Beth Israel Deaconess Medical Center, as he had for almost a half century. Retirement was a non-kosher word for him, and when he became an emeritus professor in 1997 he continued his daily activities as a senior radiologist with practically unabated intensity, vigor and interest in research. At the end of his life he had succeeded with his own often declared wish “to die with his boots on!”.

Dr. Simon was born in Johannesburg, South Africa in 1926. After attending Witwatersrand University and Medical School, Morris and his wife Josie moved to London in 1951 where he began his training in x-rays (the terms radiology and imaging were yet not in fashion), becoming a senior registrar at Guys and at the Bromley Group Hospitals. It was in this position that he

already at young age med himself known internationally as an erudite chest radiologist. The in radiological circles legendary Dr. Felix Fleischner, head of Radiology at Beth Israel Hospital from 1942-1960, invited Morris to join him in his department and the radiologic faculty at the Harvard Medical School in Boston in 1958. Dr. Simon remained actively involved in that institution and the post-merger Beth Israel Deaconess Medical Center for the remainder of his life.

Morris Simon had found in Dr. Fleischner a charismatic leader and soon became his right hand. He returned dedicated support and unflinching loyalty to his chief. He was instrumental in the preparation of a

“Festschrift”, a collection of essays in honor of Dr. Fleischner in 1967 that attracted contributions from leading chest physicians from many disciplines and countries. It became the model for the well-known and still existing international chest scientific society, formed in 1969 and named in his name, shortly after his death in the same year. Dr. Simon was an organizer, founding member and president of the Fleischner Society. This was the first formal specialty society in Radiology and it served as the basis for virtually all of those that followed.

In many ways Dr. Simon represented a bridge in Boston radiology from the era of Felix Fleischner, Richard Schatzki, Alice Ettinger and Larry Robbins, all practicing leaders in radiology at the different teaching hospitals, to the years when radiology developed via angiography, ultrasound technology, Ct and MRI into the modern clinical discipline that represents medical diagnostic imaging. Morris became acting and subsequently director of the BIH Radiology Department in 1960 and served as Radiologist-in-Chief 1963-1970. However, less attracted to the administrative responsibilities of such a position and more appropriate considering his keen interests and involvement in radiologic research and clinical teaching, he was appointed as the department’s Director of Clinical Services in 1970, a position he held until 1993.

Morris Simon was foremost known as a chest radiologist who applied profound knowledge in circulatory physiology, vascular anatomy and rheologic mechanics to the interpretation of radiologic images, which in those days consisted of static radiographs and observations made on the fluoroscopic screen. One of his early publications proposed a theory that analysis of the appearance of lung vessels in chest x-ray films could detect incipient failure of the left heart. He had adopted the insight gained from circulatory experiments and incorporated them in the image analysis. Morris assumed that the lung vasculature of the patient in upright position would represent a water manometer reflecting the balance between existing pressure, flow and caliber of the blood vessels at different heights from the lung base up to the apical top while exposed to the air pressure that existed in the unobstructed airways. Knowing that the hydrostatic pressure competes with the low-pressure pulmonary circulation he explained the prominent blood flow through the dependent portions and explained the relative narrow appearance of lung vessels in the barely perfused apical areas. Even mild elevation of the left heart filling pressure, in the order of 5-10 mm/hg would dramatically change the upper lung vasculature, which now is distended fully, a phenomenon that can be identified before the stages of more severe failure with interstitial and alveolar edema develop. This description of this observation, later also known as “Upper Zone Redistribution” or “Cephalic Flow Diversion”, became a very important diagnostic concept to the modern oriented diagnostic radiologists who integrated knowledge of circulatory pathophysiology in the interpretation of static images.

Dr. Simon was invited to join the evaluation panel for pulmonary angiograms in the first nationwide collaborative urokinase pulmonary embolism trial in the early 70’s. Realizing that this disease was most often a complication of thrombosis in the peripheral venous circulation, he made, perhaps his most important, contribution to clinical and experimental research when he conceived, developed and

completed a vena cava filter device that made use of Nitinol, an alloy with thermal memory newly invented by NASA. This “memory metal”, made of an alloy of nickel and titanium, was originally created for aerospace applications. Depending on its composition and temperature, Nitinol can change its shape and Dr. Simon conceived of using this characteristic to permit percutaneous catheter introductions of a small caliber wire into the inferior vena cava, which, when extruded into the warmer body, would transform itself into a filter, assuming whatever shape and size had been previously established. The Simon-Nitinol Filter was subsequently modified into stents and a closure device for atrial septal defects. The Simon Vena Cava Filter is still among the most used devices of this kind today.

Other medical technical approaches that attest to his innovative mind were the development of a catheter steering device that was successfully applied to perform peroral cannulation of the liver- and pancreatic-duct for diagnostic purposes. Noteworthy and appreciated by his surgical colleagues was the design of a localization wire for improved surgical approaches to small breast masses. Interventional radiologists benefited from his creation of a replication model of the human aorta so useful in the exploration and teaching avenues for complex selective vascular catheterization approaches.

Still other medical innovations made by him included the Simon-Leeming medical Classification and its incorporation as the basis of the coded language information processing system (CLIP). The method was used in the whole institution, the Beth Israel Hospital, for many years and allowed retrieval of reported data based on anatomy, pathology and image findings. In this respect Morris was a visionary and at least 20 years ahead in the development of automated computer-based reporting systems, now a fundamental pillar in the organization of hospital based health care and epidemiologic research.

Dr. Simon continued to make scientific contributions as a diagnostic pulmonary radiologist even as an emeritus professor. Technical innovations such as the Paddle-Wheel image display of the pulmonary vasculature when using CT. Morris logically merged his profound understanding of pulmonary anatomy with the technically determined image plane of the CT scanners and proposed and designed software programs that improved detection of small and localized vascular obstructions in pulmonary embolism. At the time of his death Dr. Simon was working on a device for semi-automatically dispensing multiple medications as a way of reducing errors, particularly in elderly individuals.

In his closer professional environment all appreciated him as a most gentle, soft-spoken and always helpful friend and colleague. “I have never heard Dr. Simon to raise his voice in anger” is a quotation made by Dr. Mitchell T. Rabkin, the former president of the Institution. Such positive human qualities made him also a very successful and popular director of the department’s residency and student’s training program. Dr. Simon served as the Director of the Radiology Residency Training Program at BIH from 1964-1993. His remarkable contributions established agreement between New England radiology training programs to offer positions on a single day, which later led to the now well established matching program between all major academic training centers in the Nation. From 1971-1993 he was also director of the radiology clerkship for Harvard Medical Students at the BIH and from 1982-1993

chairman on radiologic education, a time at which radiologic imaging was playing an ever-increasing important role resulting in a one-month mandatory rotation in the Harvard curriculum.

It would be a severe omission not to comment on Morris Simon's extra professional accomplishments. To all his closer friends and those who had contacts with him he was known as a great humanitarian. Being born and raised in South Africa, Morris was exposed directly to the problems of human confrontation, injustices and discrimination. His compassion for the underdog, and in particular for the innocent victims of war, irrespectively on which side, was genuine and absolutely honest. The same holds for feelings about racial and gender discrimination. Friends and colleagues at the BIH and the Harvard Medical School will remember his courageous decision to make a trip to Hanoi in order to alleviate suffering and deliver medical support during the last years of the Vietnam conflict.

Not widely known were his passionate interest and considerable accomplishments as a painter and sculptor. He shared deep interest in the arts together with his wife Josi and their four sons, Adam, Mark, Daniel and Jason. The whole Simon family was acknowledged as an anchor to the South African Diaspora and strong supporters of the art world in Boston. Morris was brilliant, generous and had an inner calm and peace.

In January 2006, one year after Morris Simon's death, the department of radiology at the BIDMC held, under the leadership of Herbert Y. Kressel, a memorial ceremony for Dr. Morris Simon in the attendance of his Wife and one of their son's. The dedication of a most modern chest reading room as the "Simon Room", containing not less than 6 modern computerized image display units, reflects the warm and respectful memory that all departments members share. His memory is also preserved in the department's Paulin-Simon lectureship that supports an annual presentation of a scientific topic by a department member to be held at the radiology department at the Rambam Hospital, Tefchnion University in Haifa, Israel.

Respectfully submitted,

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