JCS Journal of Chest Surgery
https://doi.org/10.5090/jcs.22.128
pISSN: 2765-1606 eISSN: 2765-1614
J Chest Surg. 2023;56(1):59-63

Historical Note

Historical Perspectives of the Korean Society for Thoracic and Cardiovascular Surgery: Pill Whoon Hong (1921–2004), A Pioneer in Cardiothoracic Surgery in Korea

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ARTICLE INFO
Received October 25, 2022, **Accepted** October 26, 2022

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Pill Whoon Hong (Fig. 1), the 11th President of the Korean Thoracic and Cardiovascular Surgical Society (1982–1983), was born to a Christian family as the fourth of 6 children on October 10, 1921, in Pyongyang, Korea, when Korea was under Japanese colonial rule. However, he was lucky enough to be exposed to different cultures at an early age as his father was a pastor. His sister, motivated by Christian faith, became a nurse, and he also enrolled at Severance Union Medical College, which was founded by Christian missionaries.

Fig. 1. Pill Whoon Hong during surgical training in the United States.

Education and surgical training

After graduating from Medical College in 1942, Hong completed an internship at Pyongyang Christian Hospital and opened a clinic for a short time in Manpo, located north of Pyongyang. After Korea's liberation from Japanese occupation in 1945, he served his military duty in the Coast Guard for 2 years. After his service, he started his career as a surgeon in the Department of Surgery at Seoul Transportation Hospital. In 1949, however, since he was always eager to improve thoracic surgery in Korea, he decided to go to the United States to broaden his knowledge [1].

In 1949, Hong was accepted as an intern at Binghamton City Hospital in Binghamton, New York, where he finished his surgical training in 1953. He then began training as a resident in thoracic surgery for 2 years at Baylor University Hospital (1953–1954) and Parkland Memorial Hospital (1954–1955) in Dallas, Texas, where he encountered his mentor, Professor Robert R. Shaw. Dr. Shaw played an important role in Dr. Hong becoming a thoracic surgeon and helped him to finish his resident training in spite of many difficulties. Thereby, Hong became the first Korean thoracic surgeon who obtained American board certification (Fig. 2). After he returned to Korea, he always kept a signed

https://doi.org/10.5090/jcs.22.128

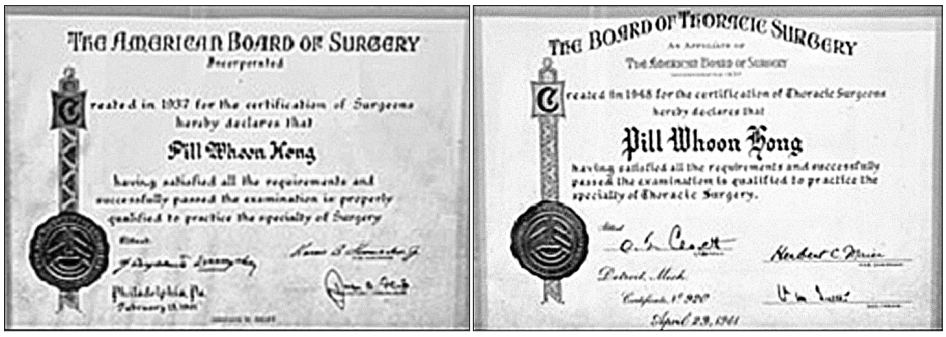

Fig. 2. Certificates of the American Board of Surgery and the Board of Thoracic Surgery.

photo of Dr. Shaw on his desk as a reminder of this period.

Hong, in his eagerness to learn more from the United States, received a Traveling Fellowship from the China Medical Board in 1960 and traveled again to visit about 20 university hospitals in the United States. He later recalled, "It was a wonderful opportunity to see where the American medicine was going [2]." With those experiences in the United States, he came back to Korea again and continued to conduct animal experiments with faculty members of his own and other departments in the field of myocardial protection and extracorporeal circulation [3,4].

Surgical career

After completing general surgery and thoracic surgery training in the United States, Hong returned to Seoul, South Korea, at the end of 1955, right after the Korean War (1950–1953), with a dream to develop the thoracic surgery field in his motherland. At that time, South Korea was one of the most impoverished countries in the world. Most of the buildings and streets had been destroyed, causing blackouts and water shortages as part of the daily routine (Fig. 3). In spite of these harsh conditions, Hong began to make history in the field of thoracic surgery in South Korea by successfully performing pioneering surgical procedures in patients with lung, esophagus, and heart diseases [5-8]. After Hong was appointed a professor of surgery at Severance Union Medical College, he recognized the need for a team approach in heart surgery. He organized a team of cardiologists, anesthesiologists, and physiologists and began animal experiments to start heart surgery in South Korea.

Kenneth M. Scott, a professor in the Department of Surgery at Severance Union Medical College, and missionary at Severance Hospital (1958 to 1963), recalls [9]:

"Although both Phil (Pill Whoon) Hong and I did thoracic surgery, Phil Hong was very good at it. I remember

Fig. 3. Destroyed Severance Hospital during the Korean War (1953).

the day Phil was doing a mitral commissurotomy and the electricity went off just as he had gotten his index finger into the left atrium. Holding the purse-string tight around his finger, Phil had to wait a full 8 minutes in darkness and without suction while the maintenance men wrestled with the standby generator, which was powered by an old temperamental army GMC truck engine."

Accomplishments in the field of Korean cardiothoracic surgery

During his early Severance period, Hong made valuable contributions in the field of heart, esophageal, and lung surgery, publishing articles and textbooks for students on diagnostics and treatments related to these surgical procedures, emphasizing the importance of multidisciplinary teamwork [3,4,7]. At a time when heart surgery was still in its infancy, he particularly focused on studying cardiac hemodynamics by measuring blood oxygen content using a van Slyke apparatus and performing cardiac catheterization, in collaboration with other professors of different de-

partments. Through these efforts, he was able to perform the first closed mitral commissurotomy in Korea on a 22-year-old male patient with severe mitral stenosis [6]. Without a doubt, this result was made possible by his years of numerous animal experiments and team approach (Fig. 4).

After this successful achievement of closed mitral commissurotomy, Hong made his name well known by performing other epoch-making operations in the Korean thoracic surgery field. In 1957, he successfully performed a Potts-Smith shunt operation on a 2-year-old girl with tetralogy of Fallot and cyanosis [8]. In 1961, he presented these experiences at the 13th annual meeting of the Korean Medical Association under the title "Cardiac Surgery in Korea [10]." Next year he performed his first case of open-heart closure of an atrial septal defect with the aid of hypothermia successfully in 1962. His continued efforts in open heart surgery experiments led to the publication of the extracorporeal circulation with hypothermia and hemodilution technique using 22 mongrel dogs, which is considered as a landmark study in the development of open-heart surgery in Korea (Fig. 5) [4]. As a result of this animal experiment, he was able to succeed in closing an atrial septal defect using a SigmaMotor pump and a helical reservoir bubble oxygenator as an artificial heart-lung machine in an 18-year-old male patient on November 20, 1963 [11].

Hong also showed his leadership and diligence in pulmonary tuberculosis and esophageal disease. Looking at some of his articles related to the surgical results of esophageal stricture and lung cancer, we can clearly see how enthusiastic he was for patient treatment and how much he strived to contribute to academic developments in the early stage of Korean thoracic surgery. He also published his clinical results in international articles; such as "The use of colon in the surgical treatment of benign stricture of esophagus" in 1964 [12] and "Unusual manifestations of ruptured aneurysm of the aortic sinus" in 1966 [13]. One of his achievements in the history of Korean thoracic surgery is that he wrote textbooks with an extraordinary passion for medical student education (Fig. 6).

Quoting a book by Scott [9] again:

"But, much more commonly, especially with older children and younger adults, we had to bypass the destroyed esophagus altogether by bringing a long loop from the

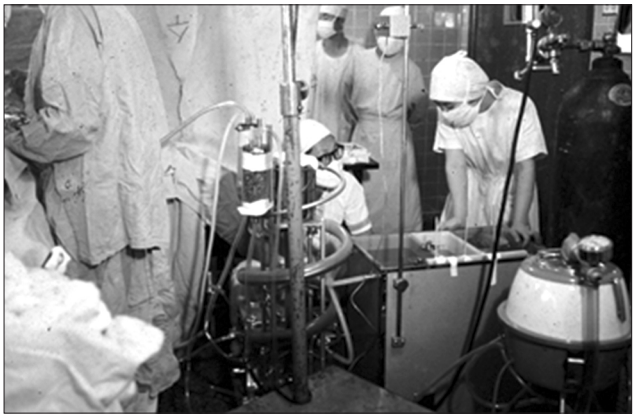

Fig. 5. Heart surgery using a SigmaMotor pump and a helical reservoir bubble oxygenator in the 1960s.

Fig. 4. A scene from a broadcast on the Korean news (1956, Professor Kwang Hyun Cho, left, the patient, and Pill Whoon Hong, right) (reproduced with permission of Korea TV).

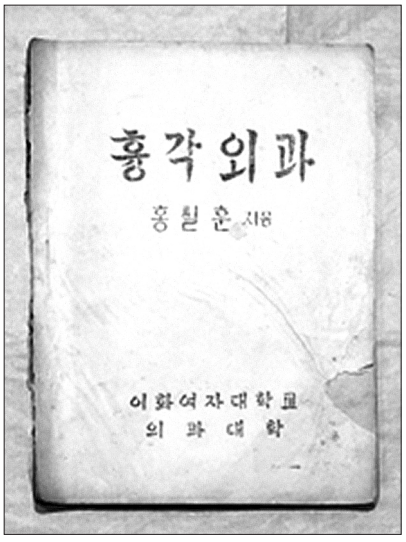

Fig. 6. Cover of a thoracic surgery textbook used in student lectures in the 1960s (provided by the Dong-Eun Medical Museum, Yonsei University College of Medicine).

bowel up through the right chest cavity and connecting it to the esophagus above the area of stricture, or sometimes even to the throat. … In the 5 years we worked together, Phil Hong and I, between us, did a total of 41 such operations. This was a procedure we dared not entrust our assistants to do—it was too hazardous."

Later life

In 1967, Hong left his home country to take office as an advisor for Okinawa Medical School in Japan. In 1969, he was appointed a Professor in the Department of Surgery at the University of Hawaii. He stayed in Hawaii for 13 years and returned to South Korea in 1980.

After returning to his alma mater in 1980, Hong, with the help of Dr. Bum Koo Cho, devoted his later life to the establishment of a heart center and improvement of coronary artery surgery techniques, as well as teaching young residents. It was as a third-year resident that I met him for the first time. I remember that he conducted morning rounds for more than 3 hours, teaching us when he was not on schedule for surgery. He hosted seminars every other week for surgical residents to study anatomy and physiology of the cardiovascular and respiratory systems. In addition, he purchased recording tapes of the American Society of Surgeons conference and asked residents to listen to the lecture tape and present their summaries twice a month to help improve their understanding of medicine and English simultaneously.

He also served as the President of the Korean Society of Surgery and the 11th President of the Korean Society for Thoracic and Cardiovascular Surgery (1982–1983). In his 1983 president's lecture, he emphasized the cultivation of skilled specialists in thoracic surgery in South Korea and the creation of an appropriate environment for the creative development of these specialists [14].

Hong played a pivotal role in the establishment of Severance Cardiovascular Hospital, which has become a world-class cardiac center. Also, he planned the 100th-anniversary hospital while serving as the Vice President and Chief Executive Officer of Yonsei University Medical Center for 2 years beginning in 1984, and as a result of his idea for a new hospital, the present Severance New Hospital was completed in 2006. He retired from his job at Yonsei University in July 1989 and spent his remaining days in Hawaii playing tennis and golf. He peacefully outlived his legacy even after undergoing coronary bypass surgery and passed away on October 8, 2004 surrounded by his dear friends.

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Conflict of interest

No potential conflict of interest relevant to this article was reported.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Acknowledgments

The authors gratefully thank the Dong-Eun Medical Museum, Yonsei University College of Medicine, for their support in the preparation of this manuscript.

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