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Historical Note

Historical Perspectives of the Korean Society for Thoracic and Cardiovascular Surgery: Sung Nok Hong (1927–2017) Who Performed the First Coronary Artery Bypass Graft in Korea

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Dr. Sung Nok Hong (SN Hong) was born on March 7, 1927, in Haengchon-dong, Jongno-gu, Seoul (Fig. 1). He was the eldest among 3 sons and 2 daughters of the banker Woo Bang Hong. He attended Maebong Elementary School, Kyunggi Middle School, and Kyunggi High School. Following graduation, he enrolled at Severance Union Medical College in 1945, which later became Severance Medical College and is now Yonsei University College of Medicine (YUCM). He graduated with excellent grades in 1951. In December 1953, he married Deacon Ok Jin Jo, and had 2 sons and 2 daughters. His second son, Jeong Hong, also graduated from YUCM, worked as a pediatric surgeon at Ajou University Hospital, and has now retired. After graduation, he served as a military doctor before joining the Department of Surgery at Severance Hospital in 1957. He became a certified surgeon in 1959 (board certification in surgery no., 222) and began his tenure as a clinical instructor in surgery at Severance Hospital in 1960.

Fig. 1. Dr. Sung Nok Hong (1927–2017), who performed the first aortocoronary bypass under cardiopulmonary bypass in Korea (1977). This photo was provided by Professor Jeong Hong from the Department of Pediatric Surgery, Ajou University School of Medicine (now retired).

In January 1956, Dr. Pill Whoon Hong (PW Hong), who completed his surgical residency training in the United States, returned to Korea and took charge of thoracic surgery at the Department of Surgery at Severance Hospital. From this time on, general surgery and thoracic surgery were separated, which served as an opportunity for the development of thoracic surgery [1]. In that same year, he successfully performed Korea's first right upper lobectomy for lung cancer in January [2] and the first closed mitral valvotomy for mitral stenosis [3] on September 6. On April 1, 1957, he also successfully carried out the Pott-Smith operation for a tetralogy of Fallot (TOF) patient. Dr. SN Hong

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played a crucial role as an assistant in these operations and the postoperative care of these challenging cases. In addition, Severance Hospital operated an animal laboratory at the time, where Professor SN Hong, as the head of the research team, impressed those around him by meticulously preparing various complex equipment needed for experiments [4]. At that time, surgery and treatment of emergency patients with conditions such as shock and excessive bleeding were handled by the thoracic surgery department. As the Red Cross Blood Center had not been established yet, the blood needed for heart surgery needed to be purchased on the market, which was also the responsibility of full-time instructor Dr. SN Hong. On June 8, 1962, the Department of Thoracic Surgery at Severance Hospital successfully closed an atrial septal defect (ASD) case using hypothermia, which marked the beginning of congenital heart surgery [4,5]. Furthermore, on November 20, 1963, the same team successfully closed ASD using cardiopulmonary bypass, under the guidance of Professor PW Hong [6] (Fig. 2).

In the early 1960s, the difficulty of heart surgery was compounded by challenges in patient management in the intensive care unit after surgery, since everything depended on human hands rather than machines. The absence of mechanical ventilators meant that medical staff often had to manually ventilate patients using an Ambu bag for more than a week, a process that frequently caused blisters on their hands. Dr. SN Hong, then an associate professor, was consistently involved in these challenging duties.

Fig. 2. Dr. Pill Whoon Hong and Dr. Sung Nok Hong, who performed the first open heart surgery with cardiopulmonary bypass for congenital atrial septal defect in Korea, on November 20, 1963. This photo was taken from the yearbook of the Department of Surgery, Severance Hospital, Yonsei University College of Medicine.

In 1963, Dr. SN Hong went to the University of Pittsburgh in the United States to broaden his experience in thoracic surgery, specifically in the cardiac surgery field, and returned to Korea in 1966. He was appointed as an assistant professor and continued to perform heart and lung surgery throughout his tenure at Severance Hospital.

After Dr. PW Hong moved to the United States in 1967, Dr. SN Hong took over leadership of the thoracic surgery department, a role he held for the next 20 years. He continued his research in cardiac surgery and received his Ph.D. in medicine with a thesis on the "optimal flow rate and priming solution in extracorporeal circulation, combined with moderate hypothermia and hemodilution techniques" in September 1968 (supervised by Dr. Gwang Sik Min). On May 18, 1968, the Korean Society for Thoracic and Cardiovascular Surgery (KTCVS) was established, initiating academic activities in the society. Dr. SN Hong played a pivotal role in the society, serving as its third Chairman of the Board of Directors from 1972 to 1974, its seventh President in 1978, its ninth Chairman of the Board of Directors from 1980 to 1981, and its fourteenth President from 1985 to 1986. Dr. Bum-Koo Cho, who specialized in pediatric heart surgery at a heart institute in Texas, the United States (1976–1977) joined the department in 1971. Upon his return from the United States after completing the Evarts A. Graham Fellowship of the AATS (American Association for Thoracic Surgery), the department was subdivided, with Cho being responsible for congenital heart surgery and Hong in charge of adult heart surgery.

In April 1977, Dr. SN Hong achieved a significant milestone by successfully performing Korea's first coronary artery bypass graft using saphenous vein, heralding the golden age of coronary artery surgery (Fig. 3) [7]. The patient was a 51-year-old man with angina pectoris. He recovered and was discharged safely.

As the department expanded, applications also increased. Professor Doo-yeon Lee was the first to apply for a residency in the Department of Thoracic Surgery at Severance Hospital in 1974, and subsequently, 13 residents were trained by 1985.

There is an anecdote that gives a glimpse into SN Hong's passion for patients. One day, a resident on duty in the intensive care unit fell asleep while taking care of a patient, and SN Hong stayed by the patient's side without waking the resident. Later, the resident realized what his professor had done out of a tender spirit, and thereafter learned more diligently from him. Due to the efforts of SN Hong and


心筋梗塞수술에 첫凱歌
延世大팀 狹心症치료에 밝은 展望

Fig. 3. A Korean media report after Sung-Nok Hong performed Korea's first successful coronary arterial bypass in 1977. This photo was taken from the yearbook of the Department of Surgery, Severance Hospital, Yonsei University College of Medicine.

Fig. 4. Professor Sung Nok Hong, after his retirement from Severance Hospital, taught juniors at Bucheon Sejong Hospital from 1992 to 1998 (from the left in the front row of the photo, Drs. Young-Tak Lee, Young-Kwan Park, Sung Nok Hong, and Kook-Yang Park). This photo was provided by Professor Kook Yang Park from the Department of Cardiothoracic Surgery, Gachon University Gil Medical Center, Incheon.

others, the number of cardiac operations rapidly increased in the 1970s and 1980s, and surgical outcomes also greatly improved [8-14].

His continuous passion for education, surgery, and spirit of experimentation served as an example to all of his followers and earned him numerous awards, including the Seoul Federation of Teachers' Associations Award, the Professor of the Year Award (1987), and the Minister of Education and the Korean Federation of Teachers' Associations Award (1991).

The history of thoracic surgery at Severance Hospital is inseparable from the legacy of Dr. SN Hong. After he retired in August 1992, Dr. Hong was appointed as an honorary professor at YUCM. He subsequently dedicated 7 years to Bucheon Sejong Hospital (Fig. 4) (1992–1998). He then moved to Myongji Hospital, affiliated with Kwandong University College of Medicine, until 2000. Although he passed away in 2017, he is remembered as a prominent figure in the history of the Korean Thoracic and Cardiovascular Surgical Society.

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Conflict of interest

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