

In Memoriam: Wu Mengchao

Wu Mengchao was born on August 31st, 1922 in Minqing County, Fujian Province, China. At the age of 5, he moved to Malaysia with his family before returning to China in 1940 during World War II, where he attended the High School affiliated to Tongji University, which was transferred from Shanghai to Kunming because of the war. In 1943, he was admitted to the Tongji University School of Medicine and, after graduating, served as a surgeon from 1949 at Changhai Hospital Affiliated to the Second Military Medical University, Shanghai.

In 1956, Professor Wu, then a 34-year-old attending physician, followed the proposal of his mentor Professor Qiu Fazu and chose a career in hepatic surgery, which he remained dedicated to for the next 65 years. In 1958, Professor Wu and a colleague translated a textbook, *Introduction to Hepatic Surgery*, the first monograph on hepatic surgery to be published in Chinese in mainland China. In the same year, he and two colleagues constructed the “three-person research team” at Changhai Hospital, which was the first hepatic surgery team in China and whose influence is still recognized today. In 1960, the team proposed the “five lobes and four segments” theory of liver anatomy by constructing and observing hundreds of human liver perfusion and corrosion specimens, and this became a foundation for liver surgery. Meanwhile, to control bleeding during hepatectomy, he established the “intermittent hepatic portal occlusion under normal temperature” technique, which subsequently evolved into the “total hepatic blood flow occlusion under normal temperature” technique. The majority of Chinese patients with liver diseases were complicated with cirrhosis, and the risk of severe liver complications after hepatectomy was high. In response, Professor Wu proposed the “biochemical metabolic rules of normal and cirrhotic liver after hepatectomy”, and established strategies to prevent and correct postoperative metabolic disorders. From the late 1950s to the 1960s, Professor Wu’s team gradually matured their hepatectomy technique, and successfully performed a series of surgeries that were considered complex and risky at the time, including middle lobectomy and giant liver cancer resection. During the 10 years of the cultural revolution, Professor Wu did not stop exploring, and in 1975 he successfully removed an 18-kilogram hepatic cavernous hemangioma from a patient. To provide some historical perspective, hepatic surgery started very late in China compared with the West. From the 1950s to the 1970s, only a few centers could conduct hepatectomies, with a very small number of cases. There was almost no academic exchange between China and other parts of the world, despite the large burden of liver disease in China. Professor Wu established a systematic approach to hepatic surgery which he promoted through multiple training initiatives. These efforts greatly popularized and improved liver surgery in China and saved the lives of countless patients.

The incidence of liver cancer in China accounts for around half of the global total and the biggest challenges for surgical treatment are late diagnosis and high recurrence. In 1978, Professor



Wu established the first special laboratory of hepatobiliary surgery in China. In the following 10 years, he focused on early diagnosis of liver cancer, using alpha-fetoprotein for disease screening in 180,000 people, and investigated aldolase isoenzyme A, fucosidase, alpha-fetoprotein variant and other biomarkers. In the late 1970s, Professor Wu and his colleagues found that some huge unresectable tumors could shrink and become resectable after hepatic artery ligation or arterial perfusion chemotherapy, and proposed a new strategy of “two-stage resection”. He began to perform re-resection of recurrent liver cancer in the 1960s, gradually improved this technique from the 1970s to the 1980s, and carried out pathological studies on the origins of recurrent lesions. “Two-stage resection” and “re-resection for recurrence” represented landmark progress in hepatic surgery in China. From the middle to late 1980s, Professor Wu devoted himself to investigating comprehensive therapies for liver cancer, such as chemoembolization and ablative treatment, and founded centers specializing in experimental and translational research, such as tumor immunological and biological therapy centers and biological signal transduction research centers. During his career, Professor Wu pioneered the study of liver cancer in China, and always had the courage to face and conquer challenges in this field.

Another important contribution of Professor Wu was promoting the development of the hepatic surgery discipline. The “three-person research team” he formed in 1958 gradually evolved into the first hepatic surgery department in China in the 1970s, the first hepatobiliary surgery institute in the 1980s, the only university-affiliated hepatobiliary hospital (Eastern

Hepatobiliary Surgery Hospital, EHBH) in the 1990s, and the only National Center for Liver Cancer (NCLC) in the 2000s. The hospital now has 2,200 beds and performs over 4,500 hepatectomies for liver malignancies per year, with further patients treated with multidisciplinary therapies. His team has trained more than 1,300 hepatobiliary surgeons at home and abroad, many of whom have become the backbone of their own centers. At present, the EHBH and the NCLC are the largest clinical and experimental research centers for hepatobiliary cancer worldwide.

Professor Wu served as vice president of the Chinese Medical Association and was the founder of multiple organizations such as the Chinese Society of Clinical Oncology. He won the first-class National Science and Technology Progress Award and the National Science and Technology Progress Innovation Team Award. In 1991, he was elected as an academician of the Chinese Academy of Sciences. In 2005, he was awarded the National Supreme Science and Technology Award, which is awarded to only two experts in various fields each year, and he is the first recipient in the medical field.

As a student of Professor Wu, and vice president during his tenure as president of the EHBH, I worked with him for over 30 years. What I learned most from him is the strict and sometimes harsh requirements for medical work, especially regarding surgical safety, in addition to exquisite surgical skills and an enthusiasm for career and patients. When I was an attending physician, although I urged myself to conduct careful preoperative evaluations, he would notice even the most minor issues almost every time during the grand round. He always checked every examination parameter carefully to avoid hidden pitfalls during the perioperative period. After age 70, it was not easy for him to come to the hospital in the evenings to check the condition of patients undergoing surgeries that day, but he always waited for the call from the chief resident and would not rest until he knew that the patients were stable. He also cared about his colleagues and students profoundly. During an operation with him 20 years ago, for an HBeAg-positive patient, I accidentally hurt his hand with a needle, but he just smiled, dealing with the wound on his hand, and said, "it's okay for me, as I've lived for a long time, but you need to be more careful as you guys have a long way to go." He loved his patients with his heart, as he said, "There is no shortage of experts or authority in this world. What is lacking is a person, who is willing to give themselves to others. When you help others, remember that medicine is sometimes exhausted, and only inexhaustible love can

illuminate a suffering soul". As one of the most famous doctors in China, he was particularly happy to provide free medical services for patients in his spare time, regardless of rich or poor, noble or humble. If a patient needed a physical examination, he would habitually heat his hands before performing it, and then help the patient button their clothes after the examination. He donated all bonuses of his awards to training young doctors and providing medical assistance. This noble morality was widely known in China, which is why thousands of ordinary people spontaneously came to mourn at his memorial service, despite heavy rain. Even taxi drivers from a different city knew about his passing and were saddened by the loss of a great doctor.

Professor Wu had no special hobbies and did not deliberately exercise, but this did not prevent him from maintaining good health during his life. He sometimes drank with friends and students, but he never drank much even though he had a good capacity for liquor. He liked to talk to young doctors and nurses, most often about the pitfalls and regrets he encountered during his surgical career of over 70 years. His wife, Wu Peiyu, a professor of obstetrics and gynecology, met him in 1941 at high school in Kunming, and then was admitted to the same school of medicine at the same time. Professor Wu Peiyu passed away 10 years before him. His three daughters, Wu Ling, Wu Min and Wu Ying, all worked in the field of medicine or pharmacy.

Professor Wu Mengchao passed away on May 22nd, 2021, 99 days from his centenary birthday. His enormous contributions truly make him worthy of the title "The Father of Hepatic Surgery in China". We cherish the memory of our mentor, the beloved Professor Wu.

Feng Shen*

Clinical Research Institute and Department of Hepatic Surgery IV, the Eastern Hepatobiliary Surgery Hospital, Naval Medical University, Shanghai, China

*Corresponding author. Address: Clinical Research Institute and Department of Hepatic Surgery IV, the Eastern Hepatobiliary Surgery Hospital, 225 Changhai Road, Shanghai, 200438, China. Tel.: 0086-21-81875005, Fax: 0086-21-65562400. E-mail address: shenfengehbh@sina.com

Received 26 May 2022; accepted 27 May 2022; Available online 30 June 2022

<https://doi.org/10.1016/j.jhep.2022.05.042>