

Utilization of da Vinci Surgical System in Taipei Tzu Chi Hospital

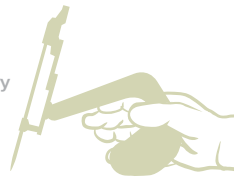
By Wu Yen-Ping

Remove Liver and Spleen Tumor

“Grandma, there are only two choices: host a vegetarian wedding banquet, or no wedding at all.” Ever since becoming a vegetarian when he was in Junior high, A-Yu has been in a constant tug-of-war with his grandmother about his dietary choice. He and his wife, who graduated from the department of nursing, Tzu Chi University, are both committed to becoming Tzu Chi volunteers. Watching her son happily committed to Tzu Chi, A-Yu’s mother also became a vegetarian. In an health examination in 2015, A-Yu’s mother was suspected to have spleen cancer. Having hepatitis-B, she began regular testing of liver functions and alpha-fetoprotein in a regional hospital in Yilan, and underwent liver imaging follow-up exams. During a routine check-up in Oct. 2017, the doctor discovered that the spleen tumor inside A-Yu’s mother did not grow, but instead a tumor was found

on her liver. Biopsies confirmed it to be malignant. The doctor recommended surgical removal. A-Yu’s mother, who is always afraid of pain, panicked. She became extremely agitated just thinking about the surgery. To ease her anxiety, A-Yu decided to take her to Taipei Tzu Chi Hospital for a second opinion.

After the assessment at the gastrointestinal outpatient clinic, his mother was transferred to the hands of general physician Dr. Wu Chao-Chuan. Dr. Wu carefully examined A-Yu’s mother and confirmed the presence of a 2.7 cm tumor in her liver, and a tumor on her spleen that was larger than 4 cm. “Only tumors that are smaller than 2.7 cm are considered small. The tumor is located right between the left hepatic vein and the middle hepatic vein, where high frequency cauterization is not possible. From a clinical perspective, surgical removal is necessary. The spleen tumor you have is in fact very rare and is located in the left upper abdomen. I recommend you to



remove it surgically with the other tumor,” Dr. Wu said. Considering the liver tumor is slightly to the right, and the spleen tumor in the upper left, the surgical area would include the left liver with a part of the right liver, and the middle hepatic vein would have to be removed as well to clean up the edges. In comparison to the simple removal of the left liver, the removal of the right liver and the middle hepatic vein would be a challenging surgery if done with done with laparoscopy.

While staying with her mother, A-Yu noticed a poster introducing the da Vinci

surgical system, explaining its advantages: smaller incision, less bleeding, less pain, and better prognosis. He believed that the system could reduce the postoperative discomfort, and would be better for his mother, so after learning about the assessment of Dr. Wu, he asked about the possibility of performing the surgery using the da Vinci surgical system.

Discharged 6 Days after Surgery

On Nov. 8, A-Yu and his sister escorted their mother to the hospital.



A-Yu's mother and another gastric cancer patient gave flowers to Dr. Wu Chao-Chuan to show their gratitude.

On the very next day, Dr. Wu operated the robotic arms and surgically removed the liver and spleen tumors inside their mother. Fortunately, the tumors did not spread, so chemo or radiotherapy were not needed. Three days after the surgery, A-Yu's mother was able to walk unassisted, recovering faster than expected. Dr. Wu visited her every day in her ward to examine her recovery. "The system allows for a better hemostatic control, and by operating the robotic arms, both tumors can be simultaneously removed. Traditional surgery would result in a larger wound and at least 10 days in hospital to recover, but you are able to walk three days after the surgery. The da Vinci system can certainly dramatically improve patients' postoperative recovery," Dr. Wu commented.

Seeing that their mother recovered well, A-Yu and his sister were jubilant. "I am so grateful for Dr. Wu. He has excellent surgical skills, leaving only a small wound and doesn't really hurt. I can walk on my own just few days after the surgery, and my appetite is great, too," the mother said thankfully. A-Yu's sister was gradually for the intricate care of the nurses, minimizing her mother's postoperative discomfort. "Taipei Tzu Chi Hospital is a vegetarian hospital, which is very convenient for her," she emphasized. Six days after the surgery, A-Yu's mother recovered well and was subsequently discharged.

Urology & Cardiovascular Surgery

A total of 8 surgical departments in Taipei Tzu Chi Hospital implemented the da Vinci surgical system to benefit their patients. The application of the system in urology occupied roughly 1/3 of the total operations. Ever since the introduction of the system, the da Vinci surgical system was utilized in 83 of the 94 surgeries, and is likely to reach 100 by the end of 2017, benefitting even more patients. It is hoped that in future hybrid operating rooms can be established, allowing surgeons to provide better treatments for patients using advanced medical imaging devices.

In July 2017, Director Chang Yen of cardiovascular therapy center, Taipei Tzu Chi Hospital, gave a talk on arterial bypass. He pointed out that 60 years ago when cardiovascular arteries are clogged, great saphenous veins from the patients' lower limbs, a conduit of choice for vascular surgeons, are removed and used as a bridge for redirected blood flow. However, the veins cannot withstand the high pressure and velocity of arterial blood flow and often deteriorate rapidly 10 years after the surgery. As time progresses and technology advances, coronary arterial bypass surgery can be performed without stopping the heart. By using only arteries coupled with the da Vinci surgical system,



Eight departments of Taipei Tzu Chi Hospital make good use of the da Vinci surgical system for patients' fine-quality treatment and recovery.



patients can receive effective treatment in the shortest amount of time possible.

Oral and Maxillofacial Surgery and Gynecological surgery

In the summer of 2016 a female patient in her thirties wrapped in large scarf came to the clinic of oral and maxillofacial surgery director Hsia Yi-Jan. She planned to be married years ago, but was hospitalized due to cellulitis caused by her wisdom tooth and respiratory oppression. With the help of Dir. Hsia,

the treatment was a success, however the wedding was never held. This time she came to Dir. Hsia to remove the scar on her neck. Aside from affecting facial nerves and salivary gland, Dir. Hsia explained, traditional surgery for head and neck cancer very often leaves scar on patients' face or neck. The advantages of the da Vinci surgical system, including smaller incision and faster recovery, makes it a new option for the patients, he added. "Only the technology that is founded on the premise of respecting life can truly guarantee patient safety," Dir

Vice Supt. Chang Yao-Jen, the medical team, and the volunteers celebrated the birthday of A-Yu's mother.





Hsia concluded.

The da Vinci Surgical System has been applied in 15 cases of gynecological surgeries as of Nov. 2017. There was a female patient in her eighties came to the hospital due to abdominal pain. The diagnosis revealed her to have a large ovarian tumor 40 cm in size and 10 kg in weight. Under the comprehensive care of the medical team, the patient successfully recovered. The team also applied the robotic arms to treat the multiple uterine fibroids of Mrs. Lin, who really wanted to be pregnant by age 33. Dir. Chen Kuo-Hu chose the new surgical removal over grind and shred with electronically powered device, which preserved the patient's fertility and shortened her recovery period, allowing her to be discharged 3 days after the surgery. Furthermore, the gynecological team also used the system to remove the relapsed ovary cancer of 66-year-old Mrs. Wu. "Time is changing, suffering isn't, and doctors' commitment to saving lives won't either," Dir. Chen said.

ENT and Thoracic Surgery

ENT doctor Su Wang-Yu gave an introduction on the application of the robotic arms of the da Vinci surgical system in ENT. By exploiting its high definition graphic and high safety, when the medical team treated a patient with salivary gland tumor, the incision

was limited to 4 cm, and damage to nerves and vessels was avoided, saving the patient from laryngectomy and tracheostomy in traditional surgery; when treating thyroid tumor, laryngeal nerve can be preserved and significantly reduced the complication of postoperative hoarseness. To hone his skills and knowledge, Dr. Su continues to advance in his study, actively participating international training programs and worldwide seminars, hoping to benefit more patients.

Thoracic surgeon Hsieh Min-Shiau shared the experience of the thoracic surgical team using the da Vinci surgical system on the removal of mediastinal tumor, esophageal resection and gastric tube reconstruction for an esophageal cancer patient, and the first single incision laparoscopic surgery in Taiwan. "Taipei Tzu Chi Hospital is now capable of providing top-notch medical service, fulfilling its goal three years ago. We hope in future we can obtain the certification for lung transplant and be able to offer quality service that advances with the time," he concluded.

The da Vinci surgical system has been widely applied in the surgical departments of Taipei Tzu Chi Hospital. Supt. Chao You-Chen pointed out, "I would like to thank our colleagues in the surgical departments taking full advantage of this expensive system, saving lives with compassion and excellent skills to spare them from pain and complications."