

A ROBOTIC HELPING HAND

Aiming for quicker and less invasive thoracic surgeries.

Patients undergoing operations on organs in the chest can benefit from shorter recovery times through the precision of robotic-assisted thoracic surgery (RATS), says Changli Wang, chief surgeon and professor of oncology at Tianjin Medical University Cancer Institute & Hospital (TMUCIH).

The widespread use of video-assisted thoracoscopic surgery (VATS) since the 1990s has greatly reduced pain, complications and shortened recovery time for patients who previously had to undergo a traditional open operation—or thoracotomy. Wang says with the newer robotic technology, this improvement is even more pronounced.

“Compared with VATS, RATS is less invasive, more precise, the recovery time is shorter and there is also a reduced loss of blood,” he says. A smaller surgical cut is required for the technology, and using the robotic arm eliminates the risk of

instability in the hand.

Wang noticed that unlike other thoracic surgeries, patients who underwent RATS at TMUCIH generally felt less pain from the second day. “This means they were recovering quicker and doctors could lower the painkiller dosage,” he says. “Patients could get on their feet by the second day, and be discharged sooner.”

TMUCIH uses the da Vinci surgical systems, which provide three-dimensional high-definition views and 10x magnification. The systems also come with instruments that offer a greater range of motion, precision and stability.

Because of these advantages, TMUCIH already has three systems despite only entering the robotics-assisted surgery scene in 2016. Wang, who specializes in lung cancer-related surgeries, says he and his colleagues have performed around 1,800 such operations in just the past two to three years. “The demand for robotic-assisted surgeries is high in China,” he says.

Wang concedes it takes time to get used to the system. “I was slower when I first started, but after three to five surgeries, the time I needed was reduced by a lot. I got used to the hand-leg coordination and felt at one with the instruments.”

Another potential challenge of RATS is that it takes longer for surgeons to stop severe bleeding if it happens. “We usually stop bleeding by using a hand-held hemostat—an instrument which compresses a blood vessel. However, when using RATS, the distance between the surgeons and the patient is further, which means we take longer to react,” Wang says. But he says these risks can be lowered by being meticulous while making the incision.

Going forward, Wang says TMUCIH plans to apply the technology to more complex surgeries, and study how survival rates of those undergoing RATS compare with other forms of thoracic surgeries. ■

