IMSUT Hospital

Surgical Center
手術部

Project Professor　Minoru Tanaka, M.D., Ph.D.

特任教授　博士（医学）　田　中　　実

IMSUT hospital provides seamless support for translational research. Our mission is the management and operation of the surgical center to achieve a safe and organized environment where surgical procedures can be performed in high quality. A da Vinci surgical system (da Vinci Xi), a robotic technology that allows surgeons to perform minimally invasive procedures, was introduced in November 2020. Robot-assisted Radical Prostatectomies (RARP) for prostate cancer and robotic rectal surgery for tumors including rectal cancer and GIST are performed. The Medtronic Stealth Autoguide Platform was introduced in April 2023.

Introduction
IMSUT hospital provides seamless support for translational research.

The aim is to apply knowledge gained from basic science to clinical and community health-care settings. Our mission is the management and operation of the surgical center to achieve a safe and organized environment where surgical procedures can be performed in high quality. Our activities include the management of clean areas, the establishment of protocols for infection control, maintenance of equipment such as astral lamps, surgical microscopes and fiberscopes, and organizing of daily and weekly operations.

A da Vinci surgical system (da Vinci Xi), a robotic technology that allows surgeons to perform minimally invasive procedures, was introduced in November 2020, and Robot-assisted Radical Prostatectomies (RARP) for prostate cancer started. Department of surgery initiated Robotic rectal surgery for tumors including rectal cancer and GIST in 2021. The Medtronic Stealth Autoguide Platform was introduced in April 2023. It is a robotic guidance system intended for instrument holders' spatial positioning and orientation. It is based on a pre-operative plan and feedback from an image-guided navigation system with 3D imaging software. Oncolytic virus therapy using the Stealth Autoguide Robotic system was started. In 2024, the robotic-assisted surgery program further expanded. The number of robot-assisted surgeries reached 142 cases, including 101 in the Department of Surgery and 41 in the Department of Urology. Of these, Robot-assisted Radical Prostatectomies (RARP) accounted for 34 cases, and Robot-assisted Pancreaticoduodenectomies (RAPAN) accounted for 7 cases. To support this expansion, medical engineering (ME) staff participated in the 2024 robotic surgery training program, enhancing their operational skills and knowledge of robotic systems.

Collaboration and Training

Collaboration with ward nurses was strengthened by conducting a joint initiative to observe and understand the practical aspects of robotic-assisted surgeries, including patient positioning for complex procedures. This initiative deepened team understanding and improved perioperative care coordination.

Medical Engineering Division

Medical engineer staffs increased accordingly, and a ME Division was newly established in the Sur-

gical Center. Three of four maintained at a NASA class 1,000 clean level and specifically designed for neurosurgery and joint surgery. For prompt and sustained supply of sterilized materials, we keep the surgical tools for each department in sets of designated purposes.

Equipment in the surgical center

The center is equipped with C-arm x-ray TV systems, surgical microscopes, ultrasonic aspirators, image guided navigation systems, intraoperative ultrasound imaging systems, intraoperative nerve simulation monitoring systems, etc. The endoscopic procedure room is located separately but adjacent to the surgical center.

TV monitoring system

Each operating room is equipped with a TV camera, so that the rooms can be monitored in the control center as well as by pad devices carried by managing anesthesiologists.

Induction of electronic ordering system

We are accommodating an electronic ordering system for the surgical center that allows a real time ordering by clinical departments and a computerized management of operation schedules.

Facts in the fiscal year 2024

Total number of operations	701
Planned operations	688
Emergency operations	13
General anesthesia	376
Spinal	25
Epidural	124
Local	227
Others	92