Four Key Components of Our Corporate Strategy: Component D

D Lead in Next-Generation Minimally Invasive Surgery

Aiming to Realize Next-Generation Minimally Invasive Surgery

Practical use of minimally invasive surgery (MIS) is making rapid progress, but there is room for improvement and many unmet needs remain. To satisfy these unmet needs, Olympus will continue to innovate technologically to enhance the performance of instruments, and work toward procedure innovation through cooperation with doctors and academic societies, as part of contributing to the development of MIS.

We intend to pursue innovative product development while actively leveraging partnerships with various stakeholders, and considering acquisitions to gain access to superior technologies.

Three Key Value Areas in MIS in the Future

Procedure innovation
Innovation that reduces procedure complexity or invasiveness By 2030, about 10% of total surgeries are expected to be done endoluminally

Enhanced instruments
Enhanced visualization and operating instruments that strengthen surgeons' visibility and dexterity, such as the Information-assisted Endoscopic Surgery System

Less invasive endoluminal manipulator
Less invasive endoluminal manipulator systems that allows use in office-based facilities as well as in operating rooms

Progress

The Research and Development of the Advanced Information-Assisted Endoscopic Surgery System

Olympus is developing a digital transformation for surgery: the Advanced Information-assisted Endoscopic Surgery System*, which provides information that helps to ensure safety and consistent quality for surgery by translating the tacit knowledge of skilled physicians in the endoscopic surgery field into data through AI analysis.

1 Information Rich Platform: Decision Assistance

Adding an information-assisted software library (Information Rich Real-time Library) created for various types of surgical and medical teams allows the endoscopic surgery system to provide visual information to the surgeons and to enable the support of medical teams. Depending on the progress of each surgery, risk factors such as anatomy, blood vessels, tumor position, anatomic landmarks, and bleeding will be displayed using AI and other related technologies. Critical information during the surgery can be shared among the medical team.

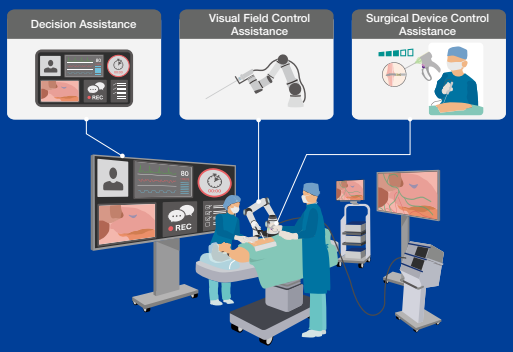
2 Autonomous View Control: Visual Field Control Assistance

In accordance with the surgery's progress and the operation's imaging estimated by the Information Rich Platform, this system will autonomously control endoscopes using AI and other related technologies to secure the visual field that makes it easier for surgeons to conduct surgery.

3 Active Device Control: Surgical Device Control Assistance

This system collects information on the treatment and access to the treatment area during surgery, along with information on surgical progress and the types and conditions of tissues, which are estimated by the Information Rich Platform.

This enables the optimal strength and energy output of surgical devices to be applied to the target tissue. The assistance of AI and other technologies has the potential to reduce risk and better enable safe and smooth treatment during operations.



* This developmental theme was selected as a subsidized project by the Japan Agency for Medical Research and Development (AMED). The work will be conducted at the latest by 2023 in collaboration with research and development contributors from the National Cancer Center Hospital East, Oita University's Faculty of Medicine, Fukuoka Institute of Technology's Faculty of Information Engineering, and the University of Tokyo's Faculty of Engineering (Graduate School of Engineering). The aim is for practical application in 2024 onward.