

To all members of the press,

We have initiated a collaborative project to develop an endoscopic surgical system that visualizes the extent of cancer progression and assists in recognizing the range of curative resection

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Asahi Surgical Robotics Co., Ltd.

National Cancer Center, National Institutes of Biomedical Innovation, Health and Nutrition

Announcement Highlights:

Asahi Surgical Robotics Co., Ltd. and National Cancer Center East Hospital will jointly develop an endoscopic surgical system that visualizes the extent of cancer progression and assists in recognizing the range of curative resection.

The improvement in the accuracy of curative resection range is expected to reduce the incidence of postoperative complications and improve treatment outcomes.

This project is an advanced surgical system development project conducted in collaboration between a surgical robot manufacturer and a medical institution, applying the endoscopic image analysis technology cultivated at the National Cancer Center.

Asahi Surgical Robotics Co., Ltd. (President and CEO, Kazuo Chiba, Kashiwa City, Chiba Prefecture, hereinafter referred to as "Asahi Surgical Robotics"), and National Cancer Center, National Institutes of Biomedical Innovation, Health and Nutrition (Director, Hitoshi Nakagama, Chuo-ku, Tokyo) East Hospital (Director, Toshihiko Doi, Kashiwa City, Chiba Prefecture, hereinafter referred to as "National Cancer Center East Hospital") have officially started the development of an endoscopic surgical system that visualizes the extent of cancer progression and assists in recognizing the range of curative resection.

This project was adopted in the "Advanced Research and Development and Strengthening of Development System Project in Medical Devices, etc. (Advanced Medical Device and System Development Project)" for the fiscal year 2024 by the Japan Agency for Medical Research and Development (AMED) as of April 10, 2024.

Project Details:

We will develop an endoscopic surgical system that integrates preoperative image diagnosis and intraoperative endoscopic image information to support anatomical recognition in rectal cancer endoscopic surgery. For the time being, we will proceed with discussions and development on paper and consider conducting clinical trials depending on the progress of development.

Background:

The selection of the resection range is crucial when performing curative surgery for rectal cancer due to its adjacency to various organs in the pelvis. To reduce the risk of local recurrence, it is necessary to secure a sufficient resection range. On the other hand, to avoid functional disorders such as postoperative urinary and bowel dysfunction, it is necessary to select an appropriate resection range. Surgeons usually diagnose the extent of cancer progression preoperatively using MRI/CT images, etc., and determine the resection range. However, it is difficult to fully grasp the extent of cancer progression through endoscopic images during surgery. This development project aims to start a future where surgeons can accurately capture the extent of cancer progression during surgery and recognize the optimal resection range.

Expected Outcomes:

- (1) Improvement in treatment outcomes of rectal cancer surgery is expected, such as reducing the incidence of postoperative complications and improving postoperative survival rate.
- (2) By utilizing the surgical support system, it is expected to perform high-quality surgery equivalent to a skilled surgical team, resulting in a reduction in perioperative complications and reoperations, as well as a reduction in the burden on surgeons.
- (3) Through the reduction of perioperative complications, reoperations, and hospitalization days, it is expected to contribute to the optimization of healthcare resources and the sustainability of healthcare for an aging society.

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