

IMSUT Hospital

Department of Surgery

外科

Professor	Dai Shida, M.D., Ph.D.	教授	博士(医学)	志田	大
Associate Professor	Susumu Aikou, M.D., Ph.D.	准教授	博士(医学)	愛甲	丞
Assistant Professor	Naoki Sakuyama, M.D., Ph.D.	助教	博士(医学)	柵山	尚紀
Assistant Professor	Satoko Monma, M.D.	助教		門間	尚聡子
Assistant Professor	Junko Mukohyama, M.D., Ph.D.	助教	博士(医学)	向山	順子
Assistant Professor	Ai Sadatomo, M.D., Ph.D.	助教	博士(医学)	佐田友	藍佳
Assistant Professor	Yuka Ahiko, M.D.	助教		阿彦	友佳
Assistant Professor	Haruna Onoyama, M.D., Ph.D.	助教	博士(医学)	小野山	温那

The mission of our department is to provide surgical treatment for various gastrointestinal diseases, including colorectal and gastric cancers. Since the participation of Prof. Shida and Dr. Ahiko in September 2020, we mainly perform laparoscopic surgery instead of open surgery for these diseases. Additionally, we began performing robotic surgery for rectal cancer in April 2021, followed by robotic surgery for colon cancer in September 2022.

1. Introduction

We specialize in the treatment of gastrointestinal cancers, with a particular focus on the surgical treatment of colorectal and gastric cancers. As certified surgeons under the Japan Society for Endoscopic Surgery's Endoscopic Surgical Skill Qualification System (Dr. Shida and Dr. Aikou), as well as qualified console surgeons for robotic surgery (da Vinci system) (Dr. Shida, Dr. Aikou, Dr. Ahiko, Dr. Sakuyama, Dr. Onoyama, Dr. Monma, Dr. Sadatomo, and Dr. Mukohyama), we actively perform minimally invasive surgeries that reduce the physical burden on our patients. Additionally, starting in October 2022, after Dr. Kojima S (Visiting Lecture in our department) joined our team, we began offering laparoscopic surgery for inguinal hernias.

This year, Dr. Ahiko and Dr. Onoyama retired in March 2024. Dr. Sadatomo joined the department for a six-month period from April to September 2024. Dr. Ito Go has joined our team as a senior resident (specialist trainee) starting in April 2024. And, Dr. Muko-

hyama joined our team in May 2024.

2. Treatment for gastrointestinal malignancy

Colorectal cancers and gastric cancers are what we mainly treat.

For colorectal cancer, if appropriate preoperative testing is conducted and the surgery is tailored to the stage of the disease, it is possible to completely cure more than 70% of patients, even with advanced cancer. For rectal cancer, in order to improve the QOL (quality of life) after surgery as much as possible, we select not only autonomic nerve-sparing surgery but also anus-sparing surgery if the cancer can be sufficiently resected. As qualified surgeons (endoscopic surgical skill qualification system) of the Japan Society for Endoscopic Surgery (Dr. Shida and Dr. Aikou) and certified robotic surgery proctors (Dr. Shida), we actively perform minimally invasive surgeries. In addition to robotic surgery for rectal cancer, we began performing robotic-assisted surgery for colon cancer in September 2022.

For gastric cancer (including gastric cancer and gastric GIST), we select the surgical method with policy of 'leaving the remaining stomach as much as possible', because stomach surgery limits the amount of food that patients eat after surgery which leads to weight loss and weakness. Under the policy of "preserving the stomach whenever possible," we focus on minimally invasive surgeries with small incisions to minimize the burden on the patient. Our goal is to perform patient-friendly surgeries that do not compromise the oncological outcomes.

To reduce the time patients feel anxious after their diagnosis, our department aim to 'perform surgery and discharge patients **within one month** of the initial consultation for colorectal and gastric cancers'. Our entire staff is dedicated to providing the best possible care for our patients.

3. Surgical treatment for inguinal hernia

For inguinal hernias, we also use laparoscopic surgery in October, 2022. Compared to traditional open surgery, the laparoscopic approach results in smaller incisions, and we perform the surgery using the "TEP (Total Extraperitoneal) technique," which does not require entry into the abdominal cavity, reducing the risk of intra-abdominal complications such as adhesions, bowel obstruction, or organ injury.

4. Surgical treatment for other benign diseases

We also treat a variety of benign diseases such as acute appendicitis, cholecystitis, and colonic diverticulitis.

5. Endoscopic examination and treatment with chemotherapy

In collaboration with the Department of Oncology and General Medicine (Prof. Boku N. and Dr. Baba K.) and the Department of Gastroenterology (Prof. Ikematsu H., Dr. Hirata Y. and Dr. Minamide T.), we have performed many cases of upper gastrointestinal endoscopy and colonoscopy as well as chemotherapy.

6. Launch of Robotic Surgery

Robotic surgery involves performing laparoscopic procedures with robotic assistance, where the surgeon controls the robot (the robot does not perform the surgery autonomously). Under high-definition 3D visualization, the use of a robot with complex, articulated joints enables more delicate and precise operations, enhancing the benefits of traditional laparoscopic surgery. Laparoscopic surgery has a limitation in that the instruments used, such as forceps and electric scalpels, are rigid and cannot bend, which restricts fine manipulation deep within the body. This limitation is overcome by robotic assistance. In robotic surgery, with high-resolution 3D visualization and multi-jointed, flexible instruments, there is a higher likelihood of making precise cuts along tissue lines and preserving function by avoiding damage to nerves and other structures.

In April 2021, we began performing robotic surgery for rectal tumors, including rectal cancer, rectal GIST, and rectal neuroendocrine tumors (NET). At that time, our hospital received "facility certification for robotic surgery for rectal tumors." As a result, we started offering robotic surgery as part of standard, insurance-covered care.

With the revision of the Japanese medical reimbursement system in 2022, robotic-assisted surgery became available for colon cancer as part of standard insurance coverage, in addition to rectal cancer. In September 2022, we expanded our services to include robotic surgery for colon cancer. Our hospital also received "facility certification" from the Ministry of Health, Labour and Welfare for colon cancer.

7. Robotic Colon Cancer Surgery Focusing on the Outermost Layer of the SMA Plexus

In robotic surgery for colon cancer, we focus on the outermost layer of the SMA (superior mesenteric artery) plexus to perform a more reliable and safer dissection. This surgical technique has been introduced in both English and Japanese publications in 2024.

Publications

Shida D, Ahiko Y, Sakuyama N, Monma S, Kojima S. Robotic right-sided colon cancer surgery: Dissecting the outermost layer of the autonomic nerve along the superior mesenteric artery *Ann Gastroenterol Surg.* *in press.* <https://doi.org/10.1002/ags3.12861>

Shida D, Ahiko Y, Sakuyama N, Monma S, Kojima S. Robotic right-sided colon cancer Onoyama H, Kojima S, Ahiko Y, Sakuyama N, Monma S, Aikou S, Ota Y, Shida D. Formation of a Colo-colonic Fistula

Communicating with the Transverse Colon in Cecal Cancer: A Case Report *J Anus Rectum Colon.* 8(4):423-427, 2024.

Monma S, Doi KI, Sakuyama N, Ahiko Y, Onoyama H, Aikou S, Shida D. Modified cranial approach to right-sided colon cancer in a patient with intestinal nonrotation: A case report. *Asian J Endosc Surg.* 17(4):e13357, 2024. doi: 10.1111/ases.13357.

Mukohyama J, Koizumi M, Yamashita K, Yoshimi A, Shida D, Kakeji Y. Knockdown of CDX2 Induces

- microRNA-221 Up-regulation in Human Colon Cancer Cells. *Anticancer Res.* 44(8):3553-3556, 2024.
- PelvEx Collaborative (including Shida D). The empty pelvis syndrome: a core data set from the PelvEx collaborative. *Br J Surg.* 111(3):znae042, 2024.
- PelvEx Collaborative (including Shida D). Beating the empty pelvis syndrome: the PelvEx Collaborative core outcome set study protocol. *BMJ Open.* 14(2):e076538, 2024. doi: 10.1136/bmjopen-2023-076538.
- Ikumi A, Sasaki E, Sakuyama N, Mikami Y. Incidence of Elbow Injury Patterns in Japanese Adolescent Judo Players: Analysis from a Nationwide Insurance Database. *Sports (Basel).* 12(11):289, 2024.
- Sakuyama N, Fujita N, Ikumi A, Miura M, Nagahiro S, Yasuo M. Efficacy of Health Surveillance and Polymerase Chain Reaction Testing in Judo During the COVID-19 Pandemic. *Cureus.* 16(4):e57898, 2024.