Program & Abstracts

Date: April 4th (Wed), 2018
Venue: Keio Plaza Hotel Tokyo
Chair: Akihiko Tsuchida, MD, PhD, FACS
Department of Gastrointestinal and Pediatric Surgery
Tokyo Medical University
International Association of Surgeons, Gastroenterologists and Oncologists
Continuing Medical Education: Advanced Post-Graduate Course in Tokyo 2018

April 4th (Wed), 2018
Keio Plaza Hotel Tokyo

Chair of IASGO-CME Advanced Post-Graduate Course in Tokyo 2018
Akihiko Tsuchida, MD, PhD, FACS
Director of Tokyo Medical University Hospital
Chairman and Professor of Department of Gastrointestinal and Pediatric Surgery
Greetings

Dear Friends and Colleagues,

I would like to cordially invite you to participate in the International Association of Surgeons, Gastroenterologists, and Oncologists (IASGO) Continuing Medical Education: Advanced Post-Graduate Course in Tokyo 2018, which will be held at the Keio Plaza Hotel in Tokyo, Japan.

The main goal of IASGO has been globalization of medical knowledge and expertise through a well-structured and precisely organized system of continued medical education. The local organizing committee is planning to provide keynote lectures on the latest information and advanced knowledge in surgical and medical treatment of the gastrointestinal as well as hepatobiliary and pancreatic diseases. Robotic surgery has been performed in worldwide for even higher-level surgery in recent years. We are also planning a training course for young surgeons to experience robotic surgery.

I truly hope that you will join this conference and gain a deeper understanding of the latest knowledge of Gastroenterologists and Oncologists.

I would like to look forward to seeing you at Tokyo.

Sincerely yours,

Akihiko Tsuchida, MD, PhD, FACS

Chair of IASGO-CME Advanced Post-Graduate Course in Tokyo 2018
Director of Tokyo Medical University Hospital
Chairman and Professor of Department of Gastrointestinal and Pediatric Surgery

A. Tsuchida
Registration

Location of Registration Desk:
In front of “Moonlight”, Keio Plaza Hotel 43rd Floor

Registration Time:
April 4 (Wed), 2018; 8:15 a.m. - 4:30 p.m.

Registration Fee:
Registration fee (Medical student: free, Member: 5,000 JPY, Non member: 10,000 JPY) is payable by cash only at the registration desk.

Information for Speakers

Disclosure of Conflict of Interest (COI)
Every speaker of both oral and poster sessions should disclose every Conflict of Interest (COI) whether you have any COI or not. Oral speakers should disclose COI in the first slide, poster speakers should disclose COI at the bottom of the poster.

PC Presentation
1) Presentation time will be 15 minutes, question-and-answer session will be 5 minutes for each oral presentation.
2) The yellow lamp on the stage will light up 1 minute before the time is over, and the red lamp will light up just the time when the time is over. Please make it a reference.
3) Please check-in to the PC desk in front of your presentation room and make your presentation data registered by 30 minutes before your session begins.
4) Please bring your presentation data on a USB flash memory, or bring your own laptop computer.
5) Please make sure to bring your AC power cable if you bring your laptop computer. If you need a special monitor output terminal (connector) other than mini D-sub 15 pin, please make sure to bring it with you.
6) The resolution of the projector is 1024 × 768.
7) The size of the screen is 4 : 3 (XGA). Please make your presentation data in the size of “standard 4:3”.
8) You cannot use the function of “presenter view” in MS Powerpoint.
《Poster Presentation》
Preparation time of displaying posters  8:15 a.m. – 10:30 a.m.
Removal time  2:45 p.m. – 3:15 p.m.

1) Presentation time will be 6 minutes, question-and-answer session will be 4 minutes for each poster presentation.

2) Poster panel will be prepared as the figure on the right. Speakers should prepare “Title”, “Speaker’s name”, “Affiliation” within the size limit of 20cm × 70cm. The size limit of “Details of presentation” is 160cm × 90cm. Organizer will prepare “Presentation Number”, push pins for displaying, and a ribbon for speakers to wear.

3) There is no registration desk for poster speakers. As for speakers, please wait in front of your poster panel with your ribbon on your chest, 5 minutes before designated beginning time of your poster presentation.

4) Please be punctual of the designated time of displaying and removing. Please bring back removed posters with you, and note that posters remaining beyond removal time will be disposed by organizer.

■ Information for Chairs

1) Please let the staff know your session in charge at the registration desk.

2) As for chairpersons in oral sessions, please be seated at the “Next Chairperson’s Seat” 5 minutes before your session in charge.

3) As for chairpersons of poster sessions, please standby in front of the poster panel in charge 5 minutes before beginning time.

4) Please freely proceed the session. We would appreciate being punctual to the presentation time, question-and-answer time. Thank you for your cooperation with a smooth progress.
## Time Table at Glance

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## Floor Map

![Floor Map Diagram]

- Presentation (Moonlight)
- Head Office
- Registration Desk
- Poster Discussion (Starlight)
- Poster Discussion (Subaru)
- Cloak
- Comet
- (P-01~P-40)
- (P-41~P-51)
Program

April, 4th (Wed), Keio Plaza Hotel Tokyo

Presentation (Moonlight)

9:00 a.m. ~ 9:10 a.m. Opening Remarks

Masatoshi Makuuchi (President of IASGO)
Akihiko Tsuchida (Congress Chair)

9:10 a.m. ~ 10:10 a.m. Upper GI Session

[Chairs] Yasuyuki Seto (Department of Gastrointestinal Surgery, The University of Tokyo, Graduate School of Medicine)
Yasuhiro Kodera (Department of Gastroenterological Surgery, Nagoya University, Graduate School of Medicine)

[Speakers]

UG-1 C S Pramesh (Department of Surgical Oncology, Tata Memorial Centre, Mumbai, India)
“Current status and future directions in management of oesophageal cancer”

UG-2 Hiroyuki Daiko (National Cancer Center Hospital, Esophageal Surgery Division)
“Current status and future directions of minimally invasive esophagectomy”

UG-3 Masanori Tokunaga (Gastric Surgery Division, National Cancer Center Hospital East)
“Advanced techniques in laparoscopic gastrectomy”

10:10 a.m. ~ 10:30 a.m. Special Lecture 1

[Chair] Kenji Katsumata (Department of Gastrointestinal and Pediatric Surgery, Tokyo Medical University)

[Speaker]

Magnus Nilsson (Division of Surgery, CLINTEC, Department of Surgical Gastroenterology, Karolinska Institutet at Karolinska University Hospital, Stockholm, Sweden)
“More effective and less invasive treatments for cancer of the esophagus and stomach”
10:30 a.m. ~ 11:30 a.m.  **HBP Session 1**

**[Chairs]**
Katsuhiko Yanaga (Department of Surgery, The Jikei University School of Medicine)
Itaru Endo (Department of Gastroenterological Surgery, Yokohama City University Graduate School of Medicine)

**[Speakers]**

**HBP1-1**
Michael G. Sarr (Emeritus, Mayo Clinic, Rochester Minnesota, USA)
"Changes in Pancreatic Surgery over the last 4 Decades: the future and back to the past"

**HBP1-2**
Masafumi Nakamura (Department of Surgery and Oncology, Graduate School of Medical Sciences, Kyushu University)
"Critical Anatomy and Techniques for Advanced Laparoscopic Pancreatectomy"

**HBP1-3**
Tang Chung-Ngai (Chief of Service, Department of Surgery, Director of Minimal Access Surgery Centre (MASTC), Pamela Youde Nethersole Eastern Hospital, Chai Wan, Hong Kong)
"Tips and Techniques in Robotic Pancreaticoduodenectomy"

11:30 a.m. ~ 11:50 a.m.  **Special Lecture 2**

**Sponsored by Johnson & Johnson K.K.**

**[Chair]**
Brice Gayet (Digestive and Oncologic Surgery, Institut Mutualiste Montsouris (IMM) University Paris Descarte, Paris, France)

**[Speaker]**
Go Wakabayashi (Director, Center for Advanced Treatment of Hepatobiliary and Pancreatic Diseases, Ageo Central General Hospital)
"Future of Minimally Invasive HBP Surgery"

11:55 a.m. ~ 12:45 p.m.  **Luncheon Seminar**

**Sponsored by Covidien Japan Inc.**

**[Chair]**
Kyoichi Takaori (Division of Hepato-Biliary-Pancreatic Surgery and Transplantation, Department of Surgery, Kyoto University Graduate School of Medicine)

**[Speaker]**
Ichiro Uyama (Department of Surgery, Fujita Health University Hospital)
"The Future of minimally invasive surgery
- New perspectives in minimally invasive surgery for the pancreas -"
12:50 p.m. ~ 1:50 p.m.  HBP Session 2

[Chairs]  Hironori Kaneko  (Department of Surgery, School of Medicine, Toho University)
          Minoru Tanabe  (Department of Hepatobiliary & Pancreatic Surgery, Tokyo Medical and Dental University)

[Speakers]
  HBP2-1  Takeaki Ishizawa  (Hepato-Biliary-Pancreatic Surgery Division, Department of Surgery, Graduate School of Medicine, the University of Tokyo / Department of Gastroenterological Surgery, Cancer Institute Hospital, Japanese Foundation for Cancer Research)
          “Applications of intraoperative fluorescence imaging to HPB surgery”
  HBP2-2  Guido Torzilli  (Department of Surgery, Division of Hepatobiliary and General Surgery, Humanitas University and Humanitas Research Hospital, Milan, Italy)
          “Current Management Strategy of HCC”
  HBP2-3  Oscar Imventarza  (President IHPBA, Buenos Aires, Argentina)
          “Current status and future directions in liver transplantation”

2:50 p.m. ~ 3:50 p.m.  Colorectal Session

[Chairs]  Nam Kyu Kim  (Division of Colorectal Surgery, Department of Surgery, Yonsei University College of Medicine, Seoul, Korea)
          Keiichi Takahashi  (Department of Surgery, Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital)

[Speakers]
  CR-1  Hiroya Kuroyanagi  (Department of Colorectal Surgery, Toranomon Hospital)
          “Laparoscopic surgery for lower rectal cancer”
  CR-2  Yusuke Kinugasa  (Gastrointestinal Surgery, Tokyo Medical and Dental University)
          “The surgical technique and outcome of robotic rectal cancer surgery”
  CR-3  Gyu-Seog Choi  (Colorectal Cancer Center, Kyungpook National University Hospital, School of Medicine, Kyungpook National University, Daegu, Korea)
          “Current Status and Future Perspectives of Robotic Surgery for Colorectal Cancer”

3:50 p.m. ~ 4:50 p.m.  HBP Session 3

[Chairs]  Keiji Sano  (Department of Surgery, Teikyo University School of Medicine)
          Akio Saiura  (Japanese Foundation for Cancer Research, Cancer Institute Hospital, Hepato-Biliary-Pancreatic Surgery)

[Speakers]
  HBP3-1  Yuta Abe  (Department of Surgery, Keio University School of Medicine)
          “Left hepatic trisectionectomy with caudate lobectomy for perihilar cholangiocarcinoma by extrahepatic glissonean pedicle isolation technique”
HBP3-2  Ho-Seong Han  (Department of Surgery, Seoul National University College of Medicine, Seoul, Korea)
“Advanced Technique in Laparoscopic Hepatectomy”

HBP3-3  Goro Honda  (Department of Surgery, Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital)
“The caudate lobe first approach for laparoscopic hepatectomy”

4:50 p.m. ~ 5:00 p.m.  Announcement of Best Poster Award
Closing Remarks
Poster Discussion (Starlight)

1:55 p.m. ~ 2:45 p.m.  Poster Session 1 : Upper GI 1

[Chairs]  
Takashi Ogata  (Kanagawa Cancer Center)
Keishi Yamashita  (Kitasato University School of Medicine, Surgery)

[Speakers]

P-1  Shinichi Umeda  (Department of Gastroenterological Surgery, Nagoya University Graduate School of Medicine)
“Adherens junctions associated protein 1 serves as a predictor of recurrence of squamous cell carcinoma of the esophagus”

P-2  Shinichi Umeda  (Department of Gastroenterological Surgery, Nagoya University Graduate School of Medicine)
“A novel dual-marker expression panel for easy and accurate risk stratification of patients with gastric cancer”

P-3  Takashi Ogata  (Division of Gastrointestinal Surgery, Kanagawa Cancer Center)
“Multimodal analgesia combined with intravenous administration of acetaminophen in perioperative management of esophagectomy using modified ERAS protocol”

P-4  Hisashi Fujiwara  (Department of Esophageal Surgery, National Cancer Center Hospital East)
“An anatomical hypothesis for the theoretical understanding of the surgical anatomy required for esophagectomy with upper mediastinal lymph node dissection”

P-5  Hiroaki Osakabe  (Department of Gastrointestinal Surgery, Kanagawa Cancer Center)
“Evaluation of nutritional status and safety of neoadjuvant chemotherapy for esophageal cancer”

1:55 p.m. ~ 2:45 p.m.  Poster Session 2 : Upper GI 2

[Chairs]  
Haruhiko Cho  (Department of Surgery, Tokyo Metropolitan Cancer and Infections Disease Center Komagome Hospital)
Masanobu Nakajima  (First Department of Surgery, Dokkyo Medical University)

[Speakers]

P-6  Katsutoshi Shoda  (Division of Digestive Surgery, Department of Surgery, Kyoto Prefectural University of Medicine)
“Short-term clinical outcomes of robotic distal gastrectomy for gastric cancer in our institution”

P-7  Nobuhiro Harada  (Department of Surgery, Japan Community Health Care Organization, Tokyo Takanawa Hospital)
“TS-1 + Paclitaxel chemotherapy is controlling recurrence of HER2 Positive Gastric Cancer for three years after multidisciplinary therapy”
P-8 Yuta Kumazu (Department of GI Surgery, Kanagawa Cancer Center)
“Prognostic impact of interval between diagnosis and surgery in patients with gastric cancer”

P-9 Akikazu Yago (Department of Gastroenterological Surgery, Yokohama City University)
“Prognostic Factor and Treatment Strategy for P0CY1 Gastric Cancer”

P-10 Kazuma Tago (Department of Gastroenterological Surgery, Tokyo Takanawa hospital)
“A case of pancreaticoduodenectomy for the bile duct metastasis from gastric cancer”

1:55 p.m. ~ 2:45 p.m. Poster Session 3 : HBP 1

[Chairs] Takeshi Aoki (Department of Gastroenterological & General Surgery School of Medicine, Showa University)
Shin Nakahira (Sakai City Medical Center)

[Speakers]
P-11 Tomotaka Kato (Department of Hepato-Biliary and Pancreatic Surgery, Tokyo Medical and Dental University)
“Tips and technics in laparoscopic liver resection of segment 7 and 8”

P-12 Shigenori Ei (Department of Surgery, Kitasato University Hospital)
“A case of laparoscopic spiegel lobectomy of a giant liver cyst with difficulty of preoperative diagnosis”

P-13 Yoshihiko Tashiro (Department of General and Gastroenterological Surgery, Showa University School of Medicine)
“Achievement of negative surgical margin in laparoscopic liver resections using infrared indocyanine green fluorescence”

P-14 Shunryo Minezaki (Department of Surgery, Teikyo University School of Medicine)
“Radical conversion surgery after Gemcitabine plus S-1 chemotherapy for locally advanced intrahepatic cholangiocarcinoma”

P-15 Yoichi Koga (Department of Surgery, Nagasaki University Graduate School of Biomedical Sciences)
“A case of liver transplantation for autosomal dominant polycystic liver disease from living donor with multiple liver cysts”

1:55 p.m. ~ 2:45 p.m. Poster Session 4 : HBP 2

[Chairs] Yasuji Seyama (Tokyo Metropolitan Bokutoh Hospital, Department of Surgery)
Koji Asai (Department of Surgery, Toho University Ohashi Medical Center)

[Speakers]
P-16 Koji Asai (Department of Surgery, Toho University Ohashi Medical Center)
“Timing of laparoscopic cholecystectomy for acute cholecystitis using propensity score matching”
**P-17**
Tomoya Kishimoto (Department of Surgery, Sakai City Medical Center)
“Treatment strategy for acute cholecystitis in our hospital”

**P-18**
Manabu Kujiraoka (Department of Surgery, Toho University Ohashi Medical Center / Laboratory of Bacterial Genomics, Pathogens Genomics Center, National Institute of Infectious Diseases)
“Comprehensive Diagnosis and Severity Evaluation for Acute Cholecystitis Using Metagenomic Approach”

**P-19**
Hironori Ryota (Department of Surgery, Kansai Medical University)
“Massive Digital Gene Expression Analysis Reveals Predictive Profiles for Recurrence of Biliary Tract Cancer”

**P-20**
Hidejiro Urakami (Department of Surgery, National Hospital Organization Tokyo Medical Center)
“Repeated hepatectomy for combined hepatocellular and cholangiocarcinoma of over 90 years old case”

**1:55 p.m. ~ 2:45 p.m.  Poster Session 5 : HBP 3**

**[Chairs]**
Yoshiharu Nakamura (Department of Surgery, Nippon Medical School)
Ippei Matsumoto (Department of Surgery, Kindai University Faculty of Medicine)

**[Speakers]**

**P-21**
Takashi Ono (Department of Gastrointestinal and Hepato-Biliary-Pancreatic Surgery, Nippon Medical School)
“Study on laparoscopic spleen preserving distal pancreatectomy procedures comparing splenic vessel preservation and non-preservation”

**P-22**
Yoshiaki Ohmura (Department of Surgery, Kansai Rosai Hospital)
“Techniques and short term outcomes of laparoscopic spleen-preserving distal pancreatectomy : A single institution experience”

**P-23**
Taketo Matsunaga (Department of Surgery, Saga University Faculty of Medicine)
“Three experiences of robot-assisted laparoscopic pancreatectoduodenectomy”

**P-24**
Kohei Kawaguchi (Department of Surgery, Kindai University Faculty of Medicine)
“Results of a novel pancreaticogastrostomy after pancreaticoduodenectomy using one trans-pancreatic mattress suture with two buttress sutures”

**P-25**
Daigoro Takahashi (Department of Hepatobiliary and Pancreatic Surgery, National Cancer Center Hospital East / Department of Surgery, Shizuoka Saiseikai General Hospital)
“Pathological evaluation of surgical margins in pancreas cancer specimens using color coding with tissue marking dyes”
1:55 p.m. ~ 2:45 p.m. **Poster Session 6 : HBP 4**

[Chairs] Keita Wada (Teikyo University School of Medicine)
Hisashi Kosaka (Kansai Medical University)

[Speakers]

**P-26**
Hisashi Kosaka (Department of Surgery, Kansai Medical University)
“Favorable influence of drain removal criteria for postoperative management after pancreas head resection”

**P-27**
Kento Kurashima (Department of Surgery, Division of Digestive Surgery, Kyoto Prefecture University)
“The perioperative outcomes and nutrition status after total pancreatectomy”

**P-28**
Yoshiyasu Kato (Department of Gastroenterological Surgery (Surgery II), Nagoya University Graduate School of Medicine)
“Impact of the Controlling Nutritional Status (CONUT) Score on the Prognosis after Resection of Pancreatic Ductal Adenocarcinoma”

**P-29**
Yuta Yoshida (Department of Surgery, Kinki University Hospital)
“Conversion surgery for initially unresectable pancreatic cancer: a single-center retrospective study in Japan”

**P-30**
Chie Takishita (Department of Gastrointestinal and Pediatric Surgery, Tokyo Medical University Hospital)
“Adjuvant surgery after chemotherapy or chemoradiation therapy for initially unresectable pancreatic cancer”

1:55 p.m. ~ 2:45 p.m. **Poster Session 7 : HBP 5**

[Chairs] Manabu Watanabe (Department of Surgery, Toho University Ohashi Medical Center)
Mitsuhisa Takatsuki (Department of Surgery, Nagasaki University)

[Speakers]

**P-31**
Toshiro Ogura (Department of Hepatobiliary and Pancreatic Surgery, Tokyo Medical and Dental University)
“The significance of lymph node dissection in distal pancreatic cancer”

**P-32**
Haruyoshi Tanaka (Department of Gastroenterological Surgery (Surgery II), Nagoya University Graduate School of Medicine)
“Two cases of intraductal tubulopapillary neoplasm of the pancreas”

**P-33**
Kayono Oonishi (Department of Gastrointestinal and Pediatric Surgery, Tokyo Medical University Hospital)
“Pancreaticoduodenectomy with the common hepatic artery resection without reconstruction for pancreatic head cancer -Case report-”

**P-34**
Takayuki Miyoshi (Department of Surgery, Nagasaki Graduate School of Biomedical Sciences)
“Efficacy of the splenectomy for portal hypertension: Dose it change the prognosis ?”
P-35 Kenichiro Takase (Saitama Medical University International Medical Center)
“Efficacy of laparoscopic liver resection for patients with intestinal stoma”

1:55 p.m. ~ 2:45 p.m.  Poster Session 8 : HBP 6

[Chairs] Takeyuki Misawa (Jikei University Kashiwa Hospital)
Daisuke Ban (Department of Hepatobiliary & Pancreatic Surgery, Tokyo Medical and Dental University)

[Speakers]

P-36 Masaya Kotsuka (Department of Surgery, Kansai Medical University)
“Prognostic factors in ampullary cancer in patients undergoing pancreaticoduodenectomy”

P-37 Sachiyo Kawamura (Department of Surgery, Teikyo University)
“Seven cases of resected duodenal cancer”

P-38 Yusuke Shimizu (Department of Surgery, Tokyo Metropolitan Bokutoh Hospital)
“A resected case of duodenal GIST presented with hemorrhagic shock”

P-39 Hisataka Ogawa (Hepatobiliary and Pancreatic Surgery, Sakai City Medical Center)
“A case of extra-adrenal paraganglioma in the patient with severe kyphosis removed safely by laparoscopic surgery”

P-40 Keigo Nakashima (Department of Surgery, The Jikei University Kashiwa Hospital)
“A rare case of liver metastasis from submandibular gland carcinoma which was resected 5 years after primary operation”

Poster Discussion (Subaru)

1:55 p.m. ~ 2:45 p.m.  Poster Session 9 : Colorectal 1

[Chairs] Junichi Koike (Toho University Medical Center Omori Hospital Gastroenterological Surgery)
Tetsuo Ishizaki (Department of Gastrointestinal and Pediatric Surgery, Tokyo Medical University)

[Speakers]

P-41 Keiichi Takahashi (Department of Surgery, Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital)
“Lateral lymph node dissection for low rectal cancer”

P-42 Hiroshi Kuwabara (Department of Gastrointestinal and Pediatric Surgery, Tokyo Medical University)
“Salivary biomarker discovery for colon cancer using metabolomics”

P-43 Keita Kouzu (Department of Surgery, Teikyo University Mizonokuchi Hospital / Department of Surgery, National Defense Medical College)
“Cytomegalovirus enterocolitis during adjuvant chemotherapy with XELOX for colon cancer”
**P-44**  Takuya Akahane (Department of Surgery, Teikyo University)

“A case of far advanced cancer of descending colon which could be curatively resected to a patient by multidisciplinary treatment”

**P-45**  Kiichi Sugimoto (Department of Coloproctological Surgery, Juntendo University Faculty of Medicine)

“Prognostic factor for locally advanced rectal cancer after surgery following chemoradiotherapy”

**P-46**  Hideaki Kawakita (Department of Gastrointestinal and Pediatric Surgery, Tokyo Medical University Hospital)

“Measurement of Nucleic Acid Metabolizing Enzymes in Stage III Colorectal Cancer Adds Precision to Adjuvant Fluorouracil and Leucovorin Therapy”

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**1:55 p.m. ~ 2:45 p.m.  Poster Session 10 : Colorectal 2 + Others**

**[Chairs]** Hidejiro Urakami (National Hospital Organization Tokyo Medical Center)
Mami Ikeda (Japan Community Health Care Organization (JCHO) Tokyo Takanawa Hospital Department of Surgery)

**[Speakers]**

**P-47**  Hirohiko Kamiyama (Department of Coloproctological Surgery, Juntendo University School of Medicine)

“Laparoscopic surgery for rectal cancer patients with colostomy -a single institutional experience of 12 cases-”

**P-48**  Mai Nakamura (Japan Community Healthcare Organization Tokyo Takanawa Hospital)

“Laparoscopic colostomy reversal after laparoscopic Hartmann’s procedure for a patient with complicated diverticulitis”

**P-49**  Yohei Oguri (Department of Surgery, Tokyo Metropolitan Cancer and Infectious Disease Center Komagome Hospital)

“A case of undifferentiated pleomorphic sarcoma of stomach with favorable outcome after surgery”

**P-50**  Yusuke Inoue (Department of Surgery, Graduate School of Biomedical Sciences, Nagasaki University)

“Analysis of 21 patients after surgical resection for small intestinal tumors”

**P-51**  Tomiyuki Miura (Department of Gastrointestinal Surgery, Graduate School, Tokyo Medical and Dental University)

“A Case of Incarcerated Internal Hernia through a Defect of the Falciform Ligament”
— Abstracts —
C S Pramesh
Department of Surgical Oncology, Tata Memorial Centre, Mumbai, India

Dr C S Pramesh is the Professor and Head of Thoracic Surgery at the Tata Memorial Centre, Mumbai. He is the convener for the National Cancer Grid, a large network of 131 cancer centres in India. The mandate of the National Cancer Grid is primarily to provide uniform standards of cancer care across the country. Pramesh is highly committed to efforts towards eliminating disparities in cancer care and making cancer treatment accessible to all geographic regions and strata of society. He is also a visiting professor at the Division of Cancer Studies, King's College London, the Institute of Cancer Policy, King's Health Partners, London and the Queen's University, Kingston, Canada.

His primary clinical areas of interest include the treatment of esophageal and lung cancers and minimally invasive surgery. He is the Secretary of the Indian Society for Diseases of the Esophagus and Stomach (ISES) and is on the Directorate of the International Society for Diseases of the Esophagus (ISDE). He is the Principal Investigator in several investigator-initiated research studies including randomized trials on cancer screening, surgical techniques, perioperative management and neoadjuvant treatment of thoracic cancers. He has written more than 200 peer-reviewed journal articles and book chapters on topics in his specialty, including esophageal and lung cancers, minimally invasive surgery, tracheal, mediastinal and chest wall tumors, clinical research methods, translational research and cancer policy.

Pramesh has strong interests in clinical trial designs, surgical trials, biostatistics, comparative effectiveness research, implementation research, promoting collaborative research and cancer policy. He successfully completed the Post Graduate Diploma in Clinical Trials offered by the London School of Hygiene and Tropical Medicine, University of London in 2010. He is keen on promoting training of early career physicians in clinical research methods and conducts several formal and informal courses on clinical research methodology, biostatistics and scientific writing. He serves on the core committee of the Clinical Research Secretariat of the hospital.

Pramesh began his training at the Coimbatore Medical College, graduating with a bachelor’s degree in medicine in 1993. After a short stint in the UK, he completed his residency in general surgery at the King Edward Memorial Hospital and his FRCS (Edin) in 1998 and in surgical oncology in 2002 at the Tata Memorial Centre. Furthering his professional training, Pramesh completed a thoracic surgical oncology fellowship at the Tata Memorial Centre interspersed with visits to the Memorial Sloan Kettering Cancer Centre, USA and the Kurume University, Japan. He joined as a consultant thoracic surgeon in the Department of Surgical Oncology at the Tata Memorial Centre in 2004 where he has remained on staff subsequently.
Current status and future directions in management of oesophageal cancer

C S Pramesh

Department of Surgical Oncology, Tata Memorial Centre, Mumbai, India

Oesophageal cancer (OC) is a major problem worldwide and overall, has a dismal prognosis. In Asia, squamous cancer is still the major problem involving almost 80% of patients with oesophageal cancer. Current evidence suggests that squamous and adeno carcinomas of the oesophagus are distinct disease entities with different aetiology, presentation and prognosis; however, research and treatment guidelines remain similar.

Currently, several controversies exist related to the management of oesophageal cancer (OC). These controversies include (1) role of screening in OC, (2) whether definitive chemoradiation is an acceptable alternative to surgery in squamous OC, (3) whether neoadjuvant chemotherapy (NACT) or chemoradiation (NACTRT) followed by surgery should be the optimum treatment strategy, (4) ideal surgical approach for resectable tumors, (5) role of radical lymphadenectomy in operable oesophageal cancer and (6) role of adjuvant therapy.

There is a need to separate the research as well as treatment strategies for squamous and adeno carcinomas of the oesophagus. My talk will address the current evidence in these areas and summarize our centres’ experience over the past 15 years. In addition, it will also discuss potential areas of future research and management options. It will also discuss the need for international collaborations for sharing of data, best practices and multicentric collaborative research.
Hiroyuki Daiko  
National Cancer Center Hospital, Esophageal Surgery Division

Director of Esophageal Surgical Division  
Department of Gastrointestinal Oncology  
Esophageal Surgical Division

**Academic Qualifications (most current date first)**

1994  
M.D. Tokai University School of Medicine

**Employment and Training History:**

Apr 1994-Jun 1995  
Clinical Resident, Department Surgery II, Tokyo Woman’s Medical University, Japan

Clinical Resident, Department Surgery, Seirei Hamamatsu General Hospital, Japan

Clinical Junior Resident, Department Surgery, National Cancer Center Hospital, Japan

Apr 2001-Mar 2002  
Clinical Senior Resident, Department Surgery, Esophageal Surgical Division, National Cancer Center Hospital, Japan

Apr 2002-May 2004  
Research Resident, Genetics Division, National Cancer Center Hospital Research Institute, Japan

Jun 2004-Mar 2013  
Staff Surgeon of Esophageal Surgical Division, Department of Gastrointestinal Oncology, Esophageal Surgical Division, National Cancer Center Hospital EAST, Japan

Apr 2013-present  
Director of Esophageal Surgical Division, Department of Gastrointestinal Oncology, Esophageal Surgical Division, National Cancer Center Hospital EAST, Japan

Apr 2017-present  
Director of Esophageal Surgical Division, Department of Gastrointestinal Oncology, Esophageal Surgical Division, National Cancer Center Hospital CENTRAL & EAST, Japan

**Society Membership**

Japan Esophageal Society, Japan Society For Endoscopic Surgery, Japanese Society of Gastroenterology, Japan Surgical Society, FACS

**Clinical Trial Experience**

2013-Present  
Has conducted 1 JCOG clinical trial as principal investigator (PI) and 2 JCOG clinical trials as sub-principal investigator for cancer of esophagus.

I had experienced global trials which were carried out under the ICH-GCP guideline.

ICH-GCP Training date
Current status and future directions of minimally invasive esophagectomy

Hiroyuki Daiko
National Cancer Center Hospital, Esophageal Surgery Division

After more than 20 years had passed from the first experience of thoracoscopic esophagectomy (TE), TE has already become an initial approach for all esophageal cancer including salvage or conversion surgery in our institution. We consider that open approach is one of the surgical option when palpation or multilateral findings needs to assess resectability. Moreover, transcervical mediastinoscopic approach is indicated for octogenarian or patients with reduced functions of organs including lung or heart. We now introduce our concept and procedure of TE.

【 Concept 】
Trachea and esophagus are surrounded by the identical visceral fascia because they are derived from same foregut origin. Upper mediastinum is consisted two layers, consisting of outer side (vascular layer) and internal side (visceral layer) according to visceral fascia. Upper mediastinal lymph node dissection is standardized using the concept of visceral fascia.

【 Procedure 】
Lymph node dissection(LND) along the right recurrent laryngeal nerve(R-RLN)
1st step: make a free space between tracheal portion and adipose tissue around the R-RLN. 2nd step: separate two layers of superficial layer (including vessels and nerves) and deep layer (including R-RLN). 3rd step: isolate R-RLN from surrounding tissue keeping with esophageal branches of R-RLN
LND along the left RLN
1st step: make wide space among esophagus and trachea. The upper third of esophagus is tapped over and pull it outside the body via the third intercostal space. 2nd step: LND along the L-RLN in en-bloc manner. The adipose tissue including the L-RLN is aggregated toward the esophagus side. 3rd step: isolate L-RLN keeping with esophageal branches of RLN. The adipose tissue including lymph nodes are removed from isolated L-RLN.

【 Results 】
From 2008-2016, 557 cases underwent TE. 17 cases were converted to thoracotomy. The morbidity and in-hospital mortality rate were 43 and 0.4% respectively. Regarding postoperative complications, incidence of paralysis of RLNs and pneumonia was 15% and 3%, respectively. The median TE time was 215 minutes.
Masanori Tokunaga
Gastric Surgery Division, National Cancer Center Hospital East

Higher Education
4/1994-3/2000 M.D. College of Medicine, Kyushu University, Fukuoka, Japan

Post-Graduate Education
2000-2006 Department of Surgery, Aso-Iizuka Hospital, Fukuoka, Japan
2006-2009 Department of Gastroenterological surgery, Cancer Institute Hospital, Tokyo, Japan
2009-2017 Division of Gastric Surgery, Shizuoka Cancer Center, Shizuoka, Japan
2017-present Gastric Surgery Division, National Cancer Center Hospital East, Kashiwa, Japan

Certification & Licenses
May, 2000 Japanese Medical License
Advanced techniques in laparoscopic gastrectomy

Masanori Tokunaga, A Kaito, T Kinoshita

Gastric Surgery Division, National Cancer Center Hospital East

Laparoscopic gastrectomy (LG) for early gastric cancer has become a standard treatment in East Asian countries. It is also increasingly performed for advanced gastric cancer, and randomized controlled trials demonstrating the non-inferiority of laparoscopic distal gastrectomy to open distal gastrectomy are ongoing. Although favorable short- and long-term outcomes of LG are expected, it includes several technically difficult procedures, particularly when applied to upper third advanced gastric cancer or adenocarcinoma of the esophagogastric junction. Lower mediastinal lymphadenectomy, suprapancreatic and splenic hilar lymphadenectomy, and esophagojejunostomy at the lower mediastinum are all technically demanding, and standardization of surgical procedures is vital for LG to be accepted more widely.

[Advanced techniques in lymphadenectomy] A wide variety of anatomical deviations are reported in the relationships among the splenic artery and vein, pancreas, and splenic hilum. Understanding positional relationships prior to surgery by use of 3-dimensional CT images could make lymphadenectomy more precise and secure. To keep the proper surgical plain is also vital for complete retrieval of lymphatic tissues and avoidance of organ injuries and bleeding. This can be achieved with a clear and stable surgical field, for which cooperation among all surgical staff members, including camera assistant and scrub nurse, is necessary.

[Advanced techniques in esophagojejunostomy] Our first choice in esophagojejunostomy is an overlap side-to-side anastomosis with a linear stapler, because it is less complicated and applicable to any situation. Less postoperative stricture is also expected with a linear stapler than with a circular stapler. During the procedure, the esophagus is divided in the antero-posterior direction, an entry hole is placed at the posterior edge, and esophagojejunostomy is made with linear stapler. Because of antero-posterior transaction, the entry hole commonly faces the ventral side, which makes hand-sewn closure easier and more secure.

To perform advanced surgery securely, cooperation among all surgical staff members is vital, and we have to consider team building more seriously whenever we extend the indication of LG. Although we have to wait for the results of ongoing clinical trials, the indication of LG will expand in the future as surgical devices and techniques advance.
Magnus Nilsson
Division of Surgery, CLINTEC, Department of Surgical Gastroenterology, Karolinska Institutet at Karolinska University Hospital, Stockholm, Sweden

Magnus Nilsson is Professor of surgery and head of the Division of Surgery at CLINTEC, Karolinska Institutet and senior consultant surgeon at the Karolinska University Hospital. His main clinical and scientific interest is gastric and esophageal cancer. Professor Nilsson is currently the President of the European Society for Diseases of the Esophagus, the Chairman of the Swedish Society of Upper Abdominal Surgery and the Chairman of the Swedish National Registry for Gastric and Esophageal Cancer. Professor Nilsson’s main scientific interests are clinical research, particularly randomized controlled trials on adjunct therapy options and translational research within the field of gastroesophageal cancer.
More effective and less invasive treatments for cancer of the esophagus and stomach

Magnus Nilsson

Division of Surgery, CLINTEC, Department of Surgical Gastroenterology, Karolinska Institutet at Karolinska University Hospital, Stockholm, Sweden

In the last decade the evolution of curative intent treatment for cancers of the esophagus and stomach has moved towards more effective and less invasive therapeutic approaches. The two main current trends in the treatment of these cancers are 1. Increasing use of minimal invasive surgical techniques. 2. Increasing use of adjunct chemotherapy or chemoradiotherapy as well as recently also more of molecularly targeted treatments.

Surgery, still being the main curative treatment for these cancers, has undergone a rapid development and refinement due to new technological innovations, and an increasing proportion of esophagectomies and gastrectomies for esophageal and gastric cancers are today performed minimal invasively. Evidence, based mainly on the TIME and MIRO trials, is mounting that morbidity is lower and quality of life recovery is quicker after minimal invasive compared to open esophagectomy. Long-term oncological outcomes in these trials indicate that the minimal invasive approach is at least equivalent. Laparoscopic gastrectomy has been shown to reduce morbidity compared to open gastrectomy, even though the effects here seem to be of smaller magnitude compared to esophagectomy. Most trials concerning laparoscopic gastrectomy have been performed on early gastric cancers, for which reason the oncological safety for more advanced tumors still needs to be definitely proven.

Worldwide a multimodality approach is standard of care for esophageal and gastric cancers. In the West neoadjuvant chemoradiotherapy (nCRT) in accordance with the CROSS trial is widely used for both histological subtypes, while some centers prefer to use perioperative chemotherapy for all esophagogastric adenocarcinomas. The main perioperative regimen has until recently been ECF as pioneered in the MAGIC trial, but has recently shifted to FLOT, as this regimen has been shown to be superior to ECF in the FLOT4 trial. In the East gastric cancer is treated with adjuvant S1, while esophageal cancers, which are mainly of the squamous subtype, are treated with neoadjuvant platin-5FU-based chemotherapy. Recently a comprehensive classification of gastric and esophageal cancers has been published and therapy guided by molecular targeting is increasing. The monoclonal antibody Trastuzumab has been successfully used for a number of years in HER2 amplified adenocarcinoma patients in a palliative phase. Recently promising results have been presented using check point inhibitors and furthermore data from the MAGIC and CLASSIC trials have show that microsatellite instable gastric cancers do not respond to conventional chemotherapy.
Michael G. Sarr
Emeritus, Mayo Clinic, Rochester Minnesota, USA

Dr Sarr is the J.C. Masson Professor Emeritus of Surgery at the Mayo Clinic, Rochester, Minnesota having retired a year ago. After finishing his surgery training at the Johns Hopkins Hospital in 1984 and 2 fellowships in experimental surgery, he was on staff for 30 years in the Division of General and GI Surgery which he chaired for 10 years. Aside from an NIH-funded laboratory for 25 years in GI Physiology, his clinical interests have been in pancreatic surgery, bariatric surgery, and abdominal wall reconstruction. His laboratory interests have been in GI motility and absorption. He is member of most of the General and GI surgical associations and has been president of the SSAT and the International Society of Surgery. His bibliography includes over 550 peer-reviewed publications and 14 separate books. Dr Sarr is currently one of the 2 co-editors of the journal SURGERY and has been for 20 years.
Changes in Pancreatic Surgery over the last 4 Decades: the future and back to the past

Michael G. Sarr
Emeritus, Mayo Clinic, Rochester Minnesota, USA

The last 4 decades have seen unparalleled advances in the management of pancreatic diseases and specifically pancreatic cancer. What was once an unusual operation (pancreatectomy for cancer) has now become a routine operation with realistic expectation of good outcomes. The unbridled (and maybe premature for the times) “extended pancreatic resections” by Fortner and his colleagues in both the US and in Japan went out of favor only to resume recently with more experience in the technical procedure but also because of a better understanding of the biology of the disease complimented by huge advances in perioperative care. Similarly the “pessimism of Crile and others” in the 1970s/early 80s toward resection in favor of “palliation”, has disappeared with the ever increasing and especially now avid support amongst our colleagues in internal medicine who have helped to bear head the introduction of neoadjuvant treatments to extend the criteria for resection. The boundaries of resection have expanded with the focus now on pre-resection and post-resection adjuvant therapies, biologics, and immunologic approaches. And now with individualized medicine becoming a true possibility, these new avenues have only further expanded our aggressiveness toward management of this dreaded disease. Review of the past and looking to the future will help to clarify where we are headed in the next decade.
Masafumi Nakamura
Department of Surgery and Oncology, Graduate School of Medical Sciences,
Kyushu University

Education
1982-1988 M.D., Faculty of Medicine, Kyushu University, Japan.
1995-1999 Ph.D. (Medical Science), Graduate School of Medical Sciences, Kyushu University,
Fukuoka, Japan
1999-2001 Research Fellow, Cancer Biology Program, Harvard University

Professional experience
1988-1992 Resident, Dept. Surgery1, Kyushu Univ. and affiliated hospitals, Fukuoka, Japan
1992-1995 Resident, National Cancer Center Hospital, Tokyo, Japan
2001-2003 The head surgeon, Shin-Kokura Hospital, Kitakyushu, Japan
2003-2011 Assistant Professor, (2005-Associate Prof) Kyushu University
2011-2015 Chairperson and Professor, Dept. Digestive Surgery, Kawasaki Medical School, Kurashiki,
Japan
2015- Chairperson and Professor, Dept. Surgery and Oncology, Kyushu University

Committee Service:
President: Japanese Society for Endoscopic Pancreatic Surgery
Vice President: Asian Surgical Association
Board of directors: Japanese Society of Hepato-Biliary-Pancreatic Surgery, Japan Society for
Endoscopic Surgery
Councilor: Japan Surgical Association, Japan Society for Biological Therapy, Japan Pancreas Society,
Japan Surgical Society, Japanese Society of Gastroenterological Surgery
Editorial Board: Journal of Hepato-Biliary-Pancreatic Sciences, Journal of Japan Society for
Endoscopic Surgery, Journal of Laparoendoscopic & Advanced Surgical Techniques (JLAST),
International Journal of Clinical Oncology

Prize:
Long-term fellowship; Human Frontier Science Program 2000 (Strasburg, France)
The most outstanding research paper award in FEBS letter in 2002
Grant-in-Aid, Japanese Society of strategies for Cancer Research and Therapy 2004
The Best Presentation Award for the Video Presentation, JSS 2013
Best Doctor 2014-2015, 2016-2017

Interests:
HBP surgery and Laparoscopic surgery
Multidisciplinary therapy of pancreatic cancer
IPMN
Critical Anatomy and Techniques for Advanced Laparoscopic Pancreatectomy

Masafumi Nakamura

Department of Surgery and Oncology, Graduate School of Medical Sciences, Kyushu University

LDP becomes one of the common surgical methods in the field of pancreatic surgery. However, splenic-vessels preservation is still challenging. Preservation of spleen was performed in 32% of patients who underwent laparoscopic distal pancreatectomy (LDP) in Japan, and 85.9% of spleen preserving LDP was performed by preserving splenic vessels. Our anatomical findings concerning splenic vein contributed to the dissemination of vessel-preservation method.

Recognition of portal-vein system is also important in the field of laparoscopic pancreateoduodenectomy (LPD). LPD comprise several other GI surgeries, i.e., gastrectomy, colectomy and distal pancreatectomy. However, resection of uncinate process is unique process required exclusively for LPD. IPDVs are linker of uncinated process and SMV, and also one of major sources of bleeding during resection. The early recognition of IPDVs and their resection broaden the operation field between uncinated process, SMV and SMA in a safe way. Addition to the recognition of IPDVs, anatomy of Treitz's ligament is also important to make LPD more feasible. These anatomical findings and laparoscopic techniques will be discussed.
Tang Chung-Ngai
Chief of Service, Department of Surgery,
Director of Minimal Access Surgery Centre (MASTC)
Pamela Youde Nethersole Eastern Hospital, Chai Wan, Hong Kong

Current Appointments

- Consultant Surgeon, Chief of Service
- Chief of Hepatobiliary Surgery
- Director of Minimal Access Surgery Training Centre (MASTC)
- Deputy Hospital Chief Executive of Pamela Youde Nethersole Eastern Hospital
- Clinical Surgical Stream Coordinator, HK East Cluster
- Honorary Clinical Associate Professor (The Chinese University of Hong Kong)
- Honorary Clinical Associate Professor (The University of Hong Kong)
- Honorary Professor (Tung Wah College, Hong Kong)
- Founding President of the Hong Kong Society of Robotic Surgery
- President of Clinical Robotic Surgery Association (CRSA)

My clinical excellence in HPB/General Surgery is well exemplified by the following innovations and significant breakthrough in surgical practice, techniques and approach

Consultant Surgeon / Chief of Hepatobiliary Surgery / Chief of Service (Surgery)

- **Pioneer of MAS Hepatobiliary Surgery** in HK, performed the first laparoscopic Whipple operation in HK in 2006, the first Robotic-assisted liver resection & Whipple operation in HK in 2009
- **The first qualified Robotic General Surgeon** in HK, accumulated personal experience more than 500 cases of Robotic-assisted hepatobiliary surgery / general surgery since 2009.
- Maintained the biggest series of laparoscopic biliary operation (>300 cases), laparoscopic liver resection (>400 cases) and laparoscopic Whipple operation (>100 cases) in HK
- Published extensively on MAS HPB surgery with more than 100 original publications in peer-reviewed journal / book chapter, and delivered about 100 invited lectures on laparoscopic and robot-assisted HPB surgery in local and international symposia

a) **Director of Minimal Access Surgery Training Centre (MASTC)**

- Organized training workshops for local/regional doctors and nurses, and more than 15000 healthcare professionals were benefited. Both basic and advanced laparoscopic (General surgery / Urology) surgery courses were recognized as mandatory trainings by College of Surgeons of HK since 2010
- Piloted MAS Competence Assessment Model to ensure staff competency in PYNEH, later rolled out and adopted by HA COC (Surgery) and College of Surgeons of HK in 2010
- Chairman of MAS Subspecialty Group of COC (Surgery) since 2011
- Director of numerous International Symposia (IESS, HPB-MAS, Asia-CRSA & IASGO HK Chapter)
- Co-director of Robotic HPB & Upper GI Training Program conducted in Grosetto, Italy since 2011
- International Faculty of the biggest MAS training Centre in the world (IRCAD/EITS of Strasbourg, France) since 2010.
Tips and Techniques in Robotic Pancreaticoduodenectomy

Tang Chung-Ngai

Chief of Service, Department of Surgery.
Director of Minimal Access Surgery Centre (MASTC)
Pamela Youde Nethersole Eastern Hospital, Chai Wan, Hong Kong

Complex pancreatic surgery remains the hurdle for minimal access surgery because of the technical challenges of controlling hemorrhage from major vessels and reconstructing the biliary and pancreatic ducts with acceptable morbidity. It is one of the most challenging and complex procedures encountered by the general surgeon. Conventional laparoscopic Whipple’s Operation did not gain broad acceptance due to the complexity of the procedure, the accuracy needed to perform the operation, and the steep learning curve required to master the procedures.

Robotic surgical systems have been recently introduced to enhance a surgeon’s dexterity in the surgical field through a magnified three-dimensional view, endowrist instruments with seven degrees of freedom, and intuitive hand-control movements. Theoretically, the enhanced capabilities of the system can facilitate better performance of surgery like the creation of technically demanding pancreatic anastomosis and portal vein resection with reconstruction.

Up till now, few data are available comparing a robotic approach to open/laparoscopic Whipple’s Operation. Complication and mortality rates are comparable to those of open surgery and there might be a potential of less operative blood loss and slightly shorter postoperative hospital stay. However, oncological outcome are lacking in the literature. The current evidence demonstrated that robotic Whipple’s Operation is feasible and safe in selected patients. However, the procedure should be performed by a surgical team expert in pancreatic and laparoscopic surgery in properly selected patients. Larger series and controlled trials comparing robotic and open Whipple’s Operation are needed in order to fully explore these potential advantages.
Go Wakabayashi
Director, Center for Advanced Treatment of Hepatobiliary and Pancreatic Diseases Ageo Central General Hospital

**Brief Profile**
Go Wakabayashi, earned his degrees from Keio University School of Medicine, Tokyo Japan. He trained at Department of Surgery at Massachusetts General Hospital and Harvard Medical School. After working as an Assistant Professor at Department of Surgery, Keio University School of Medicine, he got appointed as Professor and Chairman of Department of Surgery at Iwate Medical University School of Medicine in 2005. From April 2015, he was recruited as Director of Center for Advanced Treatment of HBP Diseases, Chief of Surgical Services, and Deputy Director at Ageo Central General Hospital, which is a flagship hospital among 6,000 beds hospital complex near Tokyo. His expertise includes Hepato- Biliary Pancreatic Surgery, liver transplantation, and laparoscopic surgery. He has operated more than 150 cases of living liver transplantation and over 3000 cases of HPB surgery and laparoscopic surgery. His publications are over 300 peer review articles and book chapters related to HPB surgery, liver transplantation, and laparoscopic surgery. He was awarded Gold Medal of Video Olympics at The World Congress of Endoscopic Surgery 1996. He also practices conventional HPB surgery and aggressive surgery as well. He holds numerous important positions in Japanese and international surgical societies.
Future of Minimally Invasive HBP Surgery

Go Wakabayashi

Director, Center for Advanced Treatment of Hepatobiliary and Pancreatic Diseases Ageo Central General Hospital

The difference between open liver resection and laparoscopic liver resection (LLR) is not merely the difference in approach. Compared to the open ventral approach of liver resection, the laparoscopic caudal approach has the great advantage that the field of view toward the dorsal side of the liver is good. Because liver resection is performed in the closed abdominal cavity in laparoscopic approach, head up position and rotation result in reduction of hepatic venous pressure and less bleeding due to pneumoperitoneum pressure. The first time I performed LLR was in 1995, and the first time in Asia I performed a robotic-assisted surgery in 2000. At that time, I performed a robotic-assisted cholecystectomy, but I thought vaguely that the pancreaticoduodenectomy (PD) should use robotic assistance. In 2004, we started laparoscopy-assisted donor (LAD) left lateral sectionectomy, and in 2007, I succeeded LAD right hepatectomy. Mobilization was done under the pneumoperitoneum, and hepatic parenchymal transection was done from a small incision. Total laparoscopic major hepatectomy was started in 2009, and total laparoscopic donor left hepatectomy was successfully performed in 2012. Then, I met the word "An operation consists of imaging and manipulation". In other words, if the surgical field image improves, the quality of surgery naturally improves. Therefore, I had come to the idea that LLR is theoretically superior to open liver resection because of better exposure and less bleeding due to the pneumoperitoneum pressure. I hosted the Second International Consensus Conference on LLR in Morioka to share this thought with liver surgeons all over the world. More evidence was obtained in the next couple of years, and LLR evolved into a major area of liver surgery beyond the range of minimally invasive surgery. LLR will here to grow in the future with its inherent advantages. However, in pancreatic surgery, does laparoscopic pancreatectomy develop and spread in the same way? In 2017, we started robotic-assisted PD. I believe that robotic-assisted surgery can make pancreatic duct mucosal jejunal anastomosis more accurate than anastomosis performed in laparotomy. In my perspective, robotic-assisted PD with higher accuracy will become a standard procedure.
Takeaki Ishizawa
Hepato-Biliary-Pancreatic Surgery Division, Department of Surgery, Graduate School of Medicine, the University of Tokyo
Department of Gastroenterological Surgery, Cancer Institute Hospital, Japanese Foundation for Cancer Research

Dr. Takeaki Ishizawa is a lector in the Department of Surgery, Graduate School of Medicine, the University of Tokyo. Dr. Ishizawa received his medical degree in 2000 from The University of Chiba, in Chiba Japan and then went on to complete his Ph.D. in 2008 at The University of Tokyo (Prof. Makuuchi and Prof. Kokudo). In 2011, Dr. Ishizawa stayed in Paris as a fellow at the Institut Mutualiste Montsouris (Prof. Gayet). Since 2014, he has performed more than 300 major HPB surgeries, including 150 laparoscopic surgeries, at the Cancer Institute Hospital, Japanese Foundation for Cancer Research (Prof. Saiura).

Dr. Ishizawa has developed in vivo fluorescence imaging and actively applied these technique to his clinical practices. So far, Dr. Ishizawa has been published for his work in hepatobiliary and pancreatic surgery and fluorescence-guided surgery in more than 50 peer-reviewed international journals, including the Gastroenterology and the Annals of Surgery. Currently, he plays a role as a president of the International Society for Fluorescence Guided Surgery (ISFGS, www.isfgs.org), which has been established in 2013 aiming to share updated information on this topic among researchers, surgeons, and technicians.

Dr. Ishizawa has been honored with a lot of prestigious awards including: award from the 106th Annual Congress of Japan Surgical Society, the British Journal of Surgery Award at the 45th Congress of the European Society for Surgical Research, KARL STORZ Award at the 24th Annual Meeting of the Japan Society for Endoscopic Surgery, Best International Abstract Award at SAGES2016, and the 2017 International Guest Scholarship of American College of Surgeons.
Applications of intraoperative fluorescence imaging to HPB surgery

Takeaki Ishizawa, Akio Saiura, Kiyoshi Hasegawa

1 Hepato-Biliary-Pancreatic Surgery Division, Department of Surgery, Graduate School of Medicine, the University of Tokyo
2 Department of Gastroenterological Surgery, Cancer Institute Hospital, Japanese Foundation for Cancer Research

Background: Recently, in vivo fluorescence imaging using indocyanine green (ICG) has actively been applied to open and then laparoscopic HPB surgery, for intraoperative visualization of biological structures and assessment of blood perfusion. In addition, we have developed a novel fluorophore activated by pancreatic chymotrypsin for real-time visualization of pancreatic leak during pancreatectomy.

Methods and Results: 1) Fluorescence cholangiography: fluorescence images of the extrahepatic bile ducts can be obtained by intrabiliary injection of ICG solution (0.025 mg/mL) or preoperative intravenous injection of ICG (2.5 mg). The latter technique begins to be used worldwide for confirmation of the bile duct anatomy during minimally-invasive cholecystectomy. 2) Identification of hepatic tumors: Following intravenous injection of ICG (0.5 mg/kg) prior to surgery, the ICG can accumulate in hepatocellular carcinoma tissues and in non-cancerous hepatic parenchyma surrounding liver metastasis, which enables intraoperative identification of subcapsular hepatic tumors by fluorescence imaging. 3) Hepatic segmentation: ICG solution (0.25 mg/5 mL) is injected into a tumor-bearing portal branch under ultrasound guidance. ICG can also be administered intravenously following closure of a corresponding portal pedicle. Then, fluorescence imaging delineates boundaries of the hepatic segments throughout hepatectomy procedures. 4) Assessment of blood perfusion: Fluorescence imaging following intraoperative bolus injection of ICG (2.5mg) visualizes arterial/portal blood flows and perfusions to the surrounding organs during surgeries with resection/reconstruction of major vessels. 5) Identification of pancreatic leak: Fluorescence imaging following topical administration of "chymotrypsin probe (glutaryl-phenylalanine hydroxymethyl rhodamine green with added trypsin)" enabled visualization of pancreatic juice leaking from the pancreatic stump.

Conclusions: Intraoperative fluorescence imaging will develop into an essential navigation tool for surgeons to identify the extent of cancer spread, anatomical variations, and a risk of postoperative complications in each individual case, enhancing accuracy and safety of HPB surgery.
Guido Torzilli
Department of Surgery, Division of Hepatobiliary and General Surgery, Humanitas University and Humanitas Research Hospital, Milan, Italy

Degrees
- MD at the University of Milan in November 1988 (summa cum laude)
- Specialist in General Surgery at the University of Milan in November 1993 (summa cum laude)
- PhD degree at the University of Tokyo, Faculty of Medicine, 1999.

Current Position
- Professor and Chairman, Department of General Surgery
- Director, Division of Hepatobiliary and General Surgery - Humanitas University - Humanitas Research Hospital - Rozzano - Milano, Italy
- Chairman of the Postgraduate School of Surgery of Humanitas University

Previous Appointment
- 1993 - 1996: Staff Surgeon, Department of General Surgery, Hospital of Lodi, Italy.
- 1996 Fellow of the Japanese Foundation for Promotion of Cancer Research, Second Department of Surgery, University of Tokyo, Faculty of Medicine, Tokyo-Japan.
- 1998 - 1999: Assistant Professor of Surgery, Hepatobiliarypancreatic Surgery Division, Department of Surgery, Faculty of Medicine, University of Tokyo, Tokyo-Japan.
- 2000 - 2004: Head of the Hepatobiliary Surgery Unit, 1st Department of General Surgery, Hospital of Lodi, Italy.
- 2006 - 2008: Chief Liver Surgery Unit, University of Milan, Faculty of Medicine, Istituto Clinico Humanitas, IRCCS, Rozzano-Milano, Italy
- 2014 - 2015: Director Department of Hepatobiliary and General Surgery - Humanitas Research Hospital - Rozzano - Milano, Italy
- 2015 - : Professor and Chairman, Department of General Surgery - Director, Division of Hepatobiliary and General Surgery - Humanitas University - Humanitas Research Hospital - Rozzano - Milano, Italy

Grants and Awards:
- 1988-93: Ministerial Grant for the best Residents in Surgery
- 1992: Grant of the Italian Society of Ultrasound in Medicine for a stage abroad (1st Surgical Dept. - Shinshu University - Matsumoto, Japan - Dir. Prof Masatoshi Makushchi)
- 1996: Fellowship of the Japanese Foundation for Promotion of Cancer Research
- 2005: Ettore Ruggieri Prize of the Italian Society of Surgery for the best Clinical Research
- 2008: Best video at the 6th International Meeting Hepatocellular Carcinoma - Eastern and Western Experiences, Seoul
- 2012: Best video at the International Vdeo Session of the 100th Clinical Congress of the American College of Surgeons - Chicago

Speaker/Chairman/Visiting professor
Prof. Torzilli has been invited as Chairman or Speaker in more than 700 National and International Meetings and has been invited as Visiting Professor by the Department of Surgery of the Catholic University, Faculty of Medicine in Rome, the 3rd Department of Surgery of the Nihon University in Tokyo, the Department of Surgery of the Dokkyo University, the Department of Surgery of the University of Tokyo, the Liver Unit of the King's College Hospital in London, the Department of Surgery of the Chinese University of Hong Kong, Department of Surgery - Lausanne University

Societies
- Prof. Torzilli is member of the following Scientific Societies: American College of Surgeons (Fellow); European Surgical Association (Board Member); International Hepatobiliarypancreatic Association (President of the Italian Chapter); International Association Surgeon Gastroenterologist and Oncologist (Executive Board Member); Eastern and Western Association on Liver Tumors (Founding Member and Governing Board Member); International Liver Cancer Association (Founding Member); European Society of Surgical Oncology; Italian Society of Ultrasonography in Medicine and Biology; Italian Society of Surgery; Italian Society of Surgical Oncology.

Clinical and Research Activities
Pioneer in new methods for intraoperative staging with ultrasound (first reports in the indexed medical literature about the use of contrast-enhanced IOUS) and for resection guidance (so-called Radical but Conservative Policy, RLvac and in the recognition and use of communicating vein in parenchyma sparing procedures in case of hepatic outflow tumor infiltration). He has pioneered new surgical procedures as the Hooking Technique, Compression Segmentectomy, Mini-Mesohepatectomy, SERPS, Liver Tunnel, Upper Transversal Hepatectomy; he has designed a new probe for intraoperative ultrasound. Prof. Torzilli has been co-editor of two books and 4 supplements of international indexed journals. He is author/co-author of 200 indexed full papers, more than 50 non-indexed full-papers, 4 monograph, and more than 50 book’s chapters for an overall number of citation approaching 7000 and an Hindex of 40 (Scopus).
Current Management Strategy of HCC

Guido Torzilli

Department of Surgery, Division of Hepatobiliary and General Surgery, Humanitas University and Humanitas Research Hospital, Milan, Italy

Liver surgery has become an established therapy for patients with hepatocellular carcinoma (HCC) on cirrhosis. However, controversies remain between surgeons and oncologists in regard to the tumor burden suitable to be surgically removed with adequate survival. Indeed, in the current guidelines (1), surgery is confined to those patients in the very early or early stages of disease. However, several studies have shown a more than potential role of surgery for patients with large, multinodular and macrovascular invasive HCC. Furthermore, surgery disappeared as a suitable treatment for patients with intermediate and advanced HCC on the basis of randomized trials in which unresectability was the main inclusion criteria in that admitting surgery as the best treatment of choice whenever suitable (2-4).

Certainly surgery has to be carried out in tertiary referral centers and in a parenchyma sparing and anatomical fashion. Parenchyma sparing (5), and anatomical fashion (6) means imaging guidance and imaging guidance means essentially ultrasound guided surgery (7). Within this perspective surgery of HCC has proven to be a safe approach (8) even utilizing simple selection criteria (9), and even once offered to patients with advanced disease (10).

A recent multicentric study showed that the 5-year overall survival of patients within the stages B and C were 57% and 38% respectively (11). The aforementioned multicentric study showed that 50% of patients carrier of intermediate or advanced HCC are treated routinely with surgery in tertiary referral centers worldwide representative. This is undoubtedly sustaining, that surgery is not an anecdotal solution for these patients, and the remarkable survival is not justifying exclusion a priori of surgery from the available therapies. Thus, surgery should at least be considered in a multidisciplinary setting as a potentially curative therapy also for patients in stage B and C of the BCLC and a therapeutic flow-chart for these patients should recognize this role.

References
Oscar Imventarza
President IHPBA, Buenos Aires, Argentina

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<th>Name of Institution Granting Degree:</th>
<th>Universidad Nacional de Buenos Aires. Facultad de Medicina.</th>
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<tbody>
<tr>
<td>Date and description of other degree:</td>
<td>1987 Surgery (General Surgeon)</td>
</tr>
<tr>
<td>Name of Institution Granting Degree:</td>
<td>Hospital Finochietto. Buenos Aires. Universidad Nacional de Buenos Aires. Facultad de Medicina</td>
</tr>
<tr>
<td>Other accreditation or qualification:</td>
<td>Fellow in Liver Transplant and Research (1987 to 1988) Presbyterian Hospital. Pittsburgh. USA</td>
</tr>
<tr>
<td>Other accreditation or qualification:</td>
<td>Surgery Instructor (1988 to 1989)</td>
</tr>
<tr>
<td>Name of Institution Granting other accreditation or qualification:</td>
<td>Presbyterian Hospital. General Surgery and Transplant Department. Pittsburgh</td>
</tr>
<tr>
<td>Other accreditation or qualification:</td>
<td>Professor (1989 to 1995) Pittsburgh University</td>
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Professional Experience (Previous and current clinical postings)

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<th>Year</th>
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<tr>
<td>1994 - Current</td>
<td>Hospital General de Agudos Dr. Cosme Argerich. Chief of Liver Transplantation and Liver Surgery.</td>
</tr>
</tbody>
</table>

Membership and Societies

Member Asociación Médica Argentina (1983)
Member American Society of Transplant Surgeons (1991)
Member Argentine Association of Surgery (1992)
Member Argentine Society for the study of the liver (1992)
Member Argentine Society of Transplantation (1993)
Member of The Transplantation Society (1995)
Member Ethics Committee Hospital Garrahan (1995)
Member of the advisory committee de la Dirección de Coordinación, Programación y Ablación de Órganos de la Municipalidad de la Ciudad de Buenos Aires.
Vice-president – Argentinean Society of Transplantation (period 2005-2006)
President Argentinean Society of Transplantation (period 2006-2007)
Associate Professor from the Argentinean Academy of Surgery (since 2008)
Congress Chair SAT- STALYC Latin American Congress of transplantation. Buenos Aires Argentina December 2013
President IHPBA (2016-2018)
President Elect STALYC (2019-2021)
Current status and future directions in liver transplantation

Oscar Imventarza
President IHPBA, Buenos Aires, Argentina

Liver transplant have evolved to include previously contraindicated disease. It is an effective therapy for several patients with acute and chronic liver diseases. The discrepancy between the number of patients on the waiting list and available donors remains the key issue and is responsible for the high rate of waiting list mortality. Multidisciplinary evaluation for liver transplantation is intended to confirm the patient’s suitability and identify the appropriate timing of transplant. While living donation has successfully increased the total number of liver transplants done in Asian countries, the total number of such transplants has been decreased in the western hemisphere. In the Western countries we increase the donor pool with older donors, split livers and non-heart beating donors and we are starting to use mechanical perfusion systems to improve the preservation of organs before liver transplantation. Early outcomes demonstrating the clinical applicability of both hypothermic and normothermic perfusion and its potential to impact patient survival and allograft function have generated much interest in our field.

The indications are growing around the world. Non-alcoholic fatty liver disease is a rising cause of liver disease in Western countries. About 30% of patients can develop non-alcoholic steato-hepatitis (NASH), progressing to cirrhosis in up to 30%. The Milan criteria are accepted worldwide to transplant patients with HCC, but a potential extension of the criteria must consider benefitting more patients. Another raising disease is acute-on-chronic liver failure (ACLF) is a clinical syndrome characterized by a rapid onset of liver decompensation and a poor prognosis. Cholangiocarcinoma (CCA) accounts for 5% to 20% of liver malignances. For unresectable peri-hilar CCA at early stage (I-II), LT has been considered an experimental therapeutic option.

The short-term outcomes after liver transplantation have been excellent worldwide, long-term outcomes remain suboptimal. The most frequent late mortality causes after liver transplantation are allograft failure, cardiovascular events, infection, malignancy and renal failure. There is a clear relation between these and the long-term use of immunosuppressive medications. As a result, in the past decade, a significant effort has been done to decrease the immunosuppression in our field.

Liver transplantation is an evolving field and we have to continue working in increasing the donor pool and give answer to the new indications.
Hiroya Kuroyanagi
Department of Colorectal Surgery, Toranomon Hospital

**Education:**
1981-1987 Kyoto University, School of Medicine

**Training & Appointments:**
1987-1988 Surgical resident at Kyoto University Hospital
1988-1992 Surgical resident at Kyoto National Hospital
1993-2005 Staff Surgeon at Kyoto National Hospital
2000-2001 Fellow, Minimally Invasive Surgery at Mount Sinai Hospital
2002-2004 Assistant Professor (temporary) of Department of Surgery of Kyoto University
2005-2010 Staff Surgeon at Cancer Institute Hospital
2010-present Head of Department of Colorectal Surgery at Toranomon Hospital

Dec. 1, 1993 Certification, Japanese Surgical board
Dec. 12, 1996 Certification, Japanese Gastroenterological Surgery
Laparoscopic surgery for lower rectal cancer

Hiroya Kuroyanagi

Department of Colorectal Surgery, Toranomon Hospital

We have actively employed laparoscopic surgery for the treatment of lower rectal cancer. Our treatment options for lower rectal cancer are as follows; laparoscopic total mesorectal excision (TME) with autonomic nerve preservation (ANP) for T1/T2 N0 lesion, preoperative radiotherapy followed by laparoscopic TME for T3/T4 or node positive lesion, and laparoscopic lateral lymph node dissection (LLN) for the lesion with swollen lymph node (>7mm in diameter) in the lateral pelvic area on preoperative imaging tests such as CT and MRI.

In order to achieve both TME and ANP, it is the most important to recognize a correct dissecting plane between two different adipose tissues, which are the mesorectal fat and the fat including autonomic nerve. After neoadjuvant chemoradiation, it is sometimes difficult to find that correct plane because of edematous tissue and fibrosis. The good vision obtained by laparoscope and the precise understanding of anatomy make it possible to find an optimal plane even in that condition.

For the dissection around very lower rectum, it is important to dissect endopelvic fascia with rectum, exposing levator ani muscle fibers. This will be of great help for following dissection between rectum and the neurovascular bundle. And the dissection of the perineal body can be achieved laparoscopically without using trans-anal procedure.

LLN dissection consists of following steps: isolation of the ureter down to the bladder, dissection medial to the external iliac vessels, dissection lateral to the superior vesical artery, identification and preservation of the obturator nerve and the dissection along the internal iliac vessels with preservation of the pelvic nerve plexus. In the case where metastasis to the lymph node is strongly suspected, adjacent vessels such as the obturator vessels and the internal iliac artery should be resected together with the lymph node.

Short movies which demonstrate the dissection stated in the above will be shown in the talk.
Yusuke Kinugasa
Gastrointestinal Surgery, Tokyo Medical and Dental University

EDUCATION
1992-1998 M.D. Tokyo Medical and Dental University
2004-2007 Ph. D. Graduate School, Tokyo Medical and Dental University

POSTDOCTORAL TRAINING
1998-1999 Resident, Department of Surgery, Tokyo Medical and Dental University
1999-2001 Surgeon, Department of Surgery, Hasuda Hospital, Saitama
2001-2004 Resident, Department of Colorectal Surgery, National Cancer Center Hospital
2004-2005 Surgeon, Department of Surgical Oncology, Tokyo Medical and Dental University
2005-2006 Research Fellow, Department of Anatomy, Sapporo Medical University
2006-2010 Staff, Department of Colorectal Surgery, Shizuoka Cancer Center Hospital
2010-2017 Chief, Department of Colorectal Surgery, Shizuoka Cancer Center Hospital
2017- Professor, Department of Gastrointestinal Surgery, Chairman, Department of Colorectal Surgery, Tokyo Medical and Dental University

Profile
Professor Yusuke Kinugasa is a colorectal surgeon. He is professor of Gastrointestinal Surgery, Tokyo Medical and Dental University since 2017. Before taking this position in Tokyo, he worked at Shizuoka Cancer Center for 11 years as a Chief of Colorectal Surgery. He has experienced the most robotic rectal cancer surgery in Japan. He is also familiar with pelvic anatomy and laparoscopic surgery.
The surgical technique and outcome of robotic rectal cancer surgery

Yusuke Kinugasa
Gastrointestinal Surgery, Tokyo Medical and Dental University

There are still many difficult problems to solve in rectal cancer surgery. The local recurrence should be decreased more without any toxic adjutant therapy. On that basis, we should preserve the urogenital function more. The magnified view of the operative field is great advantage to the rectal cancer surgery. However, it is difficult to move the forceps precisely in deep pelvis because of their characteristics in the laparoscopic surgery.

Since daVinci surgical system was approved by FDA in 2000, robotic surgery became widespread. Robotic-assisted total mesorectal excision for rectal cancer were reported in 2006. The characteristics of the robot, that is, high quality 3-dimensional image and sensitive, complicated manipulation of forceps enabled surgery in the narrow pelvic cavity easy. Between November 2011 and February 2017, we performed 580 robotic surgery for rectal cancer in Shizuoka Cancer Center. There were 436 anterior resections, 92 intersphincteric resections, 52 abdominoperineal resections. Robotic surgery was superior to laparoscopic surgery in a hospital stay, blood loss conversion rate and frequency of urinary retention.

In Japan, lateral lymph node dissection is the standard treatment for locally advanced lower rectal cancer. This is because the incidence of lateral pelvic lymph node metastasis from lower rectal cancer is 20%. Lateral lymph node dissection for advanced lower rectal cancer is a good indication of robotic surgery because of its much higher degree of difficulty. The indication of the lateral lymph node dissection is lower rectal cancer with T3 or T4. Lower rectal cancer was defined as rectal cancer below the peritoneal reflection. We performed 197 robotic surgeries with lateral lymph node dissection for lower advanced rectal cancer.
Gyu-Seog Choi
Colorectal Cancer Center, Kyungpook National University Hospital, School of Medicine, Kyungpook National University, Daegu, Korea

Professor, Head of Colorectal cancer Center, Director of MIS & Robotic Surgery Training and Research Center, Kyungpook National University Medical Center, School of Medicine, Daegu, Korea

Current appointments
- 2007- Present Professor, Kyungpook National University, Daegu, Korea
- 2011- Present Head of Colorectal Cancer Center, Kyungpook National University, Daegu, Korea

Education
- Feb, 1987 Graduated from Kyungpook National University, School of Medicine
- Feb, 1999 Graduated from Kyungpook National University, Postgraduate School
- Sep, 2002 Post-doctoral research course in Cancer & Immunogenetics Laboratory, Cancer research UK, Institute of Molecular Medicine, John Radcliffe Hospital, Oxford

He graduated school of medicine, Kyungpook national university and completed surgical residency at Kyungpook national university hospital in Daegu, Korea. He received degree of Ph.D. at the same university and he pursued research fellowship for cancer genetics at Cancer research UK, Oxford, UK. After his return to Korea, prof. Choi organized MIS training and research center at Kyungpook national university hospital. Dr. Gyu-Seog Choi is one of the early pioneers of robotic colorectal surgery and developed one of the first dVLAR and dV Right Colectomy procedure technique materials with Intuitive Surgical. Since 2008, he completed approximately 550 robotic, 4000 laparoscopic colorectal cases and has many publications and pending abstracts on robotic colorectal surgery. He actively teaches robotic surgery to his peers in S. Korea, US and around the world, and is an active/founding member of several robotic associations and societies. As an active member of many domestic and international scientific societies, he contributed 160 papers in surgical and oncologic field of science. Many outstanding achievements have led him to win the prizes including Karl-Storz award from EAES. At present he is a professor and head of colorectal surgery at Kyungpook national university hospital. His main interests are MIS and robotic surgery for colorectal cancer and cancer immunogenetics.
Current Status and Future Perspectives of Robotic Surgery for Colorectal Cancer

Gyu-Seog Choi

Colorectal Cancer Center, Kyungpook National University Hospital, School of Medicine, Kyungpook National University, Daegu, Korea

The merits of surgical robot are constant traction and counter-traction, finer and higher degree of movement of instruments and simultaneous control of instruments and a scope. With these potentials, rectal cancer is considered probably the best indication for robotic approach. Even though we have a few evidences, we could postulate that robot may give us better quality of TME, easier identification and preservation of autonomic nerves by using all the benefits aforementioned. In addition, excellent suturing technique is one of outstanding features of surgical robot, which we can apply into intracorporeal anastomosis.

In reality, there are no sound evidences based on randomized clinical trials, so far. ROLLAR trial has failed to prove superiority of robot in reduction of conversion during rectal cancer surgery. However, some reports enlightened potentials of robot in rectal cancer surgery for patients with high BMI, complicated tumor: low-lying, radiated, lateral pelvic node involvement, and so on. Also, several papers recently published have demonstrated possible benefits of robot in reduction of conversion as well as preservation of sexual and voiding function after proctectomy. Unfortunately, ROLLAR trial has failed to prove superiority of robot in reduction of conversion during rectal cancer surgery. Other perspectives of future surgical robot are single port related surgery. Current SP system is ready to clinical use in single port colorectal surgery or taTME. Fluorescence guided surgery is also a useful technique in reassurance of bowel perfusion, lymphatic mapping etc. But real future of surgical robot will be combination of artificial intelligence and robot.
Yuta Abe
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Work Experience:
2012–Present  Associate Professor, Division of Hepato-Pancreateo-Biliary and Transplant Surgery, Department of Surgery, Keio University School of Medicine, Tokyo, Japan
2009–2012  Assistant Professor, Division of Hepato-Pancreateo-Biliary and Transplant Surgery, Department of Surgery, Tokyo Medical University School of Medicine, Tokyo, Japan
2006–2009  Research Fellow (Molecular and Cellular Physiology), Louisiana State University Health Sciences Center, Shreveport, LA, USA
2004–2006  General Surgeon, Ogikubo Hospital, Tokyo, Japan
2003–2004  Chief Resident (Surgical Oncology), Hepatobiliary and Pancreatic Surgery Division, Department of Surgery, Keio University Hospital, Tokyo, Japan
2002–2002  Resident (Liver Transplantation), Department of Surgery, Kyoto University Hospital, Japan
2000–2001  Resident (Surgical Oncology), Department of Surgery, Keio University Hospital, Tokyo, Japan
1998–1999  Intern, Keio University Hospital, Tokyo, Japan

Education:
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Certification:
Board Certified Surgeon in Japan Surgical Society
Board Certified Surgeon in Gastroenterological Surgery
Board Certified Expert Surgeon (Hepatobiliary-Pancreatic Field)
General Clinical Oncologist by Japan Board of Cancer Therapy (JBCT)
Endoscopic Surgical Skill Qualified Surgeon (Laparoscopic hepatectomy) (JSES)

Honors:
2014  JSES (Japanese Society of Endoscopic Surgery) Best Video Award (Carl Storz Award)
2006  Best Chief resident of the Year
Left hepatic trisectionectomy with caudate lobectomy for perihilar cholangiocarcinoma by extrahepatic glissonean pedicle isolation technique

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**[Background]** The technique of left hepatic trisectionectomy combined with caudate lobectomy and bile duct resection for perihilar-cholangiocarcinoma (PHC) is not standardized and still challenging.

**[Methods]** From January 2013 to January 2018, we have performed 104 major hepatectomies combined with bile duct resection for PHC. Vascular reconstruction was performed in 43 cases (41.3%, PV+HA: 15, PV: 18, HA: 10) and hepatectomy combined with pancreatoduodenectomy was performed in 16 cases (15.4%). The mortality rate of 90 days after surgery was 1.9% and the 3-year survival rate was 54.1% in all 104 cases, and these differences were not observed even in the presence or absence of revascularization. During these period, 14 patients underwent “anatomic” left hepatic trisectionectomy with en bloc resection of the caudate lobe and the extrahepatic bile duct, in which the posterior glissonean pedicle was isolated and taped by extrahepatic glissonean approach. This procedure helps us to understand the root of the future remnant liver region anatomically, regardless the variation in anatomy of the vasculature of the liver. Therefore, we can easily transect liver parenchyma correctly along with the inverted tape that leads the dissection plane to the limiting point of the remnant bile duct.

**[Results]** Liver resection was successfully performed in all patients. Vascular resection and reconstruction was performed in 9 patients (PV: 3, PV+HA: 6). One patient died within postoperative 90 days. All patients were histologically diagnosed as having cholangiocarcinoma. The proximal resection margins were cancer-negative in all patients.

**[Conclusion]** Extrahepatic glissonean pedicle isolation technique is one of the useful method for performing the left hepatic trisectionectomy for PHC.

**[Video]** We will show you the scheme of this concept and actual case video.
Biography
Graduate from Seoul National University College of Medicine in 1984, and finished internship and residency of department of Surgery at Seoul National University Hospital in 1989. Full time Professor of Seoul National University, College of Medicine. The present position is the Professor of Department of Surgery. The field of interest is hepatobiliary surgery and laparoscopic surgery. World first performed laparoscopic right posterior sectionectomy, central bisectionectomy for hepatocellular carcinoma by laparoscopy. Has also performed laparoscopic liver resection in pediatric patient and succeeded in total laparoscopic right side donor heptectomy as world-first. Has also reported World first prospective series of laparoscopic surgery for gallbladder cancer. Has also performed first laparoscopic PD and distal pancreatectomy in Korea. Has a keen interest in cancer and acute inflammation on clinical and basic research.
Play a role as editors of renowned journals, such as Ann Surgery, Surgical Oncology, JHBPS, etc. Associate Editor of Digestive Surgery. Has published atlas and textbooks and contributed many chapters in numerous books and atlas. Has been invited speakers for many international conferences.
Chairman of Board of Directors of Korean Society of Laparoscopic & Endoscopic Surgeons (KSELS) and ex-Chairman of Board of Directors of Korean Society of Surgical Oncology(KSSO)
Ex-President of Korean Society of Pancreas Surgery and Korean Society of Trauma.
Vice president of IASMEN, ex-President of KSSMN(Korean Society of Surgical Metabolism & Nutrition) and Chairman- elect Director of Board of KSPEN(Korean SPEN).
President of PENSA 2018.
Advanced Technique in Laparoscopic Hepatectomy

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With many reports on encouraging outcomes, laparoscopic liver resection has been accepted as attractive alternative for open liver resection. Hepatocellular carcinoma (HCC) is associated with chronic liver disease and cirrhosis. When a patient undergoes liver resection, surgeons must consider the volume and function of the remnant liver because patients with liver cirrhosis are predisposed to hepatic failure after major resection. Therefore, it is better to preserve the liver volume as far as possible, even during laparoscopic surgery. Resection must be performed with a full understanding of anatomical liver resection. Because HCC spreads to the remnant liver through portal tributaries, anatomical resection of the surrounding portal vein has a theoretical advantage over nonanatomical resection in terms of oncological clearance. There is another report that remnant ischemia adversely affect the prognosis of the patient. Therefore precise liver resection technique like anatomic liver resection has merits not leaving postoperative remnant ischemia. Anatomical liver resection can be performed in many ways. Glissonian pedicle approach is one method for anatomical liver resection. The Glissonean approach can also be used in any type of laparoscopic anatomical liver resection.

The objective of the present study was to share the important technical features of LLR using the Glissonean pedicle method, which should provide important information to guide resection and reduce blood loss from the liver parenchyma during LLR. The type of resection also may depend on the remaining liver’s functional capacity. Therefore it would be recommendable to resect as minimal as possible including bi-segmentectomy, mono-segmentectomy, and sub-segmentectomy. And it is possible to perform any anatomic liver resection from Segment 1 to 8. In conclusion, anatomical liver resection may be advantageous in terms of preserving remaining liver volume and eradicating tumor completely.
Goro Honda
Department of Surgery, Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital

WORK EXPERIENCE
2006 - present  Head (since 2017) & Chief, Department of Surgery, Tokyo Metropolitan Cancer and Infectious Diseases Center Komagome Hospital  [Tokyo]
2004 - 2006  Chief, Dept. of Surgery, Kokura Memorial Hospital  [Fukuoka]
1998 - 2004  Consultant, Dept. of HBP Surgery, Saiseikai Kumamoto Hospital  [Kumamoto]
1997 - 1998  Clinical fellow, Dept. of Gastroenterological Surgery, Kyoto University Graduate School of Medicine  [Kyoto]
1993 - 1997  Resident, Dept. of Surgery, Uwajima City Hospital  [Ehime]
1992 - 1993  Resident, Dept. of Surgery, Kyoto University Hospital  [Kyoto]

EDUCATION & DEGREES
2010  F.A.C.S.
2009  Ph.D., Kyoto University Graduate School of Medicine  [Kyoto]
1992  M.D., Kumamoto University School of Medicine  [Kumamoto]

CERTIFICATION
Board Certified Surgeon & Instructor of Japan Surgical Society (JSS)
Board Certified Surgeon & Instructor of Gastroenterology (JSGS)
Board Certified Surgeon of Japan Society for Endoscopic Surgery (JSES)
Chairman of the review board for certification of laparoscopic hepatectomy (JSES)
Board Certified Instructor of Japanese Society of HBP Surgery (JHBPS)
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The caudate lobe first approach for laparoscopic hepatectomy

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During the anatomical hepatectomy of segments 6 and/or 7, the right-sided caudate lobe, or the right lobe, the liver parenchyma of the most dorsal side is divided along a longitudinal line (we call it “dorsal midline”), which is parallel to the ventral aspect of the inferior vena cava (IVC). During an open hepatectomy, the hanging maneuver, in which a hanging tape is placed behind the dorsal midline as the destination, is often useful, because the dorsal midline is located at the bottom of the dissection plane, which is the furthest portion in a surgeon’s operative view. However, during a laparoscopic hepatectomy, which is performed in the caudodorsal view, the dorsal midline need not be divided in the final stage, because it is clearly visible and can be divided from the back in a clear magnified view. We have standardized the caudate lobe first approach, in which the caudate lobe located between the Glissonean trunk of the right main (G-right) or right posterior (G-post) and IVC is divided in the dorsal midline, and then, the posterior aspect of the G-right or post is exposed during the first stage of the liver dissection. Furthermore, anatomically, the origins of the Glissonean branches and hepatic veins are located on the dorsal side of the liver, and they branch similar to a tree, extending toward the ventral (peripheral) side. Therefore, by dissecting the liver from the caudal side toward the cranial side and moving the devices from the dorsal side toward the ventral side, parenchymal dissection can be easily performed along the intersegmental plane, avoiding a split injury of the hepatic vein branches. Thus, the caudate lobe first approach makes laparoscopic hepatectomy safer and more precise and provides true advantages of the laparoscopic approach.
— Poster —
P-1 Adherens junctions associated protein 1 serves as a predictor of recurrence of squamous cell carcinoma of the esophagus

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[Background] Esophageal squamous cell carcinoma (ESCC), the most common esophageal cancer in East Asia, is among the six cancers with the highest fatality rates worldwide. Unfortunately, multidisciplinary treatment strategies have not achieved satisfactory outcomes. Therefore, novel insights into the molecular biology of ESCC are required to improve treatment. The gene encoding the transmembrane adherens junctions associated protein-1 (AJAP1) expressed by epithelial cells resides on chromosome 1p36, which is frequently lost or epigenetically silenced in several malignancies.

[Method] Here, we investigated the expression levels and regulatory mechanism of AJAP1 transcription. We determined the levels of AJAP1 mRNA and those of genes encoding potentially interacting proteins expressed by ESCC cells lines, as well as the chromosomal copy number of AJAP1 and the methylation status of its promoter region. AJAP1 mRNA levels of 78 pairs of surgically resected specimens were determined to evaluate the association of AJAP1 expression and clinicopathological factors.

[Results] Nine ESCC cell lines differentially expressed AJAP1 mRNA, and demethylation of hypermethylated AJAP1 genomic DNA reactivated AJAP1 mRNA expression. The copy number of sequences upstream or downstream of the AJAP1 transcriptional start site was not detectably altered. AJAP1 mRNA levels correlated inversely with those of ezrin and were significantly lower in ESCC tissues compared with adjacent normal tissues. AJAP1 mRNA levels decreased gradually with increasing tumor stage. Patients with down-regulated AJAP1 transcription were more likely to experience shorter overall and disease-free survival. Multivariate analysis of disease-free survival identified down-regulated AJAP1 transcription as an independent prognostic factor. These results suggest that in ESCC, AJAP1 acts as a putative tumor suppressor and that AJAP1 transcription is regulated by promoter hypermethylation.

[Conclusion] These findings indicate that down-regulated AJAP1 transcription may serve as a novel tumor biomarker to predict recurrence of ESCC after esophagectomy.

P-2 A novel dual-marker expression panel for easy and accurate risk stratification of patients with gastric cancer

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[Background] Development of specific biomarkers is necessary for individualized management of patients with gastric cancer. The aim of this study was to design a simple expression panel comprising novel molecular markers for precise risk stratification.

[Method] Patients (n = 200) who underwent gastrectomy for gastric cancer were randomly assigned into learning and validation sets. Tissue mRNA expression levels of 15 candidate molecular markers were determined using quantitative PCR analysis. A dual-marker expression panel was created according to concordance-index (C-index) values of overall survival for all 105 combinations of two markers in the learning set. The reproducibility and clinical significance of the dual-marker expression panel was evaluated in the validation set.

[Results] The patient characteristics of the learning and validation sets were well balanced. The C-index values of combinations were significantly higher compared with those of single markers. The panel with the highest C-index (0.718) of the learning set comprised SYT8 and MAGED2, which clearly stratified patients into low, intermediate and high-risk groups. The reproducibility of the panel was demonstrated in the validation set. High expression scores were significantly associated with larger tumour size, vascular invasion, lymph node metastasis, peritoneal metastasis and advanced disease.

[Conclusion] The dual-marker expression panel provides a simple tool that clearly stratifies patients with gastric cancer into low, intermediate and high risk after gastrectomy.
P-3  Multimodal analgesia combined with intravenous administration of acetaminophen in perioperative management of esophagectomy using modified ERAS protocol

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Division of Gastrointestinal Surgery, Kanagawa Cancer Center

[Background] In perioperative management of esophagectomy, we have performed modified ERAS protocol including preoperative oral rehydration, early enteral nutrition, early mobilization, intestinal peristalsis promotion, pain control, and so on. We think these elements are related closely and useful in reducing complication and early recovery after surgery in case of high invasive surgery such as esophagectomy with 3 field lymph node dissection. And we think pain control is particularly close relationship with early mobilization, so multimodal analgesia is very important for postoperative pain control.

[Aims and Method] The aim of the study to evaluate whether it is possible to reduce postoperative breakthrough pain by using postoperative pain control combined with acetaminophen IV. 124 patients undergone esophagectomy with 3-field LN dissection from 2013 to 2015 were enrolled this study. Before 2014, 49 patients were treated without acetaminophen IV protocol (Group A), and after 2014, 75 patients were treated with acetaminophen(1000mg/day) IV protocol (Group B). We compared the number of analgesic drug until postoperative day 7, and compared the ratio of liver dysfunction in both groups. Both groups were used epidural anesthesia as postoperative pain management.

[Result] The number of analgesic drug use due to breakthrough pain(Group A / Group B) were day3:1.12/0.55, day4:1.58/0.57, day5:1.24/0.49, and was reduced significantly in Group B (p<0.01). And liver damage as a side effect by acetaminophen IV, the rise of ALT(Group A / Group B) were seen 32.7%/66.7% in day6, and seen 20.4%/62.7% in day8, and it was significantly higher in Group B at day6 and day8 (p<0.01), but was no significant difference in day30 between both groups.

[Conclusion] In perioperative management of esophagectomy, pain control combined with acetaminophen IV was useful as multimodal analgesia. Also ALT rise was seen by liver damage, but it was the minor change in the acceptable range for natural healing.

P-4  An anatomical hypothesis for the theoretical understanding of the surgical anatomy required for esophagectomy with upper mediastinal lymph node dissection

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[Background] Understanding the surgical anatomy is the key to reducing surgical invasiveness. However, there is no theoretical recognition regarding the surgical anatomy required for esophagectomy in the upper mediastinum, although the surgical anatomy in abdominal digestive surgery has been developed based on embryological findings of intestinal rotation and fusion fascia.

[Methods] We developed a hypothesis of a “concentric-structured model” of the surgical anatomy in the upper mediastinum based on the human embryonic development. This model was characterized by three factors: (1) a concentric three-layer-structure, (2) symmetric vascular distribution, and (3) inter-layer potential space composed of loose connective tissue. The loose connective tissue intervenes between each of the three concentric and symmetric layers: the “visceral layer” containing the trachea and esophagus as the central core, the “vascular layer” of major blood vessels surrounding the visceral core to maintain the circulation, and the “parietal layer” as the outer frame of the body. We investigated the validity of this concentric-structured model, confirming the intraoperative images and the surgical outcomes of thoracoscopic esophagectomy in a prone position (TSEP) before and after the introduction of this model.

[Results] A total of 226 patients with esophageal cancer underwent TSEP from January 2015 to December 2016. After the model introduction, the surgical outcomes in 105 patients were clearly improved for the operation time of the thoracosopic procedure (160 min vs. 182 min, p=0.01) and the incidence of recurrent laryngeal nerve palsy (19.0% vs. 36.4%, p=0.004). In all 105 cases after introduction, we were able to identify the concentric-layer structure through surgical dissection along the inter-layer potential space between the visceral and vascular layers (viscero-vascular space).

[Conclusions] The concentric-structured model based on the embryonic development is clinically beneficial for achieving less-invasive esophagectomy by ensuring a theoretical understanding of the surgical anatomy in the upper mediastinum.
Evaluation of nutritional status and safety of neoadjuvant chemotherapy for esophageal cancer

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[Background] Neoadjuvant chemotherapy followed by surgery represents the standard treatment for patients with Stage II/III esophageal squamous cell carcinoma in Japan. Esophageal cancer patients sometimes have a difficulty to intake enough food because of stenosis or adverse event. We use oral nutrition supplements (ONS) to prevent malnutrition for patients with stenosis, body weight loss at first visit or anorexia during NAC.

[Methods] The aim of study is to clarify nutritional status change and incidence rate of adverse events during NAC depending on oral ingestion status in our hospital. Patients who underwent esophageal cancer surgery between January 2011 and December 2014 were enrolled in this study. At the first NAC, we divided two group (Group A: good oral intake, Group B: poor oral intake). We retrospectively compared the biochemical index, BMI, skeletal muscle index and the incidence of adverse events during NAC between two groups.

[Results] A total of 82 patients were enrolled (Group A/B: 27/55). Albumin value, prealbumin value, retinol binding protein, BMI were decreased in group B but there was no difference in SMI at first visit. Regimen of neoadjuvant chemotherapy was 5-FU/CDDP two course. ONS was needed more in Group B (96.5%) than in Group A (29.0%). The rate of change of ALB before and after NAC was A/B: 97.5%/95.4%(P=0.55), PreAlb was A/B:111.0%/97.2%(P=0.15), RBP was 120.6%/100.0%(P=0.08), BMI was A/B: 95.9%/98.2%(P=0.55), SMI was A/B:95.0%/95.5%(P=0.42), which were not significantly different. There was no difference in the incidence of Grade 3 or higher adverse events during NAC between two group.

[Conclusions] Neoadjuvant chemotherapy for esophageal cancer with ONS was safe for patients with poor oral ingestion without nutritional status worse.
P-6  Short-term clinical outcomes of robotic distal gastrectomy for gastric cancer in our institution

Katsutoshi Shoda, Takeshi Kubota, Toshiyuki Kosuga, Hirotaka Konishi, Atsushi Shiozaki, Hisashi Ikoma, Masayoshi Nakanishi, Hitoshi Fujiwara, Kazuma Okamoto, Eigo Otsuji
Division of Digestive Surgery, Department of Surgery, Kyoto Prefectural University of Medicine

[Background] Robotic distal gastrectomy (RDG) is a new minimally invasive surgical technique for gastric cancer. This study was designed to compare RDG with laparoscopic distal gastrectomy (LDG) and open distal gastrectomy (ODG) in short-term surgical outcomes.

[Methods] Between 1997 and 2017, 694 patients underwent distal gastrectomy with D1+ lymph node dissection for clinically node-negative early gastric cancer: ODG 341, LDG 344, and 9 RDG. We performed a comparative analysis between ODG group, LDG group, and RDG group for clinicopathological characteristics and short-term surgical outcomes.

[Results] Operation time was 274.1 ± 99.6 min for ODG, 312.0 ± 86.9 min for LDG, and 470.0 ± 88.4 min (p < 0.001). Intraoperative blood loss was 379.0 ± 356.9 ml for ODG, 69.2 ± 100.8 ml for LDG, 26.6 ± 70.1 ml for RDG (p < 0.001). The number of dissected lymph nodes was 23.9 ± 12.9 in ODG, 30.7 ± 13.6 in LDG, and 41.1 ± 20.1 in RDG (p < 0.001). Postoperative C-reactive protein (CRP) value was 9.65 ± 6.22 mg/dL in ODG, 8.14 ± 5.41 mg/dL in LDG, and 6.2 ± 5.6 mg/dL in RDG. There is no significant difference between three groups for postoperative complications.

[Conclusion] The comparative study demonstrates that RDG is as acceptable in terms of surgical and oncologic outcomes. With lower estimated blood loss, and radical resection, RDG would be a promising approach for the treatment of gastric cancer.

P-7  TS-1 + Paclitaxel chemotherapy is controlling recurrence of HER2 Positive Gastric Cancer for three years after multidisciplinary therapy

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The patient is 64 years old male. His complaint was nothing. Past history was bladder cancer. Transurethral bladder tumor resection was performed at 60 years old. He was pointed out fecal occult blood test was positive in medical check at a clinic. He was introduced to our hospital for examination. Gastric tumor was pointed out at upper part of the stomach by upper gastrointestinal endoscopy. It was adenocarcinoma with HER2 positive in pathological diagnosis. In computed tomography, there were irregular and hypovascular lesions in right liver lobe. We diagnosed clinical stage IV, T4aN1M1(upper). We performed 5 course neoadjuvant chemotherapy which was Trastuzumab, Capecitabine, and Cisplatin. The chemotherapy effect was partial response, and there was no new lesion. So we decided to perform total gastrectomy, right hepatectomy and splenectomy. The operation time was 13 hours and 45 minutes and the volume of blood loss was 1500 ml. We could perform curative resection. It was necessary for this patient to perform adjuvant chemotherapy. But this patient didn't want to perform adjuvant chemotherapy. So we administered only Trastuzumab. Although this therapy was performed, the therapy effect was progressive disease. Lesions in remnant liver were pointed out 5 month later after surgery. Therefore, we started chemotherapy with TS-1 and paclitaxel. The lesions disappeared after chemotherapy was performed 5 times. He has been performed 30 times chemotherapy. He is currently alive without relapse for three years after surgery.
P-8 Prognostic impact of interval between diagnosis and surgery in patients with gastric cancer

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[Background] Patients with gastric cancer should receive treatment for the cure as soon as possible because cancer cells are considered to grow and metastasize quickly. However, patients sometimes have to wait for the treatment because of further examinations of comorbidity, social background, and limited medical resources. It remained unclear whether interval between diagnosis and surgery is a risk factor for the survival.

[Patients and Methods] This retrospective single-center study examined 801 patients who visited outpatient clinic for gastric cancer and underwent curative surgery from 2006 to 2012 at Kanagawa Cancer Center in Japan. The patients who received neoadjuvant chemotherapy were excluded. Interval was defined as the time from the date of the first visit to the date of surgery. Interval was divided by the median and was classified to the early (less than median) and the late (exceeding the median) groups. Survival was analyzed by separating clinical T1 and T2-4.

[Results] 461 patients had clinical T1 and 340 had clinical T2-4. Median interval was 55 days (15-269 days) in clinical T1 and 35 days (10-148 days) in clinical T2-4, respectively. In clinical T1, 5-year survival rate was 93.1% in the early group and 91.2% in the late group (p=0.456). In clinical T2-4, 5-year survival rate was 77.8% in the early group and 78.9% in the late group (p=0.864). In the multivariate analysis, significant independent risk factors were over 75 years of age and clinical T4, and clinical N+, over 75 years of age in clinical T1, and over 75 years of age and clinical T4 in clinical T2-4. Interval was not significant factor both in clinical T1 (HR: 1.242, 95%CI 0.641-2.407 p=0.522) and in clinical T2-4 (HR: 1.078, 95%CI 0.672-1.729 p=0.756).

[Conclusion] Interval between diagnosis and surgery did not have a negative impact on the prognosis in patients with gastric cancer. Necessary interval for the clinical practice would be acceptable.

P-9 Prognostic Factor and Treatment Strategy for P0CY1 Gastric Cancer

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[Background] In gastric cancer, patients who have positive results for peritoneal lavage cytology(CY1) are classified as stage IV. Among patients with CY1 alone (P0CY1GC) who underwent surgical resection without preoperative therapy in our two institutions from January 2001 to December 2015.

[Method] We retrospectively analyzed clinicopathological factors and long-term results of 54 patients with CY1 alone (P0CY1GC) who underwent surgical resection without preoperative therapy in our two institutions from January 2001 to December 2015.

[Result] Median age:71(33-86), male/female=33/21, TG/DG/PG=35/18/1, D1/1+/2=8/31/15, pT3/4a/4b=6/39/9, pN0/1/2/3=5/7/8/34, intestinal/diffuse type=13/41. Postoperative chemotherapy was performed on 34 cases. 35 cases had disease recurrence, 30 cases were peritoneal dissemination. For all cases, the median OS was 25.3 months, and 5-year survival rate was 29.4%. The median RFS was 13.9 months, and 5-year RFS was 26.8%

Univariate analysis revealed that ≥75y.o. (vs <75, p=0.056) and pN3 (vs pN0-2, p=0.003) patients had significantly poor prognosis, and multivariate analysis revealed that pN3 (p=0.005, HR 3.257, 95%CI 1.442-7.358) was an independent prognostic factor in P0CY1GC. 5-year survival rate was 57.2% for P0CY1 cases with pN0-2, and 12.6% for pN3.

[Conclusion] Patients who underwent gastrectomy with lymph node dissection, and postoperative chemotherapy for P0CY1GC with N0-2 may have a chance of long-term survival. On the other hand, surgical treatment for patients with N3 may be less beneficial, as same as other Stage IV cases.
P-10  A case of pancreaticoduodenectomy for the bile duct metastasis from gastric cancer

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A 62-year-old man underwent distal gastrectomy (Roux-Y reconstruction) for gastric cancer about four years ago. Pathological findings showed pT3, N2, M0, Stage III a. He was treated adjuvant chemotherapy (TS-1) for a year. Three years later, he underwent partial liver resection for metastatic liver tumor from gastric cancer (tub1-2). Intraoperative findings showed swelling lymph node that diagnosed metastatic lymph node (No.13) pathologically. After partial liver resection, he was treated chemotherapy (TS-1 + Paclitaxel), but the blood examinations showed increasing hepatobiliary enzymes. Additionally, CT examination showed the dilatation of intrabiliary bile duct and bile juice cytology was class V. PET-CT showed positive accumulation of FDG (SUV max=E; 2.4) at the intra-pancreatic bile duct and no metastasis. We diagnosed as distal bile duct carcinoma, because we might think gastric cancer was controlled by chemotherapy. We performed pancreaticoduodenectomy, and combined resection of the left renal vein, because intraoperative findings showed that severe adhesion or tumor invasion between left renal vein and IVC. Pathological immunostaining confirmed CK7 and CK20 were both negative, therefore pathological diagnosis was the bile duct metastasis from gastric cancer. He has treated chemotherapy over six months after surgical treatment.

Some reports showed that the resectable case of the metastasis of gastric cancer was rare, because most of cases were multiple metastasis. At the congress, we will present a rare case of the bile duct metastasis from gastric cancer, with literature-reviews.
P-11 Tips and technics in laparoscopic liver resection of segment 7 and 8
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[Introduction] Laparoscopic liver resection of segment 7 and 8 is difficult to approach. In order to easily perform liver resection with good operative field, it is necessary to devise the operative position, the procedure of right liver mobilization, and access port setting.

[Methods] Between April 2000 and June 2017, 190 patients underwent laparoscopic liver resection. We divided patients into the preceding term (between 2000 and 2013) and the latter term (between 2014 and 2017), and examined two groups about occupation site and short term outcome.

[Results] In the preceding terms and the latter terms, 94 and 96 patients underwent laparoscopic liver resection, respectively. Of these patients in each periods, liver resection of segment 7 and 8 were performed in 8 patients (8.5%) and 19 patients (19.8%), respectively. Moreover, average of Difficulty Scores were 2.85 and 4.48, respectively (p<0.001), so the indications extended in the latter terms.

Though the operative time median was longer in the latter terms, 227 minutes and 327 minutes (p<0.001), the blood loss was less in the latter terms, 120mL and 85mL, respectively. The postoperative hospital days were also shorter in the latter terms, 8 days and 7 days, respectively.

[Conclusion] By taking experience, surgical techniques have improved and surgical results improved. Although laparoscopic liver resection to segment 7 and 8 were difficult, we were able to overcome by devising the procedure.

P-12 A case of laparoscopic spiegel lobectomy of a giant liver cyst with difficulty of preoperative diagnosis
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[Introduction] We report the case of a giant liver cyst originating from the spiegel lobe, which was difficult to get preoperative diagnosis. The cyst was treated by pure laparoscopic spiegel lobectomy.

[Presentation of Case] A 50-year-old man underwent abdominal ultrasound in 2016, and that showed a tiny cyst less than 20 mm in spiegel lobe. In July 2017, the cyst became enormous to 59 mm and carbohydrate antigen 19-9 showed the high value (144 U/ml), thus he was referred to our hospital for further examination. The endoscopic ultrasound showed that liver cyst was formed by “cyst in cyst structure” and the cyst partially had a thick wall, thus mucinous cystic neoplasm was considered in the differential diagnosis. Computed tomography and magnetic resonance imaging revealed the multilocular cyst had lightly contrasted capsule and septum. Solid components with contrast effect were found at periphery of the cyst, therefore neoplastic lesion such as hepatic schwannoma was also considered. In November of the same year, the cyst was growing up to 121 mm in diameter and bleeding component was detected. The cyst had very rapid increasing trend, thus operation was performed under the consideration of a risk of rupture or a potential of malignant. We performed pure laparoscopic spiegel lobectomy. The aspiration of the cyst contents with S.A.N.D. BALLOON-CATHETER was first performed to shrink the cyst and to check cytological diagnosis. Dark reddish-brown fluid was aspirated 650ml and intraoperative cytology did not show malignant findings. To keep comfortable operative field, we contrive some technique as follows: 1) to keep elevation left lateral segment of liver with Pretzel Flex retractor inserted from epigastric 3 mm port, 2) to divert a S.A.N.D. BALLOON-CATHETER fixed to the cyst as a cyst traction tool, and 3) to remove a hepatoduodenal ligament by hanging pringle tape that was set up intraperitoneally (not penetrate an abdominal wall). The operation time was 270 minutes and total blood loss was 50 ml. The final pathological examination confirmed a liver cyst. The patient's postoperative course was uneventful, and he was discharged 6 days after operation.

[Conclusion] The patients with untypical liver cyst in caudate lobe was successfully treated by laparoscopic surgery. It was very important to keep a good optical view for caudate lobectomy by deflation of the cyst using SAND balloon catheter.
P-13  Achievement of negative surgical margin in laparoscopic liver resections using infrared indocyanine green fluorescence

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[Objective] To evaluate the certainty of surgical margin for laparoscopic liver resection with near-infrared (NIR) fluorescence imaging in patients with liver tumor.

[Summary of Background Data] A margin-negative R0 resection contributes to long-term survival in all cancer. Intraoperative ultrasonography has been widely used to confirm surgical margin during laparoscopic liver resection. However, this approach is extremely limited in laparoscopic hepatectomy and cannot entirely avoid the risk of positive surgical margins.

[Methods] This preliminary study was conducted with the approval of Showa university ethics committee. Informed consent was obtained from all of the patients. 25 patients who underwent laparoscopic liver resection for Hepatocellular cancer (HCC) and colorectal metastases (CRLM) were recruited for this study. The liver tumors were preoperatively labeled by intravenously injecting the patients with indocyanine green dye (0.5 mg/kg), an NIR fluorescence agent. During the surgical procedure, the PINPOINT Endoscopic Fluorescence Imaging System was used to identify the location of the tumors and to assess the transection plane with real-time endoscopic high-definition visible and NIR fluorescent imaging. In all specimens, the fluorescence area around the tumor was observed and measured using NIR fluorescence imaging immediately after surgery.

[Results] All tumors could be identified using PINPOINT system and could be resected laparoscopically under the guidance of NIR fluorescent imaging. Liver transection was carefully performed to leave no fluorescent dye in the residual liver. In the pathological findings, negative surgical margin was secured in all cases. In the cases of CRLM, the fluorescence area around the tumor had a tendency to be less than 5 mm, while that had a tendency to be over 5 mm in the cases of HCC (p=0.1).

[Conclusions] This technique shows the possibility of improving the identification and secure resection of liver tumors during laparoscopic procedure. Our data suggested that in the case of CRLMs, the presence of fluorescence in the transection plane may be the signal that the tumor is exposed. Thus we suggest that the surgeons should frequently check for the presence of fluorescence and ensure the removal of any tissue with fluorescent dye. These preliminary results need to be confirmed by larger future studies.

P-14  Radical conversion surgery after Gemcitabine plus S-1 chemotherapy for locally advanced intrahepatic cholangiocarcinoma

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[Introduction] In cholangiocarcinoma, clinicopathologic factors such as large tumor size, multifocal tumors, positive resection margin, vascular invasion, perineural invasion, intrahepatic metastasis, perihepatic lymph node metastasis are regarded as poor prognostic ones. Here we report a case with effective chemotherapy which was successfully converted into radical resection for unresectable locally advanced intrahepatic cholangiocarcinoma (ICC).

[Case] 65-year old female with huge ICC in the right liver was consulted to our department. Right portal branch invasion and perihepatic lymph node metastases were detected by dynamic CT examination, so the staging was diagnosed to be T3N1M0 (Stage IV A). Instead of upfront surgery, systemic chemotherapy with biweekly gemcitabine plus S-1 (bGS) was selected. After 17-cycles of bGS without adverse events in nine months downsizing primary lesion, disappearing lymph node metastases, and normalization value of CA19-9 were obtained. Extended right hepatectomy with extrahepatic bile duct resection for perihepatic lymph node dissection was performed three weeks after right portal vein embolization. Postoperative course was uneventful and pathological diagnosis was T3N1M0 Stage IV A. Adjuvant chemotherapy using T-1 for 6 months was applied. Partial lung resections were performed for bilateral lung metastases, and now three years after hepatectomy she is now free from disease.

[Conclusion] Chemotherapy with bGS might be one of the options for conversion surgery for locally advanced ICC.
P-15  A case of liver transplantation for autosomal dominant polycystic liver disease from living donor with multiple liver cysts  

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[Introduction]  Liver transplantation is a choice of treatment for severe polycystic liver disease, however, on occasion, blood relatives who are candidate donors similarly exhibit polycystic liver disease.  

[Case]  The patient was a woman in her 50s who had undergone right hemihepatectomy and left lobe cyst fenestration in the aim of alleviating abdominal pain caused by enlarged hepatic cysts located in the epigastric region due to autosomal dominant polycystic kidney disease (ADPKD). Despite treatments, recurrent cysts further increased in size. In addition to abdominal symptoms and a development of recurrent cholangitis, liver function deteriorated with a MELD score of 24 and Child-Pugh class B. She was referred to our department for living donor liver transplantation (LDLT). Her elder brother was a candidate as a donor. His general condition was well without comorbidities. Although image examinations revealed multiple liver cysts, his liver function was satisfactory. The patient underwent liver transplantation with an extended left lobe graft donated from her brother. The inferior vena cava (IVC) and the hilar structure was dislocated by the huge liver. Also, severe adhesions existed due to the previous treatments. Native IVC was preserved for implantation of a partial graft; Reconstruction was performed with piggy-back method. Postoperative recovery of the liver function was well. Patient is currently doing well with good liver function.  

[Conclusion]  Compared with deceased donor liver transplantation, special consideration should be paid in terms of both donor selection and intraoperative technique in LDLT for patients with ADPKD.
P-16  Timing of laparoscopic cholecystectomy for acute cholecystitis using propensity score matching

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[Introduction] This study evaluates the therapeutic outcomes for laparoscopic cholecystectomy for acute cholecystitis based on the duration from symptom onset to surgery.

[Methods] A total of 224 patients were enrolled in this study. Patients' characteristics and operative outcomes were compared between patient groups based on the timing of laparoscopic cholecystectomy from symptom onset: within 72 h versus more than 72 h, and within 7 days versus more than 8 days. Then, we performed propensity score matching of 13 relevant variables, including patient demographics, examination findings, and therapeutic factors.

[Results] Among the groups, the early surgery group (within 72 h and within 7 days) had significant younger patients with less comorbidity and shorter duration from symptom onset to presentation before performed propensity score matching, as well as shorter duration of surgery, postoperative and total length of stay. Other operative outcomes, including blood loss, conversion to open surgery, bile duct injury, and postoperative complications showed no significant difference among the groups. After performed propensity score matching, all therapeutic outcomes, including duration of surgery, showed no significant differences in both analyses.

[Conclusions] In a center with enough experience, performance of laparoscopic cholecystectomy at the earliest possible time after presentation was a safe therapeutic strategy for every patient with acute cholecystitis, regardless of the time from symptom onset.

P-17  Treatment strategy for acute cholecystitis in our hospital

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[Background] Early laparoscopic cholecystectomy (LC) is the current accepted surgery for acute cholecystitis (AC). In the Tokyo Guidelines (TG13), for moderate (Grade II) acute cholecystitis (AC) early laparoscopic cholecystectomy (LC) can be indicated if advanced laparoscopic techniques are available, and for severe (Grade III) AC, percutaneous transhepatic gallbladder drainage/aspiration (PTGBD/A) followed by LC should be performed. We report our treatment strategy, surgical techniques, and perioperative outcomes.

[Method and Results] In our hospital, early LC is performed for Grade I/II AC. For Grade III AC or the patients with severe comorbidities, PTGBD/A followed by LC is performed. From Jan 2014 to Dec 2017, we performed early LC for 99 Grade I cases (Group A) and 34 Grade II cases (Group B). 12 patients underwent PTGBD/A followed by LC (Group C).

In the elective LC, we normally dissect the gallbladder along subserosal (SS)-Inner layer to avoid hepatic duct or hepatic artery. However, in cases of AC with severe inflammation, dissection along the border between SS-Inner layer and SS-Outer layer is sometimes impossible due to severe scarring change. In such cases, we prepare ultrasonic laparoscopic coagulating shears (LCS), BiClamp and monopolar coagulator with a ball-shaped tip. When gallbladder is distended, gallbladder aspiration is performed in order to expand the view, and then we try to expand the Calot’s triangle. If the landmarks for endpoint of dissection in Calot’s triangle, such as cystic duct or the upper edge of Glisson’s capsule, are identified, whole-layer dissection is performed using dome-down technique. In this procedure, we use clamp crushing technique to control bleeding. When it is hard to dissect and expand Calot’s triangle, we open up the gallbladder and perform subtotal cholecystectomy looking into the gallbladder lumen.

Blood loss (ml) in group B is significantly higher than other groups (0 vs 50 vs 0). There was no significant difference between three groups in operative time (min) (99 vs 121 vs 133), postoperative hospital stay (days) (5 vs 8 vs 7), and postoperative complication rate (%) (0.0 vs 0 vs 0).

[Conclusion] It is very important to select an appropriate strategy and surgical techniques for each patient with AC to perform LC safely.
**P-18 Comprehensive Diagnosis and Severity Evaluation for Acute Cholecystitis Using Metagenomic Approach**

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**Background**

The use of metagenome analysis for the identification of the causative agent in infectious diseases has been in focus. In gastrointestinal diseases, though the number of reports on the use of this approach has been increasing, there are no reports on the comprehensive analysis of acute cholecystitis (AC) and the utility of the metagenome approach is unclear. In this study, a comprehensive analysis of AC using the metagenome approach was performed.

**Methods**

Between May 2015 and August 2016, fifty-five patients who underwent cholecystectomy for AC at the Department of Surgery, Toho University Ohashi Medical Center, were enrolled in this study. Written informed consent was obtained from the participants. Bile was aseptically collected intraoperatively, and conventional bacterial culture and metagenome analysis were performed. The comprehensive condition of the AC patients was statistically analyzed in terms of detected causative agents, pathological findings, and clinical findings.

**Results**

Causative agents were rapidly identified from each detection ratio comprehensively. Regarding the pathological findings, the homo sapiens DNA reads ratio derived from the gall bladder (GB) mucous membrane significantly differed between cases that were negative or positive for bleeding, fibrosis, and necrosis (\(p = 0.031, 0.027, \text{and} 0.018\), respectively). Regarding the clinical findings, homo sapiens and bacterial DNA reads ratio was also analyzed for the factors of body temperature, serum white blood cell counts, and serum C-reactive protein (CRP) levels. The amount of homo sapiens and bacterial DNA reads significantly differed between cases with low and high levels of CRP (\(p = 0.001\) and 0.001, respectively).

We used metagenome analysis for bacterial detection, diagnosis, and evaluating clinical findings based on homo sapiens DNA and bacterial DNA reads. The results revealed that a higher amount of homo sapiens DNA reads was detected in cases positive for bleeding, fibrosis, and necrosis on pathological evaluation. Furthermore, serum CRP levels were significantly higher in cases with greater amounts of homo sapiens DNA and bacterial DNA reads on clinical evaluation. Particularly, these analyses could be performed within 72 h.

**Conclusions**

Metagenome analysis allows the accurate evaluation of bacterial detection, pathological findings, and clinical findings. This analysis could be useful for establishing new diagnostic criteria for AC.

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**P-19 Massive Digital Gene Expression Analysis Reveals Predictive Profiles for Recurrence of Biliary Tract Cancer**

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**Background**

Biliary tract cancer (BTC) with recurrence has a poor prognosis. The aim of this study was to identify gene expression patterns that predict recurrence, using samples collected during surgery.

**Methods**

We examined 68 patients with BTC who underwent surgery. RNA was extracted from surgical specimens and examined using a molecular assay that counts RNA molecules by simultaneous hybridisation with several probes. The counting assay was performed with a custom set of 45 genes selected from 770 cancer-related genes. Patients were divided into recurrence (28 patients) and no recurrence groups (40 patients).

**Results**

We identified several genes that showed increased or decreased expression in the recurrence group. Interleukin-8 (\(p = 0.000322\)), Oncostatin M (\(p = 0.00298\)), and Leukemia inhibitory factor (\(p = 0.00749\)) showed increased expression. Sir tain 4 (\(p = 0.0193\)), MDS and EVI1 complex locus (\(p = 0.0304\)), and SOX 9 (\(p = 0.0341\)) showed decreased expression.

**Conclusion**

High expression of Interleukin-8, Oncostatin M, and Leukemia inhibitory factor and low expression of Sir tain 4, MDS and EVI1 complex locus, and SOX 9 can be used as predictive markers of recurrence. Patients found to have this gene expression profile should be treated with adjuvant therapy.
P-20  Repeated hepatectomy for combined hepatocellular and cholangiocarcinoma of over 90 years old case

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[Introduction]  Combined hepatocellular and cholangiocarcinoma (cHCC-CC) is a rare and aggressive primary liver cancer with pathological features of both hepatocellular carcinoma (HCC) and intrahepatic cholangiocarcinoma (ICC). Since first description in 1949, the diagnostic criteria and classification have continuously evolved. However, there is no evidence demonstrating the common origin of different components of cHCC-CC. We experienced the elderly case of cHCC-CC being required repeated hepatectomy.

[Case Report]  This is a 93-year-old male with several past medical histories of renal dysfunction due to left nephrectomy for renal cell carcinoma when 81 years old, diffuse large B-cell lymphoma (DLBCL) with systemic chemotherapy when 85 years old and right hemicolectomy (RHC) for ascending colon cancer when 88 years old. No adjuvant chemotherapy was applied due to age aspect, however, a solitary mass of 55mm in size in posterior segment of liver was recognized by the scheduled plain computed tomography (CT) 5 years after RHC. Since serum alpha fetoprotein (AFP) and protein induced by vitamin k absence (PIVKA-II) level were extremely high (4,683 ng/ml and 2,420 mAU/ml, respectively), he was diagnosed as HCC preoperatively. He strongly wished to be done a surgical intervention, thus partial resection of posterior segment of liver and diaphragm was done because of direct invasion identified. Histopathological finding including immunohistostaining revealed a biphasic tumor composed of HCC and ICC diagnosed as cHCC-CC with intrahepatic portal vein infiltration (vp1) and direct invasion of diaphragm (s2). A solitary mass of 20mm in size in segment 3 of liver was recognized by the scheduled magnetic resonance imaging (MRI) 6 months after liver resection, diagnosed as liver recurrence. We applied transarterial chemoembolization (TACE), however, it could hardly control the tumor regrowth and AFP and PIVKA-II level were elevated again. Partial resection of lateral segment of liver was done because of patient’s strong will for surgery. He presented, 4 months later, with a multiple liver nodules and solitary mass of 45mm in size in upper lobe of right lung by plain CT. The lung mass was histologically diagnosed as lung metastasis of cHCC-CC by bronchus biopsy. No further aggressive treatment was done after that, however, multiple liver mass were vanished and lung mass was shrunken with decrease of AFP and PIVKA-II level 12 months after second liver surgery.

[Conclusion]  It is widely recognized that it is quite difficult to accurately diagnosed cHCC-CC preoperatively and cHCC-CC has a poor prognosis compared with HCC. Further strict follow up is necessary.
P-21  Study on laparoscopic spleen preserving distal pancreatectomy procedures comparing splenic vessel preservation and non-preservation

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[Background] The purpose of this study is to investigate whether two types of laparoscopic spleen-preserving distal pancreatectomy (Lap-SPDP) techniques are being implemented safely. The study compares the clinical outcomes from laparoscopic Warshaw operation (Lap-W) with those from laparoscopic splenic vessels preserving SPDP (Lap-SPDP-VP) and considers the role of those operations.

[Methods] On August 2013, the Warshaw technique was introduced to our institution and 17 patients with a lesion in the distal pancreas who underwent Lap-SPDP by December 2015 were enrolled. Six patients who underwent a Lap-W and 11 patients who underwent a Lap-SPDP-VP were investigated retrospectively.

[Results] In the Lap-W and Lap-SPDP-VP patients, the sizes of the tumors were 46.5+31.2 and 25.7+14.9 mm (Probability (P) value =0.0913); the operative times were 287 min (range, 225-369 min) and 280 min (range, 200-496 min); the blood loss was 95 mL (range, 50-200 mL) and 60 mL (range, 0-650 mL); the length of the postoperative hospital stay was 12 days (range, 8-43 days) and 11 days (range, 7-28 days); median follow-up was 19 months (range, 13-28 months) and 23 months (range, 6-28 months), respectively. There was no case of symptomatic spleen infarction in either group. However, partial infarctions of the spleen without symptoms were observed by computed tomography in three out of six cases (50%) in the Lap-W. No patient required reoperation and the postoperative mortality was zero in both groups. All patients were alive and recurrence-free at the end of the follow-up period. Collateral veins around the spleen developed in 83.3% (five out of six patients) in the Lap-W and developed in 12.5% (one out of eight patients) in the Lap-SPDP-VP. A significant difference was observed between groups (P=0.0256). Gastric varices developed in 33.3% (two out of six patients) in the Lap-W. However, no case of rupture of varices, or other late phase complications was observed in either group.

[Conclusions] Both the Lap-W and Lap-SPDP-VP were found to be safe and effective, and in cases in which the detachment work of the splenic vessels from the tumor or the pancreatic parenchyma is difficult, performing Lap-W, rather than Lap-SPDP-VP, is considered appropriate. While Lap-SPDP is recommended for patients with benign or low grade malignant diseases, long-term follow-up to monitor hemodynamic changes in splenogastric circulation is considered needed.

P-22  Techniques and short term outcomes of laparoscopic spleen-preserving distal pancreatectomy : A single institution experience

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The laparoscopic surgery is less invasive and provides better cosmetic outcomes than conventional surgery. Laparoscopic distal pancreatectomy with/without preservation of the spleen (Lap-DP / Lap-SPDP) has been covered by insurance since April 2010 and increasingly performed in many hospitals.

[Surgical Procedure] Laparoscopic distal pancreatectomy was undergone in the semi-right lateral position, and rotation was from supine position to right lateral position. In the case of Lap-SPDP, the pancreatic parenchyma was peeled off from the caudal side to the head side, and separated from the vessels. The pancreatic parenchyma was divided with the endoscopic stapler.

[Patients and Methods] Since May 2010, 42 patients underwent Lap-DP / Lap-SPDP at Kansai Rosai Hospital.

[Results] Lap-SPDP were 19 cases, and Lap-SPDP 23 cases. The operation time was 305 minutes / 364 minutes (p=0.329). The blood loss was 66.5 g / 202.9 g (p=0.096). The post-operative hospital stay was 21.1 day / 33.5 day (p=0.171). The pancreatic fistula (> ISGPF Grade B) was 4 cases / 7 cases (p=0.787). The number of platelet of Lap-SPDP / Lap-DP at pre-operation was 202,000/µl / 239,000/µl (p=0.233). That at one week post-operation was 215,000/µl / 338,000/µl (p=0.003). That at two week post-operation was 256,000/µl / 470,000/µl (p<0.001). That at four week post-operation was 211,000/µl / 321,000/µl (p=0.002). The thrombotic complication was not found.

[Conclusion] Lap-SPDP was feasible and effective procedure for patients with pancreatic benign or low malignant tumors, although technical challenges still need to be overcome.
P-23  Three experiences of robot-assisted laparoscopic pancreatoduodenectomy

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[Backgrounds & Aims] Robotic surgery has spread also in pancreatic surgery, owing to some advantages of robotic surgery over laparoscopic surgery. The most attractive advantages are reduction of hand tremors, seven degrees of freedom compared to three (Endowrist technology), better ergonomics, and magnified 3-dimensional view. Three patients underwent robot-assisted laparoscopic pancreatoduodenectomy in our institution safely, and we assessed results of the operation and short-term outcomes.

[Patients and Methods] Of all three, 1 patient was solid-pseudopapillary neoplasm and other 2 patients were intraductal papillary mucinous neoplasms. They were kept supine position with their legs and arms spread, bending their left elbows. We performed resection of jejunum, stomach, pancreas and bile duct. At the time of pancreatojejunostomy, we could suture 8 or 9 sutures (5-0 PDS) confirming both mucosa of main pancreatic duct and jejunum. The patients underwent pancreatojunostomy using Kakita method in first 2 patients, and modified Blumgart anastomosis method in the latest patient. External drainage stent of main pancreatic duct was inserted in all 3 patients.

[Results] The operation time was 982, 1097 and 1076 minutes and blood loss was 55, 703 and 833 mL, respectively. They showed no morbidity including pancreatic fistula. External drainage tube was removed about 2 weeks after the operation. All 3 patients discharged on 2 or 3 days after the removal of their pancreatic tubes.

[Discussions] Their postoperative courses went well. Multi-jointed arms allowing at angles not possible in laparoscopy, and reduction of hand tremors facilitated more safe and stable surgical view. So, we could suture for complex anastomosis more precisely and fire electronic devices more safely. And these advantages might contribute to the good short-term outcomes. On the other hand, robotic surgery had a disadvantage of wide view. At the time of pancreaticojejunostomy, we have to suture at 2 steps, pancreatic parenchymal to jejunal seromucosal layer and both mucosal layers. We need not only magnification but also wide field of view at the same time. So, we may have to improve management of each suture.

[Conclusion] All 3 patients underwent RALP safely without any morbidity. Robotic surgery could be one of the best ways to perform pancreatoduodenectomy.

P-24  Results of a novel pancreaticogastrostomy after pancreaticoduodenectomy using one trans-pancreatic mattress suture with two buttress sutures

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The rate of postoperative pancreatic fistula (POPF) is remains high after pancreaticoduodenectomy (PD). The aim of this study was to describe a new reconstructive technique of pancreaticogastrostomy (PG) and to evaluate its effectiveness.

[Methods] We retrospectively analyzed early postoperative outcome and POPF rate in consecutive 177 patients.

[Surgical Technique] After the pancreatic remnant was inserted from the posterior gastric wall through an anterior gastrotomy. After a lost stent was placed in the main pancreatic duct, a trans-pancreatic mattress suture was passed through the posterior gastric wall and the pancreas, one cranial and one caudal of the main pancreatic duct. The suture was carried in an U-like fashion. Each U-like suture runs from the mucosal surface to the serosal surface of the proximal posterior gastric wall, then straight through the ventral to the dorsal surface of the pancreas, and finally from the serosal surface to the mucosal surface of the distal posterior gastric wall. Then, two pancreas-transfixing sutures were carried out at same points of the mattress suture of the whole posterior gastric wall and the pancreas. The mattress suture was ligated and, then the cranial and caudal pancreas-transfixing sutures were ligated.

[Results] Overall morbidity rate (≥ C-D classification grade III) was 18%. Nineteen (11%) and one (0.6%) patients developed clinically relevant POPF grade B and C, respectively.

[Conclusion] This technique is a simple and safe reconstruction procedure after PD. The tree sutures may minimize traumatic parenchymal laceration by ligation and pancreatic leakage from the needle holes.
P-25 Pathological evaluation of surgical margins in pancreas cancer specimens using color coding with tissue marking dyes

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[Objectives] Processing of pancreatoduodenectomy specimens is not standardized, and the clinical impact of pathological surgical margins remains controversial. We used color-coding method with tissue-marking dyes to evaluate margin status of resected specimens to assess its association with postoperative recurrence.

[Methods] We developed a unified processing approach to assess pancreatoduodenectomy specimens. Five surgical margins of resected pancreatic specimens were marked with five colors. Microscopic resection margin distance (RMD) from margin closest to the tumor was evaluated for each surgical margin. Forty patients assessed non-unified protocol (NUP) and 98 patients assessed using unified protocol (UP) were included.

[Results] The frequency of tumors with RMD ≤1 mm in retroperitoneal margin was significantly lower, and that in PV / SMV margin was significantly higher in UP group than in NUP group (p < 0.001). In UP group, tumors with RMD ≤1 mm correlated with locoregional recurrence (p = 0.025) and recurrence-free survival (p = 0.030). Multivariate analysis revealed that tumor size and lymph node metastasis were independent indicators for disease recurrence.

[Conclusions] RMD ≤1 mm was a predictor for disease recurrence especially for locoregional type. Early detection of small-sized tumors without lymph node metastasis is necessary for improved clinical outcomes in pancreas cancers.
**P-26 Favorable influence of drain removal criteria for postoperative management after pancreas head resection**

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**[Objectives]** Drain is indispensable to detect and treat clinically relevant postoperative pancreatic fistula (CR-POPF) and intra-abdominal abscess after pancreas head resection. On the other hand, drain causes intra-abdominal abscess itself if drain was placed of long duration. Therefore appropriate drain management is required. Since 2012, we implemented new criteria instead of previous one. In this study, we evaluated its usefulness regarding to postoperative management.

**[Methods]** The perioperative data of consecutive 522 patients who underwent pancreateoduodenectomy during recent 10 years were compared between 255 patients with protocol criteria and 267 patients with historical criteria. A detail of protocol criteria is both drained fluid amylase value (DFA) under 5000 U/L on postoperative day (POD) 1 and DFA under 3000 U/L on POD3. If criteria was satisfied, drain was removed on POD3. On the other hand, historical criteria was DFA under 375 U/L on POD3.

**[Results]** Pylorus resecting pancreateoduodenectomy (87.1 vs 25.5%) and Blumgart anastomosis (67.5 vs 0.0%) were statistically majority in protocol cohort, while there were no significant differences in tumor factors, patient's backgrounds and fistula risk score between two groups. In protocol cohort, duration of drainage was statistically shortened (4.8 vs 6.2 days). Intra-abdominal abscess development (12.2 vs 24.3%) and CR-POPF (12.6 vs 19.1%) were significantly decreased. Rate of re-drainage after drain removal (7.8 vs 10.9%) and Clavien-Dindo Ⅲa and more were also statistically decreased. To detect risk factor of CR-POPF, patient's factor, operative factors and drain removal criteria were analyzed by logistic regression analysis. As a result, soft pancreas texture increased risk of CR-POPF, while protocol criteria decreased (Odds 6.6 and 0.45, P<0.05).

**[Conclusions]** These results indicated protocol criteria could realize appropriate patient selection for early drain removal after pancreas head resection, resulting in a decreased incidence of CR-POPF.

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**P-27 The perioperative outcomes and nutrition status after total pancreatectomy**

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**[Purpose]** The aim of this study is to investigate the perioperative outcome and the nutrition after total pancreatectomy.

**[Methods]** Retrospective analysis was performed using 20 patients undergoing total pancreatectomy between January 2001 and December 2017 at our institution.

**[Results]** The median operative time was 550 min, and the median amount of blood loss was 955 ml. Six patients developed the postoperative complications with greater than graded Ⅲa of Clavien-Dindo classification. No patient died in association with the operation procedure itself. The median period of postoperative hospital stay was 35 days. The blood glucose level was well controlled by subcutaneous injection of insulin during the postoperative period, and the mean dose of insulin required for 24 hours was 18.1 U at discharge. The mean HbA1c level was 7.1% on 3 months after the operation. The average of decrease at total protein, albumin, total cholesterol level in serum, and body weight at discharge were 0.54 g/dl, 0.73 g/dl, 52.5 mg/dl, and 3.3kg from admission, respectively. The median survival time after operation was 4.1 years.

**[Conclusions]** Total pancreatectomy could be performed safely, however, there were needs of appropriate medication in order to keep the postoperative daily performance reasonable. The negative influence on nutrition after the total pancreatectomy would be inevitable. So we should work on those issues not only during perioperative period but also for long periods.
P-28 Impact of the Controlling Nutritional Status (CONUT) Score on the Prognosis after Resection of Pancreatic Ductal Adenocarcinoma

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[Objectives] The controlling nutritional status (CONUT) score is a useful tool to evaluate immune-nutritional status. This study aimed to investigate the impact of the CONUT score on short- and long-term outcomes after curative resection of pancreatic ductal adenocarcinoma (PDAC).

[Methods] Between April 2002 and September 2016, consecutive 358 PDAC patients receiving pancreatectomy without neoadjuvant therapy were analyzed retrospectively. Association between the CONUT score and long-term outcomes was evaluated using Kaplan-Meier analyses, log-rank tests and a Cox regression model. Secondly, correlations between the CONUT score and postoperative complications were analyzed using the Mann-Whitney U test and Spearman’s rank correlation.

[Results] The high CONUT score group showed significantly lower overall survival (OS) than the low CONUT score group ($P = 0.016$). In contrast, no significant difference in recurrence-free survival (RFS) was found between the two groups ($P = 0.26$). A multivariate analysis demonstrated that high CONUT score had an independent association with OS (hazard ratio: $1.36$, $P = 0.028$) as well as no adjuvant chemotherapy, lymph node metastasis, invasion of portal vein and UICC-M1 status. The CONUT score showed no association with postoperative pancreatic fistula, the Clavien-Dindo grade or postoperative hospital stay.

[Conclusion] The CONUT score independently associated with OS in patients with PDAC after pancreatectomy and did not associated with RFS or postoperative complications.

P-29 Conversion surgery for initially unresectable pancreatic cancer: a single-center retrospective study in Japan

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[Background] With recent advances and improvements of chemotherapy and/or chemoradiotherapy, reports of conversion surgery for initially unresectable pancreatic cancer have been increasing. Here, we report our experiences and results of conversion surgery for pancreatic cancer.

[Methods] The clinical data and outcome of 14 patients with initially unresectable pancreatic cancer who underwent conversion surgery in our hospital from 2014 to 2017 were analyzed retrospectively. The median follow up time was 19 months (7-40 months) after chemo- or chemoradiotherapy. The patients consisted of 7 men and 7 women with a median age of 67 years (49-79 years). Resectability status before treatment included UR-LA pancreatic cancer in 11 patients and UR-M in 3. Preoperative therapy was conducted with chemotherapy in 8 patients and chemoradiotherapy in 3. Responses of preoperative therapy defined by RECIST were PR in 12 patients and SD in 2. Surgical procedures included with SSPPD in 7 patients, DP-CAR in 5, and DP in 2.

[Results] The median operative time was 332 minutes (205-484 minutes). The median blood loss was 1,106 ml (5-4,381 ml). No patients developed clinically relevant (grade B or C) postoperative pancreatic fistula. However, 3 patients (21%) developed grade III or more complication defined by the Clavien-Dindo classification and one patient died. R0 resection was achieved in 12 patients (86%). During follow up period, 5 patients developed recurrence (peritoneal dissemination in 3, liver metastases in 2). All the 5 patients recurred within one year after surgery. The median survival time after initial treatment was 21 months. 2 years survival rates was 49%.

[Conclusion] Conversion surgery may require high surgical skill and may have high risk of severely complication. Although high R0 resection rate was achieved, one-third of patients developed early recurrence. In our study, follow up time and number of patients were limited. Further study will be needed to evaluate the efficacy and selection of the patients who will really have benefit with conversion surgery.
P-30  Adjuvant surgery after chemotherapy or chemoradiation therapy for initially unresectable pancreatic cancer

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[Background] Recent developments in chemotherapy for pancreatic cancer have dramatically improved the survival outcomes of pancreatic cancer. There are some reports of cases with long-term survival following adjuvant surgery, even though the cancer was initially diagnosed as unresectable. We reviewed cases of unresectable pancreatic cancer treated with adjuvant surgery and evaluated patient outcomes.

[Methods] A total of 19 patients who underwent adjuvant surgery after a diagnosis of unresectable pancreatic ductal carcinoma from July 2012 to February 2017 were retrospectively reviewed.

[Results] The average age of patients was 67.1 years (range, 43-79), the male/female ratio was 7/12, and tumor location was the head of the pancreas in 13 cases and the tail in 6. The primary treatment was Gemcitabine + TS-1 + Radiation in 8 cases, Gemcitabine + TS-1 in 2 cases, and Gemcitabine + nab-paclitaxel in 9 cases. The average time to operation was 5.6 months (range 2-15), and surgical procedures included pancreaticoduodenectomy (n=11), distal pancreatectomy (n=6) and total pancreatectomy (n=2). Portal vein resection was performed in 6 cases. Postoperative complications (over grade IIIa based on Clavien-Dindo classification) occurred in 3 patients: chyle, abdominal abscess, and pancreatic fistula. Pathological evaluation (Evans classification) were grade I, IIa, IIb, III and IV in 5, 9, 1, 3 and 1 cases, respectively. R0 resection was achieved in 84.2%. There were 8 cases of postoperative recurrence. The median survival time was 27.5 months.

[Conclusion] Long-term survival can be achieved in some cases of initially unresectable pancreatic cancer by providing adjuvant surgery after treatment. Further evaluation of unresectable cases is necessary in the future.
P-31 The significance of lymph node dissection in distal pancreatic cancer

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[Introduction] The most powerful prognostic factor in pancreatic cancer with R0 resection is lymph node metastasis and in the eighth edition of UICC Staging system, N factor is classified according to the number of metastasis of regional lymph nodes. This is the same in the 7th edition of the Japan Pancreas Society (JPS) classification, and N factor according to the location of lymph node metastasis, which was described up to sixth edition of JPS, disappeared. However, the location of lymph node metastasis may affect prognosis.

[Objective] To investigate the influence on the prognosis in the location of lymph node metastasis in case of distal pancreatectomy for pancreatic cancer and reconsider appropriate lymph node dissection.

[Patients and Methods] Forty-nine patients who underwent curative distal pancreatectomy with lymphadenectomy for pancreatic cancer at our hospital from 2007 to 2017 were enrolled. Based on the lymph node number specified by JPS, the lymph node metastasis rate per each region and the cumulative survival rate by the existence of each lymph node metastasis were calculated and compared. Lymph nodes attached to the resected pancreas at the time of pathological preparation, #10, #11, and #18 lymph nodes were enrolled as peripancreatic lymph node (PLN) and compared with other lymph nodes (non-PLN).

[Results] Lymph node metastasis were found in 30 cases and 19 cases had no lymph node involvement. Three- and 5-year survival rates of positive and negative lymph node metastasis cases were 66.0% vs 24.9% and 53.3% vs 18.7%, respectively (p=0.002). Among the cases with lymph node metastasis, the survival rate of the only PLN positive group (n=25) was significantly higher in comparison to the non-PLN positive group (n=5) (p=0.0195). No one survived for more than 2 years in non-PLN positive cases. Even in multivariate analysis, non-PLN positive was an independent poor prognostic factor.

[Conclusion] Although the positive rates of non-PLN metastasis were not so low, 10%, median survival time was about 8 months and the 2-year survival rate was 0%, which was extremely poor prognosis. The prognostic effect of lymph node dissection in non-PLN area is unclear and it is worthy of note to review the appropriate dissection area of distal pancreatic cancer.

P-32 Two cases of intraductal tubulopapillary neoplasm of the pancreas

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[Introduction] Intraductal tubulopapillary neoplasm (ITPN) of the pancreas has been newly recognized entity in the 4th WHO classification of tumors and its pathogenesis has not well known because of its rarity. Here, we report two resected cases of ITPN.

[Case Presentation] Case 1. 50-year-old woman consulted our hospital because of tumor at the head of the pancreas, which was pointed out by ultrasound sonography (US) for screening. CT revealed the tumor as large as 12 × 9 × 6 cm, as replacing pancreatic parenchyma. Contrast enhanced CT revealed that the tumor was well-contrasted in the early phase and washed out in the late phase, suggesting hyper vascularity. The duodenum and superior mesenteric vein were compressed by the tumor, but without evident invasion. Although the lower bile duct could not be detected, there was no dilatation in upstream biliary duct. Endoscopic US (EUS) showed the expanding tumor toward other adjacent organs. The main pancreatic duct was not dilated on the tail. Low echoic region elongated along main pancreatic duct, enhanced as well as tumor, which suggested the tumor progression in main pancreatic duct. CA19-9 was 47 U/ml. Pancreatoduodenectomy was performed for the tumor. She discharged in good health. Pathological diagnosis was ITPN (carcinoma in situ).

Case 2. 43-year-old woman consulted our hospital for pancreatic tumor, which was assumed to cause repeated acute pancreatitis three times in a year. CT showed a tumor of 2 cm large in uncinate process of pancreas slightly calcified on the periphery, indicating lower CT value than pancreatic parenchyma. Contrast enhanced CT revealed that the tumor was well-contrasted in the early phase. The main pancreatic duct was disrupted by the tumor, which filled the lumen of the main pancreatic duct toward the papilla. MRI showed low intensity in T1-weighted image and high in T2. EUS showed the heterogenic and low echoic tumor, and flow signal was poor. PET-CT detected hot spot in the tumor. Although fine needle aspiration biopsy by EUS was negative, pancreatic juice cytology was marginally positive, suggesting ITPN. Tumor markers was all negative. She underwent Pancreatoduodenectomy, and discharged in good health. Pathological diagnosis was ITPN (carcinoma in situ).

[Conclusion] Preoperative diagnosis of ITPN is challenging. However, combined diagnostic modality can approach to accurate diagnosis.
P-33 Pancreaticoduodenectomy with the common hepatic artery resection without reconstruction for pancreatic head cancer -Case report-

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A 58-year-old man with pancreatic head cancer was introduced to our hospital. Multidetector detector computer tomography revealed that the tumor involved the common hepatic artery draining from superior mesenteric artery (SMA). However, distant metastasis was not confirmed. Angiography was performed to evaluate the arterial anatomy. Although the common hepatic artery was obstructed by tumor involvement, tumor involvement in the confluence of the right gastric artery and the proper hepatic artery was not observed. Therefore, we determined that the common hepatic artery resection without reconstruction could be performed by preserving the right gastric artery. Neoadjuvant chemotherapy using gemcitabine and nab-paclitaxel was performed before surgery, and then pancreaticoduodenectomy was planned. During surgery, the blood supply from the right gastric artery to the proper hepatic artery was confirmed by ultrasound examination after cramping the common hepatic artery, the common hepatic artery could be safely resected without reconstruction. Pathological findings revealed that R0 resection was obtained. The patient had no postoperative complication and discharged on postoperative day 12. This method may become one of options for resection in pancreatic cancer patients with tumor involvement the common hepatic artery.

P-34 Efficacy of the splenectomy for portal hypertension: Dose it change the prognosis?

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【Background and Aim】Surgery for portal hypertension (PHT) includes Hassab’s procedure and splenectomy for esophageal, gastric varices and splenomegaly. There are few reports regarding their prognosis after surgery for PHT. The aim of this study was to clarify the prognosis after those surgeries for PHT.

【Patients and Methods】From 2005 to 2017, 17 patients who underwent splenectomy for PHT were included and analyzed retrospectively. Splenectomy as a bridging therapy for liver transplantation was excluded.

【Results】The median age of the patients was 57 years old (12-71). The causes of disease were 3 cases with idiopathic portal hypertension (IPH), 14 cases with liver cirrhosis (LC). In IPH group, preoperative MELD score was 8 (median, 7-11) while in LC group, it was 9 (7-13). Platelets and white blood cells significantly increased after splenectomy. The symptoms associated with PHT such as bleeding from collateral vessels were also improved. However platelets and white blood cells in LC group significantly increased also but MELD score was not improved after splenectomy. The overall survival rates were significantly higher in IPH than LC group; the 1-, 3- and 5-year survival rates were 100, 100 and 100% in IPH group and 68.4, 59.8 and 59.8% in LC group, respectively (p<0.05). The cause of death in LC group was liver failure.

【Conclusion】Splenectomy was effective for PHT due to IPH. However prognosis of LC after splenectomy did not improve in LC patients.
Efficacy of laparoscopic liver resection for patients with intestinal stoma

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[Background] Laparoscopic liver resection (LLR) is increasingly performed and its feasibility has been established in a variety of situations. However, LLR for patients with a history of abdominal surgery is often avoided because of difficulty placing trocars. The aim of this study was to assess the feasibility and safety of laparoscopic liver resection for patients with intestinal stoma in comparison with an open approach for patients with intestinal stoma.

[Method] Between April 2008 and September 2017, 8 patients who underwent LLR (LLR group) were compared with 10 patients who underwent open liver resection (OLR group). Patient background, characteristics, and perioperative outcomes were compared. The LLR group was included 4 patients who underwent concurrent liver resection and stoma closure. The OLR group was included 3 patients who underwent concurrent liver resection and stoma closure.

[Results] All patients in the LLR group were completely treated using the laparoscopic approach. There were no other significant differences in patient background and characteristics. Operative duration was similar for these groups. Blood loss, complication rate, and hospital stay in the LLR group were significantly decreased compared with the OLR group.

[Conclusion] In laparoscopic liver resection for patients with intestinal stoma, the open approach may require multiple large incisions, but the laparoscopic approach can complete procedures with a stoma wound and a few port wounds. Laparoscopic liver resection for patients with intestinal stoma may reduce infectious complications and hospital stay.
P-36 Prognostic factors in ampullary cancer in patients undergoing pancreaticoduodenectomy

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[Background] Pancreatoduodenectomy (PD) is the standard radical treatment for AC. All patients with AC received D2 lymph node dissection at Kansai Medical University Hospital after 2006. The aim of the present study was to evaluate prognostic factors for patients with AC who received curative resection.

[Methods] The 68 patients who consisted of 36 males and 32 females with the median age of 71 years (range: 42-90) registered from 2006 to 2015 in Kansai Medical University. Clinicopathological characteristics and surgical outcomes were evaluated in this study.

[Results] The 5-year survival rates (and MST) were 73% (108 month) in all patients. Lymph node metastases (LN mets) were present in 13 (19%) of all cases. Lymph node metastases (LN mets) by degree of contiguous extent of the primary tumor were T1 cancer (0%) / T2 cancer (17.2%) / T3 cancer (41.2%). The metastatic rate of regional lymph nodes was 1.4% for #6, 2.9% for #8, 2.9% for #12, 13.2% for #13, 4.4% for #14, and 0% for #14d, 15. The MST were not reached in patients without LN mets, 29 months in patients with LN mets (p<0.0008). Univariate and multivariate analysis revealed that LN mets, ly2-3 and pn2-3 were independent prognostic factors.

[Conclusions] LN mets is poor prognostic factor in AC patients. The development of effective adjuvant chemotherapy is required for improving the prognoses of patients with LN mets.

P-37 Seven cases of resected duodenal cancer

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[Introduction] Primary duodenal carcinomas are rare.

[Patients] In a recent 8-year period from 2010 to 2017, seven cases received surgical treatment for primary cancer of the duodenum, excluding the papilla of Vater.

[Results] The mean age was 67 years. Male-to Female ratio was 5:2. Predominant symptoms were vomit, and none in two cases, and upper abdominal pain, anemia, and jaundice in one. Macroscopic curative resection was done in all patients without distant metastases to other organ. Operative procedures were pylorus-preserving pancreatoduodenectomy (PPPD) three cases, subtotal stomach-preserving pancreatoduodenectomy (SSPPD) in two, pancreatoduodenectomy (PD) and duodenectomy in one. The average of maximum tumor size was 32 mm. Histologically there were five adenocarcinomas, one mucinous carcinoma, and one choriocarcinoma. Deepest layer of tumor invasion was mucosa in two cases, submucosa in one, subserosa in two, and direct invasion to the adjacent organ (pancreas²?) in two. Positive lymph node was identified in four cases. Lymphatic invasion was microscopically diagnosed in four cases, venous invasion in four, and neural invasion in one. Adjuvant chemotherapy was done in four cases. One case was discontinuing chemotherapy with adverse event (grade 2 stomatitis). Both two cases with postoperative metastasis or recurrence had poor prognosis. The other five cases are alive without recurrence. Cases with mucinous carcinoma and choriocarcinoma had poor prognoses.

[Discussion] As primary duodenum carcinoma, 967 cases has been reported in English literature. Five-year survival rate was 14.2~44.1%. In our case series, patients with adenocarcinoma has more favorable prognosis than those with the other histological type.

[Conclusion] Adenocarcinoma might be one of the favorable prognostic factors for resectable primary duodenum cancer.
P-38  A resected case of duodenal GIST presented with hemorrhagic shock

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[Introduction] Duodenal Gastrointestinal stromal tumor (GIST) is rare, and it is about 3-5% of all GIST. We have to consider various operative procedures including limited operation for duodenal GIST. We often find duodenal GIST by investigation of anemia, but it’s not common that the bleeding from GIST resulted in hemorrhagic shock. Here, we report a case of duodenal GIST presented with shock caused by gastrointestinal bleeding.

[Case] The patient is 45-year-old man, and he has no past medical history. He consulted a hospital with chief complaint of bloody bowel discharge. He underwent emergency esophagogastroduodenoscopy (EGD), and was pointed out a duodenal submucosal tumor (SMT). Low blood pressure continued after hospitalization, and follow up EGD revealed the hemorrhage from the SMT. Since it is difficult to control the bleeding by endoscopy, the patient was transported to our hospital for further treatment. Enhanced computed tomography revealed the duodenal tumor, 50mm in diameter, located in the second portion of the duodenum, and in the contralateral side of the papilla Vater. We diagnosed hemorrhagic shock caused by bleeding from the duodenal SMT because of the extravasation of contrast material.

[Result] Emergent angiography was performed, and transcatheter embolization (TAE) was performed to the branch of posterior superior pancreoduodenal artery. After TAE, the vital sign returned to normal range. Under the diagnosis of duodenal GIST, partial duodenectomy and direct closure was performed 14 days after TAE. The postoperative course was uneventful, and he discharged on the ninth postoperative day. Pathological diagnosis is GIST, T2, G2 Group IIIB, high risk (Modified Fletcher classification). In this case, the initial TAE was useful to control the bleeding, and we could choose the appropriate limited operation for the duodenal GIST near papilla Vater.

[Conclusion] TAE followed by elective limited operation is useful for duodenal GIST with hemorrhagic shock.

P-39  A case of extra-adrenal paraganglioma in the patient with severe kyphosis removed safely by laparoscopic surgery

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Extra-adrenal paraganglioma is a rare type of neuroendocrine neoplasm with the capability of catecholamine secretion and sometimes found as a retroperitoneal tumor. Due to such kind of tumor often surrounding and associating with vital abdominal major blood vessels, complete laparotomic resection sometimes can be invasive. Especially, it is almost impossible to secure enough working space in the patients with severe kyphosis due to the narrow space between the low rib and the pelvis. We report our successful use of the laparoscopic technique for the extra-adrenal paraganglioma in the patient with severe kyphosis. A 51-year-old Japanese woman presented with general fatigue and consulted her physical doctor during follow-up of chronic bronchitis. Abdominal computed tomography scan revealed 22cm x 26cm hypervascular retroperitoneal tumor located between the inferior vena cava (IVC) and the hepatic caudate lobe. A urine test and \textsuperscript{131}I-MIBG scintigraphy suggested the tumor was catecholamine-producing paraganglioma. In the decision of surgical method, the critical issue was narrow working space due to severe kyphosis. Then, we performed laparoscopic surgery for better operability and visibility. The patient was placed in a left hemilateral decubitus position. Abdominal access was achieved on the right side of the navel by open transrectal incision technique with a 12 mm camera port. 12 mm port (at the epigastric area), 5 mm port (at the right subcostal area) and 12 mm port (at the right lower lateral abdomen) were used for mobilization of the right hepatic lobe. Then, we placed two more 12 mm ports (at the right lower lateral abdomen and the right side of the navel) for Kocher mobilization and complete mobilization of the right hepatic lobe including paracaval portion. After rotating the right lobe, we could detect the tumor between IVC and the hepatic caudate lobe. After hanging up IVC using the tapes attached on the cranial and the caudal margins of the tumor, we resected the tumor using the ENSEAL\textsuperscript{\textregistered} G2 Articulating Tissue Sealer, which provides access to tissue in deep and tight spaces and the ability to maneuver around corners and behind structures. The operation time was 325 minutes, and blood loss was 340ml. The postoperative course was uneventful, and the patient was discharged on the 7th postoperative days. The resected tumor was histologically diagnosed as paraganglioma. In the present case, the laparoscopic approach in the hemilateral decubitus position was effective for the extra-adrenal paraganglioma and, especially, in the patient with severe kyphosis.
P-40 A rare case of liver metastasis from submandibular gland carcinoma which was resected 5 years after primary operation

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[Case] The patient was a 76-year-old male who underwent resection of primary adenoid cystic carcinoma of the submandibular gland in 2012. On follow-up computed tomography (CT) five years after the initial operation, a discrete low density tumor with ring enhancement measuring 2.5cm in diameter was found incidentally in the hepatic segment 6. CT and magnetic resonance imaging (MRI) suggested intrahepatic cholangiocellular carcinoma or liver metastasis of carcinoma of the submandibular gland. The patient underwent posterior segmentectomy of the liver with the operation time of 288 min and intraoperative blood loss of 150 ml. His postoperative course was uneventful except for minor bile leakage that subsided without surgical intervention, and the patient was discharged on postoperative day 25. Postoperative pathological examinations of the hepatic tumor cells was positive for CK7, EMA, Caiponin, P63, and c-Kit. These features were the same as the primary carcinoma of the submandibular gland, and therefore the liver tumor was diagnosed as metastasis from the submandibular gland. Since liver metastasis from carcinoma of the submandibular gland is rare, we report our experience with literature review.
**P-41** Lateral lymph node dissection for low rectal cancer

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**[Purpose and Methods]** In Japan lateral lymph node dissection is the standard operation for T3T4 low rectal cancer. But the optimal area of lymph node dissection is unclear. We usually carry out total lateral lymph node dissection of bi-lateral and below aortic bifurcation. In this paper we analysed the optimal area of lateral lymph node dissection clinically-pathologically.

**[Results]** We resected 418 cases of T3T4 low rectal cancer with metastatic lateral lymph node. The rate of metastatic lateral lymph node was 17.9% (75 cases/418 cases). The metastatic rate of lateral lymph nodes was 9.3% (39/418) for obturator area (No283), 5.0% (21/418) for distal portion of internal iliac area (No263D) and 6.5% (27/418) for proximal portion of internal iliac area (No263P). These portions were main metastatic portions, but outside of these portions (common iliac (No273) and external iliac (No293) area) were 3.8% (16/418). These cases occupied 21.3% of all cases with metastatic lateral lymph nodes. The metastatic rate was 13.2% (55/418) for unilateral side and 4.8% (20/418) for bilateral sides. It is not enough to dissect only unilateral No283, No263P and No263D. We curatively resected 40 cases of T3T4 low rectal cancer with lateral lymph nodes. The 5 year survival rate was 41.9% for the cases of less than 4 metastatic lateral lymph nodes and 14.3% for more than 3 metastatic lateral lymph nodes. There was statistically significant difference between these two groups (p<0.01). But the 5 year survival rate of the following positive metastatic groups were no significant difference: 40.5% for only No283 or No263 group and 0% for outside of these groups, 42.4% for unilateral group and 19.4% for bilateral group.

**[Conclusions]** In T3T4 low rectal cancer it is necessary total lateral lymph node dissection bilaterally.

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**P-42** Salivary biomarker discovery for colon cancer using metabolomics

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The saliva of cancer patients has been reported to contain various tumor markers that reflect biological changes occurring in their bodies. Metabolomics is a novel approach to study the intracellular mechanisms of disease, as well as diagnostic applications, by comprehensively analyzing low-molecular weight molecules called metabolites, which are affected by a variety of factors, such as the environment and disease. Mass spectrometry is used to comprehensively analyze the characteristics of metabolites in combination with additional separation techniques, such as gas chromatography, liquid chromatography, and capillary electrophoresis. In particular, capillary electrophoresis time-of-flight mass spectrometry is a powerful method to analyze ionic metabolite. Ionic metabolites are the main products of metabolic pathways, such as glycolysis, the pentose phosphate pathway, and the TCA cycle, which produce numerous metabolites via carbon metabolism, nucleic acid synthesis, and amino acid metabolism. Cancer cells are generally known to use abnormal metabolic pathways, and hence metabolomics is a promising method to investigate metabolic biomarkers in cancer research. We hence aimed to investigate the use of metabolic biomarkers for the early detection of colorectal polyps or colorectal cancer, for cancer staging, as well as for the differentiation of cancers from other diseases in the clinic. For this purpose, we collected salivary samples from healthy individuals (n = 48), patients with colorectal polyps (n = 60), and patients with colorectal cancer (n = 270) from November 1, 2013 to December 31, 2016. Although our study is still ongoing, based on our progress, we will report future prospects of the use of metabolomics in cancer diagnostics and research.
P-43  Cytomegalovirus enterocolitis during adjuvant chemotherapy with XELOX for colon cancer

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[Background] Acute enteritis is a common morbidity during chemotherapy including 5-fluorouracil (5-FU) in patients with colorectal cancer. The occurrence of cytomegalovirus (CMV) enterocolitis is well known in immunosuppressed patients such as immuno-compromised host, especially in HIV and bone marrow transplantation patients. We describe the case of a 56-year-old man presenting with an unusual viral complication with CMV enterocolitis during adjuvant chemotherapy for colon cancer.

[Case Presentation] A 56-year-old man was admitted with severe diarrhea and anorexia (CTCAE grade 3) during the third course of adjuvant chemotherapy for colon cancer. He had performed laparoscopic partial resection of the transverse colon, and the tumor staging was T4b (peritoneal wall) pN3 cM0 f-StageIIIb. He was started administrating XELOX (capecitabine + oxaliplatin) as an adjuvant chemotherapy in one month after the surgery. He had only one adverse event with mild diarrhea (CTCAE grade 2) in the initial two courses, which could be treated with short-term hospitalization. During the present hospitalization, an antidiarrheal agent, bowel rest and intravenous hydration were administrated, but the symptoms did not resolve 14 days after admission. We considered the possibility of infectious enterocolitis at this point and started some examinations. No significant result was obtained from various bacterial cultures. In the blood test revealed that he had prior infection with CMV (CMV-IgM negative and CMV-IgG positive). The colon fiber showed an ulcer around the ileum and diffuse redness in entire colon. CMV cells were found with immunohistochemistry in the biopsy specimen from the ileum and the sigmoid colon. Based on these findings, he was diagnosed with CMV enterocolitis and was started on intravenous ganciclovir therapy. Diarrhea and anorexia were remarkably improved, and he was discharged on the 6th day after the start of the ganciclovir therapy.

[Conclusion] Diarrhea occurred during chemotherapy including 5-FU tends to be considered as an adverse event related to chemotherapy. However, we should be kept in mind that cytomegalovirus reactivation may occur during the immunosuppression induced by chemotherapy.

P-44  A case of far advanced cancer of descending colon which could be curatively resected to a patient by multidisciplinary treatment

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[Case] 60 year old female
[Chief Complaint] abdominal pain, abdominal distension, vomiting
[Previous Medical History] not to be noted

[Present Illness] She visited our hospital in 2015, when the main complaint above appears. We diagnosed she has a descending colon cancer ileus with liver metastasis, then we placed the colonic stent. But we could not decompress her right side colon. After examination we found advanced cancer accompanied by obstruction in the left transverse colon. We diagnosed colon cancer ileus caused by transverse colon cancer, and we constructed a colostomy on the right side of the transverse colon. After leaving hospital we recommended her to have chemotherapy, but we carried out outpatient follow-up observation at her request. After 6months observation ilioipsoas abscess due to retroperitoneal penetration of descending colon carcinoma and colon cancer prolapse from the anal side of transverse colonostomy has appeared. Then we performed partial resection of the transverse colon and incisional drainage to the ilioipsoas abscess. After since we introduced her Bv + mFOLFOX 6 regimen. After 3 months, since the disappearance of liver metastasis and the downward of descending colon cancer were seen, radical surgery was performed. The descending colon cancer invaded to the left ilioipsoas muscle and formed an abscess. Pelvic peritoneal dissemination mass showed invasion into rectum, left ovary, uterus, Douglas fossa and bladder. We found 4 tumor masses in the small intestine suspected to be caused by hematogenous metastasis. D, type 2, T 4 b N 0 M 1 b (H 0, P 2, small bowel metastasis), Stage IV. Based on the above, it was concluded that enlarged colon left hemicolecotomy, partial resection of the small intestine, partial resection of the bladder, partial resection of the right ureter, total hysterectomy + bilateral adenectomy, and ascending colorectal anastomosis. It was resectable macroscopically.

Although the current one year has elapsed after the operation, obvious recurrence has not been admitted. In this study, we report a case of curative resection by multidisciplinary therapy for advanced descending colon cancer with extensive peritoneal dissemination and multiple small bowel metastasis, complicated with advanced transverse colon cancer.
P-45  Prognostic factor for locally advanced rectal cancer after surgery following chemoradiotherapy

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[Purpose] We retrospectively investigated the prognostic factor for locally advanced rectal cancer after surgery following chemoradiotherapy (CRT).

[Methods] The clinical and pathological data of 24 patients with histologically proven rectal adenocarcinoma who underwent curative surgery following CRT were investigated. The patients received CRT (consisting of 40 - 45 Gy irradiation delivered in 25fractionsof 1.6 - 1.8 Gy [day1-day5/week for 5weeks]), along with 5 weeks of orally taken 5-FU drugs. The median observation period was 51.5 months (range: 5.0 - 91.0 months). The recurrence-free survival (RFS) rate was calculated using the Kaplan-Meier method and univariate analyses were performed using the log-rank test.

[Results] On univariate analyses, significant difference in RFS rate was recognized in pathological stage after CRT (ypStage) (P=0.04). The 5-year RFS rate was 31.3% in the patients with ysStage III while the 5-year RFS rate was 79.0% in the patients with ysStage 0 or I or II. With respect to other clinical and pathological factors (age, gender, location of the rectum, pre-CRT T-factor, pre-CRT N-factor, pre-CRT stage, yp T-factor, tumor regression grade, histological grade, resection margin, perioperative serum CEA, blood loss during surgery, operative time, surgical procedure, the presence of downstaging), there were no significant differences.

[Conclusions] The RFS rate in the patients with ypStage III was significantly worse than that in the patients with ypStage 0 or I or II. Based on the results, we need to consider the use of adjuvant therapy in the management of locally advanced rectal cancer.

P-46  Measurement of Nucleic Acid Metabolizing Enzymes in Stage III Colorectal Cancer Adds Precision to Adjuvant Fluorouracil and Leucovorin Therapy

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[Background] Recurrence of colorectal cancer has been shown to be inhibited by adjuvant chemotherapy. To achieve effective adjuvant chemotherapy, a target molecule is necessary. Therefore, we performed a prospective clinical trial to determine the relationship between adjuvant chemotherapy outcomes and prognostic factors in colorectal cancer based on nucleic acid metabolizing enzyme levels.

[Methods] A total of 147 patients with stage IIIA, IIIB, and IIIC cancer were selected for adjuvant chemotherapy. We analyzed disease-free survival (DFS) as the primary endpoint and overall survival (OS) as the secondary endpoint in relation to the thymidylate synthase (TS) and dihydropyrimidine dehydrogenase (DPD) levels as measured by enzyme-linked immunosorbent assay. According to the levels of the mean preliminary TS of 21.0 ng/mg protein and DPD of 115 ng/mg protein, the patients were divided into 4 groups. They were then administered postoperative adjuvant chemotherapy that primarily included fluorouracil and leucovorin (FL) or uracil/tegafur (UFT) and leucovorin (UZEL) for 6 months.

[Results] The 5-year DFS in advanced stage III cancer was 63.9%. A significant difference was observed between the LL (low TS and low DPD levels) and HL (high TS and low DPD levels) groups and the LH (low TS and high DPD levels) and HH (high TS and high DPD levels) groups. Multivariate analysis revealed a significant difference in stage, TS level, and TS and DPD levels. The OS was 79.6% for all the groups. A significant difference was observed between the LL, LH, and HL groups and the HH groups. Multivariate analysis revealed a significant difference in the stage, age, TS level, and TS and DPD levels.

[Conclusions] Measurement of the TS and DPD levels of a primary colorectal cancer lesion as target molecules may be helpful for achieving an effective postoperative adjuvant chemotherapy. TS and DPD can potentially serve as more accurate predictors of OS than age and cancer stage.
P-47 Laparoscopic surgery for rectal cancer patients with colostomy -a single institutional experience of 12 cases-

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[Introduction] With the growing recognition of neoadjuvant chemotherapy (NAC) and preoperative chemoradiotherapy (CRT) for rectal cancer, we have more chance to perform laparoscopic rectal surgery for patients who have undergone colostomaplasty before NAC/ CRT. A single institutional experience of the laparoscopic surgery under colostomy will be presented in the paper.

[Method] From June 2009 to October 2017, 12 cases of laparoscopic rectal surgery for patients with colostomy were performed. All cases are men, and 35-75 (median 66) years old in age. 10 cases of rectal cancer, one anal canal cancer, and one rectal villous adenoma were included. The initial sites of colostomy were 8 transverse colostomies on the right upper abdomen, and 4 sigmoid colostomies on the left lower abdomen. All, except for one end sigmoid colostomy by Hartmann’s procedure, were loop colostomies. On secondary laparoscopic surgery, colostomy interferes with port sites, and port insertion needs careful attention. However, our regular laparoscopic rectal surgery using 5 ports were completed in all cases except for 2 cases which required ablation of adjacent organs. No adverse complications including SSI beyond regular procedure were observed in the procedure under colostomy. We took strategy to create transverse colostomy previously when secondary LAR was planned, and to create sigmoid colostomy previously when secondary APR was planned. The distal bowel of the loop sigmoid colostomy was amputated in all cases at the secondary APR. Transverse colostomies were not closed in the secondary LAR to be preserved as prophylactic stoma for LAR.

[Results] Laparoscopic surgery for rectal cancer patients with colostomy was performed safely under a planned therapeutic strategy.

P-48 Laparoscopic colostomy reversal after laparoscopic Hartmann’s procedure for a patient with complicated diverticulitis

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Although associated with high morbidity and mortality rates, Hartmann’s procedure (HP) has been considered for many years to be the gold standard for the treatment of generalized peritonitis.

Open HP has been generally performed under emergency or urgent situations. The laparoscopic HP is not frequently performed, its use has been increasing as laparoscopic technology has advanced and surgeons have more adopt in their surgical techniques. The laparoscopic Hartmann’s reversal (HR) after HP has been progressively performed promising reduced morbidity and mortality. However, these approaches are still less well accepted for patients with Hinchey stage 3 and 4 diverticulitis.

We present a case of a 53-year-old man presenting with abdominal pain, diarrhea, and fever who developed sigmoid diverticular perforation in Hinchey stage 4.

The patient was treated with surgical resection of the diverticulum with a laparoscopic HP and lavage. The estimated blood loss (EBL) was 1200 ml, and operative time was 276 min. The postoperative hospital stay was 21 days. There were no complications.

Laparoscopic HR was performed for this patient 77 days later. The EBL was 50 ml, and the operative time was 163 min. There were no complications and the postoperative hospital stay was 12 days. The time to return of bowel function was 2-3 days.

Compared with its open equivalent, laparoscopic HP and HR, though challenging in terms of both patient selection and surgical technique, can produce improved outcomes with less morbidity and greater patient satisfaction.

This case helps to adopt laparoscopic approach for patients with complicated diverticulitis under emergency situations.
P-49  A case of undifferentiated pleomorphic sarcoma of stomach with favorable outcome after surgery

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Primary gastric undifferentiated pleomorphic sarcoma (UPS), formerly known as malignant fibrous histiocytoma (MFH), is a very rare disease and a long-term follow-up is not sufficiently reported yet. A 70-year-old-man complained abdominal fullness and came to our hospital. Abdominal computed tomography (CT) scan revealed 14-cm oval tumor in the wall of stomach and 10-cm tumors at mesenteries of small intestines. The Endoscopic ultrasound-guided fine needle biopsy (EUS-FNB) of gastric tumor revealed the features of high-grade spindle cell and pleomorphic sarcoma. The diagnosis was primary gastric UPS. We performed total gastrectomy for primary tumor together with combined resection of small intestines for metastatic tumors. However, the tumor recurred at mesentery of sigmoid colon 6 months after the initial operation. The second operation was performed for the recurrent tumor. After the operation, peritoneal washing cytology was positive for tumor cell. The patients free from the tumor more than 6 years after first operation without recurrence. In general, UPS is considered as highly malignant tumor, however, this case was a rare UPS of stomach with favorable outcome after surgery even if peritoneal dissemination was existed.

P-50  Analysis of 21 patients after surgical resection for small intestinal tumors

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[Background] Small intestinal malignant tumors are rare in comparison to other gastrointestinal tumors. The optimal treatment and prognosis of small intestinal tumors remain to be elucidated.

[Purpose] The purpose of the present study was to evaluate the adequacy of treatment for small intestinal tumor cases in our department.

[Patients and Methods] The study population included 21 patients with small intestinal tumors who underwent surgery in our department from March 2010 to January 2018. The age, gender, primary disease, primary symptom, preoperative diagnosis rate, tumor localization, operation procedure, complication rate, tumor risk, cancer stage and survival rate were investigated.

[Results] The median age of the patients (male, n=14; female, n=7) was 71 years (range 43-86 years). The diagnoses of the patients were as follows: malignant lymphoma (n=7), GIST (n=6), small intestinal cancer (n=4), metastatic cancer (n=3) and sarcoma (n=1). The primary symptoms were as follows: small bowel obstruction (n=7), melena (n=4), abdominal tumor (n=3), perforation (n=3), anemia (n=2), upper abdominal pain (n=1) and none (n=1; screening endoscopy). The disease was preoperatively diagnosed in 8 of 21 cases (GIST, 1/6; metastatic cancer, 1/3; malignant lymphoma, 3/7; and small intestinal cancer, 3/4). The tumor locations (jejunum ileum) for each diagnosis were as follows: malignant lymphoma, 14; GIST, 5; small intestinal cancer, 13; metastatic cancer, 12; and sarcoma, 10. The operative procedures included small bowel resection (n=7), ileocecal resection (n=2), ileal pouch resection (n=1), and bypass grafting (n=1). Laparoscopic procedures were performed in 11 of 21 cases. No complications (beyond Clavien-Dindo classification Grade III) occurred. Complete resection was performed in all cases of GIST and small intestinal cancer. The 3-year survival rates were as follows: GIST, 83.3%; small intestinal cancer, 100%; and sarcoma, 0%.

[Conclusion] Small intestinal tumors were rarely found before the manifestation of symptoms. However, the prognosis after the complete resection of GIST and primary small bowel cancer was relatively favorable.
We herein present a case of incarcerated internal hernia through a congenital defect of the falciform ligament. A 43-year-old woman with no history of abdominal surgery was emergently admitted for abdominal pain and vomiting for two days at the previous hospital. They conducted decompression therapy with a long tube. However, her symptoms persisted despite the treatment and came to our hospital. CT scan that we conducted showed a dilated small intestine which was located between liver and anterior abdominal wall with closed loop sign, elevated fat concentration and ascites. We diagnosed incarcerated internal hernia through a defect of the falciform ligament and performed emergency operation. In the operation, it was detected thickened round ligament of liver and a herniation of small intestine through a hole (2cm) in the falciform ligament from the left side. We released the hole and resected a part of small bowel with ischemic change. The postoperative course was uneventful, and the woman was discharged 11 days after surgery. Though internal hernia through a defect of the falciform ligament is very rare, we could diagnose it preoperatively by CT scan. As we consider differential diagnosis of the bowel obstruction, it is important to keep this disease in mind and make an early treatment.