

T-CAP 2015

Tokyo Conference of Asian Pancreato-biliary Interventional Endoscopist

PROGRAM & COMPENDIUM

JUL. 3-4, 2015 HOTEL East 21 TOKYO



T-CAP 2016

Tokyo Conference of Asian Pancreato-biliary Interventional Endoscopist

Tokyo Conference of Asian Pancreato-biliary Interventional Endoscopist 2016

2016 June. 17th FRI »» 18th SAT

VENUE: ITO INTERNATIONAL RESEARCH CENTER (Bunkyo-ku, Tokyo.)

INTERNATIONAL INVITED SPEAKERS

Vinay Dhir (India), **Peter Draganov** (USA), **Dong Ki Lee** (Korea),
Do Hyun Park (Korea), **Arthur Kaffes** (Australia),
Majid Almadi (Saudi Arabia), **Ida Hilmi** (Malaysia)

INTERNATIONAL FACULTY MEMBERS

Hsiu-Po Wang (Taiwan), **Jong Ho Moon** (Korea), **Dong Wang Seo** (Korea),
Hu Bing (China), **Christopher Khor** (Singapore), **Thawee Ratanachu-ek** (Thailand),
Ryan Ponnudurai (Malaysia), **James Lau** (Hong Kong), **Sundeep Lakhtakia** (India),
Rungsun Rerknimitr (Thailand), **Ang Tiing Leong** (Singapore)

JAPANESE FACULTY MEMBERS

Takao Itoi (Tokyo Medical Univ.), **Ichiro Yasuda** (Teikyo Univ. Mizonokuchi Hosp.),
Iruru Maetani (Toho Univ. Ohashi Hosp.), **Keiji Hanada** (Onomichi General Hosp.),
Atsushi Irisawa (Fukushima Medical Univ., Aizu Medical Center), **Masayuki Kitano** (Kinki Univ.),
Hiroshi Kawakami (Hokkaido Univ.), **Shomei Ryozaawa** (Saitama Medical Univ., International Medical Center),
Tsuyoshi Hayashi (Hokkaido Cancer Center), **Akio Katanuma** (Teine Keijinkai Hospital)

WEBSITE: <http://www.t-cap.jp/>

OFFICIAL LANGUAGE: Poor English

EXCLUSIVE ADVISOR: Kazuhiko Koike (The University of Tokyo, Japan)

PRESIDENT: Hiroyuki Isayama (The University of Tokyo, Japan)



We would like to appreciate all of you joining T-CAP 2015.

This is 3rd T-CAP meeting, and we expect T-CAP 2015 will become more exciting with hotter discussion. T-CAP has two major missions: Collaboration and education.

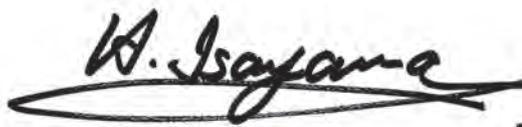
We as pancreato-biliary interventional endoscopists need skills in endoscopic procedures as well as a wide knowledge of diseases, devices and treatment strategy, which we can share with international faculties through this meeting. Hot discussion is another feature, which makes T-CAP meeting special of all the conferences and meetings in this field.

T-CAP encourages discussion on techniques and devices based on experiences and we can learn practical knowledge on the procedure and patient care.

And last but not least, we believe friendship among participants is the most important in this international meeting.

We can enjoy not only the scientific meeting but also chat during the meeting and party. Please enjoy food and drink with famous international endoscopists at party!

Hiroyuki Isayama,
President of T-CAP



Faculty Members

Exclusive adviser: **Kazuhiko Koike** (Tokyo Univ. Japan)

President: **Hiroyuki Isayama** (Tokyo Univ. Japan)

Organizing committee

Chief: **Takao Itoi** (Tokyo Medical Univ. Japan)
Ichiro Yasuda (Teikyo Univ. Mizonokuchi Hosp.)
Hiroshi Kawakami (Hokkaido Univ. Japan)
Iruru Maetani (Toho Univ. Ohashi, Japan)
Keiji Hanada (Onomichi General Hospital, Japan)
Masayuki Kitano (Kinki Univ. Japan)
Atsushi Irisawa (Fukushima Medical University Aizu Medical Center)
Shomei Ryozaawa (Saitama Medical Univ., International Medical Center)
Tsuyoshi Hayashi (Hokkaido Cancer Center)
Akio Katanuma (Teine Keijinkai Hospital)

International organizing committee

Chief: **Hsiu-Po Wang** (Taiwan)
Jong Ho Moon (Korea)
Dong Wang Seo (Korea)
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Thawee Ratanachu-ek (Thailand)
Ryan Ponnudurai (Malaysia)
James Lau (Hong Kong)
Sundeeep Lakhtakia (India)
Rungsun Rerknimitr (Thailand)
Ang Tiing Leong (Singapore)

Secretaly general: **Ichiro Yasuda** (Teikyo Univ. Mizonokuchi Hosp.)

Secretariats **Yousuke Nakai** (Tokyo Univ. Japan)
Masaki Kuwatani (Hokkaido Univ. Japan)
Takuji Iwashita (Gifu Univ. Japan)
Takayoshi Tsuchiya (Tokyo Medical Univ. Japan)
Natsuyo Yamamoto (Tokyo Univ. Japan)
Hirofumi Kogure (Tokyo Univ. Japan)
Tsuyoshi Hamada (Tokyo Univ. Japan)
Satoko Uchiyama (Tokyo Univ. Japan)

Faculty Members

Exclusive adviser

Kazuhiko Koike (Tokyo Univ. Japan)



Dr. Koike obtained his M.D. degree from The University of Tokyo in 1980. From 1986-89, he worked in National Cancer Institute, Bethesda, as a visiting fellow. In 2009, has been appointed as the Professor and Chairman of Department of Gastroenterology, The University of Tokyo.

He has been installed as Director General of The Japan Society of Hepatology (JSH) since May 2010.

He is a board-certified hepatologist and gastroenterologist. His major research efforts have been directed toward the elucidation of mechanism of hepatocarcinogenesis in hepatitis C and B. He has published more than 500 papers, book chapters and miscellaneous publications.

President

Hiroyuki Isayama (Tokyo Univ. Japan)



Lecturer, Department of Gastroenterology, Training Program for Oncology Professionals, Graduate School of Medicine, The University of Tokyo.

He is both interventional-endoscopist and oncologist in the pancreato-biliary field. He published first RCT of covered vs. uncovered self-expandable metallic stent (SEMS) and showed the superiority of covered-SEMS for the distal biliary obstruction. He also published some clinical studies of chemotherapy as a chief-investigator. He has published more than 140 peer-reviewed articles (IF > 500). He was invited internationally 25 times for lecture and 9 for endoscopic live-demonstration in this 5 years. He is member of editorial-board of 5 journals.

Organizing committee

Takao Itoi (Tokyo Medical Univ. Japan)

Chief



Dr. Takao Itoi is presently the associate professor of the Tokyo Medical University at Tokyo, Japan.

Dr. Takao Itoi graduated from Tokyo Medical University in 1991 and had worked in Tokyo Medical University Hospital as a gastroenterologist. His major is diagnostic and therapeutic endoscopy in pancreaticobiliary diseases by means of EUS and ERCP. Until now, he has outstanding endoscopic skill and has published many papers in high impact factor journals on the novel and special techniques and outcome.

Ichiro Yasuda (Teikyo Univ. Mizonokuchi Hosp. Japan)



Dr Ichiro Yasuda is Professor and Director at the Department of Gastroenterology, Teikyo University Mizonokuchi Hospital, Japan. After his graduation from Gifu University School of Medicine in 1990, he received his training in Gastroenterology at Gifu University Hospital and subsequently at the world renowned University Hospital Hamburg-Eppendorf under the direction of Professor Nib Soehendra. Dr Yasuda is an expert in ERCP and endoscopic ultrasonography (EUS). After he had gained experience for more than 20 years in Gifu and published more than 110 peer-review English articles, he has promoted to the current position in 2014.

Faculty Members

Organizing committee

Hiroshi Kawakami (Hokkaido Univ. Japan)



Assistant professor, Department of Gastroenterology and Hepatology, Hokkaido University Hospital. He is interventional-endoscopist, endosonographer and oncologist in the pancreatico-biliary disease. He has an extreme interest in hepato-pancreatico-biliary strictures. He published preoperative biliary drainage in patients expected to undergo definitive surgery for hilar cholangiocarcinoma. A breakthrough in his work causes a paradigm shift in guideline for the management of bile duct cancer. Recently, he also published some randomized controlled trials of selective bile duct cannulation as a chief-investigator. He published about 50 peer-reviewed international articles and more than 100 domestic publications.

Iruu Maetani (Toho Univ. Ohashi, Japan)



Professor and Chairman
Division of Gastroenterology and Hepatology, Department of Internal Medicine
Toho University Ohashi Medical Center
Dr. Iruu Maetani is Chairman and Professor of Gastroenterology at Toho University Ohashi Medical Center in Tokyo. He has worked for over 30 years in the hospital after his graduation from Toho University. He is devoting clinical practices and research and to undergraduate and postgraduate medical education. His special research interests include diagnostic and therapeutic endoscopy and interventional radiology for gastroenterological diseases, especially gastrointestinal/biliary stenting, gastrostomy and various palliative interventions for advanced cancers. He is currently a member of many domestic and international societies, and a member of editorial and review board of international journals.

Keiji Hanada (Onomichi General Hospital, Japan)



Chief, Center for Gastroendoscopy, Onomichi General Hospital
Clinical Professor, Hiroshima University School of Medicine
He is graduated from Shimane Medical University (1988), and the postgraduate course of Hiroshima University, with the degree of PhD (1996). He belongs to Japan Gastroenterological Endoscopy Society, Japanese Society of Gastroenterology, Japan Pancreas Society, Japan Biliary Association as councilor, and Japanese Society of Internal Medicine, Japanese Cancer Association and Japanese Society of Medical Oncology. He is both skilled endoscopist and oncologist. Now he is advancing the clinical project to detect the early stage pancreatic cancer in Onomichi City.

Masayuki Kitano (Kinki Univ. Japan)



Department of Gastroenterology and Hepatology, Kinki University Faculty of Medicine, Japan
Dr. Masayuki Kitano is Associate Professor of Department of Gastroenterology and Hepatology, Kinki University Faculty of Medicine. He has studied in the field of pancreatobiliary diseases, particularly endoscopic diagnosis and treatment. He and his colleagues made a novel EUS system equipped with contrast harmonic imaging which allowed visualization of tissue microcirculation, and reported its utility for diagnoses of pancreatobiliary and gastrointestinal diseases. By this work, he received the Ito Award from Japan Society of Ultrasonics in Medicine. He works as a councilor of the Japanese Society of Gastroenterology, of the Japan Gastroenterological Endoscopy Society, of the Japan Pancreas Society and of the Japanese Society of Clinical Pharmacology and Therapeutics. He has authored / co-authored more than 100 peer reviewed English publications

Faculty Members

Organizing committee

Atsushi Irisawa (Fukushima Medical University Aizu Medical Center Japan)



Prof. Atsushi Irisawa is a Professor of Gastroenterology, Fukushima medical university Aizu medical center. Graduated from the School of Medicine, Dokkyo Medical University in 1989, and obtained PhD from Fukushima Medical University in 1996. He was visiting faculty of Center for EUS, University of Florida, and worked with Professor Bhutani in 2000. His specialty is mainly endoscopic diagnosis and treatment for pancreatobiliary area, especially interventional EUS and ERCP. However that may be, he plays an active part in the wide-ranging digestive disease; member as councilor in the Japanese Gastroenterological Endoscopy Society, Japanese Society of Gastroenterology, Japan Pancreas Society, Japanese Society of Portal Hypertension, Japanese Gastroenterological association, and international member of American Society for the Gastrointestinal Endoscopy.

Shomei Ryozaawa (Saitama Medical University International Medical Center Japan)



Dr. Shomei Ryozaawa graduated from Yamaguchi University in 1991 and took his PhD in 1997. He worked at Dept. of Endoscopy in Hamburg University Eppendorf Hospital (Prof. Nib Soehendra) from 2000 to 2001. He has been appointed as the Professor and Chairman of Department of Gastroenterology, Saitama Medical University International Medical Center in 2013. He serves as a reviewer for over 10 journals. He is an expert in ERCP and EUS-FNA, and has been invited for many live demonstrations.

Tsuyoshi Hayashi (Hokkaido Cancer Center Japan)



Dr. Tsuyoshi Hayashi is the assistant professor of Department of Gastroenterology, Hokkaido Cancer Center, Japan. He graduated in 1996 and earned PhD. in 2005 from Sapporo Medical University. His specialties are pancreatobiliary diseases including not merely endoscopic procedure but also clinical oncology, and he has extensively published papers in this area.

Akio Katanuma (Teine Keijinkai Hospital)



Dr. Akio Katanuma is presently the head of the Center for Gastroenterology, Teine-Keijinkai hospital, which is one of the most high volume hospitals in Japan. Dr. Akio Katanuma graduated from Sapporo Medical University in 1991. He belongs to Japan Gastroenterological Endoscopy Society, Japanese Society of Gastroenterology as council, Japan Pancreas Society, Japan Biliary Association as councilor, Japanese Society of Internal Medicine, and American Society for the Gastrointestinal Endoscopy. His specialty is mainly endoscopic diagnosis and treatment for pancreatobiliary diseases.

Faculty Members

International organizing committee

Hsiu-Po Wang (Taiwan)

Chief



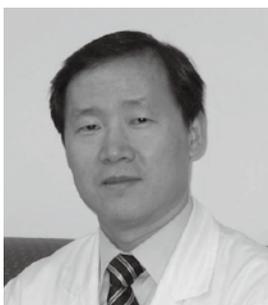
Prof. Hsiu-Po Wang, is the Chief of Division of Endoscopy of National Taiwan University Hospital and Professor of Internal Medicine, College of Medicine, National Taiwan University. He is the current President of the Digestive Endoscopy Society of Taiwan (DEST). Internationally, he is the member of Endoscopy Interest Group of WGO 2013~2015. He is skillful with many endoscopic techniques. Besides his majors of ERCP and EUS/interventional EUS, he also involves emergent endoscopic procedures, IEE (NBI, i-scan, AFI), endoscopic tumor ablation techniques, (EMR/ESD, APC, RFA), enteroscopy/capsule endoscopy, esophageal/enteric stenting. He has been active in many international meetings and has been invited for chair, speech and live demonstration.

Jong Ho Moon (Korea)



Professor of Medicine
SoonChunHyang University School of Medicine, Bucheon/Seoul, Korea
Dr. Moon is currently the Chief of Division of Gastroenterology, Director of Digestive Disease Center of SoonChunHyang University Hospital of Bucheon, Korea. His specialty includes diagnostic and therapeutic endoscopy of pancreaticobiliary tract diseases, especially through ERCP and EUS. Dr. Moon is involved in the clinical research of pancreaticobiliary endoscopy and has published extensively in high ranked journals. Dr. Moon is also actively involved in the development of metal stents, and endoscopic accessories. Dr. Moon has been invited to many international endoscopic symposiums in the world. Several Awards received locally, and nationally.

Dong Wang Seo (Korea)



Biography:
Pf. Dong Wan Seo is a specialist on pancreatoco-biliary endoscopy and EUS.
His current position is a full professor of Department of Gastroenterology, University of Ulsan Medical College, Asan Medical Center.
He has created a lot of advanced endoscopy works to the World of GI Endoscopy including his own classification of cholangioscopic reading, EUS-guided treatment of pancreatic cystic tumors. He is actively conducting many studies related to interventional EUS. Currently Prof. Seo is also serving as Secretary General of World Endoscopy Organization (WEO), Chairman of Educational Committee in Korean Society of Gastroenterology (KSG), and Director of Gastroenterology Specialty Board in Korean Society of Internal Medicine (KSIM). He is also working as an editorial board member of Endoscopy, Gastrointestinal Endoscopy and World Journal of Gastroenterology.

Hu Bing (China)



Professor, Head of Endoscopy Center
Eastern Hepatobiliary Hospital
Second Military Medical University

absent

Faculty Members

International organizing committee

Christopher Jen Lock Khor (Singapore)



Dr Christopher Khor attended medical school at the National University of Singapore, and completed clinical fellowships in ERCP and in Endoscopic Ultrasound (EUS) at the Medical University of South Carolina and Indiana University Medical Center respectively. More recently, he trained in Endoscopic Submucosal Dissection in Japan. His main practice areas are in pancreato-biliary disease (ERCP and EUS), endoscopic resection and general gastroenterology. Dr Khor has more than 20 peer-reviewed papers to his name, serves on the editorial board of Endoscopy, and is a reviewer for a number of other endoscopy and GI journals. He has a keen interest in endoscopic quality and education, and in promoting cross-border co-operation among the regional endoscopic community. His regional work includes regular faculty invitations to demonstrate and teach endoscopy. Dr Khor currently co-chairs an Asia-Pacific group focused on EUS education. He was Vice-President of Asian-Pacific Digestive Week 2011 in Singapore, for which he directed Endoscopy programming, and is a past President of the Gastroenterological Society of Singapore.

Thawee Ratanachu-ek (Thailand)



Dr. Thawee is currently a director of surgical endoscopy unit, Chief of general surgery division, department of surgery, Rajavithi hospital which is a tertiary care of gastrointestinal specialty in Thailand. He graduated from Siriraj Medical School, Mahidol University then received a board of surgery, he gained his endoscopic experiences from a short term visiting in various famous centers. His main interests are all kinds of therapeutic endoscopy and EUS especially hepato-pancreato-biliary area. He extensively provides training to young endoscopists both locally and internationally. Formerly he also held the position of president of Thai Association of Gastrointestinal Endoscopy (TAGE) during 2012-2013. Currently he is the chief of Gastrointestinal Endoscopy Summit Thailand (GEST) and Clinical Instructor at Rungsit Medical College, Rungsit University, Thailand.

Ryan Ponnudurai (Malaysia)



Dr Ryan Ponnudurai is a U.S. board certified gastroenterologist with advanced training in interventional endoscopy and endoscopic ultrasound. He has pioneered the training and development of eus in Malaysia. He is the chairman of eus tap (task force in eus training in the Asia pacific region) and was recently elected as Vice President of the international EUS society.

James Lau (Hong Kong)



Dr. Lau is currently Director to Endoscopy Center and Professor to Surgery at the Prince of Wales Hospital to the Chinese University of Hong Kong. He graduated from University of New South Wales, Australia in 1987 and became a Fellow to the Royal College of Surgeons at Edinburgh in 1991. He subsequently learned upper gastrointestinal, laparoscopic surgery and therapeutic endoscopy at the Prince of Wales Hospital. His main research interests are in epidemiology of gastrointestinal diseases, therapeutic endoscopy and specifically in management of upper gastrointestinal bleeding and biliary endoscopy.

Faculty Members

International organizing committee

Sundeep Lakhtakia (India)



I, Dr Sundeep Lakhtakia, am senior consultant at Asian Institute of Gastroenterology, Hyderabad, India with special interest in EUS, therapeutic endoscopy & ERCP.

I graduated (MBBS) from MAMC, New Delhi, followed by MD (Internal Medicine) from prestigious PGIMER, Chandigarh, and DM (Gastroenterology) from SGP GIMS, Lucknow in 1998.

I received advanced training in "Endoscopic Ultrasound" at MUSC, Charleston, South Carolina, USA.

I have various publications in national & international journals. I am peer reviewer in national and international journals. I have received various awards and scholarships during my academic career, including prestigious "Young Investigator Award" at APDW at Philippines in 2006.

Rungsun Rerknimitr (Thailand)



Rungsun Rerknimitr graduated from Chulalongkorn University, Thailand with honor. He obtained his American Board of Internal Medicine from Rush Medical College, Chicago in 1996. Later, he pursued his Gastroenterology fellowship from Louisiana State University in New Orleans. Before he returned to Thailand, he obtained an ERCP fellowship from Indiana University. To date he has published 7 English-GI- Endoscopy Atlases and more than 100 articles in peer review GI journals. He is currently a Professor of Medicine and a Director of GI Endoscopy Excellence Center at Chulalongkorn University, Bangkok, Thailand. He is also a founding member of the Thai Association of Gastrointestinal Endoscopy (TAGE) and also a past chief editor of the Thai Journal of Gastroenterology. He is now the current president for TAGE (2014-2016). He recently won the award as the most achievement young internist (2013) from the Thai Royal College of Physicians. In 2014, he received the most achievement in research award from Chulalongkorn University. In 2015, he received the award as the great teacher from Chulalongkorn University and in the same year the Royal College of Physician (London) awarded him as the honorary fellow recipient (FRCP). His main endoscopic interest is therapeutic ERCP with a special interest in metallic stent clinical application. His extra-endoscopy medical interest is telemedicine.

Ang Tiing-Leong (Singapore)



Dr Ang is Chief and Senior Consultant at the Department of Gastroenterology and Hepatology, Changi General Hospital, Singapore. He is the Director of the Endoscopy Centre. He is Adj Associate Professor at the Yong Loo Lin School of Medicine, National University of Singapore. He has subspecialty clinical interests in pancreaticobiliary diseases, early GI cancers and advanced therapeutic endoscopy, in particular therapeutic ERCP and interventional EUS. His research interests include acid-related disorders, H. pylori infection, pancreatico-biliary diseases, image enhanced endoscopy, therapeutic ERCP and interventional EUS.

Secretaly general

Ichiro Yasuda (Teikyo Univ. Mizonokuchi Hosp.)



Dr Ichiro Yasuda is Associate Professor of Medicine and Gastroenterology at the First Department of Internal medicine, Gifu University Hospital, Japan. He is also the head of the pancreatobiliary section at Gifu University Hospital. After his graduation from Gifu University School of Medicine in 1990, he received his training in Gastroenterology at Gifu University Hospital and subsequently at the world renowned University Hospital Hamburg-Eppendorf under the direction of Professor Nib Soehendra. Dr Yasuda is an expert in ERCP and endoscopic ultrasonography (EUS), and has published extensively in pancreatobiliary diseases.

Faculty Members

Secretariats

Yousuke Nakai (Tokyo Univ. Japan)



Assistant Professor, Department of Gastroenterology, Graduate School of Medicine, The University of Tokyo.

He is interested in both advanced endoscopic procedures for pancreato-biliary diseases and oncology for pancreatic cancer. He finished advanced EUS fellowship with Prof. Kenneth Chang at University of California, Irvine and conducted a prospective study of EUS-guided “through-the-needle” diagnosis of pancreatic cysts using Spyglass and nCLE. He published many (>100) articles regarding interventional endoscopy, oncology and the combination, “interventional oncology; iOncology.”

Masaki Kuwatani (Hokkaido Univ. Japan)



Assistant professor, Department of Gastroenterology and Hepatology, Hokkaido University Hospital.

He graduated from Hokkaido University and has been engaged in the pancreato-biliary field as both a physician and endoscopist for 14 years. He recently reported RCT of CO₂ vs. air insufflation during ERCP and showed that patients' discomfort after ERCP can be alleviated effectively by deep conscious sedation during ERCP regardless of insufflation gas used. He has published about 30 peer-reviewed international and 25 domestic articles.

Takuji Iwashita (Gifu Univ. Japan)



Dr Takuji Iwashita completed his medical degree as well as his Ph.D. at Gifu University. He received his training in Gastroenterology at Gifu University Hospital and subsequently at University of California, Irvine under the direction of Prof. Kenneth J. Chang. He is currently Assistant Professor of Gastroenterology at First Department of Internal Medicine, Gifu University Hospital. His clinical research focuses on endoscopic ultrasound (EUS) guided procedures. His clinical expertise in pancreatico-biliary endoscopy includes EUS, EUS-guided procedures, and endoscopic retrograde cholangiopancreatography (ERCP).

Takayoshi Tsuchiya (Tokyo Medical Univ. Japan)



Assistant Professor, Department of Gastroenterology and Hepatology, Tokyo Medical University

I am interested in both diagnostic & therapeutic endoscopy and diagnostic & therapeutic endoscopic ultrasonography. I completed my medical degree as well as Ph.D. at Tokyo Medical University. I received training in Gastroenterology at Tokyo Medical University and Teine keijinkai general hospital. I have been given World Cup of Endoscopy Silver Medal in 2013 at DDW, Orland.

Faculty Members

Secretariats

Natsuyo Yamamoto (Tokyo Univ. Japan)



Dr. Natsuyo Yamamoto is the assistant professor of the University of Tokyo at Tokyo, Japan. She graduated from Chiba University in 1998 and had worked as a gastroenterologist in Tokyo University Hospital, Japanese Red Cross Medical Center and International University of Health and Welfare Mita Hospital. Her major is diagnostic and therapeutic endoscopy in pancreaticobiliary diseases. She also specialized in endoscopic intervention for severe pancreatitis.

Hirofumi Kogure (Tokyo Univ. Japan)



Dr. Hirofumi Kogure is Assistant Professor at the Department of Gastroenterology, Graduate School of Medicine, The University of Tokyo, Japan. He graduated from The University of Tokyo in 2001. His clinical and research interests include therapeutic pancreaticobiliary endoscopy and endoscopic ultrasound, especially biliary stenting, endoscopic papillary large balloon dilation, and Double-balloon endoscopy-assisted ERCP.

Tsuyoshi Hamada (Tokyo Univ. Japan)



Department of Gastroenterology, Graduate School of Medicine, The University of Tokyo. He is a young and eager interventional-endoscopist in the pancreato-biliary field and his main interest is biliary self-expandable metal stents for malignant biliary obstruction, including antireflux stents. He is well trained in statistical analyses and has published articles on risk factors for stent dysfunction using a competing risk analysis or a propensity analysis. He is also specialized in percutaneous transhepatic cholangioscopy using an ultraslim upper endoscope.

Satoko Uchiyama (Tokyo Univ. Japan)



She graduated Aoyama Gakuin University College of Literature Department of History. She is working from 2011 as a secretary of the University of Tokyo Hospital Department of Gastroenterology group.

Access

Subway

On the Tokyo Metro Tozai Line, get off at the Toyocho Station. Take exit 1 (Otemachi side) and turn right. Approximately a 7-minute-walk.

From Sumiyoshi Station on the Toei Shinjuku Line or Tokyo Metro Hanzomon Line, take the east 22 route bus [For Toyocho Station Tokyo Station Kitaguchi]. Approximately a 10-minute-ride. Get off at Toyosumibashi (Tokyo East 21.)

JR

From Kinshicho Station on the JR S bu Line, take the east 22 route bus [For Toyocho Station Tokyo Station Kitaguchi]. Approximately a 15-minute-ride. Get off at Toyosumibashi (Tokyo East 21.)

Taxi

Approximately 15 minutes from Tokyo Station on the JR Yamanote Line/other lines/Shinkansen Lines. Approximately 10 minutes from Kinshicho Station on the JR Sobu Line.

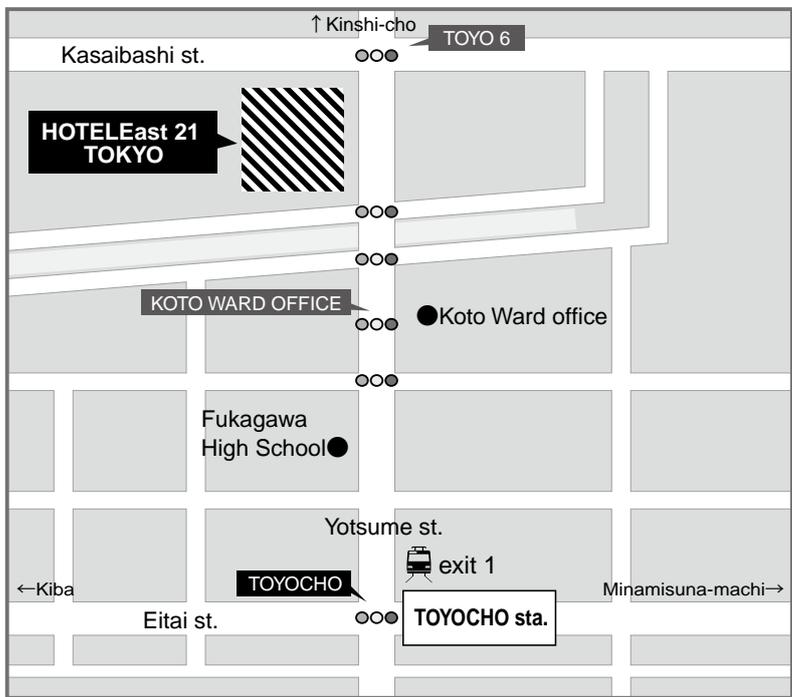
Adjacent facilities

Tokyo East21, the Multifunctional City has three functions; Office, Hotel, and Commerce.

Access Map

HOTEL East 21 TOKYO

6-3-3, Tokyo, Koto-Ku, Tokyo, 135-0016



Congress information

Registration

- **Registration Desk:** In front of "East 21 Hall", 1F, HOTEL East 21 TOKYO
 - **Open hours:** Friday, July 3 9:00-21:00 Saturday, July 4 9:00-17:00
 - **Registration Fee:** Onsite registration: JPY 15,000
Pre-registration: JPY 10,000
Medical company person: JPY 15,000
 - **Entitlements**
Participants' registration includes: + Participation in the Scientific Program / + Abstract Book / + Luncheon Seminar / + Coffee Breaks / + Dinner Party / + Drink Morning seminar
- Payment Method: Payment must be made in JPY (Japanese Yen), cash and credit card.**

Instruct for Presentation

[Symposium (Oral Presentation)]

- **All speakers, please bring one's PC. And the person using the Macintosh PC, please bring the Adapter. All speakers, please provide and bring the back-up data by USB flash memory, and see the following information.**
- All speakers are requested to come to the PC Center at least 30 minutes prior to their presentations in order to verify if the data functions properly on the equipment provided.
- If you have prepared data by Windows PC, please bring your data by USB flash memory. Your presentation data will be loaded onto a central server and distributed to an appropriate session room at an appropriate time via a LAN .
- If you have prepared data by Macintosh , please bring your Macintosh with you.
- Please operate a mouse and keypad at the podium when you make a presentation.

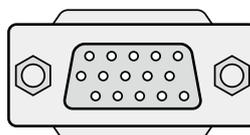
[Data Preparation (for Windows)]

1. The operating system must be Windows 2000 or later.
2. Presentation slide must be prepared by Microsoft PowerPoint 2003/2007/2010 and the following OS standard fonts: [English] Times New Roman, Arial ,Arial Black ,Arial Narrow ,Century ,Century Gothic ,Courier ,Courier New ,Georgia
3. Animation and movies can be included but it should be played by default codec of Windows Media Player 11.
4. Audio can be included as well.
5. File size should be less than 700MB including movies.
6. Resolution of presentation PC is set as XGA (1.024x768). Please be sure to change your resolution to XGA before reviewing the layout.
7. In order to avoid virus infection, please scan your data with the updated antivirus program beforehand.
8. Your presentation data loaded onto the server will surely be deleted by the congress secretariat after the congress.

[For those who bring their own computers]

1. No regulation for computer models, OS and applications, but your computer must have VGA D-sub15 pin female output. Special video output cable is required for some laptops to use D-sub 15pin to connect to external monitors and data projectors.

D-sub 15pin



e.g. output cables



Congress information

2. Please review your data at PC Center if it works properly if video and audio included.
3. Resolution of presentation is set as XGA (1.024x768). Please be sure to change your resolution to XGA before reviewing the layout.
4. Please make sure to bring AC power cable with you. Running your computer with battery only might cause a trouble.
5. It is recommended to have your data backed up in case of computer trouble.
6. After your presentation finished, your computer will be returned to you. Please come to the operator's desk and certainly collect your computer.

[Poster Presentation]

Schedule: Friday, July 3 9:00 - Saturday, July 4 17:00

July 3 (Fri) 13:15-14:30

Poster presentator, please come in front of your poster at time of Poster Discussion round mentioned above.

July 4(Sat) 13:45-14:30

Poster Discussion

Poster size:

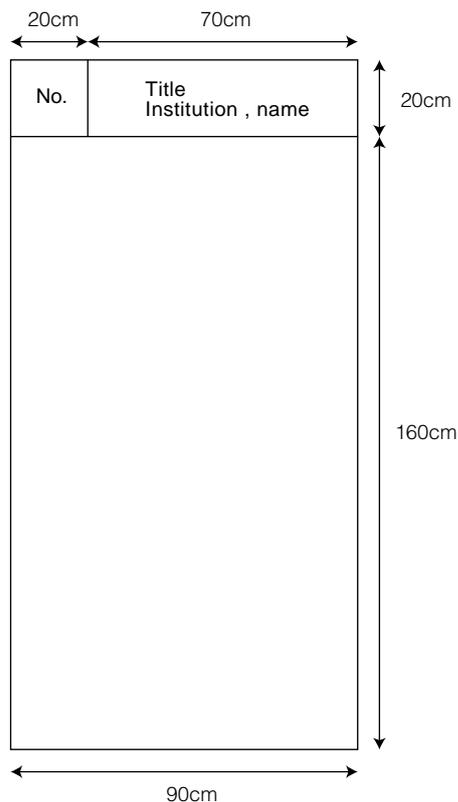
Poster: 90cm widthx180cm high

Label : 70cm widthx20cm high

- Your assigned board will be indicated with your poster program number.
- Please prepare a label showing the title , institution , and speaker's name.
- Pins for mounting will be available from the Poster Session area.

****Note****

- Posters should be brought personally to the congress and not mailed.
The Organizing Committee is unable to take any responsibilities for any loss or mishandling.
- Presenters are responsible for posting and removing their own materials.
- Audio-Visual equipments may not be used.



Time Table

| Friday, July 3 | |
|-------------------------------------|---|
| HOTEL East 21 Tokyo 1F East 21 Hall | |
| 8:30 | |
| 9:00 | Opening remarks (9:00-9:10) |
| 9:30 | Special session 1 (9:10~10:30): "Current strategy of preoperative biliary drainage" |
| 10:00 | |
| 10:30 | |
| 11:00 | Session 1 (10:30~12:00): New diagnostic modality for pancreato-biliary diseases |
| 11:30 | |
| 12:00 | |
| 12:30 | COOK JAPAN Incorporated Luncheon Seminar (12:00-13:15) |
| 13:00 | |
| 13:30 | Poster & Exhibition round (13:15~14:30) Poster Presenter: Please wait in front of a poster. Posters are always put in conference of 2 days. |
| 14:00 | |
| 14:30 | |
| 15:00 | Session 2 (14:30~15:30): Free paper session 1 (Each paper: 6min+3min) |
| 15:30 | |
| 16:00 | Session 3 (15:30~16:45): Cutting edge of Interventional EUS |
| 16:30 | |
| 17:00 | Coffee break (16:45~17:00) |
| 17:30 | Session 4 (17:00~18:15): Endoscopic anti-tumor therapy |
| 18:00 | |
| 18:30 | TaeWoong & CMI Satellite symposium (18:15~19:30) |
| 19:00 | |
| 19:30 | |
| 20:00 | Dinner Party (19:30~21:00) |
| 20:30 | |
| 21:00 | |

| Saturday, July 4 | |
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| HOTEL East 21 Tokyo 1F East 21 Hall | |
| 8:30 | |
| 9:00 | |
| 9:30 | Hitachi Medical Corporation Morning seminar: (9:00-10:15) The breakfast is not included. |
| 10:00 | |
| 10:30 | Session 5 (10:15~11:15): Endoscopic management of both duodenal and biliary obstruction |
| 11:00 | |
| 11:30 | Special session 2 (11:15~12:30): "Current advance in sphincterotomy" |
| 12:00 | |
| 12:30 | |
| 13:00 | FUJIFILM Corporation Luncheon Seminar (12:30-13:45) |
| 13:30 | |
| 14:00 | Poster & Exhibition round (13:45~14:30) Posters are always put in conference of 2 days. |
| 14:30 | |
| 15:00 | Session 6 (14:30~15:30): Management of benign biliary stricture (BBS) |
| 15:30 | Coffee break (15:30~15:45) |
| 16:00 | Session 7 (15:45~16:45): Management of malignant biliary stricture |
| 16:30 | |
| 17:00 | Awarded Ceremony & Closing remarks (16:45~17:00) |
| 17:30 | |
| 18:00 | |
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| 19:30 | |
| 20:00 | |
| 20:30 | |
| 21:00 | |

Meeting agenda of T-CAP 2015

DATE: July 3 (Fri.) ~ 4 (Sat.), 2015.

VENUE: Hotel East 21, Okura Hotels & Resorts, Koto-ku, Tokyo.

[July 3, Friday]

Opening remarks (9:00-9:10)

Hiroyuki Isayama
Kazuhiko Koike
Hsiu-Po Wang

Special session 1 (9:10~10:30): “Current strategy of preoperative biliary drainage”

Moderator: Dong Wang Seo, Hiroyuki Isayama

Distal Biliary Obstruction (25min+10min) Jeffrey H. Lee

Optimal preoperative biliary drainage is endoscopic nasobiliary drainage

for hilar cholangiocarcinoma (25min+10min) Hiroshi Kawakami

Discussers: Shomei Ryozaawa, Hirofumi Kogure, Masaki Kuwatani,
Akio Katanuma, Hiroyuki Isayama, Ang Tiing Leong,
Rungsun Rerknimitr, Jin Hong Kim, Michel Kahaleh

Session 1 (10:30-12:00): New diagnostic modality for pancreato-biliary diseases

Moderator: Takao Itoi, Ryan Ponudurai

Confocal laser endomicroscopy in pancreato-biliary diseases(15min+10min) Yousuke Nakai

Feasibility of direct peroral cholangioscopy using an ultraslim upper endoscope
for biliary lesion. (15min+10min)s Shigefumi Omuta

Digital SpyGlass (15min+10min) Michel Kahaleh

Discussers: Iruru Maetani, Ichiro Yasuda, Tsuyoshi Hayashi, Atsushi Irisawa,
Jeffrey H. Lee, Sundeep Lakhtakia, Anthony Yuen Bun Teoh,
Christopher Khor, Tiing Leong Ang, Christopher Khor

COOK JAPAN Incorporated Luncheon Seminar (12:00-13:15)

Moderator: Atsushi Irisawa, Hsiu-Po Wang

Endoscopic management of pancreatic duct disruption (25min+10min) Cheuk-Kay Sun

How to obtain better diagnostic yield of EUS-FNA? (25min+10min) Masayuki Kitano

Poster & Exhibition round (13:15-14:30)

Poster Presenter: Please wait in front of a poster. Posters are always put in conference of 2 days.

Session 2 (14:30-15:30): Free paper session

Moderator: Iruru Maetani, Ang Tiing Leong

Use of Spyglass peroral pancreatoscopy and X-ray-guided electrohydraulic
lithotripsy for refractory pancreatic stones Ken Ito

Endoscopic Ultrasound-Guided Transmural Drainage of Intra-abdominal Collections.

Song Mingjun

A Newly Modified Non-Flared Fully Covered Metallic Stent of 12 mm-Diameter with Long

Lasso for Intraductal Placement in Patients with Malignant Biliary Stricture: Feasibility Study

Hyun Jong Choi

Meeting agenda of T-CAP 2015

Biliary drainage strategy of unresectable malignant hilar strictures
by computed tomography volumetry Mitsuharu Fukasawa

EUS GUIDED DRAINAGE OF WALLED OFF NECROSIS USING LARGE
DIAMETER LUMEN APPOSING FULLY COVERED METAL STENT –
LARGE EXPERIENCE FROM A SINGLE TERTIARY CARE GI CENTRE
Jahangeer Basha

EUS-guided biliary drainage for right intrahepatic bile duct obstruction; novel technical tips
(with video) Takeshi Ogura

Discussers: Keiji Hanada, Tsuyoshi Hayashi, Takayoshi Tsuchiya,
Reiko Ashida, Tsuyoshi Hamada, Dong Wang Seo,
Ryan Ponudurai, Thawee Ratanachue-ek, Hsiu-Po Wang

Session 3 (15:30-16:45):Cutting edge of Interventional EUS

Moderator: Yousuke Nakai, Sundeep Lakhtakia
EUS guided biliary drainage (10min+5min) Kazuo Hara
EUS-guided gallbladder drainage (10min+5min) Anthony Yuen Bun Teoh
EUS-guided Pancreatic intervention (10min+5min) Takayoshi Tsuchiya
New Metal Stents for EUS-guided biliary intervention: AL stent & Hybrid stent(10min+5min)
Sang Soo Lee

Discussers: Takao Itoi, Takuji Iwashita, Natsuyo Yamamoto, Shigefumi Omuta,
Masaki Kuwatani, Sang Soo Lee, Michel Kahaleh,
Thawatchai Akaraviputh, Anthony Yuen Bun Teoh

Coffee break (16:45-17:00)

Session 4 (17:00-18:15):Endoscopic anti-tumor therapy

Moderator: Hiroshi Kawakami, Thawee Ratanachu-ek
EUS-guided RFA ablation for P-NET (10min+5min) Sundeep Lakhtakia
EUS-guided RFA for Pancreatic Cancer (10min+5min) Dong Wang Seo
Endoscopic Intraductal therapies for Cholangiocarcinoma (10min+5min) Nageshwar Reddy
Endoscopic HIFU for pancreatic cancer
~Current advance and future aspect~ (10min+5min) Reiko Ashida

Discussers: Atsushi Irisawa, Takuji Iwashita, Yousuke Nakai, Kazuo Hara,
Ryan Ponudurai, Dong-Ki Lee, Cheuk-Kay Sun, Sang Soo Lee

TaeWoong & CMI Satellite symposium (18:15~19:30):

Moderator: Hiroyuki Isayama, Rungsun Rerknimitr
Pancreato biliary updates 2015 (25min+10min) Nageshwar Reddy
International Consensus Guideline for Endoscopic Papillary Large-Balloon Dilation
(25min+10min) Jin Hong Kim

Dinner Party (19:30~21:00)

Meeting agenda of T-CAP 2015

[July 4, Saturday]

Hitachi Medical Corporation Morning seminar: (9:00-10:15 The breakfast is not included.)

Moderator: Keiji Hanada, Christopher Khor

US guided ERCP, where do we stand? (25min+10min) Michel Kahaleh

Endoscopic treatment of acute cholecystitis:

Endoscopic transpapillary approach and EUS-guided transenteric approach (25min+10min) Sang Soo Lee

Session 5 (10:15~11:15): **Endoscopic management of both duodenal and biliary obstruction**

Moderator: Shomei Ryozaawa , Takuji Iwashita

Impact of duodenal tumor invasion on biliary stenting (15min+5min) Tsuyoshi Hamada

Double metallic stenting (10min+5min) Iruu Maetani

Management with EUS-guided therapy (10min+5min) Takao Itoi

Discussers: Hiroshi Kawakami, Masayuki Kitano, Akio Katanuma, Hirofumi Kogure,
Masaki Kuwatani, Sundeep Lakhtakia, Jeffrey H. Lee,
Cheuk-Kay Sun, Thawatchai Akaraviputh

Special session 2 (11:15~12:30): **“Current advance in sphincterotomy”**

Moderator: Takayoshi Tsuchiya, Hsiu-Po Wang

Precut: How to make it safe? (25min+10min) Thawatchai Akaraviputh

EST: How to teach it well? (25min+10min) Akio Katanuma

FUJIFILM Corporation Luncheon Seminar (12:30-13:45)

Moderator: Takao Itoi, Sundeep Lakhtakia

Paradigm shifts in endoscopic management of peri-pancreatic fluid collections (25min+10min) Anthony Yuen Bun Teoh

Recent Progress in Interventional EUS (25min+10min) Yousuke Nakai

Poster & Exhibition round (13:45-14:30)

Posters are always put in conference of 2 days.

Session 6(14:30-15:30): **Management of benign biliary stricture (BBS)**

Moderator: Natsuyo Yamamoto, Thawee Ratanechu-ek

Current topics in BBS (15min+5min) Ang Tiing Leong

Biliary strictures after living donor liver transplantation (10min+5min) Hirofumi Kogure

Management of Benign Biliary Stricture (BBS) with original magnet (10min+5min) Dong Ki Lee

Coffee break (15:30~15:45)

Meeting agenda of T-CAP 2015

Session 7(15:45-16:45): Management of malignant biliary stricture

Moderator:

Tsuyoshi Hayashi, Ichiro Yasuda

Endoscopic Bilateral Stenting for Palliation of Malignant Hilar Obstruction (10min+5min)

Jin Hong Kim

Management of Malignant Biliary Strictures in USA (10min+5min)

Jeffrey H. Lee

Strategy of biliary stenting in far advanced malignant biliary obstruction (10min+5min)

Dong Ki Lee

Proposal of unified reporting system in biliary stenting~ Tokyo criteria 2014~ (10min+5min)

Hiroyuki Isayama

Awarded Ceremony & Closing remarks(16:45-17:00): Ichiro Yasuda & Thawee Ratanachu-ek

Best Free Paper Presenter (Selected by Iruru Maetani & Ang Tiing Leong),

Best Poster Presenter (Selected by Ichiro Yasuda & Dong Wang Seo),

Best Discussor (Selected by Atsushi Irisawa & Christopher Khor)

Invited Speaker

- **Jin Hong Kim, MD, Ph D**

(Department of Gastroenterology, Ajou University School of Medicine, Suwon, Korea)



CURRICULUM VITAE

Dr. Jin Hong Kim received his medical degree from the University of Yonsei, Seoul, South Korea in 1981 and did his residency and fellowship at the Soonchunhyang University Hospital, Seoul, South Korea. He started his professional career as an Associate Professor in the same hospital from 1990. His current position is a full professor of Department of Gastroenterology, University of Ajou School of Medicine in Suwon, South Korea. He served as a president of the Korean Pancreato-biliary Association and a president of the Korean Stent Research Society. His speciality includes interventional treatment of pancreatobiliary disease, especially through therapeutic ERCP and interventional EUS, and gastrointestinal stenting. He invented several types of metallic stents with his own patents and is also involving in the research of new drug-eluting metallic stents. In a career spanning 20 years or more, he has contributed almost 300 scientific papers, invited reviews, and book chapters.

International Consensus Guideline for Endoscopic Papillary Large-Balloon Dilation

Jin Hong Kim, MD, Ph D

(Department of Gastroenterology, Ajou University School of Medicine, Suwon, Korea)

Common bile duct stones are frequently diagnosed through the world. Endoscopic sphincterotomy (EST) has been used for the removal of bile duct stones for the past 40 years. The purpose of EST is to provide an opening to allow for bile duct stone extraction. However, adverse events such as bleeding, perforation, pancreatitis, and cholangitis occur in 5–10% of patients who undergo EST. Additionally, endoscopic mechanical lithotripsy (EML) may be required as an adjunctive procedure in patients with large bile duct stones to facilitate clearance. Endoscopic papillary balloon dilation (EPBD) was first proposed as an alternative to EST in 1982.¹⁰ Because the extent of orifice dilation with EPBD is limited to a diameter of ≤ 10 mm, it is less successful than EST when removing bile duct stones. Endoscopic papillary large balloon dilation (EPLBD) combined with EST was initially introduced in 2003 to facilitate the removal of large or difficult bile duct stones, and the size of the large-diameter balloons used was 12–20 mm. Since then, EPLBD with limited or large EST has become rapidly and widely adopted mainly in Asia. As an alternative method, EPLBD without a preceding EST was introduced as a simplified technique of these in 2009. Several studies have reported that this technique was safe and effective in patients with large bile duct stones without an increase in risk of severe pancreatitis or bile duct perforation. Nevertheless, it is difficult to precisely analyze the outcomes of EPLBD because the techniques and definitions are used differently among studies. To date there are no published consensus of guidelines on the techniques and indications for EPLBD. The consensus guidelines in this report will help provide a framework to improve the outcome of EPLBD.

This guideline presents recommendations for safe endoscopic papillary large-balloon dilation (EPLBD) with or without endoscopic sphincterotomy (EST) in patients with bile duct stones. Over the past decade, there has been a new understanding of the indications for this technique and its outcomes. EPLBD is used to dilate the biliary orifice with a large-diameter balloon (≥ 12 mm) and is generally performed with EST, or occasionally without. Based on

the results of several systematic reviews and meta-analyses, the initial and overall success rates of EPLBD with EST were comparable to those of EST alone for the removal of large or difficult bile duct stones. EPLBD with EST can reduce the need for mechanical lithotripsy during the endoscopic removal of such stones. EPLBD may have the advantage of a lower risk of overall adverse events compared with EST alone. During EPLBD the balloon should be inflated slowly and gradually to prevent serious adverse events, and the usual duration of balloon dilation is approximately 30–60 s after disappearance of the waist of the balloon. This technique is not recommended for patients with distal bile duct strictures. EPLBD without EST is preferred over EPLBD with EST in patients with coagulopathy. In patients with a periampullary diverticulum, surgically altered anatomy, or prior EST, EPLBD may be an effective and safe procedure to remove large bile duct stones.

Table 1. Summary statements of EPLBD

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| <p>1. Definition</p> <p>1.1 EPLBD is used to dilate the biliary orifice with a large-diameter balloon (≥ 12 mm) and can be performed with or without EST.</p> <p>2. Indication</p> <p>2.1 In the removal of large or difficult bile duct stones, EPLBD can be used as an alternative to EML.</p> <p>2.2 EPLBD can be used as the initial method when large bile duct stones have been identified on endoscopic retrograde cholangiography or cross-sectional imaging.</p> <p>2.3 When conventional stone removal after EST fails, EPLBD can be considered.</p> <p>2.4 In patients with obvious distal bile duct strictures or a non-dilated bile duct, EPLBD is not recommended because of the increased risk of perforation.</p> <p>2.5 EPLBD without EST is preferred over EPLBD with EST in patients with coagulopathy.</p> <p>3. Techniques</p> <p>3.1 The maximal diameter of the balloon should not exceed the diameter of the distal bile duct.</p> <p>3.2 The balloon should be inflated slowly in gradual steps.</p> <p>3.3 The usual duration of balloon dilation is approximately 30–60 s after disappearance of the waist.</p> <p>4. Outcomes</p> <p>4.1 The initial and overall success rates of EPLBD with EST are comparable to those of EST alone.</p> <p>4.2 Overall success rates of EPLBD with and without EST for bile duct stone clearance are comparable.</p> <p>4.3 EPLBD with EST can reduce the need for EML.</p> <p>5. Specific cases</p> <p>5.1 The presence of a periampullary diverticulum may not increase the risk of adverse events in patients who undergo EPLBD.</p> <p>5.2 In patients with surgically altered anatomy, EPLBD may be an effective and safe procedure to remove bile duct stones.</p> <p>5.3 In patients with prior EST, EPLBD without repeated EST may be effective and safe for the removal of recurrent stones.</p> <p>6. Adverse events</p> <p>6.1 The rate of overall adverse events for EPLBD with EST is lower than that for EST.</p> <p>6.2 EPLBD may not increase the risk of pancreatitis.</p> <p>6.3 EPLBD with large EST may increase the risk of bleeding.</p> <p>6.4 EPLBD with EST has a similar perforation rate as EST. A distal CBD stricture is a major risk factor for perforation.</p> |
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Endoscopic Bilateral Stenting for Palliation of Malignant Hilar Obstruction

Jin Hong Kim, MD, Ph D

(Department of Gastroenterology, Ajou University Medical Center, Suwon, Korea)

Single stents are adequate for Bismuth type I hilar tumors, which have strictures of the main bile duct below the confluence. However, there is significant controversy as to whether single or multiple stents should be inserted for Bismuth type II, III and IV hilar tumors. The decision of whether to place single or multiple biliary stents depends on the location and extent of the stricture in the biliary tract as well as the degree of biliary contamination. It is well known that only 25% of the liver volume needs to be drained for adequate palliation of obstructive cholestasis showing improvement in biochemical parameters and draining >50% of the liver volume is associated with a higher drainage effectiveness and longer survival than draining only <50%. A single biliary stent into one functional liver lobe for unilateral drainage can provide adequate palliation in a major portion of patients with hilar tumors, and many studies have reported good results using a single stent in about 80% of patients with Bismuth type II and III hilar tumors.

Sometimes, however, bilateral biliary stents may be needed for palliative drainage of both hepatic lobes when both sides are contaminated, when a non-dominant or atrophic lobe is inadvertently stented without efficacy, or if bilateral brachytherapy is scheduled. Especially the vigorous opacification of multiple bile ducts of both hepatic lobes, to obtain detailed cholangiograms with contrast during ERCP, increases the necessity for bilateral stent insertion in hilar tumors, because cholangitis mainly arises from contaminated and undrained bile ducts. The necessity for the drainage of both systems during ERCP is really more to prevent postprocedure cholangitis than to have effective palliation. If both lobes are imaged with contrast during ERCP, bilateral stent insertion reduces the potential sequelae of cholangitis in undrained bile ducts. However, even in the most experienced hands, endoscopic placement of bilateral stents may be difficult or impossible, and failure of bilateral stenting after extensive contaminated contrast filling of multiple bile ducts may frequently lead to subsequent cholangitis. If contrast medium does not contaminate both sides or is sufficiently drained from unilateral bile duct after imaging both sides, then unilateral stenting should be enough and is substantially easier to perform endoscopic re-intervention.

Several studies have attempted to address whether unilateral or bilateral drainage is preferred for palliation of obstructive jaundice in patients with hilar tumors. Early studies have shown high rates of cholangitis following ERCP in large parts attributed to the contamination of the undrained segments which was caused by contrast injection without any planned limitations. These studies showed that bilateral stent insertion was associated with an increased survival rate and reduced the risk of cholangitis, compared to unilateral drainage for Bismuth type II and III hilar tumors. The highest survival rate was noted in patients with hilar tumors who had bilateral drainage, while the lowest survival rate in those who showed cholangiographic opacification of both lobes but only able to have unilateral drainage. These results are believed to have been caused by inadvertent contrast injections into the undrained bile ducts and quite clearly show that failure to drain an opacified lobe leads to a significantly negative outcome, thus bilateral drainage being mandatory if both hepatic lobes are opacified. However, an unsuccessful attempt at bilateral drainage can lead to increased incidence of postprocedure cholangitis and lower survival rates. Therefore, ERCP in hilar tumors should only be undertaken in highly regarded institutions with high success rates for drainage of hilar obstruction.

Selectively targeted and planned endoscopic drainage guided by MR cholangiography or CT imaging has recently been introduced to reduce inadvertent contrast injections into atrophied and/or unintended multiple hepatic segments, and thus resulting in a lower incidence of postprocedure cholangitis. MR findings seem to be slightly more accurate than CT findings in assessing the level of obstruction in malignant hilar obstructions and to measure the volume of functional liver lobes. MR cholangiography is widely known as a reliable and noninvasive diagnostic tool and shows equivalent imaging to that of ERCP in demonstrating the detailed anatomy of the biliary tree. Several advantages that MR cholangiography has over ERCP include noninvasive diagnostic tool, no use of contrast medium and the delineation of missing ducts which are not visible in the endoscopic cholangiogram due to complete obstruction of the bile ducts. Cholangiograms obtained from MR provide a road map for the biliary endoscopist to define the biliary anatomy prior to ERCP, and results in them being able to choose the optimal hepatic lobe and bile ducts for effective drainage. Nowadays MR cholangiography has led to the unnecessary need for a diagnostic ERCP and is rapidly replacing its role for the delineation of the biliary tree. Therefore, ERCP is becoming an unnecessary procedure for such diagnostic purposes in hilar tumors. ERCP for hilar obstruction can be undertaken mainly for the therapeutic purpose of endoscopic intervention such as stenting into the targeted bile duct with the help of MR cholangiography. Several studies have evaluated the role of MR-guided selective unilateral biliary stent placement for endoscopic palliation of hilar tumors, and showed that the use of MR cholangiography to plan a layout of the intended endoscopic placement of the stent, reduced the need to inject contrast medium into multiple segments during ERCP, and thus diminished the risk of postprocedure cholangitis.

Invited Speaker

- **Dr. D Nageshwar Reddy, MD, DM, D.Sc, FAMS, FRCP, FASGE, FACG, MWGO**
(Andhra Pradesh Medical Council Registration No. 12072)



CURRICULUM VITAE

Dr D Nageshwar Reddy is currently the Chairman of Asian Institute of Gastroenterology, Hyderabad, India. President of World Endoscopy Organization.

He graduated from Kurnool Medical College obtaining internal medicine, Masters in Madras Medical College and D.M in Gastroenterology from PGIMER, Chandigarh. He subsequently worked as a Professor of Gastroenterology in Andhra Pradesh Health Sciences before setting up Asian Institute of Gastroenterology, a tertiary care Gastro intestinal Specialties Hospital.

His main area of research interest has been in G.I. Endoscopy particularly in Therapeutic Pancreatic Biliary Endoscopy and Innovations in Transgastric Endoscopic Surgery. He has published over 312 papers in National & International Peer review journals and has contributed chapters in 7 International Text Books of Gastroenterology and has edited 3 G.I. Endoscopy Text Books. He is on the Editorial Board of Gastrointestinal Endoscopy, Digestive Endoscopy, World Journal of Gastroenterology, World Gastroenterology News, Gastroenterology Today, The Journal of Chinese Clinical Medicine, and Recent Patents on Medical Imaging, Indian Journal of Gastroenterology and Gastro-Hep.com. He is the peer reviewer of the Journals like Lancet, Gastrointestinal Endoscopy, Endoscopy, World Journal of Gastroenterology, Journal of Gastroenterology & Hepatology and Indian Journal of Gastroenterology. He was the President of Society of Gastrointestinal Endoscopy of India in 2001. He has been a visiting faculty for 112 international endoscopy workshops and forum member of Asian Endoscopy Masters Forum.

He has been recognized for his achievements by several societies. He has been elected as honorary member for American Society of Gastrointestinal Endoscopy in 2004, Fellow of Royal College of Physicians of Ireland in 2003, Fellow of National Academy of Medical Sciences, New Delhi in 2001, Fellow of Philippines Society of Gastroenterology in 2001 and is a recipient of Honorary Doctor in Sciences (D.S.C) from Nagarjuna University in 2005. He has given several named orations including The Francisco Roman oration of Philippines Society of Gastroenterology 2002, Dr Panner Selvam Memorial Oration of Malaysian Society of Gastroenterology in 2006, Kees Huijbregtse Oration of 15th International Symposium on Pancreatic Biliary Endoscopy, Los Angeles 2007, Sir Francis Avery Jones Professorship in St. Marks, London 2008, Peter Gilispje oration, Australia 2010. He received the Master Endoscopist Award from A.S.G.E in 2009, ASGE International Leadership Award in 2011 and Fellow of American College of Gastroenterology in 2012. He is the Organizing Co-Chairman for the First WEO "Program for Endoscopic Teachers – Train the Trainers program" in January, 2013 at Hyderabad. He has received the highest Award Master of World Endoscopy Organization from World Endoscopy Organization. He was presented the award and fellowship for his contribution for the field of endoscopic surgery with Hong Kong's highest medical award. The president of Hong Kong society of Gastroenterology stated that several of Dr. Reddy's innovations and inventions in endoscopy. He was the Secretary General of World Endoscopy Organization from February 2014 to October 2014 and presently He is the President of World Endoscopy Organization from November 2014.

Pancreato-Biliary Endoscopy 2015 Update

Dr. D Nageshwar Reddy

MD, DM, D.Sc, FAMS, FRCP, FASGE, FACG, MWGO

(Andhra Pradesh Medical Council Registration No. 12072)

Evolution of pancreato-biliary endoscopy over last decade has revolutionized the management of many pancreato-biliary diseases. ERCP is now done only with therapeutic intent and EUS is transforming gradually from a predominant diagnostic to a therapeutic modality. In the following section I will brief up some of the recent advances in pancreato-biliary endoscopy.

Pancreatic Fluid Collections

The management of pancreatic fluid collections has witnessed emergence of endoscopic drainage which has almost taken over the surgical approach. Conventional endoscopic drainage is being replaced by endoscopic ultrasound (EUS) guided drainage with reduced complications and improved success rate. Endoscopic drainage of pseudocysts differs from that of walled off necrosis (WON) in that the former can be drained relatively easily with plastic stents whereas self expanding metal stents (SEMS) may be preferable in the latter for their longer patency and ease of repeated sessions of necrosectomy. The success of endoscopic transmural drainage of uncomplicated pancreatic pseudocysts does not appear to correlate with number or size of plastic stents.

Recently dedicated lumen apposing SEMS have been developed specifically for endoscopic drainage of pancreatic fluid collections. These are short biflanged SEMS with lumen apposing and antimigration properties (NAGI stent, Taewoog- Medical Co; AXIOS, Xlumena, Mountain View CA). Initial experience with these stents appears promising with regards to safety, efficacy and complications.^{1, 2} These stents are especially useful in WON where more than one necrosectomy sessions may be required.

Biliary strictures (Malignant and Benign)

Endoscopic approach to benign biliary stricture (BB) has evolved from inserting a single plastic stent to successive placement of multiple plastic stents. Recent multicentre studies have shown promise with the use of fully covered SEMS (FCSEMS) in benign biliary strictures, therefore avoiding multiple endoscopic sessions when using plastic stents.³ The efficacy of FCSEMS was found to be equal to multiple plastic stents in chronic pancreatitis related distal biliary strictures in a recent multicentre randomized controlled study.⁴

Covered SEMS (CSEMS) are now the standard of care for pancreatic cancer patients undergoing neoadjuvant chemotherapy as well as for pre-operative biliary drainage of resectable periampullary tumors. They provide superior outcomes when compared to plastic stents.⁵ More recently, CSEMS with antimigration properties has been used in the palliation of distal biliary obstruction with improved patency and no migration as compared to uncovered SEMS.⁶

As compared to malignant distal biliary obstruction, hilar cholangiocarcinomas (CCA) often require more than one stent to achieve adequate liver drainage (>50% of liver volume). Bilateral biliary drainage with SEMS can be performed by either "stent in stent" (SIS) method or "side by side" (SBS) method. SBS deployment results in better cumulative stent patency but at the cost of higher complications than SIS deployment.⁷

Novel Biliary Self expandable Metallic Stents

SEMS (covered or uncovered) may get blocked due to biliary sludge or duodeno-biliary reflux (food debris).

Novel anti-reflux stents have been designed to suppress duodeno-biliary reflux. These antireflux SEMS have a

hemispheric silicon valve with a small cross type orifice attached to the distal end of stent. In a recent randomized controlled trial, the median stent patency of antireflux SEMS was significantly higher compared to the UCSEMS group.⁸

Drug eluting stents (DES) are now being developed to prevent tumor invasion into the membrane and prolong stent patency. Paclitaxel and gemcitabine are the antitumor agents that have been used in these DES. Recent animal and pilot human studies with these stents appear promising with regards to feasibility and safety, however efficacy in terms of stent patency remains to be seen.^{9,10}

More recently, novel photosensitizer embedded SEMS has been developed and used in animal studies. These stents allow repeatable photodynamic treatment of cholangiocarcinoma without need of systemic injection of photosensitizer. Initial results from animal studies appear promising.¹⁴

Locoregional Therapies for Cholangiocarcinoma (CCA)

The endoscopic modalities for providing local control of CCA include photodynamic therapy (PDT), radiofrequency ablation (RFA) and DES. Of these modalities, PDT is well established and results in significant survival advantage as compared to stenting alone.¹¹ ERCP directed RFA is newer, but shows promise in recent studies.¹² A recent retrospective comparison between PDT and RFA for CCA shows equal survival advantage between the two groups.¹³ A randomized trial should be able to validate these results in future.

Indeterminate biliary Strictures

The diagnosis of biliary strictures remains challenging due to poor sensitivity of conventional techniques like brush cytology and forceps biopsy. Recent advances in diagnosing indeterminate strictures include direct visualisation with cholangioscopy and probe based confocal laser endomicroscopy (pCLE). Per oral cholangioscopy allows direct visualisation of strictures or filling defects noted on fluoroscopy. It also allows to take targeted biopsies from suspicious lesions and improves the accuracy of ERCP for biliary lesions. In a prospective study the accuracy of spyglass visual impression for differentiating malignant from benign bile duct lesions was 89% and that of SpyBite biopsies was 82%.¹⁵

pCLE provides in vivo histological information by introducing a confocal miniprobe through the working channel of a cholangioscope. It improves the diagnostic yield of tissue sampling significantly. Recently pCLE has also been utilized in the diagnosis of cystic neoplasms of pancreas and the initial results are promising.¹⁶

Endoscopic Ultrasound – Once Diagnostic, now a Therapeutic modality

EUS has evolved from a purely diagnostic to a therapeutic tool for many pancreaticobiliary disorders (like pancreatic fluid collections, pancreaticobiliary drainage, radiofrequency ablation, fiducial insertion and so on). EUS guided biliary drainage (EUS-BD) has emerged as a valid alternate to percutaneous or surgical drainage of biliary system when ERCP fails. EUS-BD is performed either using rendezvous technique or transmural drainage via EUS-guided choledochoduodenostomy (EUS-CDS) or hepatogastrostomy (EUS-HGS). A recent multicentre study (available in abstract form) demonstrates excellent safety and efficacy of EUS-BD in malignant distal biliary obstruction.¹⁷

EUS-rendezvous is used when duodenoscope can be advanced into second portion of duodenum (D2). Stents are placed via papilla in this approach. EUS-CDS or EUS-HGS are performed when D2 can not be accessed like in surgically altered anatomy or tumor infiltration causing stenosis. Both EUS HGS and EUS-CDS appear equal in safety and efficacy in distal malignant biliary obstruction.

The Design of Ideal SEMS – Focus at future

Biliary stents have undergone various modifications to prolong patency, reduce incidences of stent migration and complications. The mechanical properties of SEMS include radial force (RF) and axial force (AF). RF expands bile duct and resists compression by the tumor, therefore preventing early occlusion of SEMS. Axial force is the recovery force that appears when the stent is bent. SEMS with high axial force have poor conformability in the bile duct leading to increased chances of migration. Thus an ideal stent should have low AF and high RF.¹⁸ SEMS with knitted structures have lower AF than those which are laser cut or braided type.

FCSEMS with smooth inner surface, high RF and antireflux features should prolong stent patency whereas those with antimigration features and low AF should reduce migration rates. Combining these features would probably meet the requirements of an ideal SEMS in near future.

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Endoscopic Intraductal therapies for Cholangiocarcinoma

Dr. D Nageshwar Reddy

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Most exciting and latest topic in endoscopic biliary intervention. Don't miss it!

Invited Speaker

• Michel Kahaleh, M.D., PhD

(the Chief of Endoscopy at Weill Cornell Medical College. Trained in Erasme Hospital, University of Brussels)



CURRICULUM VITAE

Michel Kahaleh, MD, AGAF, FACP, FASGE is the Chief of Endoscopy at Weill Cornell Medical College. Trained in Erasme Hospital, University of Brussels, he led the Pancreatico-Biliary team of endoscopists at the University of Virginia before joining Well Cornell Medical College in July 2011. He is a world renowned endoscopist boarded in both Europe and the United States. He is fluent in French, Spanish and Arabic.

The adjunct use of both Endoscopic Retrograde Cholangiopancreatography (ERCP) and Endoscopic Ultrasonography (EUS) has permitted him and his team to successfully treat pancreatic collections and perform newly described procedures that have had a major impact on patient management.

With over 200 publications, Dr. Kahaleh's research has primarily focused on interventional endoscopy. He continually serves as a primary investigator on many clinical trials; including those that involve the use of new devices to diagnose and treat biliary and pancreatic diseases. A major focus of his research is on preventing and treating complications of advanced endoscopic procedures. He is actively analyzing the efficacy of metallic stents in both benign and malignant diseases. Another area of investigation for Dr. Kahaleh is understanding and preventing biliary and pancreatic cancer. The objective is to develop new diagnostic techniques for reducing the mortality associated with those cancers, by detecting them earlier and treating them using novel therapies such as laser therapy, photodynamic therapy and radiofrequency ablation. He has a vested interest in minimally invasive therapy such as peroral Endoscopic Myotomy and Endoscopic submucosal dissection.

Digital SpyGlass

Michel Kahaleh, M.D., PhD

(the Chief of Endoscopy at Weill Cornell Medical College. Trained in Erasme Hospital, University of Brussels)

Endoscopic retrograde cholangiopancreatography is the gold standard to manage biliary disorders, it has its own limitations. The digital single-operator cholangioscopy (DSOC) system (Digital Spyglass) may offer an interesting compromise for most advanced biliary endoscopists, in terms of visualization and complexity of use. DSOC is a great step toward intraductal visualization and therapy but the cost might be prohibitive to many countries.

EUS guided ERCP, where do we stand?

Endoscopic retrograde cholangiopancreatography (ERCP) is currently the preferred procedure for pancreatic and biliary drainage in both benign and malignant obstructions. While ERCP is successful in 85-95 % of cases, a small subset of cases are unsuccessful. Endoscopic ultrasound-guided ERCP is a promising route for pancreatic and biliary decompression that provides multiple advantages over percutaneous or surgical biliary drainage. Multiple retrospective as well as some prospective studies have shown EUS guided ERCP to be safe and effective. It appears to be a viable therapeutic modality for failed ERCP when performed by highly skilled advanced endoscopists at tertiary centers with expertise in both echo-endoscopy and pancreato-biliary endoscopy. Larger prospective multicenter randomized comparative studies are needed to further define indications, outcomes, and complications.

Invited Speaker

• Jeffrey Lee, MD, MPH

(a Professor and Director of Advanced Therapeutic Endoscopy in the Division of Gastroenterology of the MD Anderson Cancer Center in Houston, Texas.)



CURRICULUM VITAE

Jeffrey Lee, MD, is currently a Professor and Director of Advanced Therapeutic Endoscopy in the Division of Gastroenterology of the MD Anderson Cancer Center in Houston, Texas. Dr. Lee made the move to south in 2003, leaving his post as a faculty at Yale University School of Medicine in New Haven, Connecticut.

He completed a fellowship in Advanced Therapeutic Endoscopy (ERCP, EUS) at Harvard Medical School, Brigham and Women's Hospital. Dr. Lee served as a Chair of ERCP committee in the American Society for Gastrointestinal Endoscopy and a member of Publication Committee in the American College of Gastroenterology.

Management of Malignant Biliary Strictures in USA

Jeffrey Lee, MD, MPH

(a Professor and Director of Advanced Therapeutic Endoscopy in the Division of Gastroenterology of the MD Anderson Cancer Center in Houston, Texas.)

Malignant biliary strictures most commonly arise from either pancreatic cancer or cholangiocarcinoma. Regrettably, pancreatic cancer is usually advanced at presentation. The recent SEER data shows the overall five-year survival rate of pancreatic cancer at 6-7%. If detected early (approximately 10% of cases), the survival rates are better but still abysmal at approximately 25%.¹ Similarly, the five year survival with extrahepatic biliary cancer after resection was approximately 30% but 0% in those cases who were unresectable.² Given these solemn statistics, the goal with early stage disease is to proceed to therapy in an efficient and timely manner, specifically to get to surgical resection, as this is the only hope for cure.

Throughout the past two decades, the approach of an operation-first followed by adjuvant therapy failed to show any significant improvements in patient survival. Over the last decade, there has been a paradigm shift to move toward preoperative neoadjuvant chemotherapy and radiation, especially in the setting of borderline resectable disease that has emerged as a distinct subset of pancreatic cancer with the advent of the multidetector CT optimized for pancreatic imaging.

Neoadjuvant therapy efficiently delivers early treatment of micrometastatic disease, allows for the identification of those patients with rapidly progressive metastatic disease at the time of pre-operative restaging, may increase margin-negative resection rate, and reduce the risk of local tumor recurrence.³ Consequently, effective preoperative biliary drainage has become a paramount concern in this setting.

Plastic stents are susceptible to early occlusion from the formation of adherent bacterial biofilm and accumulation of sludge. Hence, self-expandable metal stents (SEMS) are being increasingly used for malignant distal biliary

obstruction owing to their relatively straightforward deployment and longer duration of patency. Besides, no significant SEMS-related complications or adverse events were seen in patients undergoing neoadjuvant chemoradiation or surgical resection.⁴

However, metal stents have been associated with higher rates of post-ERCP pancreatitis compared to plastic stents.⁵ The frequency between covered and uncovered has shown mixed results in studies with either similar pancreatitis rates or increased rates with covered stents.⁴⁻⁶ Additionally the rate of acute cholecystitis has been higher with the covered stents than uncovered.⁶ As the stent technology is still evolving, we expect that future SEMSs will ensure efficient drainage, prevent occlusion by inhibiting tissue ingrowth, and, perhaps, even provide effective antitumor treatment, ultimately bringing a survival benefit. In parallel to the advances in stent technology, vigorous preoperative trials are expected to continue for patients with pancreatic cancer using FOLFIRINOX, nab-paclitaxel, and emerging immunotherapeutic agents.

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Distal Biliary Obstruction

Jeffrey Lee, MD, MPH

(a Professor and Director of Advanced Therapeutic Endoscopy in the Division of Gastroenterology of the MD Anderson Cancer Center in Houston, Texas.)

Distal biliary obstruction can result from either a benign or malignant etiology. The malignant causes include the neoplasms involving the ampulla, pancreas, intra- or extrahepatic biliary system, and metastatic cancers. Among them, the most common cause of malignant distal biliary obstruction is pancreatic cancer. Multiple imaging modalities have been studied to assess for the best method of detection and differentiation between malignant and benign strictures. A prospective study assessing magnetic resonance cholangiopancreatography (MRCP) compared to CT, endoscopic retrograde cholangiopancreatography (ERCP), and percutaneous transhepatic cholangiography (PTC) for the diagnosis of malignant biliary strictures versus benign showed comparable sensitivities and specificities for ERCP versus MRCP (sensitivity 85% for both and specificity of 75% for ERCP and 71% for MRCP). CT had lower sensitivity and specificity compared to both ERCP and MRCP.¹ The sensitivity and specificity of fludeoxyglucose-positron emission tomography (18FDG-PET) to distinguish malignant from benign strictures have varied widely across studies and for different anatomic locations (intrahepatic versus perihilar versus extrahepatic). In a study involving patients with cholangiocarcinoma undergoing preoperative

¹18FDG-PET scans, the sensitivity and specificity for intrahepatic lesions versus extrahepatic were 95% and 100% versus 69.2% and 66.7% respectively.² Biliary brushings during ERCP have shown a wide range of sensitivities from approximately 30% to 60%.³ Endobiliary forceps biopsies have shown increased sensitivities, on average around 60%.³ A prospective, single-blinded trial of same session EUS and ERCP for malignant biliary strictures showed the overall sensitivity and accuracy of 94% and 94% for EUS and 50% and 53% for ERCP sampling. ⁴ Fluorescence in-situ hybridization (FISH) uses fluorescently labeled DNA probes to assess for polysomy on certain predetermined chromosomal loci. In a study where brushings from pancreaticobiliary strictures were assessed with FISH versus routine cytology, the sensitivity of polysomy FISH was 42.9% and that of routine cytology, 20.1%. Specificity approached 100% for both.⁵

The use of plastic stents in for biliary drainage in this setting has become less desirable as self-expandable metallic stents (SEMS) have been shown to be superior as far as rates of occlusion and cholangitis with minimal intraoperative or postoperative complications. SEMS have also been shown to be better than plastic stents for palliative stenting as well. The covered SEMS were more frequently associated with migration and uncovered SEMS were more frequently associated with tumor ingrowth.⁶ Given the success of drug eluting stents in the vascular arena, a natural transition would be to utilize this technology with biliary stents if a suitable drug could be identified. In a prospective, randomized pilot study, stent patency duration and survival time were not significantly different between the drug eluting stents and the conventional covered metal stents.⁷ Further larger studies of this drug may be warranted or additional drug investigation may prove more fruitful to lower the rates of reocclusion. Endobiliary RFA has been studied as a palliative adjunct to biliary stenting in patients with unresectable disease to decrease the rate of tumor ingrowth and epithelial hyperplasia within the stent. Although there appears to be potential benefit with this treatment, further larger randomized studies are needed to document meaningful utility and, particularly, safety. Injection of anti-tumor therapy or placement of radioactive seeds, specifically for pancreatic cancer, has unfortunately been disappointing despite proven administration safety. Clearly, the management of malignant biliary strictures requires a multidisciplinary team approach including gastroenterologists, surgical oncologists, interventional radiologists, and medical oncologists.

In this presentation, we will discuss the modalities in establishing the diagnoses of malignant strictures, the endoscopic therapy currently available for these strictures, and possible future technologies in the pipeline.

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Invited Speaker

• DongKi Lee, M.D., PhD

(Department of Internal Medicine Gangnam Severance Hospital, Yonsei University Seoul, Korea)



CURRICULUM VITAE

Dr. DongKi Lee is a founding member, former Secretary-General and president-elect of the Society of Gastrointestinal Endoscopy (SGI), an international organization of medical professionals dedicated in improving public health in gastrointestinal interventions. He is also a member of the International Editorial Board of Gastrointestinal Endoscopy. He was nominated as the best reviewer several times from this journal. He has been closely involved in many clinical studies for therapeutic ERCP, and has innovated and introduced several unique methodologies to the pancreatico-biliary field. He is currently conducting studies in developing a drug-eluting biliary stent, the effects of omega-3 on the bile and liver, as well as various therapeutic ERCP treatments, such as EPLBD, MCA, and management of benign and malignant biliary stricture.

Management of Benign Biliary Stricture (BBS) with original magnet

DongKi Lee, M.D., PhD

(Department of Internal Medicine Gangnam Severance Hospital, Yonsei University Seoul, Korea)

Benign biliary stricture (BBS) can be occurred by various causes. The feasibility and safety of magnet compression anastomosis (MCA) for BBS that cannot be recanalized using conventional methods (ERCP and PTBD) continue to be verified in several experimental and clinical studies. Of the BBS is completely occluded, there are only two options for the patients. One is keeping the drainage bag for life, and another is re-operation. However, both are a big burden to the patients and doctors as well. Re-operation is also frequently impossible. MCA may become a ground-breaking option for treatment in these patients.

The magnets used in MCA are cylindrical Sm-Co rare-earth magnets of various powers that can be delivered by a variety of methods. The most common delivery route is by the percutaneous and peroral bile ducts. The MCA procedure may be divided into the following four steps: (1) tract formation for magnet delivery; (2) magnet approximation; (3) magnet removal after recanalization; and (4) maintenance and removal of the internal catheter or stent.

We performed about 40 cases of MCA in refractory BBS, including patients after post living donor liver transplantation and various biliobiliary or bilioenteric anastomosis surgery. We succeeded this procedure over 90%. Main causes of unsuccessful MCA are long length of the stricture, tapered or tortuous duct and/or parallel axis of alignment. Magnetic force weakens as length of stricture increases. However, if we achieve magnet approximation, magnet recanalization was possible in all cases. The advantage of MCA is less traumatic comparing to the surgical method. Even though we have no enough data, MCA shows definitely less stricture recurrence rate because it creates new fistulous tract and not dilating previous stricture segment.

MCA is a very promising non-surgical alternative for treatment of occluded BBS that is difficult to resolve using conventional endoscopic or percutaneous methods.

Strategy of biliary stenting in far advanced malignant biliary obstruction

DongKi Lee, M.D., PhD

(Department of Internal Medicine Gangnam Severance Hospital, Yonsei University Seoul, Korea)

Palliative drainage is the main treatment for an inoperable hilar cholangiocarcinoma to improve symptoms, such as cholangitis, pruritus, high-grade jaundice, and abdominal pain. In advanced hilar tumor, how much of the liver should be drained in a patient with advanced hilar tumor and is multisectorial drainage necessary should be answered. Unilateral stenting has advantages of a high technical success rate for placing a stent and low early complication rates. However, there is a limit on sufficient drainage over 50% of liver volume for patients with advanced hilar tumor. Additionally, if an infected bile duct cannot be drained, the risk of cholangitis and liver abscess may increase. In contrast, bilateral stenting preserves functional liver volume and the risk of cholangitis can be lowered, and complications reduced by draining the infected duct when there is inflammation in both lobes, which extends patient survival.

Because the diameter of plastic stent (PS) is smaller than that of self-expanding metal stents (SEMS), PS occludes more rapidly than SEMS and has a shorter median patency. Moreover, inserting more than two 10-Fr diameter PS is difficult and can increase migration rates in advanced hilar tumor. In contrast, uncovered SEMS have superior success rates, minimal adverse effects, fewer requirements for re-intervention, and higher patient survival than those of PS. Inserting a stent for bilateral side-by-side stent placement is easier. A simultaneous side-by-side deployment method using a thin 6-Fr delivery system shows a high success rate. This SEMS has an open-cell mesh structure. Re-intervention is difficult or even impossible. In addition, side-by-side deployment can occlude a surrounding vessel and increase the rate of cholangitis and can cause severe pain and vascular injury, which may lead to massive bleeding. Bilateral stent-in-stent deployment is less likely to cause these adverse events because the stents overlap within the common hepatic duct. However, it is technically difficult to insert a guide wire and introducer into the contralateral bile duct through the mesh of a previously inserted stent. Currently, large-celled wire mesh stents were designed to resolve these issues. This mesh design enables an easier re-intervention. However, the expanding radial force is slightly reduced because of the mesh design and the susceptibility to tumor in-growth increases. Therefore, further clinical data should be collected to prove the efficacy of the large-celled SEMS.

Endoscopy is the initial approach even in patients with advanced hilar tumor in actual practice at many institutes, including ours. Nevertheless, we prefer to convert endoscopy to a percutaneous approach when we encounter any difficult during the procedure. This policy is better than a "never give up policy" in terms of patient safety and preventing procedural-related adverse events. Percutaneous drainage must be performed immediately after unsuccessful endoscopic drainage. The palliative success rate is higher for a percutaneous approach in a patient with advanced hilar tumor compared to endoscopy, for the several reasons. Percutaneous approach can puncture at a precisely selected bile duct; achieve a greater variety of drainage feature designs (T- or X-shaped) than for interesting a per-oral SEMS. Therefore, if the intention to treat fails by endoscopy as the initial method, it is essential to switch immediately to a percutaneous method. Furthermore, the percutaneous approach should be considered as initial palliation for some patients with very for advanced and difficult hilar tumor.

Invited Speaker

• Sang Soo Lee, M.D. & Ph.D.

(Associate Professor Department of Gastroenterology, Pancreaticobiliary Center University of Ulsan College of Medicine, Asan Medical Center)



CURRICULUM VITAE

He is an interventional endoscopist for pancreaticobiliary diseases. He published first RCT of EUS-GBD versus PTGBD and showed that EUS-GBD was comparable with PTGBD in terms of the technical feasibility and efficacy; there were no statistical differences in the safety.

His main research fields are metal stents (stents for interventional EUS, drug eluting stent, bio degradable metal stent, etc) and clinical research of pancreaticobiliary endoscopy. He has several patents for these stents. He also published more than 80 articles in high ranked journals.

New Metal Stents for EUS-guided biliary intervention:

AL stent & Hybrid stent

Sang Soo Lee, M.D. & Ph.D.

(Department of Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea)

With the evolution of the linear echoendoscope and the improved ability to direct a needle within the field of interest, the therapeutic potential of endoscopic ultrasonography (EUS) has greatly expanded. Clinical experiences of EUS-guided biliary intervention have been accumulated. The challenge of EUS-guided transluminal gallbladder (GB) and biliary drainage is that the lumen is not adherent. When there is space between the lumens, perforation, bile leakage, and peritonitis can be developed. Conventional stent cannot prevent this problems because conventional stents do not provide anchorage between lumen to lumen.

Our group introduced the specially designed stents for gallbladder drainage and biliary drainage. One is AL stent which is used for gallbladder drainage and the other is Hybrid stent which is used for biliary drainage (EUS-guided choledochoduodenostomy (CDS) or hepaticogastrostomy (HGS)).

Our group evaluated the long term outcomes of 63 patients who underwent EUS-GB drainage using AL stent; EUS-GB drainage was technically and clinically successful in 62/63 patients (98.4 %; 95% confidence interval [CI] 94.9%–100%). Procedural adverse events included duodenal perforation (n=1, 1.6 %) and self-limiting pneumoperitoneum (n=2, 3.2 %), all of which resolved with conservative treatment. Long-term outcomes of EUS-GBD were evaluated in 56 patients who were followed for a median of 275 days (range 40–1185 days). Late adverse events developed in four patients (7.1 %; 95%CI 5.7%–8.4 %), including asymptomatic distal stent migration (n=2), and acute cholecystitis due to stent occlusion (n=2). Two patients with occluded stent were successfully treated endoscopically (reintervention rate of 3.6 %). A total of 54 patients (96.4 %) had no recurrence of acute cholecystitis during follow-up. Median stent patency time was 190 days overall (range 15–1185 days) and 458 days (range 151–1185 days) for the 28 patients who were alive at the study end. The cumulative stent patency rate was 86% at 3 years.

The preliminary experience of Hybrid stent were as follows: A total of 27 consecutive patients with malignant biliary obstruction who were candidates for alternative techniques for biliary drainage because of failed ERCP were

enrolled. EUS-HGS was performed in 10 patients, and EUS-CDS was performed in 17 patients. The technical success rate of EUS-BD with the Hybrid metal stent was 100% (27/27), and clinical success was achieved in 96.3% (26/27) of the cases. Adverse events developed in 5 patients (5/27, 18.5%), including a self-limited pneumoperitoneum in 3 patients, minor bleeding in 1 patient, and abdominal pain in 1 patient. During the follow-up period (median 134 days), proximal or distal stent migration was not observed.

In conclusions, AL stent and Hybrid stent is technically feasible may be used safely in EUS guided biliary intervention, and they can prevent stent-related adverse events.

Endoscopic treatment of acute cholecystitis:

Endoscopic transpapillary approach and EUS-guided transenteric approach

Sang Soo Lee, M.D. & Ph.D.

(Department of Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea)

Introduction

Although laparoscopic cholecystectomy is the treatment of choice in patients with acute cholecystitis, this procedure is unsuitable for patients of advanced age or with advanced malignancy or underlying comorbidities. Currently, nonsurgical gallbladder drainage is performed by percutaneous and endoscopic drainage procedures. Percutaneous transhepatic gallbladder drainage (PTGBD) has been the most established salvage for gallbladder drainage in patients unresponsive to medical therapy, or who are at high risk for cholecystectomy, with clinical response rates of 78-100%. However, PTGBD may be inappropriate for patients with massive ascites or severe coagulopathy, and patient discomfort and postprocedure pain have been associated with the percutaneous drainage catheters. Furthermore, inadvertent catheter dislodgement or migration have been reported in 0.3% to 12% of patients. Endoscopic gallbladder drainage is another alternative method. These methods may overcome the limitation of PTGBD. Endoscopic gallbladder drainage technique includes transpapillary nasogallbladder drainage or stenting (ETGBD or ETGBS), or EUS-guided transmural gallbladder drainage or stenting (EUS-GBD or EUS-GBS).

Endoscopic transpapillary gallbladder drainage or stenting

1. Technique

The transpapillary approach to the gallbladder via the cystic duct has been used for approximately 30 years. Technique of endoscopic transpapillary approach is similar to that of ERCP. After selective bile duct cannulation, a 0.025- or 0.035-inch guidewire was advanced into the cystic duct and subsequently into the gallbladder. Finally, a 5F to 7F nasogallbladder catheter or a 7F or 10F double-pigtail stent was inserted into the gallbladder.

2. Clinical outcomes

The technical success rate was reported ranged from 80 to 90% from various studies. This is somewhat lower than that of PTGBD. This is because of nonvisualization of the cystic duct on the cholangiogram or failure of guidewire cannulation through the cystic duct into the gallbladder. Moreover, it is impossible to cannulate the cystic duct in patients who have previously undergone covered, self-expandable metallic stent (SEMS) placement in the bile duct. The clinical success rate was about 80%. The incidence of procedure-related adverse events, which include post-ERCP pancreatitis, perforation of the cystic duct or gallbladder, cholangitis, and septic complications that lead to death, is reported to be 0% to 14%.

3. Long term outcomes

When the stent is left in place as a long-term management strategy, Pannala et al reported that septic shock developed in 14% of patients during a mean follow-up of 10 - 13 months, and 56% of patients had no recurrence of cholecystitis, although 10% of patients were readmitted for recurrent cholangitis or ongoing symptom.

Our group reported long-term data at DDW 2015. In this study, a total of 82 patients were followed up for a median of 480 days (range 10 - 2735). The rate of late adverse events after ETGBS was 25.6%. Complete stent migration was noted in 3 patients (3.7%). Eighteen patients (21.9%; 95%CI 13.6%-32.5%) experienced partial stent migration (n=8), recurrent cholecystitis due to stent obstruction (n=8), recurrent cholangitis due to common bile duct stone (n=2) at mean 225 days (range 14-1830) after ETGBS. They were successfully retreated with following ETGBS except 4 patients with partial stent migration who had no specific symptom or sign associated with stent. The overall reintervention rate was 20.7%. The overall median stent patency of ETGBS was 300 days (range 10-2370), and cumulative patency rates at 1 year, 2 years, 3 years were each 80%, 67%, 67%.

EUS-guided transmural gallbladder drainage (EUS-GBD)

EUS-guided transmural gallbladder drainage (EUS-GBD) is gaining favor as an attractive alternative for managing acute cholecystitis in high-risk patients. The advantages of EUS-GBD are the avoidance of external drainage, unlike the PTGBD, and potentially no risk of post-ERCP pancreatitis or cholangitis, unlike transpapillary drainage. There are two possible EUS-guided gallbladder approaches (e.g. cholecystogastrostomy and cholecystoduodenostomy).

1. technique

The gallbladder is usually visualized from the prepyloric antrum of the stomach or duodenal bulb using a linear-array echoendoscope in a long scope position. The puncture point usually corresponds to the gallbladder neck or body. After checking local vasculature with color Doppler, the EUS needle is then advanced into a gallbladder. After withdrawal of the stylet, bile is aspirated and a cholecystogram is obtained. The guidewire (preferably 0.025-inch or 0.035-inch, requiring a 19-gauge needle) is advanced into the gallbladder. The needle was then withdrawn, and a 6F or 7F bougie was inserted to dilate the transmural tract. If there was resistance to advancing the 6F bougie, a triple-lumen needle-knife with a 7F shaft diameter was used. If resistance was felt during stent advancement, a 4-mm biliary balloon dilator was occasionally used for sufficient tract dilation to facilitate the advance of the stent. Following tract dilation, a 5F naso-gallbladder drainage catheter, double pigtail-type plastic stent, or SEMS is inserted over the guidewire. When needed (the presence of thick pus or particles of lithiasis), a nasogallbladder drainage tube (ENBD-5; Cook Endoscopy) was also inserted through the stent lumen for continuous irrigation. EUS-guided transmural nasogallbladder drainage can be useful for bridge to surgery in patients unsuitable for emergent cholecystectomy. Generally, a 5F nasobiliary catheter is coiled into the gallbladder through the echoendoscope, thus obviating the need for a large fistulous tract, which is the main risk factor of bile leakage.²⁹ A follow-up cholecystography through the nasobiliary tube can be performed to evaluate the patency of the cystic duct and whether there has been any leakage at the puncture site.

EUS-guided transmural gallbladder stenting is the same as for EUS-guided nasogallbladder drainage. A 7F to 8.5F double pigtail plastic stent or SEMS is, however, placed in the gallbladder. In general, the choice of nasogallbladder drainage catheter versus stents is dictated by the underlying etiology and the stage of the disease: for advanced malignancy, a SEMS is appropriate, but in patients in whom EUS-GBD is attempted for benign indications or even a malignant indication just requiring temporary gallbladder drainage, nasogallbladder drainage catheter may be the suitable option.

2. Clinical outcomes

According to 8 published studies involving 84 cases, the overall technical and clinical success rate was 96.4% (81 of 84 patients) and the adverse event rate was 13.1% (11 of 84 patients). Adverse events included abdominal pain, pneumoperitoneum, bile leakage, perforation, and stent migration. Although there was no procedure related mortality, severe adverse events can be developed when EUS-GBD failed.

3. Long term outcomes

Recently, authors evaluated the long term outcomes of 63 patients who underwent EUS-GBD using SEMS, the technical success rate was 98%, and adverse events were encountered in 7% of patients. During the follow-up (median 275 days, range 40–1185 days), 54 patients (96.4%) had no recurrence of cholecystitis without any additional intervention, such as exchange of the stent. The overall rate of reintervention was only 3.6% (2/56). Our results suggest that it may be possible to leave the stent in place after EUS-GBD without scheduled stent revision unless clinical symptoms or adverse events occurred. Unnecessary interventions such as stent exchange or removal may be obviated in patients at high risk for complications. Even when stent migration occurs, patients are less likely to have a recurrence of cholecystitis presumably attributable to the maturation of the cholecystoenteric fistula. EUS-GBD with a SEMS has excellent long-term outcomes and may represent a potential definitive treatment in patients unsuitable for cholecystectomy because of advanced malignancy or high surgical risk.

Conclusion

Endoscopic treatment for acute cholecystitis can be a safe and feasible alternative option of acute cholecystitis in patients who have high surgical risk. And it can be useful for not only bridge to surgery in patients unsuitable for emergent cholecystectomy but also reasonable definite option in patient with short life expectancy because of advanced malignancy or underlying comorbidity.

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Invited Speaker

• Anthony Yuen Bun Teoh , M.D., PhD

(The Chinese University Hong Kong)



CURRICULUM VITAE

Dr Anthony Yuen Bun, Teoh graduated from the Chinese University of Hong Kong in 2001. Since then, he has completed his surgical training in the Prince of Wales Hospital, Hong Kong and he was awarded with the GB Ong and Li Shield's Medal for the best candidate in the fellowship examinations both locally and internationally. He then completed his overseas training in the Kitasato University East Hospital and the Cancer Institute Hospital (Ariake) focusing on advanced interventional endoscopy and minimally invasive surgery for upper gastrointestinal cancers. His research interests are multifold and these include advanced interventional endoscopic ultrasonography (EUS) and endoscopic retrograde cholangiography (ERCP), minimally invasive surgery, single site access surgery and robotics surgery. He is currently the Deputy Director of Endoscopy, Associate Consultant and Honorary Associate Professor in the Division of Upper Gastrointestinal Surgery, Prince of Wales Hospital, Hong Kong. He also serves as a steering committee member for the Asian EUS group, founding member of the Hong Kong EUS club, council member of Hong Kong Hernia society and the Board Director for Lion's Club Kidney Education Centre. He is also on the editorial board for several internationally renowned journals including Clinical gastroenterology and hepatology and World journal of Gastrointestinal endoscopy and World Journal of Gastroenterology. He has published almost 70 journal papers and written 5 book chapters.

EUS-guided gallbladder drainage abstract

Anthony Yuen Bun Teoh , M.D., PhD

(The Chinese University Hong Kong)

The aim of this lecture is to provide an overview in the current status of EUS-guided gallbladder drainage including the indications, techniques, stent systems in-use and how the procedure compares to conventional techniques are outlined. Furthermore,

The feasibility of cholecystoscopy and advanced gallbladder interventions is explored.

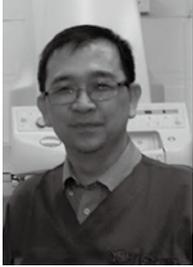
Paradigm shifts in endoscopic management of peri-pancreatic fluid collections abstract.

Significant controversies exist on the best practice for endoscopic management of peri-pancreatic fluid collections (PFC). The aim of this lecture is to provide an in-depth discussion in the latest updates and controversies in endoscopic management of PFC's. Particular emphasis has been placed on the following topics including: the technical and technological evolution in endoscopic drainage of PFC's, the 2012 Revised Atlanta's criteria for defining PFC's, the optimal approach for draining pseudocyst, the role of endoscopic drainage in pancreatic necrosis, the technical considerations in endoscopic drainage, the specific stent systems for EUS-guided drainage, the adjunctive measures for successful endoscopic drainage and management of complications.

Invited Speaker

• **Thawachai Akaraviputh , M.D., PhD**

(Department of Surgery, Faculty of Medicine Siriraj Hospital)



CURRICULUM VITAE

Dr. Thawachai Akaraviputh is now a professor in the Minimally Invasive Surgery (MIS) Unit, the Department of Surgery, Faculty of Medicine Siriraj Hospital. He received his MD degree and surgical training from Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand. In 1999 he received Germany Academic Exchange Service (DAAD) Scholarship. He completed a postdoctoral fellowship in advanced surgical endoscopy and obtained "Doktors der Medizin" degree with Professor Nib Soehendra at a University Hospital Eppendorf, Hamburg, Germany. He returned to Bangkok in 2002, where he continued his training in endo-laparoscopic surgery and subsequently in robotic surgery. He was promoted to professor in 2013. He has published many international publications in a variety of endoscopic and laparoscopic surgery.

Precut: How to make it safe?

Thawachai Akaraviputh , M.D., PhD

(Department of Surgery, Faculty of Medicine Siriraj Hospital)

The ability to gain access to the common bile duct (CBD) or pancreatic duct is a important key factor to the success rate of diagnostic and therapeutic endoscopic retrograde cholangiopancreatography (ERCP). The common method of cannulation is employment of a sphinctertome catheter over a guidewire. Selective CBD cannulation may be difficult in those with obstructive pathology. Overall success rates of CBD cannulation by this method in patients with cholestasis range from 70% to 90%, even when performed by experienced endoscopists. Precut sphincterotomy (PS) is a technique used to facilitate CBD cannulation by cutting the papilla prior to passing the guidewire into the CBD. At present there are many PS technique that has been introduced in the literatures. However, these PS methods are associated with higher intraoperative and postoperative complications compared with the standard cannulation methods. Therefore performing PS safely is still a challenging issue for all endoscopists. This issue has become increasingly important, as the use of therapeutic ERCP has increased with the advent of laparoscopic surgery in HPB diseases.

Invited Speaker

• Cheuk-Kay Sun, MD

(Division of Hepatology and Gastroenterology, Department of Internal Medicine, Shin Kong Wu Ho-Su Memorial Hospital, Taipei, Taiwan)



CURRICULUM VITAE

Dr. Cheuk-Kay Sun is Senior Consultant at the Department of Gastroenterology, Shin Kong Wu Ho-Su Memorial Hospital. Dr. Sun is currently the Director of Taiwan Association for the Study of Small Intestinal Diseases and Clinical Assistant Professor at the School of Medicine, Fu Jen Catholic University in Taipei, Taiwan. After his graduation from Kaohsiung Medical College in Taiwan, he received advanced training in therapeutic endoscopy at prestigious institutions including the Medical University of South Carolina (MUSC), under the guidance of Professor Peter Cotton, the University Medical Center of Hamburg-Eppendorf under Professor Nib Soehendra and Kitasato University East Hospital under Professor Mitsuhiro Kida. Dr. Sun's specialties include diagnostic and therapeutic endoscopy of pancreatobiliary tract diseases, especially through ERCP, IDUS and sphincter of Oddi manometry. In addition, he is also skillful with many endoscopic techniques, including PEG, enteroscopy, esophageal and enteric stenting. Dr. Sun is active in many domestic and international meetings and has been invited for speech and live demonstration.

Endoscopic management of pancreatic duct disruption

Cheuk-Kay Sun, MD

(Division of Hepatology and Gastroenterology, Department of Internal Medicine, Shin Kong Wu Ho-Su Memorial Hospital, Taipei, Taiwan)

Pancreatic duct disruption (PDD), which is rare clinical entity resulting from acute or chronic pancreatitis, surgery, trauma or pancreatic malignancy, causes leakage of pancreatic secretion that predisposes to numerous complications such as pancreatic ascites, fistula, pseudocyst, abscess formation, and necrosis. While anterior duct disruption leads to pancreatic ascites, posterior disruption may lead to the penetration of pancreatic fluid into the mediastinum along the path of least resistance through the aortic and esophageal hiatus, thereby resulting in mediastinal pseudocyst or pleural fistula with amylase-rich pleural effusion.

Conservative treatment modalities include restricting oral feeds, somatostatin analogue therapies and paracentesis. However, less than 40% of PDD improve with such management which is less likely to be successful in symptomatic fluid collections greater than 6 cm and collections that persist for longer than 6 weeks.

PDD and associated fluid collections can be treated by surgical, percutaneous, or endoscopic procedures. While surgical therapies are associated with 15% morbidity, 5% mortality and 10% recurrence, percutaneous aspiration under radiological guidance is another therapeutic option but is associated with recurrence and external fistula. On the other hand, not only can endoscopic retrograde pancreatography (ERP) identify the source and extent of the fistula, but it can also diagnose associated pancreatic duct strictures that may impede the normal antegrade flow of pancreatic juice and prevent fistula closure. Moreover, endoscopic management allows pancreatic decompression via pancreatic sphincterotomy and transpapillary ductal drainage. Therefore, it has been reported to be useful as

Invited Speaker

an alternative treatment modality. Nevertheless, successful sealing of ductal leakage was noted only in 76% of cases.

Recently, endoscopic transpapillary application of N-butyl-2-cyanocrylate, which is a tissue monomer that instantly polymerizes upon contact with body fluids at neutral pH, has been proposed to be a tool for treating patients with ductal leakage refractory to conventional endoscopic therapeutic strategies.

EUS-CDS has a possibility of first-line biliary drainage procedure.

Invited Speaker

- **Reiko Ashida, M.D., PhD**

(Osaka Medical Center for Cancer and Cardiovascular Diseases, Osaka, Japan)



CURRICULUM VITAE

Dr. Ashida is currently Co-Director of Departments of Cancer Survey and Gastrointestinal Oncology at the Osaka Medical Center for Cancer and Cardiovascular Diseases. She graduated in 1998 and obtained PhD in 2005 from the Graduate School of Medicine, Osaka City University. She started EUS since 1999 and trained EUS-FNA in 2002 at Aichi Cancer Center and had the advanced fellowship program of Interventional EUS under Prof. Dr. Kenneth Chang at University of California Irvine, Medical Center between 2007-2009. Her specialty is mainly endoscopic diagnosis and treatment for pancreatobiliary oncology area, especially interventional EUS.

Endoscopic HIFU for pancreatic cancer ~Current advance and future aspect~

Reiko Ashida, M.D., PhD

(Osaka Medical Center for Cancer and Cardiovascular Diseases, Osaka, Japan)

High-intensity focused ultrasound (HIFU) is a novel therapeutic modality that permits noninvasive treatment of various benign and malignant solid tumors. Currently, HIFU with a thermal approach has been widely applied clinically and has shown promising data, especially for treating breast and prostate tumors. As far as pancreatic cancer, the results of nonrandomized studies of HIFU therapy have suggested that HIFU treatment can effectively alleviate cancer-related pain without any significant complications. Moreover, combined therapy with HIFU and chemotherapy showed the promising data in improving overall survival of patients with pancreatic cancer although the number of patients included in these studies is still small. Recent studies suggest that mechanical effects of HIFU may help to enhance targeted drug delivery and stimulate an anti-tumor immune response in many tumors including pancreatic tumors although high intensity of ultrasound is necessary. Previously, we reported that a phase-change nanodroplet (PCND), a kind of superheated perfluorocarbon droplet, can be used as a sensitizer to decrease the required intensities of HIFU to induce mechanical tissue fractionation. Moreover, the development of an EUS-guided HIFU transducer has many potential benefits including improved targeting and decreased potential for injury to intervening structures. In this lecture, I will talk about brief overview of HIFU, describes current clinical applications of HIFU for pancreatic cancer, and discusses future applications and challenges.

Invited Speaker

• Kazuo Hara, M.D., PhD

(Medical director of department of Gastroenterology, Aichi Cancer Center Hospital, Nagoya, Japan)



CURRICULUM VITAE

- Nagoya University School of Medicine, March 1996 graduation
- Medical staff of Toyohashi municipal Hospital, May 1996
- Medical director of department of Gastroenterology, Komaki municipal Hospital, April 2000
- Medical director of department of Gastroenterology, Aichi Cancer Center Hospital, October 2001
- Medical staff of department of Gastroenterology, Nagoya University Graduate School of Medicine, July 2003
- Medical staff of department Tumor Biology, Nagoya University Graduate School of Medicine, April 2004
- 21Century COE Research Fellow, from April 2006 to March 2008
- Medical director of department of Gastroenterology, Aichi Cancer Center Hospital, Nagoya, Japan from April 2008 to now

EUS-guided biliary drainage

Kazuo Hara, M.D., PhD

(Medical director of department of Gastroenterology, Aichi Cancer Center Hospital, Nagoya, Japan)

Recently, interventional EUS has become remarkably popular, especially for EUS-guided biliary drainage (EUS-BD). Although several authors have reported the usefulness and safety of EUS-BD, relatively few large scale prospective studies reports have been conducted to date. Almost all papers have reported the efficacy, safety and high success rate of EUS-BD. Actually, EUS-BD enables easy access of the biliary tract, even in postoperative patients with altered anatomy or digestive tract obstruction. The high risk of complications associated with EUS-BD is its biggest problem. Most papers have reported early complication rates of 10% to 30%, although late complications are rare. EUS-HGS is the most challenging of the EUS-BD procedures with a high complication rate, with one case fatality due to stent migration into the abdominal cavity already being reported. This indicates that even if stent placement is successfully accomplished, the possibility of stent migration immediately or a few days later still remains. Bile peritonitis is usually, however, not severe and can be treated conservatively. Additionally, its occurrence can be minimized by using a metal stent, as in EUS-CDS. In conclusion, EUS-BD is certainly a useful procedure, the utility of which is likely to increase with the development of newer techniques and devices. However, at present, these procedures carry the risk of major technical and clinical problems. This fact must always be kept in mind when prescribing these procedures. Further, since the occurrence of complications is closely related to the devices used, special new devices should be developed to minimize the risk of complications.

Invited Speaker

- **Shigefumi Omuta, MD**

(Division of Gastroenterology and Hepatology, Department of Internal Medicine Toho University Ohashi Medical Center)



CURRICULUM VITAE

Graduated from Toho University in 2000, Dr Omuta has worked as an assistant professor in Toho University Ohashi Medical Center since 2010. He is an interventional-endoscopist in the pancreato-biliary field and his clinical research focuses on ERCP related procedure, especially, biliary cannulation technique, direct peroral cholangioscopy (DPOCS), endoscopic papillary large balloon dilatation (EPLBD).

In 2007, Poster Award has been given at the 6 th Korea-Japan Joint Symposium on Gastrointestinal Endoscopy.

Feasibility of direct peroral cholangioscopy using an ultraslim upper endoscope for biliary lesion.

Shigefumi Omuta, MD, Iruru Maetani, M.D., PhD

(Division of Gastroenterology and Hepatology, Department of Internal Medicine Toho University Ohashi Medical Center)

Summary

Peroral cholangioscopy (POC) is traditionally conducting using a mother-baby endoscope. However, the disadvantage of traditional POC is cumbersome, labor-intensive, difficult, fragile, a small working channel. Furthermore, it was required two skilled endoscopist. Direct peroral cholangioscopy (DPOCS) using an ultraslim upper endoscope was proposed as an attractive alternative 1). There are three advantages compared with traditional POC. First, DPOCS provides high quality endoscopic imaging, image-enhanced endoscopy such as narrow band imaging (NBI), can be easily applicable 2). Secondary, larger biopsy forceps can be used by a large 2-mm diameter working channel and it can be extend for therapeutic intervention. Finally it involves only a single endoscopist. Meanwhile the most serious disadvantage of DPOCS is difficulty associated with accessing to the biliary system. And to overcome the difficulty, we reported a promising technique 3) with an application of a balloon anchor technique 4). If any residual stone is observed, because it simultaneously converts to remove it using a basket and/or suction under DPOCS, I believe that the best diagnostic indication is the detection of residual stone after endoscopic lithotomy. And because DPOCS can obtain clear direct image and tissue sampling under direct visualization, this procedure is beneficial in precise diagnosis for indeterminate biliary stenosis as well as protruded lesion. This procedure has significant difficulty in inserting biliary system in patients with distal benign or malignant biliary stenosis.

We used the GIF-XP260N (Olympus, Tokyo, Japan) from November 2009 to June 2013, since July 2013, we have used the EG-580NW2 (Fujinon, Tokyo, Japan). In my talk, I would describe endoscopic technique and the application of DPOCS.

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Faculty Abstract

Optimal preoperative biliary drainage is endoscopic nasobiliary drainage for hilar cholangiocarcinoma

Hiroshi Kawakami

(Department of Gastroenterology and Hepatology, Hokkaido University Hospital)



Preoperative biliary drainage (PBD) for hilar cholangiocarcinoma (HCA) will reduce bile stasis and induce hypertrophy with the enhancement of future remnant liver function. Although PBD is widely performed for HCA, its optimal method is still a matter of debate. The Asia-Pacific consensus recommendations 2013 for endoscopic and interventional management of HCA included recommendations for the optimal palliative management of HCA. However, there were no recommendations on optimal PBD in this consensus. The latest Japanese guideline 2015 for bile duct cancer reported recommendations of preoperative “endoscopic” drainage for resectable HCA. Recently, we reported that endoscopic nasobiliary drainage (ENBD) for the future remnant liver was considered the most suitable PBD method as compared with endoscopic biliary stenting (EBS) and percutaneous transhepatic biliary drainage (PTBD). EBS had more frequent complications such as short patency of stent, and PTBD was associated with serious complications such as vascular injuries and cancer dissemination. To date, ENBD is the most suitable PBD method in terms of minimizing the risk of tract seeding and less invasiveness.

Faculty Abstract

Confocal laser endomicroscopy in pancreato-biliary diseases

Yousuke Nakai

(Department of Gastroenterology, Graduate School of Medicine, The University of Tokyo)



Confocal laser endomicroscopy, CLE, is a novel diagnostic tool, which enables real time in vivo imaging. CLE was first utilized in gastrointestinal luminal diseases i.e. Barrett's esophagus, but its indication is now expanding to many other organs such as respiratory and urinary tracts. The advantage of CLE over conventional diagnostic modalities including "physical biopsy" is "in vivo" microscopic imaging over "multiple areas" leading to "diagnosis on the spot." Given this advantage, pancreato-biliary diseases including indeterminate pancreato-biliary stricture or pancreatic cysts are considered as good indications for CLE. Recently, a miniature CLE probe, which can be inserted through an ERCP catheter or FNA needle, has been developed. The classification for indeterminate biliary stricture or specific findings for each cystic tumor have been established, but CLE is considered as complimentary to the conventional pathological tests as well as other novel diagnostic procedures. CLE for indeterminate biliary stricture can be combined with cholangioscopy and biopsy under direct visualization, and nCLE for pancreatic cysts with through-the-needle cystoscopy or biopsy. To further utilize the advantage of "in vivo" imaging, functional imaging or immunohistochemical stain imaging will be the way to go.

Faculty Abstract

How to obtain better diagnostic yield of EUS-FNA?

Masayuki Kitano

(Department of Gastroenterology and Hepatology, Kinki University Faculty of Medicine)



EUS-guided fine needle aspiration (EUS-FNA) is an indispensable tool for tissue acquisition from lesions within and adjacent to the gastrointestinal tract. Several variables have been related to outcomes of EUS-FNA. These include the skill and experience of the endosonographer, presence of an on-site cytopathology evaluation during the procedure, use of a stylet and suction, sampling technique, number of passes, the location of the targeted lesion, needle gauge, and performance of EUS-FNA versus fine needle biopsy.

There is a learning curve for performing EUS-FNA. The success of EUS-FNA also depends on presence on-site cytopathology. A recent meta-analysis showed that rapid on-site evaluation (ROSE) was associated with a 10% higher tissue adequacy rates on average, but had no impact on diagnostic accuracy. Studies have shown that 5-7 passes reached the maximum diagnostic accuracy for pancreatic mass lesions. The role of stylet in the EUS-FNA needle is to prevent the hollow tip of the needle from filling with gut wall tissue before it enters the target lesion. However, several randomized studies have shown the use of a stylet does not improve the diagnostic yield for malignancy. Applying suction during EUS-FNA increases the quantity of the sample, although the specimen is bloodier thereby diminishing the aspirate quality. There are several reported alternative techniques for tissue sampling such as capillary and wet suction techniques to improve quantity and quality of samples. The fanning technique involves positioning the needle at several different areas within a mass and then moving the needle back and forth several times in each area, which has significantly higher first pass diagnosis compared with EUS-FNA without this technique.

EUS-FNA can be performed by using 25 gauge (G), 22 G or 19 G needles. There are several factors that determine the choice of needle gauge, such as approach route and type of the lesion. In general, transesophageal and transgastric approaches are technically easier than transduodenal approach. Several multicenter studies revealed 25G and 22G needles are more suitable than 19G needle for transduodenal approach. A new fine needle biopsy device (Procore) with reverse bevel was developed to increase the tissue acquisition. It is a controversial issue whether the Procore needle has overcome standard EUS-FNA needles in terms of diagnostic yield. Our recent study in 214 patients with pancreatic masses using the 25G Procore needle versus a standard 25G EUS-FNA needle showed 25G Procore needle had superior sample quality, particularly for transduodenal approach and masses of 3 cm or larger.

In conclusion, acquisition of these various materials and methods and their appropriate selection may increase the diagnostic yield of EUS-FNA for each endosonographer.

Faculty Abstract

EUS-guided Pancreatic intervention

Takayoshi Tsuchiya

(Department of Gastroenterology and Hepatology Tokyo Medical University Hospital)



Endoscopic ultrasonography-guided (EUS)-guided pancreatic interventions have gained increasing attention. Acute recurrent pancreatitis (ARP) can occur due to pancreatic duct (PD) obstruction from any cause. Recently, endoscopic ultrasonography (EUS)-guided PD (EUS-PD) stent placement has been used to treat such patients when traditional ERCP fails or is not possible due to post-surgical anatomy. In these previous reports and case series the mean technical success rate was only 82%. Furthermore, adverse events such as pancreatic duct leaks, stent migration, and pancreatitis commonly occurred. We hypothesized that the low technical success and high adverse events may be due to lack of a dedicated PD stent designed for EUS-PD. Herein, we report the feasibility and efficacy of a new plastic stent designed for EUS-PD placement.

Faculty Abstract

EUS guided Radio-Frequency Ablation (RFA) in Pancreatic Neuro-Endocrine Tumor (PNET)

Sundeep Lakhtakia

(Consultant, Asian Institute of Gastroenterology, Hyderabad, India)



Pancreatic Neuro-Endocrine Tumor (PNET) is common pancreatic tumor with potential of malignant transformation. PNETs are increasingly being diagnosed with widespread use of high quality cross-sectional imaging (CECT and MRI). Endoscopic ultrasound (EUS) is used to locate functional NET (insulinoma) when conventional image fails to localize in suspected patients.

PNET can be either, functional (hormone producing) and non-functional. The standard treatment of PNET is surgical resection. The PNET located in the pancreatic head require Whipple resection, whereas those located in pancreatic body or tail are managed by distal pancreatectomy. Both type of surgical resection carry significant morbidity and mortality, resulting in unacceptably high risk/benefit ratio especially for elderly patients or those with co-morbidities. Patients, who are unfit for or refusing surgery, need an alternative non-surgical method to ablate these lesions or alleviate symptoms associated with functional PNET.

Apart from localization, EUS is also used in PNET for FNA (to confirm diagnosis), tattoo with India ink (to ease intra-operative identification for surgical excision or enucleation) and ablation. Techniques described of EUS-guided tumor ablation include - RF ablation, photodynamic therapy, laser ablation, and ethanol injection.

Radiofrequency ablation (RFA) is a safe, effective, and well-recognized modality for the treating various focal malignant lesions. RFA uses high-frequency alternating current which generates energy as heat that produces coagulative necrosis in the tissue. RFA can be delivered based on site and type of lesion by different approaches: percutaneous route under image guidance for superficial HCC and focal liver metastases, intra-operative approach for deep seated lesions, endo-biliary (endoluminal) route for inoperable bile duct & pancreatic head cancer presenting with biliary obstruction or endosonographic (transmural) approach for pancreatic or peri-luminal lesions. The major advantage with RFA is its minimally invasive nature and good tolerability.

Pancreas is thermo-sensitive organ, and thermal ablation of normal pancreas leads to an inflammatory response causing edema and later fibrosis and occasionally cystic transformation. There is a growing interest and need of RFA in various lesions of pancreas, including PNET and unresectable pancreatic carcinoma where RFA is feasible. Animal experiments with EUS RFA have demonstrated reasonable safety.

Currently, there are two main delivery devices for EUS RFA approach. First is through-the-needle method where Habib™ EUS RFA probe (1 French calibre) is passed through the hollow of FNA needle to project beyond the tip. Fluoroscopy assists in visualization. The tip of the probe is floppy, and may take a curved shape in emptied cystic lesions. Second is the needle RFA device (EUSRA from Starmed, Korea) where the needle is insulated except for the 1cm tip. Both devices are then attached to their respective sophisticated generators to deliver accurate energy to the target lesion, which can be visualized endosonographically. More than one area in the lesion can be ablated by EUS RFA by either withdrawing or burning the more proximal lesion in same trajectory of needle path or in different trajectory by fanning or by re-puncturing at the same session.

Additional benefit with RFA is strong adjuvant for immune antitumor response. In-situ tumor destruction by RFA provides the immune system with a new antigen source for the induction of antitumor immunity. Antigen-presenting cells take up antigens in the periphery after which they induce specific immune responses.

Faculty Abstract

EUS-guided RFA for Pancreatic Cancer



Dong-Wan Seo

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Backgrounds: Radiofrequency ablation (RFA) has been used as a valuable treatment modality for various unresectable malignancies. EUS-guided radiofrequency ablation (EUS-RFA) of the porcine pancreas was reported to be feasible and safe in our previous study, suggesting that it may be applicable as an adjunct and effective alternative treatment method for unresectable pancreatic cancer. This study aimed to assess the technical feasibility and safety of EUS-RFA for unresectable pancreatic cancer.

Methods: An 18-gauge endoscopic RFA electrode and a RF generator were used for the procedure. The length of the exposed tip of RFA electrode was 10 mm. After insertion of RFA electrode into the mass, the RF generator was activated to deliver 20–50 W ablation power for 10 seconds. Depending on tumor size, the procedure was repeated to sufficiently cover the tumor.

Results: EUS-guided RFA was successfully performed in all six patients (median age 62 years, range 43–73). Pancreatic cancer was located in the head (n=4) or body (n=2) of the pancreas. The median diameter of the mass was 3.8 cm (range: 3–9 cm). Four patients had stage 3 disease and two patients had stage 4 disease. After the procedure, two patients experienced mild abdominal pain, but there were no other adverse events such as pancreatitis or bleeding.

Conclusions: EUS-guided RFA could be a technically feasible and safe option for patients with unresectable pancreatic cancer.

Faculty Abstract

Impact of duodenal tumor invasion on biliary stenting

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Distal malignant biliary obstruction (MBO) is mainly caused by pancreaticobiliary cancers which are often nonresectable at the time of diagnosis. Self-expandable metal stents (SEMS) are widely utilized as a first-line treatment option for the relief of obstructive jaundice, because of the longer patency time and greater cost-effectiveness compared with plastic biliary stents. However, our retrospective analysis showed that duodenal tumor invasion is a risk factor for early (≤ 3 months) SEMS dysfunction (multivariate-adjusted odds ratio, 2.35; 95% confidence interval [CI], 1.43–3.90), and increased duodenobiliary reflux as a result of the narrowing of the duodenum itself or reduced peristalsis likely contributes to this complication¹. Furthermore, we previously reported that duodenal SEMS placement for malignant gastric outlet obstruction is a stronger risk factor for SEMS dysfunction for distal MBO (multivariate-adjusted hazards ratio, 2.00; 95% CI, 1.16–3.45), because of further enhanced duodenobiliary reflux².

To prolong SEMS patency for distal MBO via the prevention of the duodenobiliary reflux, we have sought the effectiveness of antireflux metal stent (ARMS) for covered SEMS occlusion. The ARMS was manufactured based on the Niti-S ComVi-type SEMS (Taewoong Medical Inc., Gimpo, Korea) with a 10-mm-long funnel-shaped antireflux valve attached to the distal end. In our prospective study of 13 patients with the occlusion of a prior covered SEMS due to the duodenobiliary reflux (i.e. sludge or food impaction), the intervention via ARMS was associated with a significantly longer patency time compared with the occluded SEMS in the same cohort³. Two randomized controlled trials are ongoing to evaluate the superiority of ARMS over conventional covered SEMS, in SEMS-naïve patients (UMIN-CTR, UMIN000014784) and those with covered SEMS occlusion (UMIN-CTR, UMIN000014579).

Endoscopic ultrasound (EUS)-guided transmural biliary drainage is a possible alternative to transpapillary drainage in patients with an indwelling duodenal SEMS. In our retrospective analysis⁴, the stent patency rate in the EUS-BD group ($n = 7$; hepaticogastrostomy using a SEMS in 3 patients and choledochoduodenostomy using a SEMS or a plastic stent in 2, each.) was higher than that in the transpapillary drainage group ($n = 13$; SEMS in all): 100 vs. 71 % at 1 month and 83 vs. 29 % at 3 months, respectively. To confirm the superiority of EUS-guided biliary drainage over transpapillary drainage, a retrospective study by T-CAP faculty members is ongoing (the first T-CAP study; ClinicalTrials.gov number, NCT02376907).

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Faculty Abstract

Double metallic stenting

Iruru Maetani

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Biliary obstruction can occur concurrently with GOO, or before or after GOO. Both gastroduodenal and biliary obstructions are classified into three patterns based on timing and location. Mutignani and colleagues proposed a classification for the duodenal stenosis type in relation to the major papilla, with Type I at a level proximal to and without involvement of the papilla; Type II affecting the second part of the duodenum with involvement of the papilla; and Type III involving the third part of the duodenum distal to and without involvement of the papilla [1].

Biliary obstruction usually occurs in patients with pancreaticobiliary malignancy as the underlying disease, but sometimes also in patients with other etiologies, such as gastric, duodenal or metastatic cancers. Particularly in patients with pancreaticobiliary malignancies, biliary obstruction tends to develop before the occurrence of GOO. One study reported the onset of biliary obstruction before GOO in 56%, concomitantly in 25%, and following the development of GOO in 19% [2,3]. Many patients undergoing enteral stenting for GOO thus already have a pre-existing biliary stent to manage a preceding biliary obstruction. In these cases, if the pre-existing biliary stent is a plastic, it should be replaced with a SEMS, given the risk of buckling and inability to retrieve it. In Type II patients with preceding biliary SEMS, concern has been expressed about the possible blockage of bile outflow with the use of a covered duodenal SEMS. A study which compared post-procedural bilirubin and alkaline between covered and uncovered SEMSs placed to bridge the papilla concluded that placement of a covered SEMS was not contraindicated [4]. Nevertheless, selection of an uncovered SEMS to avoid the endoscopic inaccessibility of the bile duct may be preferable.

In cases in which biliary obstruction is concomitant with GOO, simultaneous placement of a biliary stent should be considered when placing an enteral stent for GOO, since the success rate of this procedure is comparable to that of placement of a duodenal stent alone [5]. In cases with either simultaneous or two-stage placement, biliary stenting prior to duodenal stenting should be considered, because endoscopic biliary stenting may be impossible when a duodenal stent bridges the papilla. If transpapillary biliary stenting fails even with the use of balloon dilation for duodenal stricture, a percutaneous or EUS-guided transmural approach [6] may be selected.

As stated above, development of a biliary obstruction after a duodenal obstruction is least common. Thanks to the pre-existing enteral stent, the duodenoscope can usually reach the level of the major papilla. In cases with an enteral SEMS bridging the papilla, however, a transpapillary approach is often impossible.

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Faculty Abstract

Endoscopic management of both duodenal and biliary obstruction



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Nowadays, biliary obstruction is usually treated under ERCP or EUS guidance. Duodenal obstruction is often caused by pancreatic cancer, periampullary cancer, and duodenal cancer. It causes nausea, vomiting, and poor oral food intake, resulting in a low quality of terminal life. When both obstructions appear, duodenal stent placement combined with biliary stent, so called “double stenting” is one of option to relive symptom. In this lecture, I would like to introduce current status and perspective of treatment of endoscopic double stenting.

Faculty Abstract

EST: How to teach it well?



Akio Katanuma

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Endoscopic sphincterotomy (ES) is one of the most frequently performed procedures by endoscopic retrograde cholangiopancreatography (ERCP) endoscopists. Although ES is frequently carried out, the rate of complications (e.g., bleeding and perforation) approximately ranges from 3% to 10%. To acquire and master the necessary skills for the ES techniques, accumulating experience in actual clinical practice in many institutes is needed. We developed a new dry model for ES training. An endoscopic retrograde cholangiopancreatography trainer was used as a duodenum, bile duct, and papilla simulator. A simulated papilla was created with a piece of rolled uncured ham, and ES was performed. Hands-on training was carried out using this model, and success and failure of the procedures were evaluated. A questionnaire survey was conducted among the participants to assess the performance and usefulness of the dry model for ES training. Twenty-two endoscopists participated in the hands-on training using this dry model. ES was successful in 33 out of 34 attempts (97%). Based on the results of the questionnaire survey, the median score for realism was 7 (range: 2-9) for ES on a scale of 1 to 10. For the question on whether the model was useful for improving the skills of beginners in performing the ES techniques, the scores were 10 (range: 7-10) for ES. In this session, I will report the new ES training model which is relatively cheap, and easy to prepare and use. In addition, I'll briefly review the current status of ES training.

Faculty Abstract

Recent progress in interventional EUS

Yousuke Nakai

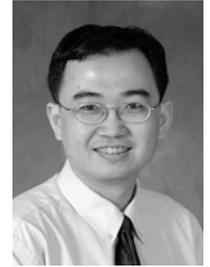
(Department of Gastroenterology, Graduate School of Medicine, The University of Tokyo)



For pancreatobiliary diseases, ERCP has been the mainstay as diagnostic and therapeutic modalities. Initially, the role of EUS was limited to diagnosis. However, EUS has its advantage over ERCP imaging; while ERCP imaging is limited to duct (biliary and pancreatic), EUS can provide both intra- and extra-duct image as well as access to these areas. While the role of EUS-FNA has been fully established as a tool for tissue acquisition, a novel through-the-needle imaging such as confocal laser endomicroscopy (CLE) has further advanced its role. Moreover, indications of EUS are destined to expand from diagnosis to treatment due to its ability to access to both intra- and extra-duct organs. Interventional EUS for biliary indications was first utilized as an alternative to transpapillary biliary drainage in failed ERCP: EUS-guided rendezvous or biliary drainage, as we previously reported patients with GOO. EUS-BD has a potential to be a primary biliary drainage for malignant biliary obstruction because EUS-BD can avoid post-ERCP pancreatitis and provide longer patency by bypassing the ampulla and the biliary stricture. EUS-gallbladder drainage (EUS-GBD) can be also an alternative to percutaneous or transpapillary gallbladder drainage. The advantage of EUS-GBD is its high technical success rate and its nature of internal drainage. Other than biliary drainage, EUS-PCD (pancreatic cyst drainage) or EUS-GJ (gastrojejunostomy) using a lumen apposing metal stent has drawn much attention. In addition to these palliative procedures under EUS-guidance, interventional EUS is increasingly utilized as a therapeutic tool such as injection, RFA and so on. In conclusion, indications of interventional EUS are still expanding.

Faculty Abstract

Management of benign biliary stricture



Ang Tiing Leong

(Changi General Hospital Singapore)

Benign biliary strictures may arise post-operatively or in chronic conditions such as chronic pancreatitis, primary sclerosing cholangitis, autoimmune cholangiopathy, autoimmune pancreatitis, ischemia, post radiation or be due to extrinsic compression. The need for a biliary drainage procedure will depend on the presence of symptomatic biliary obstruction and the underlying etiology. In specific conditions such as autoimmune pancreatitis and autoimmune cholangiopathy, medical treatment such as steroids may actually lead to resolution of the stricture and avoid the need for biliary interventions. ERCP and stenting can achieve immediate drainage of obstruction. Endoscopic techniques such as stricture dilation using balloon and coaxial dilators will provide only temporary relief of the obstruction. Strategies such as the insertion of multiple plastic stents or the insertion of a single fully covered self-expandable metallic stent (FCSEMS) are required if the intent is to achieve long lasting stricture resolution. The success of these strategies will depend on the underlying anatomy, such as whether it is a single short fibrotic stricture, or a more complex long stricture associated extrinsic compression. In selected suitable patients, insertion of multiple plastic stents and insertion of a single FCSEMS for one year have been shown to be equally effective in achieving successful stricture. The advantage of FCSEMS is that only a single ERCP session is required to achieve adequate dilatation, unlike plastic stents where multiple sessions are needed. Endoscopic treatment may be reattempted in the context of stricture recurrence. A holistic approach that integrates the roles of endoscopy and surgery based on specific anatomy, case selection and patient response to endotherapy is important.

Faculty Abstract

Biliary strictures after living donor liver transplantation

Hirofumi Kogure

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Living donor liver transplantation (LDLT) has become an accepted therapeutic option for patients with end-stage liver disease. In adult recipients, duct-to-duct (D-D) biliary reconstruction is preferred to hepaticojejunostomy for several reasons. However, biliary complications such as biliary strictures, leaks, or cast syndrome after LDLT with D-D reconstruction are major issues requiring attention. They occur in 16–32% of adult LDLT patients and may lead to graft failure necessitating re-transplantation or death. Endoscopic management of biliary complications after deceased donor liver transplantation has been well described in a considerable number of patients. However, there are only a few reports on endoscopic therapy in a small number of patients after LDLT. In our institution, endoscopic treatment strategy for biliary strictures after LDLT is as follows: Strictures are dilated with a balloon followed by a nasobiliary catheter insertion across the stricture. If dilatation is still not adequate, inside stents are inserted. The inside stent, which is plastic stent placement above the intact sphincter of Oddi, has been invented to retain the function of the sphincter of Oddi and to prevent the reflux of duodenal contents into the biliary tree. Favorable outcomes are obtained by balloon dilation of the stricture and inside stent placement in patients with biliary strictures after LDLT. However, there are some cases recalcitrant to the endoscopic treatment, and recurrent stricture sometimes occurs during long-term follow-up. New treatment modalities such as covered metallic stents or bioabsorbable stents are studied, aiming at the further improvement of treatment outcome.

Faculty Abstract

Proposal of unified reporting system in biliary stenting ~ Tokyo criteria 2014~

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There were so many articles about the evaluation of biliary stent. However, the definitions of those articles were different and difficult to compare exactly and perform meta-analysis. We should make unified evaluation and reporting system. We had published the new unified reporting system named "Tokyo criteria 2014" from some Japanese experts in endoscopic biliary interventions as follows; Ichiro Yasuda, Takao Itoi, Shomei Rhozawa, Tsuyoshi Hamada and Yousuke Nakai, Hirofumi Kogure and Kazuhiko Koike. In this system, we employed the term of "Recurrent biliary obstruction (RBO)" instead of "Patency". Patency was considered as not available for some situation of stent trouble. Migration, kinking of bile duct at the edge of stent or non-occlusion cholangitis are not a stent obstruction but cause the symptoms of biliary obstruction. Then, we thought that RBO is more suitable for these situations. And, we defined the calculation of the period and cause of RBO. The items should be described on the article were also define including severity of complications. We want to receive your opinion about this criteria and to improve with expert's ideas gathering in T-CAP 2015meeting.

Free Paper : Oral Session

Use of Spyglass peroral pancreatoscopy and X-ray-guided electrohydraulic lithotripsy for refractory pancreatic stones

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Seichi Hara,² Kensuke Takuma,² Naoki Okano²

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Objective: Extracorporeal shock wave lithotripsy (ESWL) and endoscopic stone lithotomy (EL) are minimally invasive procedures and useful in the treatment for pancreatic stones. However, large-diameter stones and impacted stones are sometimes refractory to these treatments. We retrospectively evaluated the efficacy of using peroral pancreatoscopy (POPS) and X-ray-guided electrohydraulic lithotripsy (EHL) for these refractory pancreatic stones.

Methods: From May 2005 to November 2013, 148 chronic pancreatitis lithiasis patients were treated with ESWL and EL; among them, EHL was performed as a second attempt for unsuccessful ESWL and EL cases. We used 10 Fr SpyGlass Direct Visualization system for POPS-guided EHL. X-ray-guided EHL (using a 7 Fr biliary dilator as an outer sheath) was performed when a 10Fr SpyGlass system was difficult to insert into the main pancreatic duct.

Results: A total of 14 patients were included in this study. Mean stone diameter was 11.5 ± 3.3 mm; 6 patients had a single stone, whereas 8 patients had diffuse stones. POPS-guided EHL was performed in 8 cases and X-ray-guided EHL was performed in 6 cases. Fragmentation was successful in 7 (50%) patients: 3 patients treated with POPS-guided EHL and 4 treated with X-ray-guided EHL. One patient with post-ERCP pancreatitis (Cotton classification: mild) occurred by POPS-guided EHL, whereas one patient with mild pancreatitis and one with severe pancreatitis occurred by X-ray-guided EHL.

Conclusions: POPS-guided and X-ray-guided EHL may be an alternative treatment for refractory stones. However, EHL can sometimes cause severe complications; hence, it is necessary to take adequate precautions with these treatments.

Free Paper : Oral Session

Endoscopic Ultrasound-Guided Transmural Drainage of Intra-abdominal Collections

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Objective: To analyze the results of endoscopic ultrasound-guided transmural drainage (EUTD) of intra-abdominal collections performed at Changi General Hospital.

Method: Retrospective analysis of a EUTD registry was performed.

Results: Over 88 months, 31 patients (median age: 57 years; range: 19-89) underwent EUTD. There were 13 pancreatic pseudocysts (PC), 15 pancreatic walled off necrosis (WON), 2 left subphrenic abscesses, and 1 pelvic abscess. The mean size was 10.5 cm (range: 5–17.2). The indication for EUTD was infection (22) or symptomatic mass effect (9). All collections were punctured by a 19G needle, followed by guidewire insertion. Initial tract dilatation was performed by wire-guided needle-knife (23), co-axial dilator (7) or cystotome (1), followed by further balloon dilatation. Drainage devices used were double-pigtail stents (26), drainage catheters (2) or NAGI self-expandable metallic stents (3). Endoscopic necrosectomy was performed in 13/15 WON [median 2 (range: 1-8) sessions were required for double-pigtail stents, whereas 1 session was required for NAGI stents]. Pancreatic duct (PD) stenting was required in 14/28 (50%) due to PD disruption. Technical success was 100%. Perforation necessitating surgery occurred in 1/31 (3.2%) after use of needle knife. Minor complications were asymptomatic pneumoperitoneum (1/31; 3.2%) and self-limited bleeding post-balloon dilation (1/31; 3.2%). Clinical success was 94% (29/31) [PC: 12/13; abscess: 3/3; WON: 14/15]. Two patients required surgery for perforation and recurrence respectively.

Conclusion: EUTD was safe and effective. Initial tract dilatation using co-axial dilator or cystotome may be safer compared to needle knife. NAGI stents may be better for WON.

Free Paper : Oral Session

A Newly Modified Non-Flared Fully Covered Metallic Stent of 12 mm-Diameter with Long Lasso for Intraductal Placement in Patients with Malignant Biliary Stricture: Feasibility Study

Hyun Jong Choi, Jong Ho Moon, Yun Nah Lee, Moon Han Choi, Tae Hoon Lee, Sang-Woo Cha, Young Deok Cho, Sang Heum Park

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Background and Aims: Suprapapillary intraductal placement of fully covered self-expandable metallic stent (FCSEMS) for malignant biliary stricture (MBS) may prevent duodeno-biliary reflux and cholangitis. Non-flared, convex both ends of FCSEMS can minimize ductal injury by stent itself. Thus, intraductal placement of a non-flared FCSEMS can be a novel stent for MBS. The aim of this study was to evaluate the efficacy of newly modified, non-flared FCSEMS having 12mm in diameter with long lasso for intraductal placement in patients with MBS.

Methods: 34 Patients with MBS and obstructive jaundice were enrolled in this study. The non-flared FCSEMS has 12mm in diameter with central portion of 8mm and long lasso of 7cm in distal end. Newly modified metallic stent was placed above the papilla. The main outcome was mean stent patency, and adverse effect. Perioperative complications were accessed in cases that undergone surgical resection of MBS.

Results: Technical and clinical success rate was 100%. Early complications (≤ 30 days) were occurred in 1 patient (post-procedure mild pancreatitis). Eight patients received surgery after stenting, and there were no peri- or postoperative complications. The mean stent patency was 277 days (range, 34-456). Late complications (>30 days) were occurred in 26.9% (7/26) with stent migration in 2 patients, and stent occlusion in 5 patients.

Conclusions: Intraductal placement of the non-flared FCSEMS with large diameter of 12mm can be a novel stent in patients with MBS for both preoperative and palliative management. Long-term follow up and prospective comparative studies with large number of patients were needed to evaluate the usefulness of intraductal placement of this stent.

Key Words: malignant biliary stricture, covered self-expandable metallic stent

Free Paper : Oral Session

Biliary drainage strategy of unresectable malignant hilar strictures by computed tomography volumetry

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Hiroko Shindo, MD, PhD, Yudai Yokota, MD, PhD, Sumio Hirose, MD,
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AIM: To identify criteria for predicting successful drainage of unresectable malignant hilar biliary strictures (UMHBS) because no ideal strategy currently exists.

METHODS: We examined 78 patients with UMHBS who underwent biliary drainage. Before drainage, the liver volume of each section was measured using CT volumetry. Drained liver volume was calculated based on the volume of each liver section and the type of bile duct stricture. Receiver operating characteristic (ROC) analysis was performed to identify the optimal cutoff values for drained liver volume. In addition, factors associated with the effectiveness of drainage and early complications were evaluated.

RESULTS: Multivariate analysis showed that drained liver volume and impaired liver function (with decompensated liver cirrhosis) were independent factors contributing to the effectiveness of drainage. ROC analysis for effective drainage showed cutoff values of 33% of liver volume for patients with preserved liver function (with normal liver or compensated liver cirrhosis) and 50% for patients with impaired liver function. Among patients who met these criteria, the rate of effective drainage among those with preserved liver function and impaired liver function was 90% and 80%, respectively. The rates of effective drainage in both groups were significantly higher than in those who did not fulfill these criteria ($P < 0.001$ and $P = 0.02$, respectively). Drainage-associated cholangitis occurred in 9 patients (12%).

CONCLUSION: Liver volume drainage $\geq 33\%$ in patients with preserved liver function and $\geq 50\%$ in patients with impaired liver function correlates with effective biliary drainage in UMHBS.

Free Paper : Oral Session

EUS GUIDED DRAINAGE OF WALLED OFF NECROSIS USING LARGE DIAMETER LUMEN APPOSING FULLY COVERED METAL STENT – LARGE EXPERIENCE FROM A SINGLE TERTIARY CARE GI CENTRE

Sundeep Lakhtakia, Jahangeer Basha, Rajesh Gupta, Mohan Ramchandani, Rakesh Kalapala, Zaheer Nabi, Domenico Galasso, Nageshwar Reddy D
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BACKGROUND & AIM

EUS guided Trans mural drainage of pancreatic fluid collections (PFC) using plastic stents has limitations of inadequate drainage especially in “Walled off necrosis (WON)” which contains solid debris. To overcome this limitation a large diameter lumen apposing fully covered self-expandable metallic stent (SEMS) has been developed. The present study is designed to evaluate the safety and efficacy of this SEMS in a large cohort.

METHODS:

Consecutive patients of AP with large symptomatic PFC having varied amount of solid debris were included during the study period from January 2013 to December 2014. EUS guided drainage was done using novel specially designed large diameter lumen apposing fully covered SEMS (Nagi stent, Taewoong Medical Co Ltd, Korea). The main outcome measurements studied were technical success of stent placement, complications, need for necrosectomy and clinical success including resolution of symptoms & fluid collection.

RESULTS:

A total of 102 patients (Mean age-35.8 years, 11 females) underwent EUS guided drainage with placement of fully covered SEMS. Technical success was achieved in all patients (100%). Early complication observed was bleeding in 4(3.9%) patients, which settled spontaneously (in 2 patients) or required intervention (2 patients, radiological intervention). None of the patient had perforation. 10(9.8%) patients required additional endoscopic procedures for persistent symptoms (infection, non-resolution of PFC). This included: naso-cystic drain placement for irrigation with hydrogen peroxide and saline (5 patients), necrosectomy through SEMS (5 patients, single session). During necrosectomy, two patients had SEMS migration, one had internal migration (retrieved immediately) and another had external migration. Clinical success was achieved in all patients (100%).

CONCLUSION:

EUS guided drainage with this large diameter lumen-apposing fully covered SEMS is safe and effective especially in fluid collections with solid debris (WON) with an ability to perform necrosectomy through SEMS.

Free Paper : Oral Session

EUS-guided biliary drainage for right intrahepatic bile duct obstruction; novel technical tips (with video)

Takeshi Ogura, Wataru Takagi, Tatsushi Sano, Saori Onda, Akira Imoto, Atsushi Okuda, Daisuke Masuda, and Kazuhide Higuchi

(2nd Department of Internal Medicine, Osaka Medical College, Osaka, Japan)

Objective: EUS-guided biliary drainage (EUS-BD) is not normally indicated for right intra-hepatic bile duct (IHBD). We evaluated the technical feasibility and clinical efficacy of novel EUS-BD for right IHBD obstruction.

Methods: Among 232 patients who underwent EUS-BD between June 2012 and April 2015 at Osaka Medical College, total 22 patients who was diagnosed obstructive jaundice complicated with right intra-hepatic bile duct (IHBD) obstruction were included. This novel EUS-BD was divided into two approach route. First route is from left IHBD, and second is from right IHBD. From left IHBD route, after uncovered metallic stent was placed from right IHBD to left IHBD, EUS-guided hepaticogastrostomy was performed. From right IHBD route, following deployment of the uncovered metallic stent from right IHBD to the hepatic parenchyma, we also placed fully covered metallic stent from uncovered metallic stent to the duodenal bulb or stomach.

Results: The causes of obstructive jaundice were cholangiocarcinoma (n=14), pancreatic cancer (n=5), gastric cancer, and colon cancer (n=3). From left IHBD as first drainage route, technical success rate was 78% (14/22). Among failed EUS-BD from left IHBD, we performed EUS-BD for 2 patients from right IHBD. On the other hand, from right IHBD as first drainage route, technical success was obtained in all patients. Sever adverse events were not seen in any patients during follow-up period (median 298 days).

Conclusion: Presented novel method appears safely and effectively for obstructive jaundice complicated with right IHBD obstruction.

Free Paper : Oral Session

Is combination of biliary sphincterotomy and balloon dilation a better option than either alone in endoscopic removal of bile duct stones? A comparative study.

Mohamed Sarhan

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Objective

We compared therapeutic benefits and complications between endoscopic sphincterotomy (EST) alone, endoscopic large balloon sphincteroplasty (ELBS) without preceding sphincterotomy and (EST) plus large balloon dilation (LBD).

Method

60 patients with bile duct stones. Three groups, 20 patients randomized to EST (group A), 20 patients randomized to EST plus LBD (group B) and 20 patients randomized to LBS without preceding EST (group C). Patients subjected to blood count, liver functions, serum amylase, lipase, alkaline phosphatase, abdominal ultrasound and MRCP.

Results

Complications were (5%) in group (A) one patient with melena. (5%) in group (B) one patient with acute pancreatitis. (10%) in group (c) one patient with acute pancreatitis and another patient with failure of complete stone extraction . (0%) perforation in all groups.

Conclusion

EST plus LBD was found to be an effective alternative to EST alone. Using balloon dilation has less bleeding with more increase risk of pancreatitis also more use of mechanical lithotripsy with no difference in perforation rates, however number of situations as coagulopathy or anti-coagulation favor use of EBD. All methods are safe and effective but each method has its different complications.

Free Paper : Poster Session

An enzymatically activatable fluorescence probe is useful for the rapid on-site evaluation of pancreatic tissue specimens obtained by EUS-FNA

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Objectives: Endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) has been widely accepted as the most reliable method for the histological diagnosis of pancreatic tumor. However, the multiple needle passes are necessary to increase the accuracy because of the difficulty in on-site evaluation of adequate core specimen. The aim of this study was to develop a rapid on-site fluorescent method for the detection of adequate core specimens within the pancreatic tumor EUS-FNA samples using a topically applied enzymatically activatable probe (gGlu-HMRG) which fluoresces in the presence of γ -glutamyltranspeptidase (GGT).

Methods: EUS-FNA was performed using a linear array echoendoscope and either 22 or 19-gauge needle. We applied gGlu-HMRG onto the EUS-FNA samples and signal intensity was measured every 1 min using a fluorescence imaging system. Histological adequacy was evaluated in each sample and GGT expression was confirmed by immunohistochemistry.

Results: EUS-FNA samples from 10 patients with pancreatic tumor (7 pancreatic cancer, 1 neuroendocrine tumor, and 2 chronic pancreatitis) were obtained and evaluated with gGlu-HMRG probe for 13 minutes. In 6 samples, fluorescent specimens contained adequate histological specimens and reached pathological diagnosis. The remaining non-fluorescent samples contained very small amount of carcinoma cells, normal ductal epithelial cells or no epithelial cells. The signal intensity at 5 minutes was 25.5 ± 7.7 and 7.7 ± 0.5 in fluorescent and non-fluorescent part respectively ($p < 0.05$).

Conclusions: An application of enzymatically rapid-activatable probe on EUS-FNA samples was highly reliable method for rapid detection of adequate tissue materials. This would minimize the number of needle puncture without the expense of pathological diagnosis.

Free Paper : Poster Session

The role of side-port needle for tissue acquisition of pancreatic mass: a parallel group randomized study

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Objective: Endoscopic ultrasound fine needle aspiration (EUS-FNA) is widely used for obtaining specimens from pancreatic mass. However, it remains imperfect and needs modification to enable accurate diagnosis. A side-port needle was developed to improve diagnostic accuracy with obtaining more cellular material. We compared 22-gauge (G) side-port needle and 22G standard needle in pancreatic mass in a multicenter prospective randomized control trial.

Method: Between January and September 2013, consecutive 160 patients with a suspected solid pancreatic mass in five tertiary referral centers were enrolled. Patients were randomized to 22G side-port needle (EZ Shot 2 with side-port, Olympus Medical Systems) and 22G standard needle (EZ Shot 2). The primary endpoint was diagnostic accuracy. The secondary endpoints were adequacy of tissue acquisition and degree of contamination and amount of blood.

Results: Analysis of 158 patients (79 per group) was performed. Two patients did not undergo EUS-FNA after allocation. In four patients, EUS-FNA failed owing to difficulty of the puncture. There was no significant difference in the diagnostic accuracy rate (side-port group, 92.4% (73/79) vs. standard group, 86.1% (68/79); $P = 0.3$). Adequate samples for histological diagnosis were obtained in 61.3% (47/76) and 44.2% (34/78) of patients from side-port and standard groups, respectively ($P = 0.03$). No significant difference was seen in the degree of sample contamination and amount of blood between the groups.

Conclusion: There was no significant difference in diagnostic accuracy between the needle types. However, side-port needle was superior for tissue acquisition.

stones was not significantly different between the two groups (3.0 ± 3.9 v.s. 1.9 ± 3.3 sessions). The rate of initial complete stone removal was significantly lower in group A than in group B (49.4% v.s. 78.1%, $p < 0.001$); however, the final rate of complete stone removal was not significantly different between the two groups (88.2% v.s. 98.6%). The rate of early complications related to ERCP was 12.9% in group A and 13.5% in group B (N.S.). As for details of the complications in group A, pancreatitis, bleeding and cholangitis were observed 7.1% (18), 4.7% (12) and 1.9% (3), respectively. All patients recovered by conservative treatment; moreover, no patients died in either group.

Conclusions: Although the rate of initial complete stone removal was significantly lower, endoscopic treatment for elderly patients with choledocholithiasis is effective and safe compared with such treatment in younger patients.

Free Paper : Poster Session

A comparison of image quality between tissue harmonic echo and B mode using a novel EUS for a pancreatic lesions

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Background: Recently, novel tissue harmonic echo (THE) imaging performed using an endoscopic ultrasound (EUS) system equipped with a special monitor/processing unit has been developed. With this new technology, penetration (THE-P) and resolution (THE-R) images can be obtained.

Objective: To evaluate the clinical usefulness of the novel THE imaging for pancreatic diseases.

Method: Three EUS images of the same pancreatic lesion were obtained using B-mode, THE-P mode, and THE-R mode imaging. Each set of EUS images was randomly arranged and evaluated independently using a Likert scale 5-point grading system by 4 physicians blinded to the imaging technique. Evaluation points were as follow; for cystic lesion, boundary, septum, nodules, and total image quality; for solid lesions, boundary, internal structures, and total image quality.

Results: Fifty patients with pancreatic lesions (38 cystic, 12 solid) were enrolled. For cystic lesions, THE-P mode images were significantly superior to conventional B-mode images for all the evaluation points ($p < 0.05$). THE-R mode images were significantly superior to conventional B-mode images for visualizing the boundary, septum, and total image quality ($p < 0.05$). However, for solid lesions, there was no significant difference in all the evaluation points between THE-P and conventional B-mode images. THE-R mode images were inferior to conventional B-mode images for visualizing the boundary, internal structure, and total image quality ($p < 0.05$).

Conclusions: THE mode images provide better lesion characterization, particularly of pancreatic cystic lesions, than conventional B-mode images.

Free Paper : Poster Session

The clinical evaluation of needle-based confocal laser endomicroscopy (nCLE) in the assessment of the pancreatic cystic lesions (PCL). A pilot study

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Sponsor: Singhealth Research Grant 2014

Background/ Aim:

PCL are increasingly diagnosed from the cross-sectional imaging done for other indications. Some PCL harbour malignant potential. The challenge lies in the ability to correctly identify the high-risk individuals and refer them for resection surgery, which carries high morbidity and mortality. Unfortunately, present diagnostic techniques can only achieve diagnostic accuracy of approximately 60%. nCLE had been designed to bridge the diagnostic gap. We aim to assess the feasibility and safety of nCLE in the assessment of PCL in local setting.

Methods:

We prospectively recruited patients referred for assessment of PCL from August 2014 till present. All PCL were examined with nCLE miniprobe via endoscopic ultrasound (EUS) followed by fine-needle aspiration (FNA). Information regarding the cysts (e.g. size, morphology, location, fluid analysis and etc.) was documented. Adverse event were recorded.

Results:

Ten patients were recruited, 6 were male with a mean age of 70.5. Only 8 completed nCLE examination of the PCL, one was unfit for procedure and one withdrew consent. Average nCLE imaging duration was 4m20s. There was 0% complication or adverse event reported. nCLE imaging was successful in 87.5%. The acquired nCLE image quality was good to excellent (figures). Table 1 shows the finding of nCLE. One patient had operation which showed ductal adenocarcinoma. The accuracy of the nCLE compared to cytology was 71.4%.

Conclusion:

Our results had demonstrated that nCLE assessments of the PCL are safe and feasible option. It complements the existing diagnostic modalities to improve diagnostic yield. Future studies should focus on histological correlation of other PCL.

Table 1: Patients' characteristic and nCLE finding

| No. | Sex | Age | Cyst Location | Cyst Size (mm) | Location of puncture | nCLE Imaging duration | nCLE Impression | Structures Identified | Complication | Cyst CEA (UG/L) | Cyst Amylase (U/L) | Cytology |
|-----|-----|-----|----------------|----------------|----------------------|-----------------------|--------------------------------|--|--------------|-------------------|--------------------|---|
| 1 | F | 78 | Head | 56 x 30 | Duodenum | 4m 48s | IPMN [*] | Papillary like projection | Nil | N.D. [#] | N.D. | Cyst contents with benign epithelial cells |
| 2 | M | 74 | Head | 26 x 28 | Duodenum | 6m 18s | IPMN | Papillary like projection | Nil | 53.4 | 22 | Dysplastic glandular epithelium, consistent with intraductal papillary mucinous neoplasm |
| 3 | M | 68 | Tail | 27 x 25 | Gastric | 4m 18s | Serous cystadenoma | Superficial vascular network | Nil | 45.2 | 1139 | Poor cellularity |
| 4 | M | 66 | Head/ Uncinate | 27 x 19 | Duodenum | 6m 42s | Unable to capture images | N.A. [^] | Nil | N.D. | N.D. | Low yield benign epithelial cells present |
| 5 | F | 79 | Neck | 34 x 40 | Gastric | 5m 54s | Suspicious of malignant lesion | Prominent blood vessels Acinar cells | Nil | N.A | N.A | Well differentiated neuroendocrine tumour |
| 6 | M | 75 | Body | 19 x 18 | Gastric | 4m 28s | Pseudocyst | Fibrous septa | Nil | 0.2 | >15000 | Benign pancreatic acinar elements are seen. |
| 7 | M | 69 | Neck | 22 x 13 | Gastric | 5m 30s | IPMN | Papillary like projection Dark rings | Nil | N.D | N.D | Cell poor aspirate with no neoplastic epithelium identified |
| 8 | F | 72 | Tail | 62 x 59 | Gastric | 5m 48s | IPMN | Papillary like projection Dark cells clumps | Nil | 5696 | 11 | Strips of neoplastic mucinous epithelium present. Features in keeping with IPMN Histology: ductal adenocarcinoma |

*Intraductal papillary mucinous neoplasm

Not applicable

^ Not detected

Free Paper : Poster Session

Role of Contrast-enhanced Endoscopic Ultrasonography in the Differential Diagnosis of Branch Duct Intraductal Papillary Mucinous Neoplasm

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Objective: This study aimed to elucidate the role of contrast-enhanced endoscopic ultrasonography (CE-EUS) in the differential diagnosis of benign and malignant branch duct intraductal papillary mucinous neoplasm (BD-IPMN).

Methods: A total of 50 patients with BD-IPMN, who underwent computed tomography (CT) and endoscopic ultrasonography (EUS) were included in this study. CE-EUS was performed when mural lesions were detected on EUS. The ability to evaluate the presence and the height of the mural nodules with each imaging modality was compared.

Results: Resection was performed in 17 cases, with the remaining 33 patients were merely followed up. Of the 17 patients that underwent resection, the pathological findings revealed 14 cases with mural nodules and three cases without. When using EUS alone, the accuracy for diagnosing the presence of mural nodules was 72%, but this increased to 98% when using EUS combined with CE-EUS. In terms of the measurement accuracy of the height of mural nodules, CE-EUS performed significantly better than CT or EUS ($P < 0.05$). Using receiver operating characteristic curve analysis and determining the cut-off value for the height of the mural nodules measured on CE-EUS as 8.8 mm facilitated the accuracy for diagnosing malignant BD-IPMN of 94%.

Conclusions: CE-EUS can be used not only to diagnose the presence of mural nodules, but also as an accurate means of measuring the height of mural nodules. Furthermore, using CE-EUS to measure the height of mural nodules provides a highly precise means of determining the difference between benign and malignant BD-IPMN.

Diagnostic approach using EUS-guided fine needle biopsy and transpapillary biopsy in patients with suspected malignant biliary obstruction

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BACKGROUND AND AIMS: Although tissue sampling on ERCP is an initial procedure for histologic diagnosis of malignant biliary obstruction (MBO), EUS-guided sampling is emerging as an accurate diagnostic procedure. However, the diagnostic yields of EUS and ERCP-guided sampling on MBO were reported variously. The aim of this study was to evaluate the usefulness of the diagnostic approach using EUS-guided fine needle biopsy (EUS-FNB) and ERCP-guided transpapillary forceps biopsy (TPB) combined according to an origin of stricture in patients with suspected MBO.

PATIENTS AND METHODS: A total of 178 patients with suspected MBO underwent intraductal ultrasonography (IDUS) and TPB during ERCP at first. Based on the results of cross sectional imaging study and IDUS, all patients were classified as 88 patients (49.4%) with intrinsic type and 90 patients (50.6%) with extrinsic type of MBO. If the malignancy was not confirmed by initial TPB, 2nd endoscopic TPB for intrinsic type of MBO and EUS-FNB using a core biopsy needle for extrinsic type of MBO was performed, respectively.

RESULTS: The overall diagnostic accuracy of 1st endoscopic TPB was 74.7%. The diagnostic accuracy of 1st endoscopic TPB in intrinsic type was significantly higher than in extrinsic type (81.8% vs 67.8%; $p=0.023$). In 19 patients of intrinsic type with negative for malignancy by 1st TPB, 2nd endoscopic TPB was achieved a diagnostic accuracy with 84.2%. In 33 patients of extrinsic type with negative for malignancy by 1st TPB, the diagnostic accuracy of EUS-FNB was 90.9%. The overall diagnostic accuracy of 1st TPB combined with 2nd TPB in intrinsic type and EUS-FNB in extrinsic type was 96.6%.

CONCLUSIONS: The TPB appears still a useful initial tool to be able to diagnosis and treatment of patients with MBO at the same time on ERCP. In addition, the diagnostic approach using 2nd endoscopic TPB or EUS-FNB according to the origin of MBO is considered highly effective to improve a histologic diagnostic accuracy of MBO in patients with negative for malignancy by 1st trial of endoscopic TPB.

Free Paper : Poster Session

A newly modified access balloon catheter for direct peroral cholangioscopy using an ultraslim upper endoscope

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Background and Objective: Direct peroral cholangioscopy (DPOC) using an ultraslim upper endoscope has been increasingly applied for diagnosis and treatment of diverse biliary diseases. Recently, an intraductal balloon catheter has been used commonly to guide the flexible ultraslim endoscope; however, accessibility into the bile duct remains a limitation of the procedure. The aim of this study was to evaluate the feasibility and success rate of an intraductal balloon-guided DPOC using an ultraslim endoscope with a newly modified 5-F balloon catheter.

Methods: In total 36 patients with biliary obstruction were included prospectively for a DPOC using an ultraslim endoscope with a newly modified intraductal 5-F balloon catheter. The main outcome measure was technical success, defined as successful advancement of the ultraslim endoscope into the obstructed segment of the biliary tree or the bifurcation. Secondary outcomes were mean time for the total procedure, intubation into the common bile duct (CBD) and advancement up to the target site after intubation of the ultraslim endoscope, technical success rates of diagnostic and therapeutic interventions, and adverse events.

Results: The intraductal balloon-guided DPOC using a newly modified 5-F balloon catheter was completed successfully in 35 of 36 (97.2%) patients. The mean times for total procedure, intubation into the distal CBD, and advancement up to the obstructed bile duct segment were 27.3 ± 7.2 , 2.2 ± 0.5 and 0.8 ± 0.4 min, respectively. In total, 49 interventions were performed in 35 patients, excluding one patient in whom we failed to perform DPOC. Technical success of the interventions was achieved with 44 of 49 (89.8%) procedures. No adverse event including cholangitis was observed.

Conclusions: A newly modified 5-F balloon catheter seemed to facilitate performing intraductal balloon guided DPOC for direct visual examination of the bile duct in patients with biliary obstruction. Continued development of endoscopes and accessories are expected to further improve the performance of DPOC.

The role of direct peroralcholangioscopy after intraductalultrasonography in evaluation of indeterminate biliary strictures or filling defects

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Background: Despite improvements in imaging techniques, accurate diagnosis of indeterminate bile duct strictures or filling defects is challenging. Although intraductal ultrasonography (IDUS) can provide high-resolutive, cross-sectional images of the bile duct, tissue confirmation is not possible. Direct peroralcholangioscopy (POC) using an ultra-slim upper endoscope permits endoscopic visualization and tissue confirmation. However, it has technical difficulty in performing, and proper indications were not established. We evaluated the role of IDUS and direct POC in evaluation of indeterminate biliary strictures or filling defects.

Methods: Total 48 patients with indeterminate biliary strictures or undefined filling defects in preceding conventional imaging modalities including ERCP were evaluated by IDUS. Based on the findings of IDUS, direct POC was performed in patients with suspicious malignant strictures, intraductal protruding lesions or other inconclusive findings. Patients with suspicious benign lesions like nonspecific symmetrical wall thickening on IDUS undergone clinical follow-up. Final diagnoses were confirmed by histopathologic results and/or clinical follow-up outcomes.

Results: Direct POC was performed in 28 patients with suspicious malignant or inconclusive bile duct strictures or filling defect on IDUS, and successful in 27 patients (96.4%). Direct POC-guided target biopsy and histopathological confirmation were acquired in 92.6% (25/27) with 92% (23/25) diagnostic accuracy. The sensitivity, specificity and accuracy of IDUS and direct POC for suspicious malignant or inconclusive lesions were 87.5% and 100%, 83.3% and 100%, and 85.7% and 100%, respectively. The overall sensitivity, specificity, and accuracy of IDUS combined with direct POC for indeterminate bile duct strictures or filling defects were 100%, 96.9%, and 97.9%.

Conclusion: Stepwise evaluation with IDUS and direct POC using an ultra-slim endoscope was highly accurate in evaluation of indeterminate bile duct strictures or filling defects. IDUS may be useful for decision making of need of direct POC in evaluation of indeterminate bile duct lesions.

Key Words: intraductal ultrasonography, peroralcholangioscopy, indeterminate biliary stricture

Free Paper : Poster Session

Endoscopic palliative treatment of hilar obstruction due to carcinoma gallbladder: 5 years experience from a single center in the Gangetic river belt in India

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BACKGROUND:

Gangetic river belt in India has one of the highest prevalence rates of carcinoma gallbladder (CaGB) in the world. We retrospectively evaluated the outcomes of endoscopic biliary drainage of malignant hilar obstruction.

METHODS:

From July 2009 to June 2014, 613 patients, 468 females and 145 males (F: M 3.22:1), average age 45+/-12.5 years, were evaluated. Endoscopic insertion (ERCP) of either one or multiple biliary stents, either plastic or metallic, across the hilar stricture was the standard of care.

RESULTS:

Successful stent insertion was achieved in 553/613 (90.2%) patients and successful drainage in 516/613(84.17%) patients. Early complications (<7 days) were observed in 110/613 (17.9%) patients with mortality rate of 22/613 (3.58%) patients. Sixty-two percent (380/613) patients were lost to follow-up after the first discharge. Patients who had turned out for at least one more time in the next 4 weeks were further studied. Late complications (>7 days) occurred in 133/380 (35.0%) of patients. Mean survival was 147 days.

CONCLUSIONS:

Endoscopic palliation had a good success rate for palliative treatment of malignant hilar strictures caused by CaGB in a resource poor area with a very high prevalence rate of CaGB.

" Partially covered metallic stent have longer patency than uncovered and fully covered metallic stent in the management of distal malignant biliary obstruction"

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Objectives

Self-expandable metallic stent (SEMS) are widely used for malignant biliary obstructions. Currently, there are three types of SEMS differ in covering fashion; uncovered, partially covered and fully covered SEMS. No consensus has been reached on which stent have a longer patency than the others.

Methods

To compare outcomes of three types of stents, we retrospectively analyzed the patients with unresectable distal malignant biliary obstruction receiving SEMS placement. Time to stent dysfunction and patient survival were compared among three types of SEMS. Univariate and multivariate analyses were performed to identify risk factors for stent dysfunction.

Results

One hundred one patients received SEMS placement for malignant biliary obstructions (44 uncovered, 28 partially covered and 29 fully covered SEMS). Median patient survivals were 200, 168 and 276 days in uncovered, partially covered and fully covered SEMS group, respectively. There were no differences in survival between each two groups. Median time to stent dysfunction were 199, 444 and 194 days in uncovered, partially covered and fully covered SEMS group, respectively. Partially covered SEMS had significantly longer patency than uncovered ($p=0.013$) and fully covered SEMS ($p=0.010$). Fully covered SEMS migrated more often compared with the others, and tumor ingrowth was more frequent in uncovered SEMS. Multivariate analyses confirmed that partially covered SEMS has lower risk for SEMS dysfunction.

Conclusions

Partially covered SEMS have longer patency than the other two SEMSs. Partially covered SEMS has less ingrowth than uncovered SEMS and less stent migration than fully covered SEMS.

Free Paper : Poster Session

Safety and efficacy of a large-bore covered self-expandable metal stents (SUPREMO 12) for unresectable distal malignant biliary obstruction

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Objective: To evaluate safety and efficacy of a covered self-expandable metal stents (cSEMSs) with large-bore for unresectable distal malignant biliary obstruction (d-MBO).

Methods: We retrospectively reviewed a prospectively collected database of cSEMSs with a diameter of 12mm (SUPREMO12, TaeWoong, Seoul, South Korea) in patients with unresectable d-MBO at the University of Tokyo Hospital and two affiliated institutions between December 2011 and March 2014. We evaluated technical success, recurrent biliary obstruction (RBO), time to RBO (TRBO) and complications according to the Tokyo criteria 2014. TRBO and survival were evaluated using the Kaplan–Meier method. Clinical outcomes were compared with conventional cSEMSs with the same structure (SUPREMO 10) in 42 patients between December 2010 and January 2012.

Results: A total of 19 patients (the median age of 76 years old, 12 males, 18 pancreatic cancer) received SUPREMO 12 placement. Median survival time and cumulative TRBO of SUPREMO12 were 264 and 228 days, respectively. The rate of RBO was 58% with a median time until RBO of 93 days. The causes of RBO were stent occlusion (n=5, sludge 3, food impaction 1, kinking 1) and migration (n=6). The median cumulative TRBO by Kaplan–Meier analysis was 228 and 231 days in SUPREMO 12 and 10 (P = 0.66), but migration was higher in SUPREMO 12 (42% vs. 2%, P <0.01).

Conclusion: A large bore cSEMS for unresectable MBO was technically feasible with comparable TRBO to the conventional one. However, anti-migration system should be further utilized given the higher rate of migration.

Endoscopic ultrasonography-guided gallbladder drainage is superior to endoscopic transpapillary gallbladder drainage for acute cholecystitis

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[Objective]

Endoscopic gallbladder drainage, including endoscopic ultrasonography-guided gallbladder drainage (EUS-GBD) and endoscopic transpapillary gallbladder drainage (ETGBD), is alternative to percutaneous transhepatic gallbladder drainage (PTGBD) for patients with acute cholecystitis who cannot undergo emergency cholecystectomy, especially for patients unsuitable for even elective surgery. However, the usefulness of EUS-GBD and ETGBD have not been compared.

[Methods]

Eighteen patients with acute cholecystitis, who were inapplicable to emergency cholecystectomy, underwent EUS-GBD consecutively in the setting of clinical trial from September 2011. ETGBD was performed in 257 patients with acute cholecystitis from 1998 in the daily practice. The technical feasibility, efficacy, and safety of EUS-GBD and ETGBD were compared.

[Results]

Bridge to surgery and palliation (including cholecystitis after metallic stenting for malignant biliary obstruction) was 7 (38.9%) and 11 (61.1%) patients in the EUS-GBD group and 110 (42.8%) and 147 (57.2%) patients in the ETGBD group, respectively (P=0.81). Technical success were achieved in 18 of 18 patients (100%) in the EUS-GBD group and in 199 of 257 patients (77.3%) in the ETGBD group (P=0.028). Clinical improvement was achieved in 16 patients (88.9%) in the EUS-GBD group and in 186 patients (72.4%) in the ETGBD group (P=0.255). Complication developed in 4 (3 peritonitis, 1 intraabdominal abscess) patients (22.2%) in the EUS-GBD group and in 44 (15 cystic duct perforation, 9 acute pancreatitis, and others) (17.1%) in the ETGBD group (P=0.51).

[Conclusion]

EUS-GBD is superior to ETGBD in terms of the technical feasibility and efficacy without decline of safety.

Free Paper : Poster Session

Feasibility, Efficacy, and Predictive Factors for the Technical Success of Endoscopic Nasogallbladder Drainage: A Prospective Study

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Background and aims:

Several studies have shown the usefulness of endoscopic nasogallbladder drainage (ENGBD) in patients with acute cholecystitis. However, the procedure is difficult, and factors that affect technical success have not yet been clarified. We conducted a prospective study to evaluate the technical feasibility, efficacy, and predictive factors for the technical success of ENGBD in patients with acute cholecystitis.

Patients and Methods:

All patients with moderate or severe acute cholecystitis who were enrolled underwent ENGBD between April 2009 and April 2011. Patients with surgically altered anatomy or pancreatobiliary malignancies were excluded. The primary outcomes included technical success, clinical success, and complications. Factors that could affect the technical success were also examined.

Results

Of the 27 patients who underwent ENGBD during the study period, technical success was achieved in 21 (78%) and clinical improvement was achieved in 20 (95%). Early complications were encountered in four patients (15%). Gallbladder wall thickness (odds ratio [OR], 1.64; 95% confidence interval [CI], 1.08 to 2.47) and age (OR, 1.16; 95% CI, 1.00 to 1.35) were effective predictors of technical failure.

Conclusions

ENGBD was effective in resolving acute cholecystitis; however, this modality was technically challenging and had a limited success rate. Because of technical difficulties, ENGBD should be reserved for limited indications.

Efficacy of early pancreatic sphincter pre-cutting for difficult biliary cannulation

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[Introduction] Although selective biliary cannulation is the first and key step for interventional treatment and diagnosis of biliary disease under ERCP procedure, Even experts sometimes encounter difficult cannulation cases. Pancreatic sphincter pre-cutting (PSP) is well established as the rescue technique for these difficult cannulation.

[Objective] To assess the efficacy of PSP for difficult biliary cannulation during of performed PSP within 30minutes (Group A) versus over 30 minutes (Group B), retrospectively. Methods Between August 2007 and February 2015, 793 patients with naive papilla were performed ERCP in our situation. During study period , forty-six patients (25 men, 21 women ; median age 70.2 yrs) underwent PSP due to unsuccessful biliary cannulation by standard cannulation technique .

[Results] Successful biliary cannulation followed by PSP in the same session was 75% (12/16) in Group A and 66.7% (20/30) in Group B. Among the failed 14 cases, second attempt at a later date provided successful biliary cannulation in 4 cases in Group A and 6 cases in Group B. Overall success rates was 100% (16/16) in Group A and 86.7% (26/30) in Group B. Adverse events occurred 18.8% (3/16) in Group A PEP3 (mild 1 , moderate 2) , 53.0% (16/30) in Group B PEP9 (mild 3, moderate 6) , hemorrhage 5 (mild 5) , cholangitis 1 (mild) , perforation 1(moderate) .

[Conclusion] Early PSP appears to be beneficial in reducing adverse events.

Free Paper : Poster Session

ENDOSCOPIC PAPILLARY LARGE BALLOON DILATION WITH OR WITHOUT ENDOSCOPIC PRECEDING SPHINCTEROTOMY

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Introduction: EPLBD with EST is safe and effective in the treatment of difficult common bile duct stones (CBDS). Although EPLBD has been suggested to be safe and effective without prior EST, the requirement of EST has not been studied in detail.

Object: To compare the clinical outcomes of EPLBD with and without EST.

Methods: We retrospectively evaluated 122 patients who underwent EPLBD for large (≥ 10 mm) or multiple CBDS from April 2010 to April 2015. The clinical outcomes were assessed and compared between EPLBD with EST (wEST) and without EST (w/oEST). The EPLBD wEST group included patients with history of previous EST.

Results: Basic clinical characteristics did not differ significantly between the EPLBD wEST (n=64) and EPLBD w/oEST (n=58) group. The mean stone sizes were 15.4 ± 6.9 mm and 14.7 ± 5.4 mm ($p=0.536$), the mean numbers of stones were 4.2 ± 4.1 and 3.8 ± 3.8 ($p=0.649$), the mean sizes of the common bile duct were 15.4 ± 4.5 mm and 15.3 ± 4.1 mm ($p=0.801$), and the overall complete stone removal rates were 100% (64/64) and 96% (56/58) ($p=0.224$), respectively. The mean numbers of sessions for complete stone removal, the mean treatment times of ERCP, and use of mechanical lithotripsy were not significant difference in each group. Adverse events were recognized in 3% (2/64) and 9% (5/58) patients ($p=0.255$).

Conclusion: EPLBD without EST is as safe and effective as EPLBD with EST. Thus, prior EST might be not essential for performing EPLBD.

Comparative study on the effectiveness of two procedures for extracting bile duct stones: Endoscopic Papillary Balloon Dilatation for 5 minutes with a 10mm diameter balloon vs. Endoscopic Sphincterotomy.

Satoshi ASAI

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Background: Endoscopic papillary balloon dilatation (EPBD) is associated with a lower risk of hemorrhage but is associated with higher incidence of pancreatitis than endoscopic sphincterotomy (EST). It is reported that 5-minute EPBD improves the efficacy of stone extraction and reduces the risk of pancreatitis compared with the conventional 1-minute EPBD. Therefore, we conducted a retrospective comparative study of 5-minute EPBD vs. EST with respect to stone extraction and pancreatitis.

Methods: All enrolled cases had bile duct stones of less than 10mm. The consecutive 82 cases treated by 5-minute EPBD from October 2013 to May 2015 were compared with the consecutive 82 cases treated by EST from May 2010 to October 2013. The diameter of the EPBD balloon in this trial was 10mm in all cases.

Results: Mean age was 74.0 yr in the EPBD group and 69.7 yr in the EST group, showing a significant difference. Gender, stone diameter and number of stones did not significantly differ between the two groups. The rate of complete extraction of bile duct stones in the first session was 100% in both groups. Procedure time was approximately 30 minutes in both groups and did not show a significant difference. Pancreatitis was seen in 3.7% of the EPBD group and 6.1% of the EST group, and bleeding occurred only in the EST group (2.4%) although the rates of pancreatitis and bleeding did not show significant differences.

Conclusion: 5-minute EPBD was associated with high performance of stone extraction and low incidence of pancreatitis.

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Dilatation by Soehendra Stent Retriever is Feasible and Effective in Deployment of Multiple Metallic Stents for Unresectable Malignant Hilar Biliary Strictures

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Objective: The endoscopic deployment of multiple metallic stents (MS) for unresectable malignant hilar biliary strictures (UMHBS) is technically demanding, not only in the initial deployment of MS, but also in the re-intervention for MS occlusion with deployment of multiple plastic stents (PS). The Soehendra stent retriever (SSR) is a device designed to remove PS (Wilson-Cook Medical Inc., USA). As a drill, this device has been adapted to dilate difficult strictures. We evaluate the results of the application of a Soehendra stent retriever (SSR) as a dilator at the initial deployment of multiple MS and at the re-intervention for MS occlusion using multiple PS.

Methods: Between April, 2011 and March, 2015, 39 consecutive patients with UMHBS underwent multiple deployment of MS using a partial stent-in-stent method. When we encountered intractable strictures which allowed only the passage of a guidewire, we adopted SSR to dilate the stricture and the interstice of the MS. The success rate of MS or PS deployment after SSR application and procedural complications were evaluated.

Results: Four of 39 patients (10%) were subjected to SSR application for the initial deployment of multiple MS. MS were successfully deployed in all of these patients (100%). During the follow-up period, MS occlusion occurred in 18 patients. We applied SSR to five patients (28%) for the deployment of multiple PS, and four of five patients (80%) achieved successful PS deployment. No complications occurred in any patient.

Conclusion: SSR proved to be a potent dilator of difficult strictures in the management of UMHBS.

Management of ERCP-Related Perforation

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Objective: To investigate the causes and management of ERCP-related perforation.

Methods: we performed 7525 ERCP-related procedures including 263 cases with surgically altered anatomy between August 2006 and March 2014. Perforation occurred in 21 patients (0.28%) [median age, 72 (50-97) years]. We classified the perforation sites into 3 groups: periampullar(type P), gastrointestinal tract(type GI), choledochojejunostomy anastomosis(type CJ) and evaluated the 1) causes, 2) severity grading, 3) initial management after perforation and 4) outcomes.

Results:

1) Of 16 type P, procedures with onset perforation were related to endoscopic sphincterotomy in 12, endoscopic papillectomy in 2, endoscopic papillary large balloon dilation in 1 and endoscopic instrument insertion in 1. The 4 type GI were due to scope insertion. One type BJ was due to cautery dilatation for anastomotic stricture.

2) As a result of grading the severity, 9 patients were severe (P=5, GI=4), 10 were moderate (P=9, GI=1), 2 were mild (P=2).

3) One patient (type GI) underwent emergency surgical treatment and the remaining 20 patients were treated with conservative management included biliary drainage and/or nasal-gastric drainage.

4) One patient (type P) didn't improve in the conservative treatment and surgical treatment was required. All patients recovered without further incident.

Conclusions: ERCP-related perforation occurred in 0.28%. Most of patients were resolved conservatively by biliary drainage. However, careful follow-up is necessary after ERCP-related perforation due to some cases requiring surgical treatment.

Free Paper : Poster Session

Endoscopic ultrasonography-guided pancreatic duct drainage after failed ERCP with benign pancreatic duct obstruction

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Objective: Endoscopic ultrasound-guided pancreatic drainage (EUS-PD) was reported to be an alternative and effective procedure when transpapillary access to pancreatic duct was impossible. We evaluated feasibility and problem of EUS-PD when transpapillary access was impossible or failure in Osaka Medical College.

Method: We retrospectively analyzed our single-center experience. We used 19 G puncture needle, Sono tip™ (Medi-Globe Co.), 0.025 inch Visiglide™ guidewire (Olympus), and 7Fr plastic stent (Boston Scientific Co.).

Results:

- 1) EUS-PD procedures were attempted for 7 symptomatic patients (Age: 65.0 ± 11.5 year (46-78), Gender male/female: 3/4) and were attempted for 6 patients due to acute pancreatitis. Indications for the procedure were pancreatic duct obstruction due to chronic pancreatitis (n=4) and post pancreatoduodenectomy (n=3).
- 2) Success rate of EUS-PD was 85.7% (6/7). The procedure of EUS-PD was performed by transgastric route with Rendez-vous method (n=1), antegrade method (n=1) and transluminal drainage (n=4).
- 3) Compared with pancreatic enzyme levels before and 24 hour after EUS-PD, pancreatic enzymes levels were declined after EUS-PD.
- 4) Re-intervention was performed in 83.3% (5/6), 60% (3/5) were successfully carried out with exchange stent via transgastric route, and 1 was succeeded in stone removal. There were 2 complications such as bleeding without blood transfusion, in whom endoscopic hemostasis was needed in 1 case.

Conclusion: EUS-PD was feasible and effective treatment although procedure was technically challenging.

MICROBIAL SPECTRUM IN INFECTED PANCREATIC NECROSIS – AN ANALYSIS DURING EUS GUIDED DRAINAGE

Jahangeer Basha, Sundeep Lakhtakia, Rajesh Gupta, Mohan Ramchandani, Rakesh Kalapala, Anuradha Kancharla, Nageshwar Reddy D

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BACKGROUND & AIM: Patient with infected Pancreatic Fluid Collections (PFC) following Acute Necrotising Pancreatitis (ANP) have poor clinical outcome. The microbial spectrum is not well reported in infected PFC in literature. To evaluate the microbial analysis in patients with infected pancreatic fluid collections undergoing EUS guided drainage.

METHODS: Consecutive patients with PFC (WON / Pseudocyst) following ANP with clinical suspicion of infection, undergoing EUS guided drainage were included during the study period (from October, 2013 to December, 2014). Complete clinical assessment and imaging were done in all patients. During the EUS guided drainage procedure the first aspirated sample from PFC on puncture with 19G needle was sent for microbial analysis (culture & sensitivity). The subsequent drainage procedure was completed using standard of care, with placement of either multiple plastic or FCSEMS. Microbial culture results were read at 48 hours.

RESULTS: 113 patients (males 93,82%) with mean age 35.6 (range: 11 to 69 years) underwent EUS guided drainage for infected PFC. Microbial analysis revealed culture positivity in 45 patients (39.8%). Of these mono-microbial infection was seen in 86.6%(39/45) patients whereas 13.3% (6/45) had mixed infections. Majority had gram negative infection (91.1%) and the most common organism causing infection was E.coli in 48.8%(22/45), followed by Klebsiella pneumoniae in 40% (18/45), Pseudomonas in 6% (3/45), Acinetobacter in 6% (3/45) and Citrobacter in 5.1% (2/39).

CONCLUSION: Approximately 40% of the patients with suspected infected pancreatic necrosis had grown pathogenic bacteria. Gram negative bacterial infection was common with E coli and Klebsiella being commonest organisms.

Free Paper : Poster Session

EUS-guided Rendezvous pancreatic duct stenting with short wire system in symptomatic Pancreatic Divisum patient

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Thawee Rattanachu-Ek,MD

(Gastrointestinal and Liver center, Bangkok Hospital, Thailand)

A 15-year-old woman presented with recurrent acute pancreatitis at outside hospital. ERCP was performed but pancreatic stent placement was unsuccessful (Figure 1). Cholangiogram shown common bile duct narrowing, then a biliary stent was inserted. CT abdomen demonstrated multiple large main pancreatic duct (MPD) stones at head of pancreas accompanied by upstream MPD dilatation measuring 6-8 mm. in diameter (CT scan as shown in figure 2). She was referred to our center for further management.

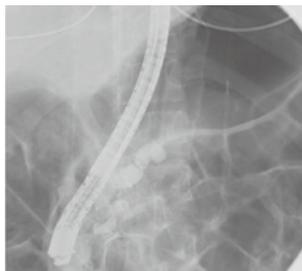


Figure 1



Figure 2

At our center, ERCP was repeated and also deep cannulation via major papilla and minor papilla was unsuccessful (Figure 3.1, 3.2), the procedure was terminated. After discussion with the patient and her relatives, we decided to perform EUS-guided rendezvous procedure to access MPD for stone removal and MPD stent placement. Surgical team was consulted for standby operation if the EUS-guided procedure was failed.



Figure 3.1

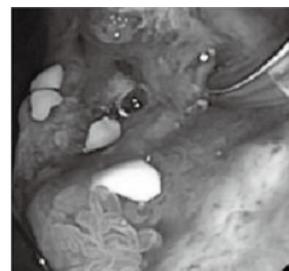


Figure 3.2

Procedure

The procedure was performed under general anesthesia, the patient received prophylactic antibiotics with fluoroquinolone. EUS was performed using a linear array echoendoscope (EG-530UT2 convex scope, Fuji film). EUS showed pancreatic duct dilatation, 6mm in diameter. The puncture site was chosen after careful endosonographic assessment of the pancreatic duct (Figure 4.1). Puncture was achieved using a 19-gauge needle (Echo tip 19; Cook Endoscopy, Winston Salem, North Carolina). Pancreatic duct access was confirmed by pancreatic fluid aspiration and contrast instillation under fluoroscopy. Subsequently, a 450 cm long and angled-tip 0.025-inch hydrophilic wire (Visiglide, Olympus, Japan) was introduced through the needle and direct downstream advancement in an antegrade manner, however the guide wire could not pass through the stricture site (Figure 4.2).



Figure 4.1

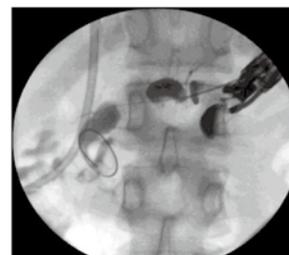


Figure 4.2

We then designed to use a 260 cm long, angled-tip 0.025-inch hydrophilic wire (Navipro, Boston scientific, USA) to inserted through the needle and directed in an anterograde manner downstream. Finally, this guide wire could be passed through the stricture site into 2nd part duodenum via minor papilla (Figure 5.1, 5.2). Several loops of the wire were placed in the duodenum to maintain wire stability during needle and scope withdrawal (Figure 5.3).

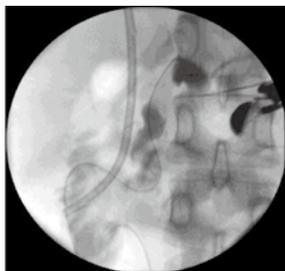


Figure 5.1

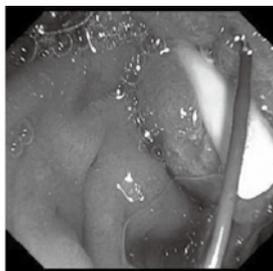


Figure 5.2



Figure 5.3

Standard exchange technique was performed and the whole wire was completely pushed out from the needle by using a 10-ml water filled syringe, flushed into the needle so called "float the wire" (1). Once the needle device had been detached and withdrawn completely from the echoendoscope, the scope was gradually pulled out while performing fluoroscopy to ensure that the distal end of the wire remained within the distal duodenum. When the scope was completely removed, the wire was grasped and secured at the oral orifice.

The ERCP therapeutic duodenoscope (TJF 160; Olympus Medical, Japan) was subsequently inserted alongside the wire. The distal end of the wire was detected via minor ampulla. Sphincterotome 30 mm (Boston scientific, USA) and angled-tip 0.025-inch (Visiglide Olympus, Japan) were used to cannulated minor ampulla along with Navipro wire (Boston scientific, USA) (rendezvous wire) but not successful due to the tight and long stricture at head of pancreas (Figure 6).

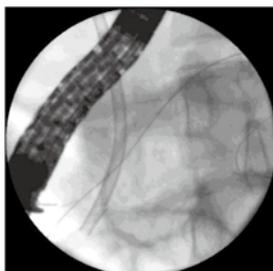


Figure 6

Then we decided to use a biopsy forcep FB-240-1 (Olympus Medical, Japan) to grasp the Navipro wire (Boston scientific, USA) from duodenum and retrieve into the accessory channel until sufficient length was available to load a dilator (Hurricane Rx biliary balloon dilation 6 mm x 4 cm, Boston scientific, USA) (Figure 7.1). While the distal end was attached to Hurricane Rx biliary dilatation, the other end of the wire (proximal end) was maintaining at oral side by assistance under fluoroscopic image assistance. After hurricane balloon was inserted into minor ampulla properly (Figure 7.2), exchange of 0.025-inch Navipro wire (Boston scientific, USA) to 0.035-inch Jagwire 450 cm (Boston scientific, USA) via injection port into main pancreatic duct was done (Figure 7.3, 7.4, 7.5). Hurricane balloon was inflation up to 6 mm. diameter x 60 second across the stricture site (Figure 7.6), and biliary plastic stent 7 Fr x 10cm (Boston scientific, USA) was subsequently placed into main pancreatic duct over Jagwire successfully (Figure 8.1, 8.2).

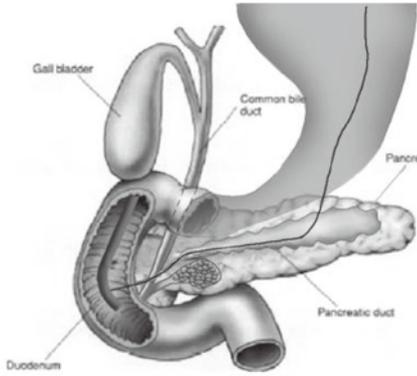


Figure 7.1

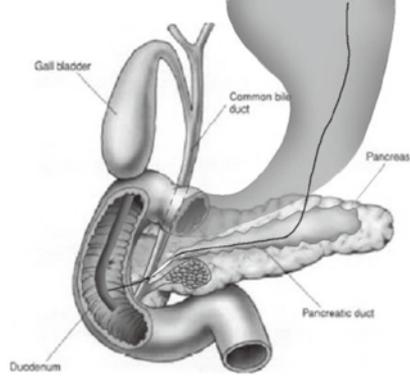


Figure 7.2



Figure 7.3

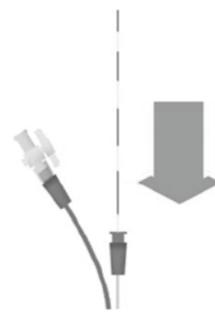


Figure 7.4

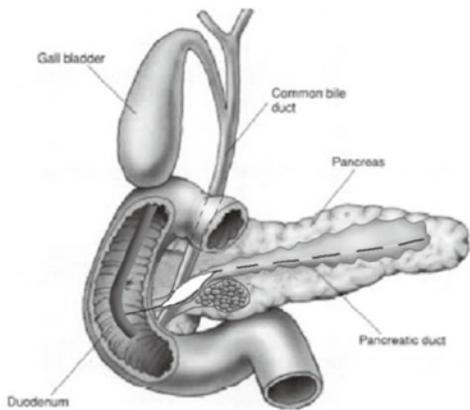


Figure 7.5

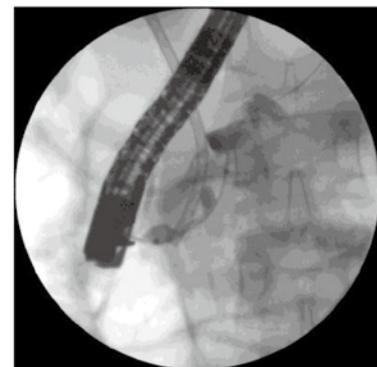


Figure 7.6

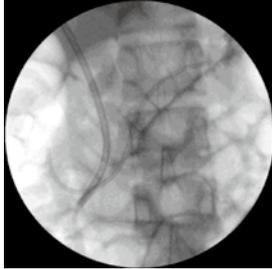


Figure 8.1

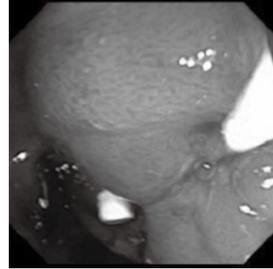


Figure 8.2

Conclusion: We demonstrated the feasibility of EUS guided Rendezvous pancreatic duct stenting with short wire system in symptomatic pancreatic divisum patient with pancreatic duct stricture and stone. We hope this is the one available technique to succeed cannulation in difficult case.

Reference:

1. EUS-guided biliary rendezvous using a short hydrophilic guidewire: Dhir V., Andrew Kwek BE., Bhandari S., Bapat M., Maydeo A., J Interv Gastroenterol 2011,1(4), 153-159

Free Paper : Poster Session

Drainage the walled-off necrosis of pancreas by EUS guided cystogastrostomy with double pigtail stents

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Objective: Walled-off necrosis of pancreas is defined a mature, encapsulated collection of pancreatic and/or peripancreatic necrosis that has developed a well defined inflammatory wall. It usually occurs >4 weeks after onset of necrotizing pancreatitis [1]. Minimally invasive techniques are thought to induce less physiological stress as compared with open surgical necrosectomy [2].

Methods: We reported one case of successful drainage of walled-off necrosis of pancreas by endoscopic transluminal drainage. This is a 52 y/o man who had just admitted for acute necrotizing pancreatitis. The abdominal computed tomography (CT) showed extensive abscess formation in retroperitoneum complicated with ascites (Figure 1). The symptom persisted after one month of conservative treatment. He received CT-guided percutaneous drainage and the drainage catheter was removed several days later because of poor function. The endoscopic retrograde pancreatography revealed a tortuous pancreatic duct, which communicated with the peripancreatic abscess cavity (Figure 2). Thus, pancreatic duct stent was inserted. However, the following abdominal CT three months later still showed a large walled-off pancreatic necrosis (Figure 3). The abdominal pain persisted. We performed EUS puncture from stomach to the walled-off necrosis and then inserted two double-pigtail stents (Figure 4).

Results: Immediately after EUS guided cystogastrostomy, much brown fluid was drained into stomach. Nine days after the procedure, the abdominal CT demonstrated that the lesion size was decreasing (Figure 5). The clinical symptoms also improved and the patient was discharged.

Conclusions: EUS guided cystogastrostomy with double-pigtail stents is less invasive but effective intervention for drainage of large walled-off necrosis of pancreas.

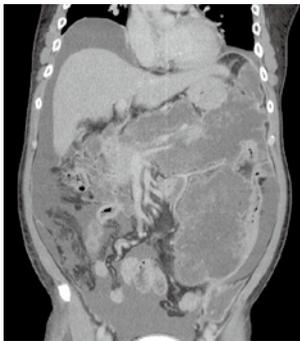


Figure 1
Extensive lobulated abscess formation in retroperitoneum and left pararenal space complicated with dirty ascites

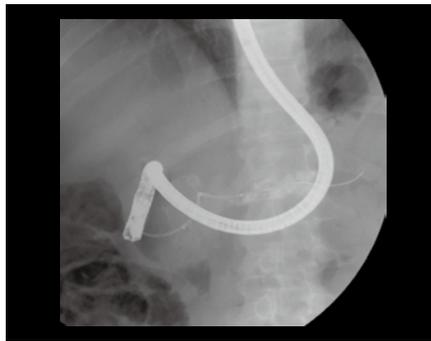


Figure 2
Endoscopic retrograde pancreatography showed a tortuous pancreatic duct with extravasation of contrast medium into peripancreatic space, indicated the communication between pancreatic duct and abscess cavity

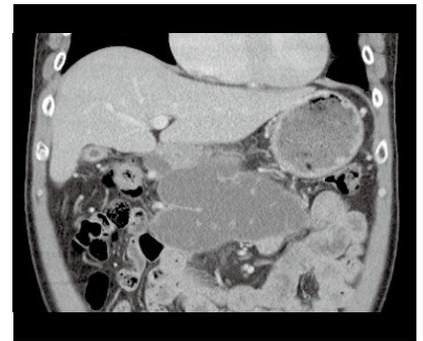


Figure 3
Three months later, the abdominal CT still demonstrated a large walled-off necrosis with liquefaction in peripancreatic space, up to 17.3 cm in length

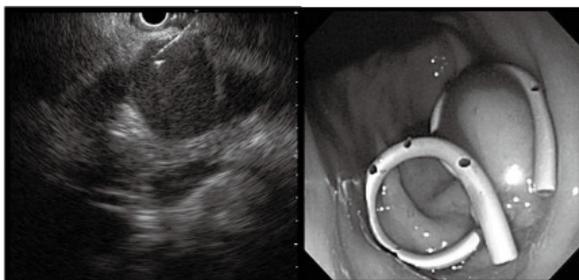


Figure 4
EUS guided puncture with 19G FNA needle was performed into the peripancreatic necrosis (left picture), then two double-pigtail stents were inserted for drainage (right picture).



Figure 5
Three months later, the abdominal CT still demonstrated a large walled-off necrosis with liquefaction in peripancreatic space, up to 17.3 cm in length

References:

1. Banks PA, Bollen TL, Dervenis C, et al. Classification of acute pancreatitis--2012: revision of the Atlanta classification and definitions by international consensus. *Gut*. 2013 Jan;62(1):102-11.
2. van Brunshot S, Bakker OJ, Besselink MG, et al. Treatment of necrotizing pancreatitis. *Clin Gastroenterol Hepatol*. 2012 Nov;10(11):1190-201.

Free Paper : Poster Session

Metal versus Plastic Stents for EUS Guided Pseudocyst Drainage

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(Gastrointestinal Endoscopy Excellent Center, Department of Medicine, Faculty of Medicine,
Chulalongkorn University and King Chulalongkorn Memorial Hospital, Thai Red Cross Society)

Objectives: Both metal and plastic stents have been used for endoscopic ultrasound guided pseudocyst drainage (EUS-PCD) in the last decade. However, only a few studies compared both ones. This current study aimed to retrospectively compare efficacy, success and complication rate of both stents.

Methods: Patients underwent EUS-PSD at King Chulalongkorn Memorial hospital from January 2010 to December 2014 were retrospectively recruited. Results from each group were compared.

Results: Fifteen patients (male; n=10) were recruited into the study. Median age was 54 (range 28-79) years old. Presented symptoms were pain (n=14), jaundice (n=2), fever (n=4), weight loss (n=3), and abdominal distention (n=3). Chronic pancreatitis was found in 8 patients (53.3%). Initial stents used for drainage were Nagi (n=5), and plastic (n=10) ones. Technical success (stents placed in desired position) rates in group of Nagi versus plastic stents were 80% (4/5) and 100% (10/10), respectively. Among those with successful stent placement, clinical success (significant resolution of pseudocyst and symptoms) rate in group of Nagi versus plastic were 100% (3/3) and 50% (5/10), respectively. Of 5 patients without clinical success; 2 and 3 of them required additional plastic and Nagi stents for complete drainage respectively. No procedure related serious adverse events including bleeding, perforation, and death occurred in this current series.

Conclusion: In this present study, placement of Nagi stents for EUS-PSD provides higher clinical success rate than plastic stents. Certainly, future systematic studies with larger number of patients are required to fairly answer the research question.

EUS-guided cholecystoduodenostomy for acute cholecystitis with anti-stent migration and anti-food impaction system

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(2nd Department of Internal Medicine, Osaka Medical College.)

Objective

EUS-guided gallbladder drainage (EUS-GBD) using self-expandable metal stent (SEMS) has been reported as alternative treat method. This technique has risk of stent migration, and food may flow into the common bile duct (CBD) through the cystic duct (CD). To prevent for these Problems, we perform novel EUS-guided cholecystoduodenostomy. In this study, we evaluate the safety and feasibility of this technique.

Methods

14 consecutive patients who underwent novel EUS-guided cholecystoduodenostomy for acute cholecystitis between August 2013 and February 2015 were included in this study. First, to prevent stent migration, we inserted pig tail plastic stent within SEMS, and because the mobility of gallbladder neck is less, the gallbladder neck was punctured from the duodenum. Second, to prevent food flowing into CBD across CD, we punctured The gallbladder neck from the duodenum because top of SEMS would be toward form the gallbladder neck to the tail, and CD may be obstructed by SEMS itself.

Result

Technical and clinical success was obtained in all patients. Median procedure time was 26.9 min (range 19 to 42 min). Median follow-up times Was 181.5 day (range 18 to 604), and in this time, recurrence of acute cholecystitis was not seen in all patients. Adverse events such as stent migration, and cholangitis were not seen in all patients. Although pneumoperitoneum was seen in one patient.

Conclusion

Our technique may be favorable, and effective for prevent various adverse Events on EUS-GBD.

Free Paper : Poster Session

Endoscopic ultrasound-guided rendezvous (EUS-RV) technique via various approach routes

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Objective: EUS-RV is a salvage method for failed selective biliary cannulation. In published articles, three puncture routes, namely trans-gastric (TG) route, trans-duodenal short position (TDS) route, and trans-duodenal long position (TDL) route are reported, but we use trans-esophagus (TE) and trans-jejunum (TJ) routes. Therefore, we evaluated the utility of EUS-RV for biliary access focusing on the approach route.

Method: 39 patients, (42 cases) underwent EUS-RV after failed ERC between January 2010 and December 2014. We prospectively enrolled and retrospectively collected clinical data for these 42 cases.

Results: The median age was 71 years (range 29–84 years; M/F 27/15). Indications for ERCP were malignant biliary obstruction in 27 patients, and benign biliary disease in 15. The success rate of bile duct puncture and cholangiography was 97.6% (41/42). The success rate of EUS-RV was 8 of 11 EHBD patients (72.7%: TG 50.0% [1/2], TDL 80% [4/5], TDS 75.0% [3/4]); and 25 of 31 IHBD patients (80.6%: TE 90.9% [10/11], TG 78.6% [11/14], TDL 0% [0/2], TJ 100% [4/4]). There was no difference in the success rate ($p=0.902$). The complication rate was 19.0% (8/42). Mediastinal emphysema occurred in 3 TE-route EUS-RV patients. No EUS-RV-related deaths occurred.

Conclusion: EUS-RV was reliable after failed ERCP. There are complexities and complications with each puncture route. TE had the best success rate, but also the most complications. Selection of the appropriate route, depending on patient condition, is critical.

Two cases of successful transpapillary drainage using endoscopic ultrasonography with rendezvous technique, and antegrade approach.

Hiroko Sato, Shomei Ryozaawa, Hirotoshi Iwano, Kumiko Taba, Yuki Tanisaka, Maiko Harada, Nobuhiro Katsukura

(Department of Gastroenterology Saitama Medical University International Medical Center)

Back ground:

EUS-guided biliary drainage (EUS-BD) is a minimally invasive technique that provides biliary drainage in patients with malignant biliary obstruction in whom endoscopic retrograde cholangiography (ERC) is not feasible. We present two cases of successful transpapillary drainage using endoscopic ultrasonography with rendezvous technique (EUS-RV), and antegrade approach (EUS-AG).

Case presentation:

(1) A 59-year-old man, with upper bile duct stricture caused by gallbladder cancer, underwent biliary drainage with metallic stent. Four weeks later, he suffered jaundice again, with lower bile duct stricture caused by lymph node metastasis. We performed re-intervention, but the guide wire couldn't pass the stricture. After the sufficient informed consent, we decided to perform EUS-RV. We punctured intrahepatic bile duct B3 with 19G needle, inserted the guide wire, and placed the metallic stent with rendezvous technique.

(2) A 71-year-old man, who underwent total gastrectomy with Roux-en-Y anastomosis because of gastric cancer, was admitted due to obstructive cholangitis caused by lymph node recurrence. Abdominal CT demonstrated intra hepatic biliary dilatation and ascites. At first, single balloon enteroscopy assisted ERCP was attempted but it was not successful, because of the intestinal invasion. Therefore, a metallic stent was placed under EUS-AG technique.

Conclusion:

EUS-RV and EUS-AG can be safe and feasible technique.

Free Paper : Poster Session

Stent underexpansion on the procedure day; a predictive factor for poor oral intake after metallic stenting for gastric outlet obstruction

Yasuki Hori, MD, Itaru Naitoh, MD, Tessin Ban, MD

(Department of Gastroenterology and Metabolism, Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan)

OBJECTIVE: Self-expandable metallic stents (SEMS) have been widely accepted as palliation therapy for malignant gastric outlet obstruction (GOO). However, the factors predictive of poor oral intake after SEMS placement have not been elucidated sufficiently. We aimed to clarify both the patient- and stent-related predictive factors.

METHODS: We retrospectively reviewed 126 consecutive patients who underwent uncovered SEMS placement for malignant GOO between April 2010 and March 2013 at a university hospital and two tertiary care referral centers.

RESULTS: Technical success of SEMS placement was achieved in all 126 (100%) patients. Improved oral intake was observed in 111 (88.1%) patients. A Karnofsky performance status ≤ 40 (odds ratio [OR], 1.19; 95% confidence interval [CI], 1.02–1.28; $p = 0.041$), peritoneal dissemination (OR, 1.20; 95% CI, 1.01–1.26; $p = 0.038$), and underexpansion of the SEMS on the procedure day (OR, 1.55; 95% CI, 1.26–1.62; $p < 0.001$) were independent predictive factors for poor improvement on the GOO scoring system, according to multivariate analysis.

CONCLUSIONS: SEMS underexpansion was a stent-related, while poor performance status and peritoneal dissemination were patient-related, predictive factors for poor oral intake after SEMS placement for malignant GOO.

Comparison of the effectiveness of endoscopic duodenal stent placement and surgical gastrojejunostomy for gastric outlet obstruction in patients with advanced pancreatic cancer

Takuji Iwashita¹, Shinya Uemura¹, Akinori Maruta¹, Mitsuru Okuno¹, Masanori Nakashima⁵, Yasuhiro Ohshima³, Keisuke Iwata⁴, Katsuhisa Toda⁵, Takaya Ohnishi⁶, Tsuyoshi Mukai², Ichiro Yasuda⁷, Masahito Shimizu¹

(1 First Department of Internal Medicine, Gifu University Hospital; 2 Department of Gastroenterology, Gifu Municipal Hospital; 3 Department of Gastroenterology, Murakami Memorial Hospital Asahi University; 4 Department of Gastroenterology, Gifu Prefectural General Medical Center; 5 Department of Gastroenterology, Chuno Kosei Hospital; 6 Department of Gastroenterology, Hashima Municipal Hospital; 7 Department of Gastroenterology, Teikyo University Mizonokuchi Hospital)

Gastric outlet obstruction (GOO) in patients with advanced pancreatic cancer (APC) was traditionally managed with surgical gastrojejunostomy (GJ). However, endoscopic duodenal stenting (DS) has become increasingly popular.

Aim: To compare the efficacy and safety of DS and GJ for GOO in patients with APC.

Patients and Methods: 86 patients with GOO due to APC underwent DS (52) or GJ (34) were enrolled. GOO scoring system (GOOSS) was used as an index of clinical success. Other clinical outcomes of interest included technical success and adverse event rates, and survival duration. Prognostic factors for overall survival were also analyzed.

Results: Comparison of the baseline characteristics showed no difference except for a significantly higher age and poorer performance status (PS) in DS. Technical success rates were 98% and 100% in DS and GJ, respectively ($p=1.00$). The time to resumption of oral intake was significantly shorter following DS without difference in maximum GOOSS. The clinical success rates (GOOSS ≥ 2) were 83% and 91% in DS and GJ, respectively ($p=0.19$). Early and late adverse event rates did not differ. [Early: DS(5.8%), GJ(11.8%), $p=0.43$; Late: DS(17.3%), GJ(8.8%), $p=0.35$]. Analyses of prognostic factors for overall survival showed PS ≤ 2 (HR 0.49, 95%CI 0.30–0.79), post-procedural chemotherapy (HR 0.27, 95%CI 0.16–0.44), and DS (HR 2.16, 95%CI 1.33–3.54) as significant factors.

Conclusions: In the management of GOO in APC, DS was associated with earlier resumption of oral intake. However, survival duration was longer in GJ, especially with PS ≤ 2 . Therefore, GJ should be considered in patients with good PS.

Free Paper : Poster Session

Safety and Efficacy of a Partially Covered Stent with a Flared Portion (Flared-ComVi) in Patients with Malignant Gastric Outlet Obstruction

Naminatsu Takahara, M.D., PhD¹⁾, Hiroyuki Isayama, M.D., PhD¹⁾, Yousuke Nakai, M.D., PhD¹⁾, Kazunaga Ishigaki, M.D.¹⁾, Ryunosuke Hakuta, M.D.²⁾, Dai Akiyama, M.D.¹⁾, Kaoru Takagi, M.D.¹⁾, Takeo Watanabe, M.D.¹⁾, Tsuyoshi Hamada, M.D., PhD¹⁾, Rie Uchino, M.D., PhD¹⁾, Suguru Mizuno, M.D., PhD³⁾, Koji Miyabayashi, M.D., PhD¹⁾, Dai Mohri, M.D., PhD¹⁾, Hiroshi Yagioka, M.D., PhD⁴⁾, Hirofumi Kogure, M.D., PhD¹⁾, Osamu Togawa, M.D., PhD⁵⁾, Saburo Matsubara, M.D., PhD¹⁾, Yukiko Ito, M.D., PhD²⁾, Natsuyo Yamamoto, M.D., PhD¹⁾, Minoru Tada, M.D., PhD¹⁾, and Kazuhiko Koike, M.D., PhD¹⁾.

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2) Department of Gastroenterology, Japanese Red Cross Medical Center, Tokyo, Japan.

3) Department of Gastroenterology, Toshiba Hospital, Tokyo, Japan.

4) Department of Gastroenterology, Tokyo Metropolitan Police Hospital, Tokyo, Japan.

5) Department of Gastroenterology, Kanto Central Hospital, Tokyo, Japan.)

OBJECTIVE:

Endoscopic placement of self-expandable metal stents (SEMS) has emerged as a palliative treatment for malignant gastric outlet obstruction (GOO). Although several reports showed the safety and efficacy of covered and uncovered SEMSs for GOO, both of them have inherent advantages and disadvantage. Generally, covered SEMS can prevent tumor ingrowth which is main cause of occlusion of uncovered SEMS, but have a higher chance to migrate. Therefore, we evaluated a new partially covered SEMS with uncovered flare at oral end, Flared-ComVi, to prevent both tumor ingrowth and stent migration.

PATIENTS & METHODS:

Between March 2014 and April 2015, 39 consecutive patients with malignant GOO were managed with Flared-ComVi. The main outcomes were technical and clinical success, stent dysfunction, and complications.

RESULTS:

The etiologies of GOO were pancreatic cancer in 17 (44%), gastric cancer in 14 (36%), and other in 8 (21%). Technical and clinical success rates were 100% and 92%, respectively. Stent dysfunctions occurred in 17 patients (44%), including stent migration in 9 (23%) with median 7 days, and tumor ingrowth in 1 patient (2%) at 137 days. Complications occurred in 2 patients (5%), including pancreatitis and perforation. No procedure-related death was observed.

CONCLUSION:

The Flared-ComVi stent was safe and effective for malignant GOO and may prevent tumor ingrowth but not stent migration. Further research is warranted to find an optimal stent design.

Free Paper : Poster Session

The efficacy of endoscopic pancreatic stent therapy for patients with chronic pancreatitis

Eisuke Ozawa¹⁾, Takuji Yamao¹⁾, Masanori Fukusima¹⁾, Akira Yoshida¹⁾

Daisuke Yoshikawa¹⁾, Ken Ohnita²⁾ and Kazuhiko Nakao²⁾

(1. Gastroenterology and Hepatology, Sasebo municipal general hospital

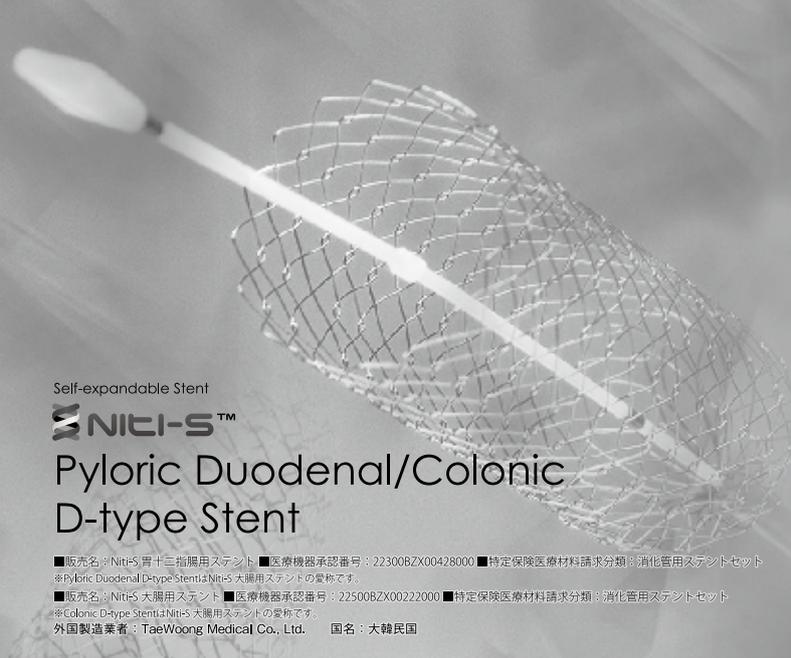
2. Department of Gastroenterology and Hepatology, Nagasaki university Graduate school of medicine)

Objective: The long-term stenting is used for patients with chronic pancreatitis who have a stricture in the main pancreatic duct. It is also useful for pain relief, but it is need to exchange stent quite often, difficult to stent free. We studied the long-term safety and efficacy of pancreatic stenting.

Methods: Subjects comprised 28 patients with chronic pancreatitis treated endoscopic pancreatic stent. These patients admitted to the our hospital between August 2006 and March 2014.

Results: Stent insertion was successful in all patients. Symptoms were improved in 27 of 28 patients (96.8%). 4 patients, leakage of pancreatic juice, stricture of main bile duct, unremovable tail side pancreatic stone, need surgical therapy (12.4%). 17 patients still had stent inplace. Stent were removed 9 patients, released dependence on alcohol and symptoms over 1 year, 10Fr stent was inplace, stricture was clearly described on pancreatography, 7 of the 9 patients persistent benefical response. After removal, relapsing pancreatitis occurs 2 patients. Cumulative incidence of relapsing pancreatitis were occurred 12.5% in 1 years, 34.4% in 3 years. Pancreatic stents were replaced these 2 patiens, and that symptoms were improved.

Conclusion: In our study, chronic pancreatitis who have a stricture in the main pancreatic duct, it is possible to remove pancreatic stent in the patients, confirm dilatation of stricture, and released dependence on alcohol.



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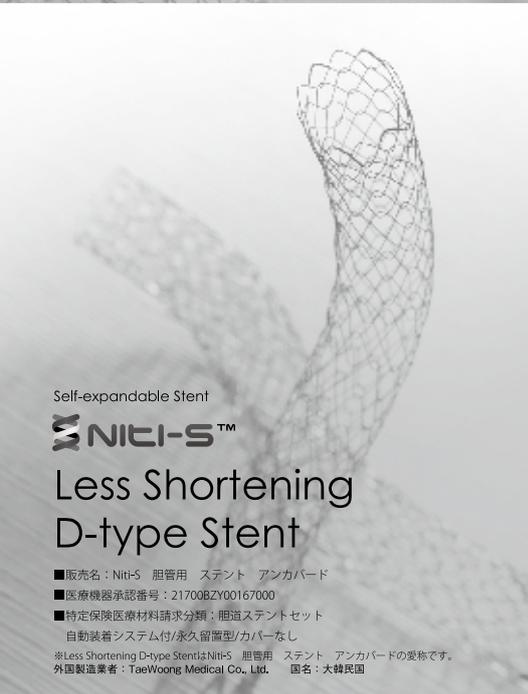


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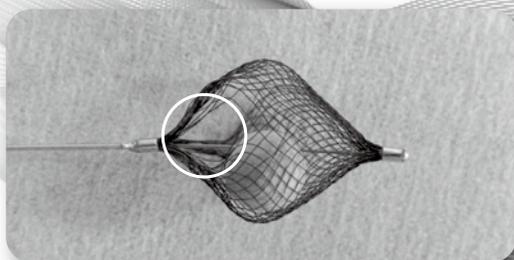
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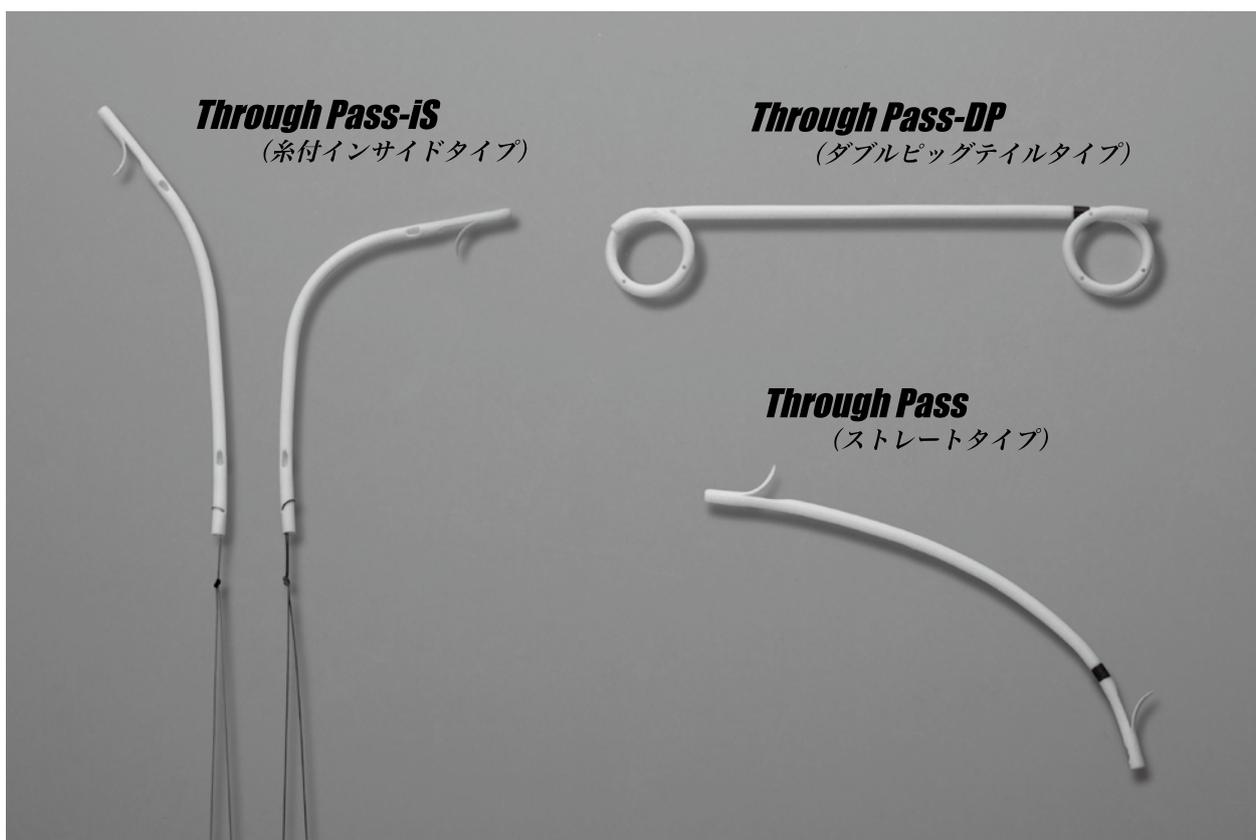
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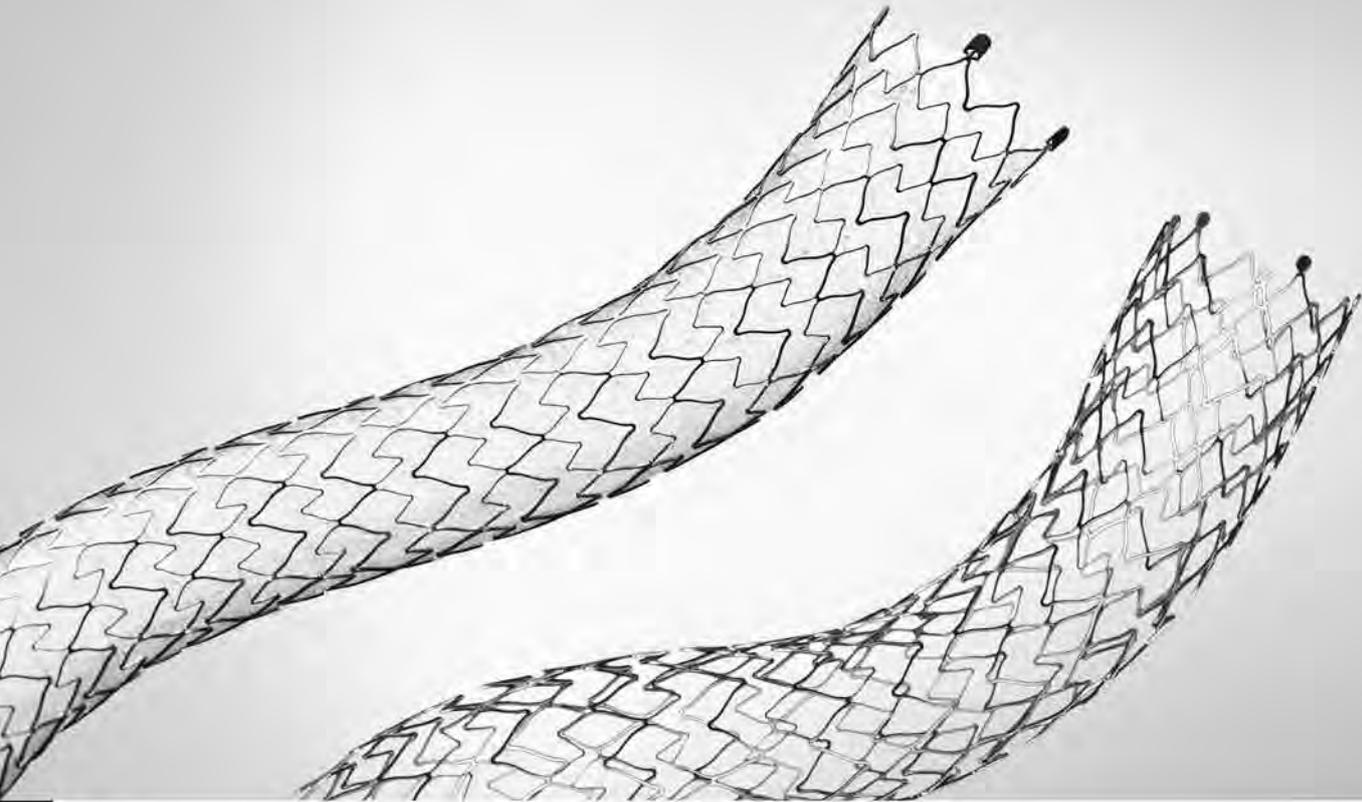
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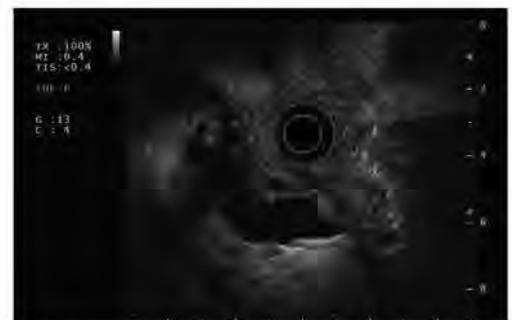
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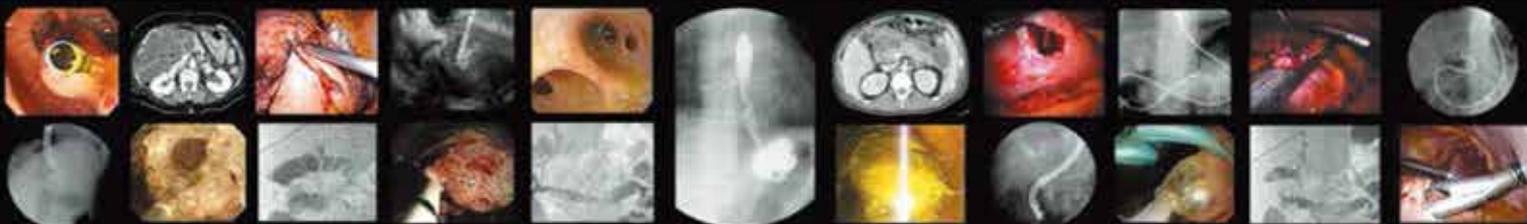
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