

# T-CAP 2013

Tokyo Conference of Asian Pancreato-biliary Interventional Endoscopist  
**Program & Compendium**

JUN. 22-23, 2013  
Ito International Research Center



It is a great pleasure to invite you to T-CAP 2013 held in Tokyo. We started up T-CAP, an international workshop of pancreato-biliary endoscopy, last year with great success thanks to all attendees and faculties from all over the world.

Pancreato-biliary endoscopic intervention is always technically demanding but essential for the patients and the techniques and devices are developing day by day. For the sake of our patients, we should advance and share the techniques, knowledge and education. We propose two major missions of T-CAP; collaboration and education. The first mission of collaboration stands for the Asian endoscopic alliance to make our Asian statement to the world. The second mission of education means sharing the knowledge with each other, especially for Asian young endoscopists.

It is a great opportunity for us and our young fellows to share time and discuss with endoscopists from all over the world. We expect hot discussion and bonds of friendship during this conference to achieve our missions.

Please enjoy this exciting conference and subsequent comfortable party in Tokyo!

A handwritten signature in black ink, appearing to read 'H. Isayama', with a large, sweeping underline that extends across the width of the signature.

President: Hiroyuki Isayama (Tokyo Univ. Japan)



## 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** (Gifu Univ. Japan)

**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)

International organizing committee

Chief: **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)

Secretaly general: **Ichiro Yasuda** (Gifu Univ. Japan)

Secretariats **Yousuke Nakai** (Tokyo Univ. Japan)

**Masaki Kuwatani** (Hokkaido Univ. Japan)

**Takuji Iwashita** (Gifu Univ. Japan)

**Fumihide Itokawa** (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)

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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)

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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)

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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** (Gifu Univ. Japan)

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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

### 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.

#### Iruku Maetani (Toho Univ. Ohashi, Japan)



Professor and Chairman  
Division of Gastroenterology and Hepatology, Department of Internal Medicine  
Toho University Ohashi Medical Center  
Dr. Iruku 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 graduated Tottori University School of Medicine, got medical degree in Japan in 1990 and earned PhD in 1994. From 2000, he began to work at Kinki University, and 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 faculty of the Japanese Society of Gastroenterology, of the Japan Gastroenterological Endoscopy Society, and of the Japanese Society of Clinical Pharmacology and Therapeutics. He has authored / co-authored 90 peer reviewed English publications.

## Faculty Members

### Organizing committee

#### Atsushi Irisawa (Fukushima Medical University Aizu Medical Center)



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.

### International organizing committee

#### Hsiu-Po Wang (Taiwan)

Chief



Dr. Hsiu-Po Wang, born in 1961, is the Chief of Endoscopy Division of National Taiwan University Hospital and Professor of Internal Medicine, College of Medicine, National Taiwan University. He is the incumbent the President of Digestive Endoscopy Society of Taiwan and a Council Member of Taiwan Society of Coloproctology and a Member of the Board of Director of Taiwan Pancreas Society. He is skillful with many endoscopic techniques. Besides his majors of ERCP and EUS/interventional EUS, he also involves IEE (NBI, i-scan, AFI), endoscopic tumor ablation techniques, enteroscopy, esophageal/enteric stenting. He is active in many international meetings and has been invited for chair, speech and live demonstration. He has had many publications involving gastroenterological and endoscopic fields. He also has written a book chapter about GI bleeding of international emergency textbook.

#### Jong Ho Moon (Korea)



Professor of Medicine

Soon Chun Hyang University School of Medicine, Bucheon/Seoul, Korea

Dr. Moon is currently the Chief of Division of Gastroenterology, Director of Digestive Disease Center of Soon Chun Hyang University Hospital of Bucheon, Korea. Dr. Moon was Visiting Assistant Professor of Medicine at University of Washington in 2005. 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.

#### Dong Wang Seo (Korea)



Dong Wan Seo is a full professor of Department of Gastroenterology, University of Ulsan Medical College, Asan Medical Center which is the largest teaching hospital in South Korea. Dr. Seo has created a lot of advanced endoscopy works to the World of GI Endoscopy and his main research interests are cholangioscopy, interventional EUS and interventional treatment of hepato-bilio-pancreatic neoplasm. Prof. Seo is also serving as a chairperson of Endoscopy Teleconference Session in APAN meeting and scientific committee of SGI meeting. He is working as an active member in variety of national & international societies including KSGE, KSG, SGI, ASGE and NOSCARG. He is also serving as an international editorial board member of Gastrointestinal Endoscopy.



## Faculty Members

### International organizing committee

#### Hu Bing (China)



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

absent

#### Christopher Khor (Singapore)



Senior Consultant / Department of Gastroenterology & Hepatology Director, Endoscopy Centre Singapore General Hospital Immediate past president, Gastroenterological Society of Singapore  
Dr Christopher Khor completed clinical fellowships in ERCP and in EUS in the US, after Internal Medicine & GI training in Singapore. More recently, he trained in Endoscopic Submucosal Dissection at the National Cancer Center Hospital, and at Kobe University Medical Center. His main practice areas are in general gastroenterology, therapeutic endoscopy and pancreato-biliary disease. He has a keen interest in endoscopic quality and education, and in promoting cross-border co-operation between endoscopists in the region. Dr Khor was Vice-President of Asian-Pacific Digestive Week 2011 in Singapore, for which he directed Endoscopy programming. He is the immediate past President of the Gastroenterological Society of Singapore.

#### Thawee Ratanachu-ek (Thailand)



Director, Surgical Endoscopy Unit, Department of Surgery, Rajavithi Hospital, Bangkok, Thailand.  
President, Thai Association for Gastrointestinal Endoscopy (TAGE)  
Dr. Thawee finished medical degree from Siriraj medical school, Mahidol university since 1983 then trained general surgery and got FRCS (Thailand) in 1990. He is a surgeon who actively works in GI endoscopy at Rajavithi hospital where is the largest referral centre hospital of the ministry of public health, his main interested in all kinds of therapeutic endoscopy esp. hepato-pancreato-biliary area. He also provides the teaching and training to young endoscopists both locally and internationally and works closely with the key doctors in the other institutes under Thai Association for Gastrointestinal Endoscopy (TAGE) to provide educational support and hands-on training in GI endoscopy as well. He published five GI endoscopy books and was editor-in-chief in many books of GI endoscopy and surgery. His current position is senior surgical staff (professor level), director of surgical endoscopy unit, Rajavithi hospital and president of TAGE (2012-2013).

#### Ryan Ponnudurai (Malaysia)



Dr. Ponnudurai was trained in Canada and in Hamburg specializing in advanced endoscopy and endoscopic ultrasound. When he returned to Malaysia in 2001, he pioneered the training and development of EUS in his country. His passion is teaching endoscopic ultrasound and has been invited to many live endoscopy courses around the world. In 2011 an EUS task force for the Asia Pacific region was developed, which he chairs. He also sits on many editorial boards and has published in peer review journals.

## Faculty Members

### International organizing committee

#### James Lau (Hong Kong)

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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.

#### Sundeep Lakhtakia (India)

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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 SGPGIMS, 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.

### Secretaly general

#### Ichiro Yasuda (Gifu Univ. Japan)

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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.

### Secretariats

#### Yousuke Nakai (Tokyo Univ. Japan)

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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."

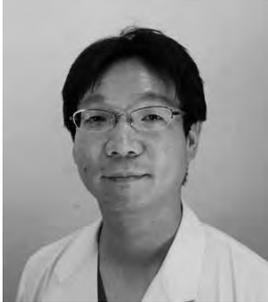


## Faculty Members

### Secretariats

#### Masaki Kuwatani (Hokkaido Univ. Japan)

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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 CO<sub>2</sub> 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)

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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).

#### Fumihide Itokawa (Tokyo Medical Univ. Japan)

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Instructor of dept of Gastroenterology and Hepatology, Tokyo Medical University

He is both interventional-endoscopist and oncologist in the pancreato-biliary field. He is the member of Japanese Society of Internal Medicine and Gastroenterology, American and Japanese Endoscopic Society, and Japanese Biliary and Pancreatic Society. He is specialized in EUS-elastography in pancreatic masses and published articles. He have been given 2 awards; Award of Japan Biliary Society in 2004 and Best of DDW(US) in 2009.

#### Natsuyo Yamamoto (Tokyo Univ. Japan)

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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.

## Faculty Members

### Secretariats

**Hirofumi Kogure** (Tokyo Univ. Japan)

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Dr. Hirofumi Kogure is Assistant Professor at the Department of Endoscopy and Endoscopic Surgery, 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 and Double-balloon enteroscopy-assisted ERCP.

**Tsuyoshi Hamada** (Tokyo Univ. Japan)

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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)

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She graduated Aoyama Gakuin University College of Literature Department of History.

She worked as a medical office secretary In Yokohamashintoshi Neurosurgical Hospital until 2011.

She is working from 2011 as a secretary of the University of Tokyo Hospital Department of Gastroenterology group.



## Access

The Ito International Research Center is located on the Hongo Campus in central Tokyo. There are several options for access from Narita Airport.

### Narita Express

Take the JR Narita Express train from the basement of the airport building to Tokyo Station. Trains run approximately every thirty minutes and take about either 60 or 90 minutes to reach Tokyo Station. Tickets cost about 3,000 yen. From Tokyo Station take the Marunouchi Metro line (Ikebukuro direction) and get off at Hongo Sanchoime Station. Trains run every few minutes and take about 8 minutes. Tickets cost 160 yen.

### Keisei Express "Skyliner"

Take the Keisei Express "Skyliner" from the basement of the airport building to Keisei Ueno. Trains run approximately every twenty minutes and take 44 minutes to reach Keisei Ueno Station. Tickets cost about 2,400 yen. Take a taxi from Keisei Ueno Station to the Hongo Campus, or walk (about 20 minutes; includes uphill sections).

### Limousine Bus

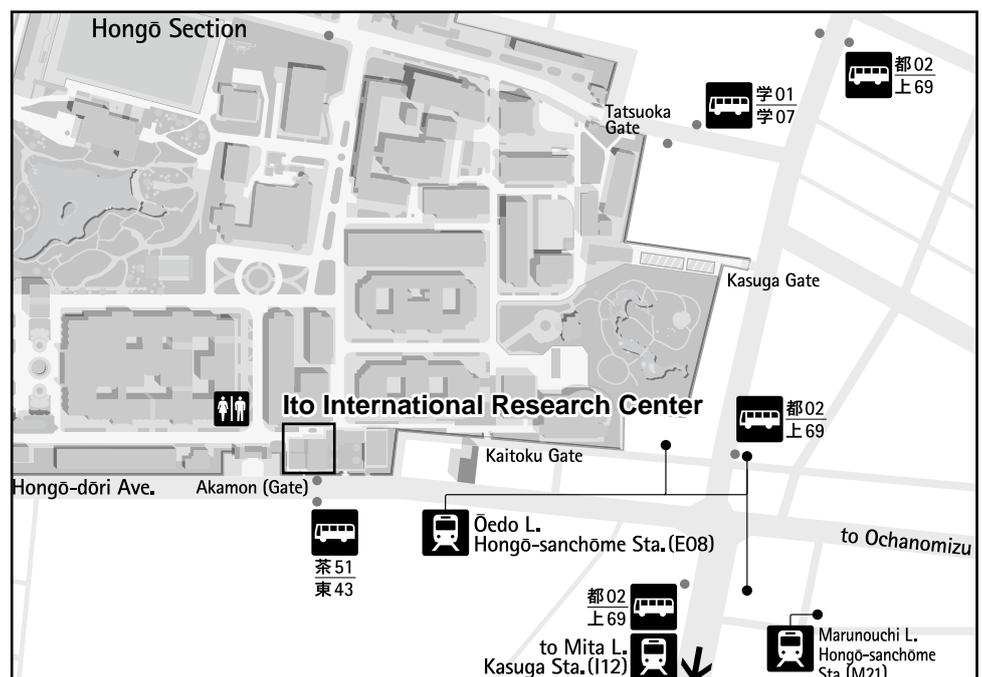
Take the Limousine Bus from outside the terminal building immediately opposite the exit from customs. Buses run every twenty to thirty minutes and take up to 120 minutes, depending on the traffic. Tickets cost 3,000 yen. From Tokyo Station take the Marunouchi Metro line (Ikebukuro direction) and get off at Hongo Sanchoime Station. Trains run every few minutes and take about 8 minutes. Tickets cost 160 yen.

### Taxi

Narita Airport is about a two-hour drive from Tokyo. Taking a taxi from the airport is not recommended as it is expensive (about 20,000 yen), but you can take a taxi from Tokyo Station if you prefer not to take the Metro.

### Access Map

The University of Tokyo  
Ito International Research Center  
7-3-1 Hongo, Bunkyo-ku, Tokyo  
113-0033 JAPAN



## Congress information

### Registration

- **Registration Desk:** In front of "Ito Hall" , B2F , ITO INTERNATIONAL RESEARCH CENTER
- **Open hours: Saturday** , June 22 8:30-21:00 / **Sunday** , June 23 8:30-13:00
- **Registration Fee:** JPY 5,000 or 60
- **Entitlements**  
Participants' registration includes: +Participation in the Scientific Program / +Abstract Book  
+Luncheon Seminar / +Coffee Breaks / + Dinner Party / +Breakfast Morning seminar
- **Payment Method:** Payment must be made in JPY ( Japanese Yen) or , by cash only.

### 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:
3. [English] Times New Roman, Arial, Arial Black, Arial Narrow, Century, Century Gothic, Courier, Courier New, Georgia
4. Animation and movies can be included but it should be played by default codec of Windows Media Player 11.
5. Audio can be included as well.
6. File size should be less than 700MB including movies.
7. Resolution of presentation PC is set as XGA (1.024x768). Please be sure to change your resolution to XGA before reviewing the layout.
8. In order to avoid virus infection, please scan your data with the updated antivirus program beforehand.
9. Your presentation data loaded onto the server will surely be deleted by the congress secretariat after the congress.

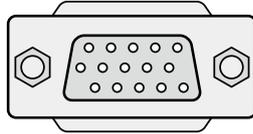


## Congress information

### [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



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: Saturday, June 22 8:30 - Sunday, June 23 13:00**

**We do not arrange the presentation time.**

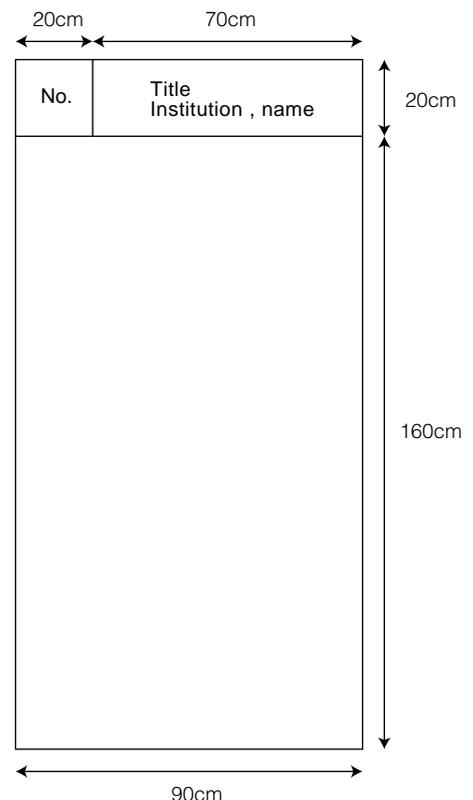
#### Poster size:

Poster: 90cm wide x 180cm high / Label: 70cm wide x 20cm 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.



ITO INTERNATIONAL RESEARCH CENTER Wireless LAN

Network **irc-hall** Password **%01-2012-guest**

**Time Table**

Saturday , June 22	
Ito International Research Center B2F Ito Hall	
8:30	
9:00	Opening remarks (9:00-9:10)
9:30	Session 1 (9:10~10:30): Current status in CBD stone management
10:00	
10:30	Session 2 (10:30~11:50): New paradigm for distal stenting
11:00	
11:30	
12:00	FUJIFILM Corporation Luncheon Seminar (12:00-13:10)
12:30	
13:00	Session 3 (13:15~14:30): Technical discussion session "Details of EUS- BD"
13:30	
14:00	Session 4 (14:30~15:30): Current status in pancreatic pseudo-cyst management
14:30	
15:00	Coffee break (15:30~15:45)
15:30	Session 5 (15:45~17:30): Interventional EUS
16:00	
16:30	
17:00	Session 6 (17:30~18:30): Free paper session
17:30	
18:00	TaeWoong & CMI Satellite symposium (18:30~19:45)
18:30	
19:00	TaeWoong & CMI Dinner Party (19:45~21:00)
19:30	
20:00	
20:30	
21:00	

Sunday , June 23	
Ito International Research Center B2F Ito Hall	
8:30	
9:00	Hitachi Medical Corporation Morning seminar (8:45-10:00)
9:30	
10:00	VTR symposium (10:00-11:30): Current topics in pancreato-biliary interventional
10:30	
11:00	
11:30	Special lecture (11:30-12:45)
12:00	
12:30	Awarded Ceremony & Closing remarks (12:45-13:00)
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21:00	



## Meeting agenda of T-CAP 2013

[June 22, Saturday]

**Opening remarks** (9:00-9:10)

Hiroyuki Isayama

**Session 1** (9:10~10:30): Current status in CBD stone management

**Moderator:**

Ichiro Yasuda, Hsiu-Po Wang

EST, history and current status (10min+5min)

Kiyohito Tanaka

EPBD, short & long term results (10min+5min)

Takeshi Tsujino

Meta-analysis: dilation duration of EPBD (10min+5min)

Wei-Chih Liao

EPLBD, current status (10min+5min)

James Lau

**Discussion:** 10min

Discusser:

K Hanada, M Kuwatani, H Kogure, C Khor, DK Lee,

**Session 2** (10:30~11:50): New paradigm for distal stenting

**Moderator:**

Sundeep Lakhtakia, Keiji Hanada

Large diameter covered metallic stent (10min+5min)

Tsuyoshi Mukai

Drug eluting stent (10min+5min)

Dong Ki Lee

Anti-reflux stent (10min+5min)

Tsuyoshi Hamada

Benign biliary stricture (10min+5min)

Sundeep Lakhtakia

**Discussion:** 10min

Discusser:

F Itokawa, M Kitano, H Isayama, K Tanaka, HP Wang, JH Moon

**FUJIFILM Corporation Luncheon Seminar** (12:00-13:10)

**Moderator:**

Hsiu-Po Wang

*Benign stricture management with fully-covered SEMS*

Rungsun Rerknimitr

*New diagnostic strategies for early pancreatic cancer*

Keiji Hanada

**Session 3** (13:15~14:30): Technical discussion session "Details of EUS-BD"

**Moderator:**

Masayuki Kitano, Hiroyuki Isayama

Techniques for EUS-BD (10min+5min)

Kazuo Hara

Stent selection for EUS-BD (10min+5min)

Yousuke Nakai

Trouble Shooting for EUS-BD (10min+5min)

Marc Giovannini

**Discussion:** 15min

Discusser:

A Irisawa, T Iwashita, K Ito, T Itoi, H Ishiwatari, T Ratanachu-ek,  
S Varadalajule, R Rerknimitr, SS Lee

**Session 4** (14:30~15:30): Current status in pancreatic pseudo-cyst management

**Moderator:**

Christopher Khor, Thawee Ratanachu-ek,

Japanese multicenter study of necrosectomy (10min+5min)

Ichiro Yasuda

Covered metallic stent for PCD and necrosectomy (10min+5min)

Natsuyo Yamamoto

State of art (15min+5min)

Nageshwar Reddy

**Discussion:** 10min

Discusser:

T Itoi, M Kitano, A Irisawa, H Sakamoto, S Lakhtakia, DW Seo, R Ponnudurai

## Meeting agenda of T-CAP 2013

**Coffee break** (15:30~15:45)

**Session 5** (15:45~17:30): Interventional EUS

**Moderator:**

Atsushi Irisawa, Jong Ho Moon

EUS-guided pancreatic ductal drainage (10min+5min)

Fumihide Itokawa

EUS-guided celiac plexus neurolysis (10min+5min)

Hirotohi Ishiwatari

EUS-guided treatment for pancreatic tumor (10min+5min)

Dong Wang Seo

EUS-guided gallbladder drainage (10min+5min)

Hiroki Sakamoto

**Discussion:** 10min

Discusser:

M Kitano, Y Nakai, K Hara, M Giovannini, R Ponnudurai,  
T Ratanachu-ek, S Varadarajulu

**Session 6** (17:30~18:30): Free paper session (Each paper: 6min+2min)

**Moderator:**

James Lau, Yousuke Nakai

1. Pancreatic cystic lesion containing microcystic component can be diagnosed correctly by endoscopic ultrasound-guided fine needle aspiration  
Tsuyoshi Hayashi
2. Performance of Procore Needle (19 Gauge and 22 Gauge) for Endoscopic Ultrasound Fine Needle Biopsy  
Chai Soon Ngiu
3. Can Early Double Guidewire Technique Facilitate Common Bile Duct Cannulation and Reduce Post ERCP Pancreatitis? -Results of a Multicenter Prospective Randomized Controlled Trial: EDUCATION Trial-  
Naoki Sasahira
4. Comparison of the safety profiles of endoscopic papillary balloon dilation and sphincterotomy in young patients with CBD stones and gallstones  
Hyun Jong Choi
5. Non-fluoroscopic common bile duct stenting for prompt symptomatic relief for choledocholithiasis during pregnancy  
Cheuk-Kay Sun
6. A Comparison Of Biliary Stent In Pancreatic Cancer Patients With Malignant Biliary Obstruction During Neoadjuvant Chemoradiotherapy : Plastic VS Metallic stent.  
Hiroyuki Inoue

**Discusser:**

M Shimatani, T Tsujino, M Kuwatani, S Lakhtakia, C Khor,  
Tiing Leong Ang

**TaeWoong & CMI Satellite symposium** (18:30~19:45):

**Moderator:**

Dong Wan Seo, Iruru Maetani

*Progress on pancreatic endotherapy*

Nageshwar Reddy

*Place of hepaticogastrostomy guided by EUS for biliary drainage*

Marc Giovannini

**TaeWoong & CMI Dinner Party** (19:45~21:00)



## Meeting agenda of T-CAP 2013

**[Jun 23, Sunday]**

**Hitachi Medical Corporation Morning seminar: (8:45-10:00)**

<b>Moderator:</b>	Hiroyuki Isayama
<i>Endoscopic treatment of acute cholecystitis</i>	Sang Soo Lee
<i>EUS-guided pancreatic intervention</i>	Takao Itoi

**VTR symposium (10:00-11:30):** Current topics in pancreato-biliary interventional endoscopy

<b>Moderator:</b>	Natsuyo Yamamoto, Ryan Ponnudurai
Tips of multi-stenting for hilar obstruction (8min+4min)	Hironari Kato
Current status of Direct Endoscopic Necrosectomy (8min+4min)	Tiing Leong Ang
Double balloon ERCP & related procedures (8min+4min)	Masaaki Shimatani
Endoscopic papillectomy for ampullary neoplasm (8min+4min)	Kei Ito
Cholangioscopy from cholangiography	Jong Ho Moon
Efficacy of high negative pressure suction in EUS-FNA of a pancreatic mass (8min+4min)	Masaki Kuwatani
New guidewire for wire-guided cannulation (8min+4min)	Iruru Maetani

**Special lecture (11:30-12:45):**

<b>Moderator:</b>	Atsushi Irisawa
EUS-guided Tissue Acquisition	Shyam Varadalajule
Endoscopic management of refractory benign biliary bile duct stricture:	through fc-SEMS and MCA
	Dong Ki Lee

**Awarded Ceremony & Closing remarks (12:45-13:00)**

Takao Itoi & Hsiu-Po Wang

Best free paper presenter 1 & 2

Best discussers 1 & 2

## Invited Speaker

- **D Nageshwar Reddy, M.D., PhD** (MD, DM, D.Sc, FAMS, FRCP, FASGE, FACG)  
(Chairman and Chief Gastroenterologist Asian Institute of Gastroenterology Hyderabad, India)



### CURRICULUM VITAE

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

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 200 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, 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 Huibregtse 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. Organizing Co-Chairman for the First WEO "Program for Endoscopic Teachers – Train the Trainers program" in January, 2013 at Hyderabad.



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## Progress on pancreatic endotherapy

**D. Nageshwar Reddy, M.D., PhD**

(Chairman and Chief Gastroenterologist Asian Institute of Gastroenterology Hyderabad, India)

Chronic pancreatitis is characterized by chronic inflammation of the pancreas that results in pancreatic fibrosis, formation of pancreatic ductal and parenchymal stones, and exocrine and endocrine insufficiency. The most debilitating manifestation that brings the patient to clinical attention is abdominal pain, which is significantly contributed by pancreatic ductal stones.

The current standard of care for symptomatic ductal stones is endotherapy (ESWL and ERCP). In our experience, ESWL is very effective in fragmenting ductal stones (located primarily in the head, neck and proximal body region) of >5mm diameter, and results in stone clearance and pain relief in nearly 80% of patients over 6 months. Efficacy of ESWL is best when performed with a third generation machine by a dedicated operator under epidural anesthesia. This can be followed by ERCP, pancreatic sphincterotomy and removal of the stone fragments with or without pancreatic ductal stenting. For smaller stones, ERCP with pancreatic sphincterotomy and stone clearance can be used as the primary modality. This has been shown to result in pain relief in 65% patients at 5yrs. Other than stone removal, ERCP is also used to treat pancreatic ductal strictures. Traditionally, single or multiple 3-10Fr plastic stents have been used to bridge across strictures, with or without stricture dilatation. More recently, covered/uncovered self-expandable metal stents and bumpy stents have been attempted in clinical trials. However, these are in preliminary stages of development and are not currently recommended for routine use.

## Invited Speaker

• **GIOVANNINI MARC FRANCOIS VICTOR, M.D., PhD**

(Endoscopic Unit, Paoli-Calmettes Institute, France)



### CURRUCULUM VITAE

DIPLOMA OF GASTROENTEROLOGY IN 1987

DIPLOMA OF ONCOLOGY IN 1990

CHEF DE CLINIQUE - ASSISTANT OF THE UNIVERSITY OF MARSEILLE / 1988 TO 1990

PRATICIEN HOSPITALIER SINCE 1990 ( PAOLI-CAMETTES INSTITUTE )

CHIEF OF UNIT OF ENDOSCOPY since 1997 ( PAOLI-CAMETTES INSTITUTE )

CHIEF OF ONCOLOGY UNIT 2000-2002 ( PAOLI-CAMETTES INSTITUTE )

CHIEF OF EMCO UNIT SINCE SEPTEMBER 2005(PAOLI-CALMETTES INSTITUTE).

CHIEF OF THE DEPARTMENT OF GASTROENTEROLOGY AND ENDOSCOPY SINCE 2010

(PAOLI-CALMETTES INSTITUTE)

MEMBER OF THE FRENCH SOCIETY OF ENDOSCOPY SINCE 1999

MEMBER OF THE FRENCH CLUB OF ENDOSONOGRAPHY SINCE 1994

MEMBER OF THE FRENCH FONDATION OF DIGESTIVE ONCOLOGY SINCE 1991

MEMBER OF THE EUROPEAN SOCIETY OF GASTROENTEROLOGY SINCE 1999

SECRETARY OF FRENCH CLUB OF ENDOSONOGRAPHY 1996-98

PRESIDENT OF FRENCH CLUB OF ENDOSONOGRAPHY 1998-2000

PRESIDENT OF EURO-EUS SINCE 2008

INDIVIDUAL MEMBER OF THE ESGE BOARD since 2010

EDITOR IN CHIEF OF ENDOSCOPIC ULTRASOUND SINCE 2012



## EUS guided Biliary Drainage

**Marc Giovannini, M.D., PhD**

(Endoscopic Unit, Paoli-Calmettes Institute, France)

EUS guided biliary drainage is an option to treat obstructive jaundices when ERCP drainage fails. These procedures compose alternative methods to the side of surgery and percutaneous transhepatic biliary drainage, and it was only possible by the continuous development and improvement of echoendoscopes and accessories. The development of linear sectorial array EUS scopes in early 1990 brought a new approach to diagnostic and therapeutic dimension on EUS capabilities, opening the possibility to perform puncture over direct ultrasonographic view. Despite of the high success rate and low morbidity of biliary drainage obtained by ERCP, difficulty could be found at the presence of stent tumor ingrown, tumor gut compression, periampullary diverticula and anatomic variation. EUS technique starts performing puncture and contrast of the left biliary tree. When performed from gastric wall, the access is made through hepatic segment III. From duodenum, direct common bile duct puncture. Diathermic dilatation of the puncturing tract is required using a 6F cystostome and a plastic or metallic stent is introduced. The technical success of hepaticogastrostomy is near 98%, and complications are present in 20%: pneumoperitoneum, choleperitoneum, infection and stent dysfunction. To prevent bile leakage we have used the 2 stents techniques, the first stent introduced was a long uncovered metallic stent (8 or 10 cm) and inside this first stent a second fully covered stent of 6 cm was delivered to bridge the bile duct and the stomach. Choledochoduodenostomy overall success rate is 92%, and described complications include, in frequency order, pneumoperitoneum and focal bile peritonitis, present in 14%. By the last 10 years, the technique was especially performed in reference centers, by ERCP experienced groups, and this seems to be a general guideline to safer procedure execution. An anti-tumor effect, the membrane should release the drug for at least 6~8 weeks. A membrane with a reliable drug-release pattern should be able to incorporate both structurally stable hydrophilic agents and hydrophilic agents that show an initial release burst. Investigations of the use of nonvascular DES for malignant biliary obstruction are currently insufficient.

## Invited Speaker

### • Dong-Ki Lee, M.D., PhD

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



#### CURRICULUM VITAE

Dr. Dong-Ki Lee is the director of the cancer hospital at Gangnam Severance Hospital, Yonsei University. He is also a founding member and former Secretary General of the Society of Gastrointestinal Endoscopy (SGI), an international organization of medical professionals dedicated in improving public health in gastrointestinal interventions. He has been closely involved in many clinical studies for therapeutic ERCP, and has innovated and introduced several unique methodologies to the medical field. He is also a member of the International Editorial Board of Gastrointestinal Endoscopy.

He is currently conducting studies in developing a drug-eluting biliary and enteral stent, the effects of fish oil on the bile and liver, as well as various therapeutic ERCP treatments, such as EPLBD, Magnet compression anastomosis stricture, benign and malignant biliary stricture articles in both international and domestic journals. In the past several years, Dr Dong-Ki Lee has received several awards, namely the Medical-Science Award, by the Korea Society of Gastroenterology, and Korean Society of Gastrointestinal Endoscopy.

### Drug eluting stents in malignant biliary obstruction

**Dong-Ki Lee, M.D., PhD**

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

Covered self-expandable metal stents (c-SEMS) are used for the mechanical palliation of a distal malignant obstruction, but lack anti-tumor effects. Drug-eluting stents (DES), which were first introduced in coronary artery disease, are currently under investigation for sustaining stent patency and prolonging patient survival by inhibiting tumor ingrowth in malignant biliary obstruction. Many factors affecting efficient drug delivery have been studied to determine how drugs with anti-tumor effects suppress tumor ingrowth, including the specific drugs incorporated, means of incorporating the drugs, mode of drug release, and stent structure. Advances have resulted in the construction of more effective non-vascular DES and ongoing clinical research. We completed the Mira-I and Mira-II animal and human clinical trials and are preparing the Mira-III stent for clinical application.

Non-vascular DES are expected to play vital roles in prolonging stent patency and, hopefully, the survival of patients with malignant biliary obstruction. To achieve this, we need to develop an ideal SEMS that prevents early stent occlusion resulting from food impaction. In addition, we have to devise a satisfactory technical platform that guarantees a sustained anti-tumor-drug-releasing membrane. The technical platform should include sufficient drug-eluting duration and the ability to harbor several drugs regardless of their chemical characteristics. To achieve an anti-tumor effect, the membrane should release the drug for at least 6~8 weeks. A membrane with a reliable drug-release pattern should be able to incorporate both structurally stable hydrophilic agents and hydrophilic agents that show an initial release burst.

Investigations of the use of nonvascular DES for malignant biliary obstruction are currently insufficient.



Nevertheless, trials have led to advances in DES and have demonstrated both their safety and incomplete clinical efficacy. We anticipate that DES will be effective against tumors through diverse mechanisms. Basic research on the anti-tumor effect of local drug delivery is crucial to reinforce the theoretical background for clinical use of these new stents. Further investigations and clinical studies of DES are required to open a new therapeutic avenue in the palliation of malignant biliary obstruction.

### **Endoscopic management of refractory benign biliary bile duct strictures using fc-SEMS and MCA**

Many benign biliary strictures (BBS) can be successfully repaired using a conventional endoscopic stenting method. However, the largest downside of this method is recurrence of strictures. Thus, an Italian group developed a method to reduce stricture recurrence using aggressive endoscopic treatment. This method requires multiple stent insertions over several sessions until the stricture disappears and has shown very promising long-term clinical outcomes. However, due to the number of sessions and duration required for this method, endoscopists began to apply full covered self-expandable metal stent (fc-SEMS) for treating BBS.

Currently, most BBSs are suitable for applying fc-SEMS, and various companies are developing various fc-SEMS for this purpose. In particular, Korean stent manufacturers are developing different types of fc-SEMS using a variety of designs and materials. fc-SEMS have flanges at the ends or are designed with bumps to prevent stent migration. These stents are typically indwelled for < 76 months. Strictures of most patients have been treated successfully and all have a median follow up of 12 months with an average 10% recurrence rate. Stent migration and occlusion occur in some patients. However, cholecystitis, pancreatitis and de novo stricture formation are surprisingly rare. Pain and discomfort after stent deployment were noted in some patients. The data on the optimal period for stent indwelling are insufficient and long-term data for stricture recurrence are limited. However, fc-SEMSs in patients with BBS have an overall acceptable rate of stricture resolution. Further clinical trials are needed but fc-SEMS are an excellent choice for treating refractory BBS.

The percutaneous method can be used should the endoscopic method fail during treatment of benign bilo-biliary or bilo-enteric anastomoses. Either method requires a drainage bag for life, and the only option available is a re-operation, which involves high risk and technical difficulties. Therefore, we consider the magnet compression anastomosis fistula formation (MCA) method in these patients. We have performed MCA in 17 patients after living-donor liver transplantation and succeeded in 15. Magnet recanalization is possible between 2 weeks to 6 months. If the magnet can be aligned, recanalization is possible in all patients. The two patients who failed had trouble with magnet alignment. Currently, we are extending this method to many other benign bilo-enteric and bilo-biliary strictures. The magnet delivery route must be secure, proper distance between the magnets must be ensured, and appropriate magnet characteristics must be used for MCA to be effective. MCA is less traumatic and, more importantly, has a very low recurrence rate compared with other treatments.

MCA can be difficult when magnet delivery is hindered by a fixed stricture or a long afferent loop. We have developed a needle-knife puncture technique for completely obstructed choledochojejunal anastomoses for those who are not surgical or MCA candidates. Although this new procedure has some risks, further trials with protective measures could minimize the complication rate and maximize the benefits. This procedure negates the need for further surgery when performed properly and safely.

In conclusion, biliary strictures refractory to conventional methods can be overcome using many effective and safe interventions that provide an excellent quality of life.

## Invited Speaker

- **Shyam Varadarajulu, M.D., PhD** (Florida Hospital, Orlando, Florida)



### CURRICULUM VITAE

Shyam Varadarajulu was born and raised at Madras in India and completed his medical school at the Madras Medical College, his residency training at the Rochester St Mary's Hospital, and pursued a GI fellowship at University of Connecticut Health Center. He then underwent advanced training in ERCP and EUS under the tutelage of Peter Cotton and Robert Hawes at the Medical University of South Carolina (MUSC). He has spent the last nine years as an Associate Professor of Medicine on faculty at the University of Alabama in Birmingham. In June 2012, Shyam Varadarajulu will move to Florida Hospital Orlando to become the Medical Director of the Center for Interventional Endoscopy and a Professor of Medicine at the University of Central Florida.

His research focus is on EUS-guided tissue acquisition, Interventional EUS, Pancreatic Endotherapy and Sphincter of Oddi dysfunction. He is also the Associate Editor for the American Gastroenterological Association's official Journal "Clinical Gastroenterology and Hepatology" and the official journal of the Japanese Endoscopic Society "Digestive Endoscopy". He is a co-editor of the most widely read textbook on EUS, and has published more than 150 peer reviewed original articles, 20 textbook chapters and performed at numerous international live endoscopy workshops.

## EUS-guided Tissue Acquisition

**Shyam Varadarajulu, M.D., PhD**  
(Florida Hospital, Orlando, Florida)

Endoscopic Ultrasound-guided fine-needle aspiration (EUS-FNA) is an indispensable tool for tissue acquisition in patients with gastrointestinal tumors. The procedural complexity is proportionate to the location and type of lesion being sampled. Recent studies evaluating the utility of suction and stylet have questioned the conventional practices in tissue sampling. Also, the procedural efficiency is significantly impacted by modifying the sampling techniques and by following an algorithmic approach when selecting accessories for tissue acquisition. The emerging concept of tailoring chemotherapeutic agents based on molecular markers has increased the demand for EUS-guided core tissue procurement. In addition, core tissue acquisition may offset the limitations of EUS-FNA wherein the diagnostic sensitivity is incumbent on the availability of an onsite cytopathologist. Best practices in tissue acquisition include the collection of additional specimen for ancillary studies in cell block and learning the basics of cytopathology to improve the overall diagnostic yield of the procedure.

### References

1. Bang JY, Magee SH, Ramesh J et al. Randomized trial comparing fanning with standard technique for endoscopic ultrasound-guided fine-needle aspiration of solid pancreatic mass lesions. *Endoscopy* 2013 (In press)
2. Bang JY, Ramesh J, Trevino J et al. Objective assessment of an algorithmic approach to EUS-guided FNA and interventions. *Gastrointest Endosc* 2013 (In press)
3. Varadarajulu S, Fockens P, Hawes RH. Best practices in endoscopic ultrasound-guided fine-needle aspiration. *Clin Gastroenterol Hepatol.* 2012;10: 697-703
4. Iglesias-Garcia J, Poley JW, Larghi A et al. Feasibility and yield of a new EUS histology needle: results from a multicenter, pooled, cohort study. *Gastrointest Endosc* 2011; 73: 1189-96
5. Varadarajulu S, Jhala NC. Cytopathology: a dying art or something that a gastroenterologist should know? *Gastrointest Endosc* 2012; 76:397-9.



## Invited Speaker

### • Wei-Chih Liao, M.D., PhD

(National Taiwan University Hospital)



#### CURRICULUM VITAE

Attending physician, Department of internal medicine, National Taiwan University Hospital  
Clinical assistant professor, National Taiwan University College of Medicine.

His main research interests include interventional endoscopy and clinical epidemiology in the pancreato-biliary field. He has published a series of studies investigating endoscopic papillary balloon dilation (EPBD), as well as studies on diagnostic and prognostic biomarkers for pancreatic cancer. He has served as an Ambassador for ASGE Ambassador Program and is the reviewer of several international journals.

## Meta-analysis: Balloon Inflation Time of EPBD

**Wei-Chih Liao MD, MSc**

(National Taiwan University Hospital)

Endoscopic papillary balloon dilation (EPBD) using a balloon of 6 to 10 mm in diameter to dilate biliary sphincter preserves the function of sphincter of Oddi and has a lower risk of bleeding than endoscopic sphincterotomy (EST). However, EPBD is reserved for patients with bleeding diathesis in current consensus because of concerns of a higher risk of pancreatitis.

The risk of pancreatitis after EPBD in previous trials varied greatly between 0% and 15.4%, and recent evidence suggests that this disparity may be explained by differences in dilation duration of EPBD in those trials. A recent randomized controlled trial found that the risk of pancreatitis after EPBD with 5 minutes duration was comparable to EST and was lower than EPBD with 1 minute duration. Contrary to current recommendation, these findings suggest that EPBD with 1 minute dilation actually increases the risk of pancreatitis, while EPBD with adequate duration may have a lower overall complication rate than EST as it reduces bleeding without causing more pancreatitis.

To confirm the above observations, we systematically reviewed randomized controlled trials to compare long EPBD (>1 minute), short EPBD (1 minute), and EST regarding pancreatitis and overall complications. The meta-analysis revealed that compared to EST, short EPBD had a higher pancreatitis risk (odds ratio [OR] by traditional/network meta-analysis 3.87 [95% confidence interval 1.08–13.84] / 4.14 [95% credible interval 1.58–12.56]), but long EPBD did not pose a higher risk (1.14 [0.56–2.35] / 1.07 [0.38–2.76]). Long EPBD had a lower overall complication rate than EST (0.61 [0.36–1.04] / 0.54 [0.20–1.36]). Probabilities of being the safest treatment for long EPBD/short EPBD/EST regarding pancreatitis and overall complication were 43.9%/0.2%/55.9% and 90.3%/1.3%/8.4%, respectively.

In summary, balloon inflation time is inversely associated with the risk of pancreatitis after EPBD. The current recommendation of EPBD for 1 minute dilation actually increases the risk of pancreatitis. EPBD with adequate dilation duration may be preferred over EST as the first-line treatment for bile duct stones because of comparable pancreatitis but lower overall complication rates.

#### Reference:

1. Liao WC, Lee CT, Chang CY, et al. Randomized trial of 1-minute versus 5-minute endoscopic balloon dilation for extraction of bile duct stones. *Gastrointest Endosc* 2010;72:1154-1162.
2. Liao WC, Tu YK, Wu MS, et al. Balloon dilation with adequate duration is safer than sphincterotomy for extracting bile duct stones: a systematic review and meta-analyses. *Clin Gastroenterol Hepatol*. 2012;10:1101-9.

## Invited Speaker

### • Rungsun Rerknimitr, M.D., PhD

(Professor of Medicine Director of GI Endoscopy Excellence Center, Department Medicine, Chulalongkorn University)



#### CURRICULUM VITAE

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 5 English-GI- Endoscopy Atlases and more than 70 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 has been elected as new president for TAGE (2014-2015). He recently won the award as the most achievement young internist (2013) from the Thai Royal College of Physicians. His main endoscopic interest is therapeutic ERCP with a special interest in metallic stent clinical application.

### The role of fully covered self-expandable metal stent for treatment of benign biliary strictures

**Prof. Rungsun Rerknimitr, M.D., PhD**

(Professor of Medicine Director of GI Endoscopy Excellence Center, Department Medicine, Chulalongkorn University)

Endoscopic therapy by means of balloon dilation and placement of multiple large-bore plastic stents has been the treatment of choice for benign biliary stricture. This approach has been shown to be effective but it typically requires multiple endoscopic sessions given the short duration of stent patency. Self-expandable metal stent (SEMS) has traditionally been used for palliation of malignant biliary strictures given the long duration of stent patency owing to their larger stent diameter. Recently, SEMS has been used in a variety of benign biliary strictures especially with the design of covered self-expandable metal stent (CSEMS) allowing the stents to be removed endoscopically. The use of CSEMS in benign biliary stricture could potentially result in a decrease in endoscopic sessions and it is technically easier when compared to placement of multiple plastic stents. However, complications such as cholecystitis due to blockage of cystic duct, stent migration, infection and pancreatitis have been reported. The potential subsegmental occlusion of contralateral intrahepatic ducts also limits the use of CSEMS in hilar stricture. Certain techniques and improvement of stent design may overcome these challenges in the future. Thus, CSEMS may be appropriate in only highly selected conditions, such as refractory benign biliary stricture despite multiple plastic stent placement or difficult to treat bile duct stricture from chronic pancreatitis, and should not be used routinely.



## Invited Speaker

### • Sang Soo Lee, M.D., PhD

(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.

### Endoscopic treatment of acute cholecystitis

#### Sang Soo Lee, M.D., PhD

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

Acute cholecystitis is one of the most common surgical emergencies. Laparoscopic cholecystitis is the treatment of choice with low procedure related complications. However, the mortality rate cannot be ignored in high risk patients. Traditionally this kind of patients undergoes nonsurgical therapy such as medical treatment or percutaneous transhepatic gallbladder drainage (PTGBD) when the acute cholecystitis does not respond medical therapy. Although technical success and clinical response rate of PTGBD is nearly 100%, complication rate has been reported up to 12%. The complications are bile peritonitis, bleeding, pneumothorax, tube removal, and migration. In addition, PTGBD might inappropriate for patients with massive ascites or coagulopathy, and patient discomfort and cosmetic disfigurement have been associated with the drainage catheter itself. Furthermore, catheter dislodgement has been associated with repeat procedures. Endoscopic Gallbladder drainage is another alternative method. These methods may overcome the limitation of PTGBD. Endoscopic methods include transpapillary approach which has been used more than 20 years, and EUS-guided transmural approach which is attempted lately. The technical success rate of endoscopic transpapillary gallbladder drainage has been reported from 70~89% and clinical success rate reported 64~100%. The limitation of this procedure is the lower success rate compared with that of PTGBD. This low success rate arises from cystic duct configuration, stricture or obstruction by inflammation. EUS-guided gallbladder drainage (EUS-GBD) might be an effective alternative option such as PTGBD for the high-risk patients with acute cholecystitis. The technical success rate and safety of EUS-GBD is comparable to those of PTGBD. Recently several types of special designed metallic stents have been used in clinical field. In conclusion, EUS-GBD has excellent potential as an alternative gallbladder decompression procedure. However, because the current outcomes are limited, multicenter trials for the precise evaluation of this procedure appear to be a necessity in the near future.

## Invited Speaker

### • Adj A/Prof Ang Tiing-Leong, M.D., PhD

(Chief and Senior Consultant at the Department of Gastroenterology, Changi General Hospital the Deputy Head, Research and Director of Endoscopy Center, as well as Adjunct Associate Professor at the Yong Loo Lin School of Medicine, National University of Singapore)



#### CURRICULUM VITAE

Dr. Ang is Chief and Senior Consultant at the Department of Gastroenterology, Changi General Hospital. He is also the Deputy Head, Research and Director of Endoscopy Center, as well as Adjunct Associate Professor at the Yong Loo Lin School of Medicine, National University of Singapore. Dr. Ang is actively involved in the gastroenterological field. He is the President of the Gastroenterological Society of Singapore, a member of the Residency Advisory Committee for Gastroenterology and Vice Chairman of the Chapter of Gastroenterology, Academy of Medicine, Singapore. Dr Ang has subspecialty clinical interests in pancreaticobiliary diseases, early GI cancers and advanced therapeutic endoscopy. His research interests include acid-related disorders, H. pylori infection, pancreatobiliary diseases and gastrointestinal endoscopy.

### Current status of direct endoscopic necrosectomy

#### Adj A/Prof Ang Tiing-Leong, M.D., PhD

(Chief and Senior Consultant at the Department of Gastroenterology, Changi General Hospital the Deputy Head, Research and Director of Endoscopy Center, as well as Adjunct Associate Professor at the Yong Loo Lin School of Medicine, National University of Singapore)

The approach to pancreatic necrosectomy has evolved from primary open necrosectomy to minimally invasive radiologic, surgical and endoscopic procedures. Direct endoscopic necrosectomy (DEN) is a minimally invasive technique that was introduced in recent years for treatment of infected walled-off necrosis. A stoma is created endoscopically between the gastric lumen and the walled-off collection. An endoscope is then inserted directly into the cavity to perform endoscopic necrosectomy. This is followed by short term placement of double pigtail transgastric stents and nasocystic catheter for post procedural irrigation and drainage. Three non-comparative large case series have been published. These are a German multi-centre study (n = 93)<sup>1</sup> a US multi-centre study (n = 104)<sup>2</sup> and a large single centre case series from the German centre that pioneered this technique (n = 80)<sup>3</sup>. High clinical success rates ranging from 80% to 91% were achieved. The complication rate from the multi-centre German study was 26% and 30-day mortality rate was 7.5%<sup>1</sup>. In the US multi-centre case series, complications occurred in 14% and included 5 retrogastric perforations/ pneumoperitoneum (4.8%) which were managed non-operatively<sup>2</sup>. In a Dutch multi-centre randomized controlled study patients with signs of infected necrotizing pancreatitis were randomly assigned to undergo endoscopic (n = 10) or surgical necrosectomy (n = 10). It was found that DEN significantly reduced the post procedural IL-6 levels compared with surgical necrosectomy. The composite clinical end point of death or major morbidity occurred less often after DEN (20% vs 80%; p = 0.03)<sup>4</sup>. DEN is a challenging procedure that should only be performed by experienced therapeutic endoscopists with surgical backup. Severe complications such as perforation, bleeding and embolism may occur. These risks may be



minimized by meticulous attention to appropriate patient selection and technical details. Current data suggest that DEN is a viable minimally invasive treatment option when there is expertise to perform such advanced therapeutic endoscopic procedures. However management has to be multi-disciplinary in nature and surgical and radiological interventions may still be required as adjunctive or salvage procedures.

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## Invited Speaker

### • Kiyohito Tanaka, M.D., PhD

(Vice Director of the department of Gastroenterology, Kyoto Second Red Cross Hospital, Japan.)



#### CURRICULUM VITAE

He is interventional-endoscopist. He lead some RCT for SEMS, interventional endoscopic field in Kansai district. He was invited internationally 30 times for lecture and 15 for endoscopic live-demonstration in this 5years.

He is Chief Information Officer(CIO) in Kyoto Second Red Cross Hospital. In this 5years he was invited international lecture and conference via 10times.

### Current status and history of CBD stone management via EST.

**Kiyohito Tanaka, M.D., PhD**

(Kyoto Second Red Cross Hospital)

#### Introduction

EST was introduced on 1970's to the world, after about 45years has been passed; EST positions the main technique and essential procedures on therapeutic ERCP. In this topic, long term result of CBD stone management by using EST is shown.

#### Methods and Materials

In 1487 patients of CBD stones undergone lithotripsy by EST (1980-2011), 1028 cases followed up during at least 6 months were investigated.

Recurrence rate of CBD stones and Occurrence rate of acute cholecystitis are checked out.

#### Results

In 1487 cases, successful rate of lithotripsy was 95.49%(1420/1467). Basket and balloon lithotripsy was successfully done in 1079 cases, Mechanical lithotripsy was done in 316cases. ESWL was done in 17cases, EHL by using peroralcholangioscopy was done in 3cases.

In 67 unsuccessful cases, EST could not be done In 11 cases. In 17 cases with huge and conference stone and 6 cases of Mirrizzi syndrome, completely lithotripsy was failure.

Complications were occurred in 36cases (2.4%), acute pancreatitis in 16cases(1.0%), bleeding in 19cases(1.2%), perforation of ampulla vater site in 1case(0.06%).

In investigation for 1028 cases that could be followed up during at least 6months, recurrent rate of CBD stones was 19.6%(201/1028). In the cases of undergone cholecystectomy after EST, recurrent rate was 9.8%(39/396), In the cases of preservation of gall bladder, 25.8%(124/481), However in cases of performed EST-lithotripsy after cholecystectomy, recurrent rate was 25.2%.

The period until recurrent of CBD stones after EST-lithotripsy was 697days in median period. In the cases of performed cholecystectomy for gall bladder with stones, median period was 964 days, in the cases of preserved gall bladder without stone was 1169days. Shortest period until recurrent CBD stones was 540days in the case of preservation gall bladder with gall stones. The risk of acute cholecystitis was 8.7%(43/492), there was no significant difference in preservative gall bladder with gall stones nor without stones.



## Summary

The recurrent rate of CBD stone after EST-lithotripsy had been decreased by cholecystectomy for gall bladder with gall stones, this phenomenon was due to stones falling down from gall bladder to common bile duct. In the cases of preservation gall bladder with gall stones, recurrent period was over 1.5year.

There is no significant difference on occurrence of acute cholecystitis between with gall bladder stones and without gall stones.

## Conclusion

Endoscopical lithotripsy undergone EST is effective and safety. For avoid the recurrent CBD stone, cholecystectomy for gall bladder with gall stone is essential. Cholecystectomy is effective for avoidance acute cholecystitis. However, the rate of acute cholecystitis is relative low, in the cases accompany with heart diseases and high aged patients, EBD placement is enough for safety observation.

## Invited Speaker

• **Takeshi Tsujino, M.D., PhD**

(Department of Gastroenterology, Japanese Red Cross Medical Center)



### CURRICULUM VITAE

Dr. Takeshi Tsujino was graduated from the Jikei University of Medicine in 1994. He completed his Internal Medicine and Gastroenterology training at Japanese Red Cross Medical Center and received his PhD from the University of Tokyo. His main research interests include diagnostic and therapeutic ERCP, especially EPBD, post-ERCP pancreatitis, and endoscopic management of biliary complications after living donor liver transplantation. He has published over 100 articles in peer-reviewed journals.

## Endoscopic papillary balloon dilation: short- & long-term results

**Takeshi Tsujino, M.D., PhD**

(Department of Gastroenterology, Japanese Red Cross Medical Center)

EPBD is a possible alternative to EST for the management of CBD stones. Main advantages of EPBD over EST include: 1) Bleeding rarely occurs after EPBD (Tsujino CGH 2007), 2) EPBD can be performed easily in patients with unfavorable anatomy for EST (Billroth II), and 3) papillary function may be preserved after EPBD (Yasuda Gut 2003, Isayama Hepatogastro 2004).

### Short-term results:

#### 1. Efficacy

- 1) The overall success rate of EPBD is similar to that of EST (Fujita GIE 2003).
- 2) For removal of large CBD stones, EPBD may require multiple ERCPs and mechanical lithotripsy more often than EST.

#### 2. Early complications

- 1) Pancreatitis may be more frequent after EPBD (Fujita GIE 2003, DiSario Gastro 2004). In our study with 1000 patients, however, post-EPBD pancreatitis occurred in 48 patients (4.8%), including only 1 patient (0.1%) graded as severe (Tsujino CGH 2007).
- 2) Bleeding is less frequent after EPBD (Fujita GIE 2003).

### Long-term results:

- 1) Late biliary complications may be less frequent after EPBD than after EST (Yasuda GIE 2010).
- 2) Stone recurrence in patients who receive cholecystectomy after EPBD may be low (Tsujino CGH 2007, Tsujino EGH 2009), whereas recurrence in patients with primary stones may be similar between EPBD and EST.
- 3) Acute cholecystitis is less frequent after EPBD (Yasuda Gut 2001), suggesting that preserved papillary function after EPBD guard against this complication.

Conclusions: EPBD is a valuable alternative to EST, especially in patients with 1) small stones, 2) coagulopathy, 3) difficult anatomy, and 4) concurrent GB stones.



## Invited Speaker

### • Tsuyoshi Mukai, M.D., PhD

(Department of Gastroenterology, Gifu Municipal Hospital)



#### CURRICULUM VITAE

He graduated from the Gifu University in 1994. He is the Director at the Gastroenterological Endoscopy Division of Gifu Municipal Hospital. He belongs to Japanese Society of Gastroenterology, Japan Gastroenterological Endoscopy Society, and Japan Biliary Association as councilor. His clinical research interests are therapeutic endoscopy for pancreato-biliary diseases, especially endoscopic biliary stenting. He recently reported about better selection from a viewpoint of axial force and cell widths of self-expandable metal stents (SEMSs) for unresectable malignant hilar biliary strictures.

## T-CAP 2013 Session 2: New paradigm for distal stenting

### 1. Large diameter covered metallic stent

#### Interim analysis of the NEWCOMER-12 study (A pilot study of new covered metallic stents with a large bore size for unresectable distal biliary malignancies: Niti-S™ SUPREMO-12)

Tsuyoshi Mukai<sup>1</sup>, Ichiro Yasuda<sup>2</sup>, Hiroyuki Isayama<sup>3</sup>, Hiroshi Kawakami<sup>4</sup>, Takao Itoi<sup>5</sup>, Yosuke Nakai<sup>3</sup>, Hirofumi Kogure<sup>3</sup>

(1 Department of Gastroenterology, Gifu Municipal Hospital 2 First Department of Internal Medicine, Gifu University Hospital 3 Department of Gastroenterology, Graduate School of Medicine, The University of Tokyo 4 Department of Gastroenterology, Hokkaido University Graduate School of Medicine 5 Department of Gastroenterology and Hepatology, Tokyo Medical University)

**Background:** Self-expandable metallic stents (SEMSs) have a significantly longer patency than plastic tube stents because of their larger dimensions. Moreover, covered SEMSs might have longer patency than uncovered SEMSs because they can prevent tumor ingrowth through the stent mesh. However, a new concern regarding covered SEMSs is an increased risk of stent migration. Theoretically, SEMS with larger dimensions might increase patency and reduce the risk of migration. Therefore, we have invented a novel, fully covered SEMS (FCSEMS), Niti-S SUPREMO-12, with a diameter of 12 mm. In addition to its larger bore, its flared ends prevent migration, and the knitting structure comprises large and small cells that alternately increase and decrease the amount of radial force, such that the stent fits into the bile duct.

**Objective:** To investigate the clinical safety, efficacy, and complication rates associated with Niti-S SUPREMO-12 stent for malignant distal biliary obstructions (NEWCOMER-12 Study; UMIN000007061).

**Results:** Thirty-eight consecutive patients were enrolled into this prospective pilot study between June 2011 and November 2012. Stent placement was successful in 37 (97%) of 38 patients; in 1 patient, the stent did not unfold. The median observation period was 230 days (range, 13–675 days). Among the 38 patients, 12 (32%) survived. Stent dysfunction was observed in 9 patients (24%). Stent occlusion, because of food impaction, was observed in 3 patients and tumor ingrowth was observed in 2 patients; stent migration was observed in 3 patients (1 proximal and 2 distal migration). Furthermore, mild cholecystitis and mild pancreatitis developed in 1 patient. Mean stent patency and median TRBO were 269 ± 13 and 306 days, respectively. Stent removal was attempted in 6 patients and was successful in all of them.

**Conclusions:** The preliminary results suggest that this stent may be safe to use, with acceptable complication rates. Randomized controlled trials with conventional FCSEMSs will be necessary for evaluating the usefulness of this stent.

## Invited Speaker

**• Kazuo Hara, M.D., PhD**

(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

### Techniques for EUS-BD

**Kazuo Hara, M.D., PhD**

(Department of Gastroenterology, Aichi Cancer Center Hospital, Nagoya, Japan)

Endoscopic ultrasound (EUS)-guided biliary drainage (EUS-BD) is a recently described alternative to PTBD, in cases of failed Endoscopic Retrograde Cholangio-Pancreatography (ERCP). Many reports have demonstrated the feasibility and efficacy of EUS-BD in patients with failed biliary access by ERCP. However, most reports have been retrospective, or included a small patient number.

EUS-BD includes a rendezvous technique and a direct access technique. The direct access technique includes 2 major methodologies: EUS-guided choledochoduodenostomy (EUS-CDS) and EUS-guided hepatogastrostomy (EUS-HGS). Rendezvous technique is maybe safe procedure, but success rate is low. Guidewire control is sometimes difficult. EUS-CDS has been reported as a useful method in cases with malignant lower biliary obstruction. EUS-CDS is easy technically and reported on long stent patency. EUS-HGS has been reported for patients with duodenal obstruction or after abdominal surgery. EUS-HGS is also useful technique, but severe complications (including fatal complication) have been reported.

EUS-BD is feasible and effective as an alternative to PTBD in cases with malignant biliary tract obstruction. Prospective randomized studies are needed in the near future to

compare the efficacy and safety of EUS-BD with PTBD.



## Invited Speaker

### • Hirotoshi Ishiwatari, M.D., PhD

(Fourth Department of Internal Medicine, Sapporo Medical University School of Medicine)



#### CURRICULUM VITAE

Assistant Professor, 4th Department of Internal Medicine, Sapporo Medical University

He graduated from Sapporo Medical University in 1999 and had worked as a gastroenterologist in Sapporo Medical University Hospital. His specialty includes diagnostic and therapeutic endoscopy of pancreatobiliary disease, especially through ERCP and EUS. He is specialized in endoscopic stenting for malignant hilar biliary obstruction and in endoscopic intervention for pancreatic fluid collections and cancer pain. He has been given an Award of the Japan Pancreas Society in 2006.

### New challenge for cancer pain

#### -EUS guided-celiac plexus neurolysis using phenol-glycerol in cancer pain-

**Hirotoshi ISHIWATARI, M.D., PhD**

(Fourth Department of Internal Medicine, Sapporo Medical University School of Medicine)

**[Objectives]** In terms of the duration of pain relief, EUS-CPN using ethanol provides limited benefit. CT carried out immediately following EUS-CPN often reveals a distribution of neurolytic agent that is broader than the celiac plexus. This distribution may contribute to insufficient effect, and a solution for this problem is the use of neurolytic agents with high viscosity. Phenol is a common neurolytic agent and appreciably soluble in water. Glycerol, however, exhibits high viscosity and is commonly used for epidural block therapy. Consequently, we applied phenol in combination with glycerol to EUS-CPN.

**[Methods]** To define the appropriate concentration of glycerol, we designed a concentration escalation study of glycerol (0, 30, and 60 %) with the concentration of phenol fixed at 7 %. EUS-CPN was performed by injecting a 20ml dose of phenol-glycerol containing 10% contrast media at the base of the celiac axis in one puncture. To evaluate neurolytic spread, CT was performed following the procedure. The efficacy of pain relief was also evaluated based on the NRS.

**[Results]** Nine patients with advanced pancreato-biliary cancer were included in this study. EUS-CPN was successfully performed without complication in all patients. By evaluating the area occupied by contrast medium in CT, we observed that higher concentrations of glycerol were associated with denser accumulation of contrast around the celiac trunk. Thus, the 60% glycerol was considered optimal for this procedure.

**[Conclusion]** The area of contrast at the site of the celiac plexus on CT indicates a precise delivery of phenol-glycerol (60% glycerol).

## Invited Speaker

• **Hiroki Sakamoto, M.D., PhD**

(Kinki Univ. Japan)



### CURRICULUM VITAE

Department of Gastroenterology and Hepatology, Kinki university Faculty of Medicine, Japan. I am assistant professor at the Department of Gastroenterology and Hepatology, Kinki university Faculty of Medicine and graduate school of medicine, got medical degree in Japan in 2000 and earned PhD in 2006.

My clinical and research interests include diagnostic and therapeutic pancreaticobiliary endoscopy and endoscopic ultrasound (EUS) and contrast harmonic EUS. Especially, I am specialized in EUS guided plexus neurolysis and published articles. I recently reported EUS-guided broad plexus-neurolysis over the superior mesenteric artery using a 25 gauge needle. I have been given some awards: best abstract award UEGW in 2007, 2008, and 2009, Japan ultrasound society in 2010, and young investigate award APDW in 2012.

## EUS-guided gallbladder drainage

**Hiroki Sakamoto, M.D., PhD**

(Department of Gastroenterology and Hepatology, Kinki university Faculty of Medicine, Japan.)

Endoscopic ultrasound (EUS)-guided transluminal drainage techniques are rapidly gaining acceptance as effective methods of managing a variety of conditions, eg, pseudocyst drainage, hepatogastrostomy, bilioduodenostomy, and pancreatogastrostomy. Although laparoscopic cholecystectomy is the standard treatment for cholecystitis including cholecystolithiasis, endoscopic ultrasound (EUS)-guided cholecystectomy is an alternative treatment for patient at high surgical risk. Until now, we had reported on using the fistula created by the EUS-guided cholecystectomy to remove gallstone for successful radical treatment of cholecystolithiasis without cholecystectomy. Also, we had reported here a patient who underwent EUS-guided gallbladder drainage for acute cholecystitis caused by covered metallic stent placement. Here, we describe EUS-guided gallbladder drainage technique, technical feasibility, and outcome of EUS-guided gallbladder drainage in our institution.



## Invited Speaker

### • Hironari Kato, M.D., PhD

(Okayama Univ. Japan)



#### CURRICULUM VITAE

Dr. Hironari Kato is Assistant Professor, Department of Gastroenterology and Hepatology, Graduate School of Medicine, Okayama University.

He is both interventional-endoscopist and oncologist in the pancreato-biliary field. He belongs to Japanese Society of Internal Medicine and Gastroenterology, American and Japanese Endoscopic Society, and Japanese Biliary and Pancreatic Society. His main interest is biliary stenting for malignant or postoperative bile duct strictures.

### Endoscopic multiple deployment of metallic stents is feasible and effective for the patients with unresectable hilar biliary strictures.

**Hironari Kato, Shinichiro Muro, Yasuhiro Noma, Naoki Yamamoto, Shigeru Horiguchi, Ryo Harada, Koichiro Tsutsumi, Hiroyuki Okada, Kazuhide Yamamoto**

(Departments of Gastroenterology and Hepatology, Okayama University Graduate School of Medicine and Dentistry, and Pharmaceutical Sciences, Okayama, Japan.)

**Objective:** The management of jaundice and cholangitis is associated with the prognosis of the patients with unresectable hilar biliary strictures (HBS). We performed endoscopic multiple deployment of metallic stents (MS) for these patients. We evaluated the efficacy and long term outcomes of the patients receiving endoscopic multiple deployment of MS due to unresectable HBS. **Methods:** Between April 2004 and December 2012, 95 consecutive patients received endoscopic multiple deployment of MS using partial stent-in-stent method. If the deployment only via the transpapillary route was difficult, we used the Rendezvous technique. Sixty-six of 95 patients (69.5%) received chemotherapy after or before stent deployment. We investigated success rate, survival, MS patency, and complications. **Results:** Successful deployment was achieved in all patients. The procedure was successfully completed only via the transpapillary route in 86 patients (90.5%). In the remaining nine patients (9.5%), a Rendezvous technique was employed. The overall median survival time was 6.9 months, and overall median patency time was 4.6 months. There was no significant difference in the patency between the patients with and without chemotherapy. However, in the chemotherapy group, the median patency time in disease control group (n=43, 65% (43/66)) was significantly longer than that in progressive disease group (n=23, 35% (23/66)) (P=0.0012). Acute complications and MS obstruction were noted in 13 patients (13.7%) and 55 patients (57.9%), respectively. **Conclusions:** Endoscopic multiple deployment of MS using partial stent-in-stent method is feasible and effective for the patients with unresectable HBS.

## Invited Speaker

• **Masaaki Shimatani, M.D., PhD**

(Third Department of Internal Medicine, Kansai Medical University, Osaka, Japan)



### CURRICULUM VITAE

Education:

1996-1998 Faculty of Medicine, Kansai Medical University,  
2006 awarded Ph Degree of Medical Science from Kansai Medical University

Teaching and Research Appointments:

2004-2007 Assistant Professor, Kansai Medical University  
2004 Board Certified in The Japanese Internal Medicine  
2004 Board Certified in Japan Gastroenterological Endoscopy society  
2005 Board Certified in The Japanese Society of Gastroenterology  
2011 Board Certified in The Japanese Gastroenterological Association  
2011 Board Certified in The Japanese Biliary Association  
2013 Board Certified The Japanese Association for Capsule Endoscopy  
2008-present Associate Professor, Kansai Medical University

Councilor:

The Japanese Society of Gastroenterology (Kinki District) Japan Gastroenterological Endoscopy Society

The Japanese Gastroenterological Association

Diagnostic and therapeutic ERCP using a short double balloon endoscope (DB-ERCP) in patients with altered gastrointestinal anatomy



## Diagnostic and therapeutic ERCP using a short double balloon endoscope (DB-ERCP) in patients with altered gastrointestinal anatomy

Masaaki Shimatani, MD, Makoto Takaoka, MD, Kazuichi Okazaki, MD

(Third Department of Internal Medicine, Kansai Medical University, Osaka, Japan)

### Background:

ERCP is technically challenging in patients with altered gastrointestinal anatomy. With a conventional endoscope, ERCP was very difficult for the patients with altered gastrointestinal anatomy. However, a recently introduced double balloon enteroscope (DBE) has made ERCP possible for these patients. Especially, ERCP was more difficult for patients with Roux-en-Y reconstruction.

Objective: Because diagnostic and therapeutic interventions for the pancreato-biliary system in previously operated patients by conventional endoscopes are difficult, we described our experience and data of ERCP with a short type double balloon enteroscope (DBE) in these patients.

Patients and Methods: Between February 2006 and February 2013, we performed ERCP with the use of a short type DBE in 269 patients with various anatomic variations (473 procedures; 248 procedures (141 patients) for Roux-en-Y reconstruction (R&Y), 95 procedures (60 patients) for Billroth II gastrectomy (BII), 65 procedures (31 patients) for pancreatoduodectomy (PD), 40 procedures (21 patients) for pylorus preserving pancreaticoduodenectomy (PpPD), and 25 procedures (16 patients) for others), and evaluated the technique.

Result: Deep insertion of the short DBE to the ductal anastomosis or papilla was successful in 463 of the 473 procedures (97.9%). The success rate was 97.2% (241/248) for R&Y, 100% (95/95) for BII, 98.5% (64/65) for PD, 95.0% (38/40) for PpPD, and 100% (25/25) for others. Deep biliary cannulation was successful in 440 of the 463 procedures (95.0%). The success rate was 97.1% (234/241) for R&Y, 93.7% (89/95) for BII, 98.4% (63/64) for PD, 97.4% (37/38) for PpPD, and 96.0% (24/25) for others. Therapeutic intervention was achieved in all of the 440 procedures of successful deep cannulation (100%). Complications occurred in 20 of the 473 procedures (4.2%) (20 procedures; 11 procedures for R&Y, 7 procedures for BII and 2 procedures for PD), including perforation (12 procedures; retroperitoneal perforation (n=3), post ES perforation (n=3), intestinal perforation (n=5), and subcutaneous emphysema with pneumothorax (n=1)), laceration (n=4), acute pancreatitis (n=3), and carbon dioxide narcosis (n=1). Although two patients (one with intestinal perforation and the other with juxtrapapillary duodenal diverticula perforation) required urgent surgery, the other 18 patients were managed successfully with conservative treatments, including nothing per mouth, placement of nasojejunal tube, endoclip closure and placement of chest tube. Although severe pancreatitis occurred in one patient, the patient recovered with conservative treatments.

Conclusions: ERCP by a short type DBE is highly effective and safety in patients with altered gastrointestinal anatomy, especially in patients with Roux-en-Y reconstruction.

## Invited Speaker

• **Kei Ito, M.D., PhD**

(Department of Gastroenterology Sendai City Medical Center, Miyagi, Japan)



### CURRICULUM VITAE

Kei Ito was born in Tokyo, Japan, in 1971. He received the medical degree and the Ph. D degree from the Tohoku University at Sendai city, in 1996 and 2010, respectively. Since 1998, he begun his career at Sendai City Medical Center as an expert endoscopist in the field of pancreatobiliary diseases. Dr. Ito is a member of lots of medical societies including the Japan Gastroenterological Endoscopy Society (JGES), American Society of Gastrointestinal Endoscopy (ASGE), and so on. He was awarded the JGES prize in 2005. Up to 2012, he wrote more than 100 original and review articles regarding diagnosis and therapy of pancreatobiliary diseases. He lives happily with his wife and three children in Sendai City suburb.

## Endoscopic papillectomy for ampullary neoplasm

**Kei Ito, M.D., PhD**

(Department of Gastroenterology Sendai City Medical Center)

A Whipple procedure has long been the standard treatment for ampullary neoplasm. Recently, treatment options have increased with the development of several therapeutic techniques such as endoscopic papillectomy (EP).

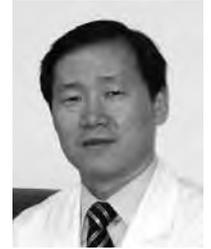
Since neither lymphatic permeation, vascular invasion, nor lymph node metastasis is observed in patients with ampullary cancer limited to the mucosa, EP of such tumors without ductal infiltration into the pancreatic/ bile duct can be justified as radical treatment. For its application in patients with ampullary neoplasms, accurate pretreatment staging is indispensable. EUS is useful for differential diagnosis as well as detection of periampullary tumors. Although intraductal US of the bile duct tends to result in overestimation of tumor staging in cases of ampullary neoplasm, it can provide useful information for making therapeutic decisions, especially in cases appropriate for EP. While the technical success rate of EP is high, the complication rate and recurrence rate are not as low as a satisfactory level. Pancreatic duct stenting after EP is expected to contribute to prevention of post-EP pancreatitis. There is no consensus regarding the mode of resection current nor the need for addition of biliary/ pancreatic sphincterotomy and biliary stenting.

EP has been reported to be useful in selected patients with ampullary neoplasms. Data on further long-term follow-up after EP are awaited.



## Faculty Abstract

### EUS-guided treatment for pancreatic tumor



**Dong-Wan Seo, M.D., PhD**

(Department of gastroenterology, Asan Medical Center, University of Ulsan College of Medicine)

Endoscopic ultrasound (EUS) is a very useful modality for the diagnosis and staging of pancreatic masses. With the advent of EUS-guided fine-needle aspiration technology, this modality has made a tremendous leap from imaging modality to histologic diagnosis and therapeutic intervention. EUS offers high-resolution images of and unparalleled access to the pancreas.

After locating the tip of the echoendoscope in the duodenum or stomach, several drugs or local treatment modalities can be delivered directly into the pancreas. EUS-guided ethanol lavage with/without paclitaxel injection has been tested for the treatment of cystic tumors of the pancreas, with complete resolution of cystic tumor being observed in up to 70-80% of patients. The efficacy and safety were proven by several trials. Possible complications are abdominal pain, pancreatitis, splenic or portal vein thrombosis. Ethanol injection is also performed for the management of solid neuroendocrine tumors of the pancreas and showed variable results. The development of image-guided radiation therapy has been a major advancement in the palliation of pancreatic cancer. For this treatment, EUS can help fiducial placement into the tumor or peritumoral area. For control of cancer related pain, we can perform EUS guided celiac plexus neurolysis after accurate visualization of celiac take-off from the aorta. Diverse types of EUS-guided injections have also been investigated for the treatment of pancreatic cancer. An activated allogenic mixed lymphocyte culture (Cytoimplant) was injected in patients with advanced pancreatic cancer. A replication-deficient adenovirus vector carrying the tumor necrosis factor-alpha gene was also delivered intratumorally by EUS. ONYX-015 is an oncolytic attenuated adenovirus that exhibits replication preferentially in malignant cells, causing cell death, and this has also been injected into pancreatic cancers under EUS guidance. EUS-guided local ablation therapies such as radiofrequency ablation, photodynamic therapy, and brachytherapy are also under investigation. EUS-guided fine-needle injection for various solid or cystic lesions is a rapidly expanding field and will play one of the key roles for the management of pancreatic tumors.

## Faculty Abstract

### EPLBD – current status



**James Lau, M.D., PhD**

(currently Director to Endoscopy Center and Professor to Surgery  
at the Prince of Wales Hospital to the Chinese University)

Endoscopic papillary large balloon dilation (EPLBD) involves an initial small endoscopic biliary sphincterotomy followed by balloon dilation using a balloon varying from 12 -20 mm in diameter to remove large or difficult bile duct stones. The technique has the theoretical advantages over endoscopic sphincterotomy (ES) or endoscopic balloon sphincter dilation alone that stone extraction becomes more efficient. Risk of bleeding and perforation would be minimized with a small sphincterotomy. The biliary sphincterotomy also separates the bile duct sphincter from that of the pancreatic duct, controls the direction of sphincter disruption following balloon dilation and reduces trauma to the pancreatic orifice. A review of 1292 cases [1] published in the literature showed a 98% success rate in removal of bile duct stones in a median session of a single endoscopy session. Mechanical lithotripsy (ML) was required in 9.3% of patients. Adverse events occurred in 5% of patients (pancreatitis 2.8%, bleeding 1.2%, perforation 0.2% and others 0.9%). There have been four published randomized controlled studies comparing EPLBD to ES in patients with large bile duct stones. The first study [2] randomized 200 patients and reported no significance differences in the rates of stone clearance, complication and use of mechanical lithotripsy (8 vs. 9%). The mean stone size was not reported. The second randomized controlled trial compared EPLBD to ES and ML in 90 patients with stone size of 12-20 mm. The stone clearance rate was 97.7% and 91.1% respectively. The study was terminated because of a higher rate of cholangitis in those after ES [3]. In the third study [4], patients with stones greater than or equal to 15 mm were randomized and no significant difference in clinical outcomes was reported. Unfortunately, the study size was small. We published a randomized trial that included 151 patients with bile duct size of at least 13 mm and large stones [5]. Morbidities after either ES or EPLBD were similar (10.3 vs. 6.8%). A lower rate in the ML use was seen with EPLBD (28.8% vs. 46.2%, P=0.028). The studies suggest that stone extraction following EPLBD is easier without increasing complications when compared to ES. The technique of EPLBD has not been standardized. The maximum size of balloon that can be used and the duration of inflation are unclear. In an analysis of a large cohort of 946 patients who underwent EPLBD [6], over- and rapid inflation in the presence of distal bile duct strictures led to perforations. Cirrhosis, full ES and stone size  $\geq 16$ mm were associated with an increased risk of bleeding. Balloon size  $\geq 14$  mm was associated with less pancreatitis. It has been suggested that safe EPLBD would entail exclusion of those with a concomitant stricture, avoid a full ES, slow and gradual balloon inflation, balloon inflation below size of distal bile duct and liberal use of ML.

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## Faculty Abstract

### New paradigm for distal stenting Benign Biliary Stricture



**Sundeep Lakhtakia, M.D., PhD**

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Benign Biliary Stricture (BBS) can occur in variety of medical conditions, each having different natural course and management strategy. Differentiating distal BBS from malignant distal biliary stricture is often clinically challenging, often requiring a variety of investigating tools - cross-sectional imaging (high resolution CT, MRCP), ERCP with brushings and / or cholangioscopy, and EUS with FNA . The clinical presentation of a biliary stricture can vary, depending on the severity of the biliary obstruction. It can range from sub-clinical disease on one end of the spectrum (with mild abnormality in liver function tests alone) to complete biliary obstruction with resultant jaundice on the other end, with or without cholangitis. In some patients, symptoms may not develop until years after the initial insult, with delayed presentation most commonly seen with ischemic causes of bile duct injury.

The most common cause of BBS is surgical injury to the bile duct, particularly during cholecystectomy. Such biliary strictures are more often located in mid or upper CBD. Distal BBS occur due to inflammatory injury to the biliary duct. The common cause of such distal BBS include chronic pancreatitis, CBD stone, primary sclerosing cholangitis, duodenal ulcer and auto-immune cholangiopathy. Rarely, infections like pancreato-biliary tuberculosis can present as pliable distal CBD stricture.

The endoscopic management of distal CBD stricture includes - placing multiple side-by-side, large-bore plastic stents has been reported to improve long term outcomes of BBS compared with placing 1 or 2 more stents. This technique requires aggressive stricture dilation with balloon before placing multiple plastic stents. In biliary stricture occurring in post operative setting, placing multiple plastic biliary stents for benign (non-hilar) strictures after 6 months of surgery is associated with a lower rate of symptomatic stent occlusion and a longer occlusion-free survival.

Self Expanding Metal Stents (SEMS) have been used in recent past in distal BBS by providing large caliber continuous dilation of CBD. SEMS have inherent property to expand in diameter at least 3 times that of standard 10-Fr plastic stents. Moreover SEMS have the advantage of smaller pre-deployment delivery system that does not require aggressive stricture dilation before stent placement. Overall SEMS confer the advantage of requiring one or few procedures to achieve the same end result, compared to use of multiple plastic stents in BBS. SEMS are available as uncovered, partially covered (PCSEMS) or fully covered (FCSEMS) variety.

Uncovered SEMS have a median patency of about one and half year with re-interventions being frequently required, to manage stent occlusion from high rates of reactive tissue hyperplasia. In addition, such naked SEMS embed into the bile duct wall making them virtually irremovable. These factors limit the use of uncovered SEMS for long-term treatment of BBS.

Partially covered SEMS (PCSEMS) are uncovered at both the proximal and distal ends of the stent. This supposedly decreases the rate of stent migration, but increases the risk of tissue embedment at ends; the latter may lead to difficulty in removing the PCSEMS.

Fully covered SEMS (FCSEMS) are designed to prolong the duration of patency by preventing occlusion from reactive tissue hyperplasia and preventing in growth. Removal of FCSEMS is reasonably easy because of no embedding of the metal wires into the bile duct wall. Treatment of BBS with FCSEMS is successful at the rate of about 80 - 90%. However, studies of FCSEMS so far have been limited by short follow-up, which limits confirmation of a durable response to stenting. High rates of stent migration have been reported with FCSEMS, ranging from 5- 33%. This has caused clinical concern because of theoretical higher risk of biliary re-obstruction, bowel obstruction, or perforation compared with plastic stents.

## Faculty Abstract

### EUS-guided pancreatic intervention



**Takao Itoi, M.D., PhD**

(Department of Gastroenterology and Hepatology, Tokyo Medical University)

Nowadays, endoscopic ultrasonography-guided (EUS)-guided pancreatic interventions have been performed. It included pancreatic pseudocyst drainage, pancreatic duct drainage, celiac plexus block, and anti-tumor therapies. Here I would like to review EUS-guided pancreatic interventions.



## Faculty Abstract

### Japanese multicenter experience of endoscopic necrosectomy for infected walled-off pancreatic necrosis: The JENIPaN study



Ichiro Yasuda, M.D., PhD

(First Department of Internal medicine, Gifu University Hospital)

#### ABSTRACT

**Objective:** Only a few large cohort studies have evaluated the efficacy and safety of endoscopic necrosectomy (EN) for infected walled-off pancreatic necrosis (WON). Therefore, we conducted a multicenter, large cohort study to evaluate the efficacy and safety of EN and examine the procedural details and follow-up after successful EN.

**Methods:** A retrospective review was conducted in 16 leading Japanese institutions for patients who underwent EN for infected WON between August 2005 and July 2011. The follow-up data were also reviewed to determine the long-term outcomes of those procedures.

**Results:** Of 57 patients, 43 (75%) experienced successful resolution after a median of 5 sessions of EN and 21 days of treatment. Complications occurred in 19 patients (33%) during the treatment period. Six patients (11%) died, of whom 2 died because of multiple organ failure and 1 patient each died because of air embolism, splenic aneurysm, hemorrhage from a Mallory-Weiss tear, and an unknown cause. Of 43 patients with successful EN, recurrent cavity formation was observed in 3 patients during a median follow-up period of 27 months.

**Conclusions:** EN can be an effective technique for infected WON, requiring a relatively short treatment period. However, serious complications can arise, including death. Therefore, patients should be carefully selected, and knowledgeable, skilled, and experienced operators should perform the procedure. Further research into safer technologies is required in order to reduce the associated morbidity and mortality.

Masanori Nakashima, Tomohisa Iwai, Hiroyuki Isayama, Takao Itoi, Hiroyuki Hisai, Hiroyuki Inoue, Hironari Kato, Atsushi Kanno, Kensuke Kubota, Atsushi Irisawa, Hisato Igarashi, Yoshinobu Okabe, Masayuki Kitano, Hiroshi Kawakami, Tsuyoshi Hayashi, Tsuyoshi Mukai, Naohiro Sata, Mitsuhiro Kida, Tooru Shimosegawa

## Faculty Abstract

### A new guidewire for wire-guided cannulation



**Iruru Maetani, M.D., PhD**

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

According to the previous studies including a systematic review, the guidewire-assisted cannulation technique increases the primary cannulation rate and reduces the risk of post-ERCP pancreatitis. However, the sharp tip of conventional biliary guidewire is associated with adverse events such as trauma, bleeding, or perforation. In addition, a guidewire may be stuck when the tip of guidewire is passed through the tortuous in intra-duodenal biliary segment. We have been using a newly designed J-shaped tip guidewire featuring a strongly-flexed atraumatic tip with hydrophilic coating. Our preliminary experience with 50 cases of WGC using a J-shaped tip guidewire indicates that the primary success rate of selective biliary cannulation was 91 %, comparable to the results of previous studies with a conventional guidewire. The occurrence rate of PEP was 5.5% (3/55). There was no other adverse events including perforation or bleeding. A newly designed J-shaped tip guidewire may be feasible for wire-guided cannulation and presumably beneficial for reducing serious adverse events. However, a comparison with a conventional guidewire is warranted.

Of 50 patients with successful cannulation, 41 patients obtained successful cannulation within 5 min and remaining 9 patients obtained successful cannulation from 5 min to 10 min. Five patients with unsuccessful biliary cannulation ultimately obtained , biliary cannulation with some other methods. Within successful cases of 10 minutes, The time to selective biliary cannulation was 75 second, the number of attempts for pr selective biliary cannulation was 2.0, the number of accidental pancreatic duct insertion was 1.0. The occurrence rate of PEP was 5.5% (3/55). All pancreatitis were successfully managed with conservative treatment. There was no other adverse events including perforation or bleeding. Conclusion: A newly designed J-shaped tip guidewire may facilitate selective biliary cannulation for ERCP. However, it must be necessary to conduct a large prospective randomized control trial to verify the performance of this guidewire in comparison with a standard guidewire.

Method: In this study, between September 2011 and October 2012, we performed ERCP using a J-shaped tip guidewire (RWHJ-2545A, 0.025-inch; Paiolax Medical Devices, Inc., Kanagawa Japan) which tip was bent to attain a 1-mm radius, and a hydrophilic coating was applied starting 50 mm from the tip. The shaft was covered by a sheath and jacket coated with water-repellent material. The primary endpoint was the success rate of cannulation within 10 min. The secondary endpoints were as follows: (1) time to selective biliary cannulation, (2) number of attempts for selective biliary cannulation, (3) number of accidental pancreatic duct insertion, (4) the rate of the occurrence of PEP. Data is presented as the median.

Results: The primary success rate of selective biliary cannulation was 91 % (50/55). Of 50 patients with successful cannulation, 41 patients obtained successful cannulation within 5 min and remaining 9 patients obtained successful cannulation from 5 min to 10 min. Five patients with unsuccessful biliary cannulation ultimately obtained , biliary cannulation with some other methods. Within successful cases of 10 minutes, The time to selective biliary cannulation was 75 second, the number of attempts for pr selective biliary cannulation was 2.0, the number of accidental pancreatic duct insertion was 1.0. The occurrence rate of PEP was 5.5% (3/55). All pancreatitis were successfully managed with conservative treatment. There was no other adverse events including perforation or bleeding. Conclusion: A newly designed J-shaped tip guidewire may facilitate selective biliary cannulation for ERCP. However, it must be necessary to conduct a large prospective randomized control trial to verify the performance of this guidewire in comparison with a standard guidewire.



## Faculty Abstract

### A SOCIAL PROGRAM FOR DIAGNOSIS OF THE STAGE 0 PANCREATIC CARCINOMA IN A RURAL DOCTOR'S ASSOCIATION

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**Introduction:** Despite advances in imaging techniques, pancreatic carcinoma (PC) remains the fifth leading cause of cancer related mortality in Japan. Detection of PC at an early stage with curative surgery is the approach with the potential to significantly improve long-term patient outcome.

**Aim:** To establish a social program for diagnosis of the small pancreatic cancer in a rural doctor's association.

**Methods:** In 2007, Onomichi Medical Association (OMA) tried to start a social program for diagnosis of the small pancreatic cancer. Specialized doctors for pancreatic cancer (SDPC) in medical centers enlightened practicing doctors about risk factors of PC, abnormal findings of ultrasonography (US), or elevated serum pancreatic enzymes.

Simultaneously, if practicing doctors experienced the patient with these previous problems, they aggressively consulted SDPC each other. SDPC firstly performed computed tomography (CT), magnetic resonance pancreatocholangiography (MRCP), and endoscopic ultrasonography (EUS). If these imaging examinations demonstrated the irregular stenosis in the main pancreatic duct (PD), or the dilatation in the branch of PD, SDPC performed endoscopic retrograde pancreatography (ERP). In the patients with irregular stenosis diagnosed by ERP, SDPC performed the repeated cytology using pancreatic juice collected by endoscopic naso-pancreatic drainage (ENPD).

**Results.** From January 2007 to September 2011, a total of 1616 cases were consulted from SDPC to Onomichi General Hospital. Out of these patients, CT was performed in 1420 cases, MRI was performed in 1181 cases, and EUS was performed in 952 cases. Among these cases, ERCP was performed in 470 cases with the irregular stenosis in the main PD, or the dilatation in the branch of PD. ENPD and the repeated cytology using pancreatic juice were performed in 40 cases. Finally, 18 cases were proved as adenocarcinoma. After surgical operations, 10 cases out of 18 were diagnosed as the stage 0 PC histopathologically.

**Conclusions.** To detect of early stage of PC, the relationship between SDPC in medical centers and practicing doctors is very important. ENPD and repeated cytology using pancreatic juice also play important roles in diagnosis of the early stage of PC.

## Faculty Abstract

### Stent selection for EUS-guided biliary drainage: Best is yet to come?



**Yousuke Nakai, Hiroyuki Isayama, Kazuhiko Koike**

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

EUS-guided biliary drainage (EUS-BD) is increasingly performed in malignant biliary obstruction (MBO) after failed ERCP. There are two approaches in EUS-BD: EUS-HGS (hepaticogastrostomy) and EUS-CDS (choledochoduodenostomy). Though EUS-CDS is technically easier due to the anatomical proximity of the duodenum and the common bile duct, EUS-HGS is the treatment of choice in cases who need EUS-BD due to gastric outlet obstruction (GOO) or altered GI anatomy. The advantages of EUS-HGS are one-step internal drainage without external drainage and diversion of biliary drainage from gastrointestinal luminal obstruction in cases with GOO. One of the problems of EUS-BD is lack of the dedicated devices, and bile leak and stent migration are the unsolved complications. The use of covered self-expandable metallic stents (cSEMS) can prevent bile leak but cSEMSs are prone to migration. During EUS-HGS procedure, the distance between the stomach and the liver can be long during the procedure due to the lack of adhesion, which makes accurate stent positioning difficult and sometimes causes migration. Several types of fistula dilation method (bougie, balloon or electric cautery dilator) or several types of cSEMS (length of uncovered portion, foreshortening, design or length of SEMS) have been clinical used and increasing data have been available from the initial experiences. Clinical factors causing a long distance between the stomach and liver, or stent migration, will be discussed for the better stent selection and positioning and for the future development of dedicated devices for EUS-BD.



## Faculty Abstract

### **Efficacy of high negative pressure suction in EUS-FNA of a pancreatic mass**

**Masaki Kuwatani, Hiroshi Kawakami, Taiki Kudo, Kazumichi Kawakubo, Yoko Abe,  
Naoya Sakamoto**

(Department of Gastroenterology and Hepatology, Hokkaido University)



**Background:** EUS-FNA has been developed for diagnosis of a pancreatic mass. However, a standard suction method for EUS-FNA has not been established.

**Aim:** To clarify the efficacy of EUS-FNA with high negative pressure suction for acquisition of tissue of a pancreatic mass.

**Patients and Methods:** We enrolled and randomized 90 patients to two groups: high negative pressure suction [HNP] and normal negative pressure suction [NNP] groups. Between May 2012 and March 2013, patients underwent EUS-FNA with a 25 G needle and HNP using a 50 ml syringe or NNP using a 10 ml syringe. Items examined in this study were: 1) patient characteristics, 2) acquisition rate of tissue and diagnostic accuracy, 3) scores of cellularity (0, insufficient – 5, high quality) of the obtained samples.

**Results:** 1) The patients included 52 males and 38 females with an average age of 67.0 yrs. Seventy-nine patients had carcinomas, 5 patients had chronic pancreatitis, 4 patients had a neuroendocrine tumor, and 2 patients had others in the final diagnosis. 2) Acquisition rates of tissue were 90% in HNP and 72.2% in NNP. Diagnostic rates of malignancy were 83.8% in HNP and 62.5% in NNP. 3) Cellularity scores were 3.59 and 2.96 in HNP and NNP, respectively.

**Conclusion:** HNP contributes to improvement in the acquisition of tissue in EUS-FNA of a pancreatic mass.

## Faculty Abstract

### Interventional EUS

#### **EUS-guided pancreatic ductal drainage (Techniques and literature review)**



**Fumihide Itokawa**  
(Tokyo medical university)

#### Abstract

To date endoscopic ultrasonography-guided (EUS)-guided pancreatic interventions reports have been increasing. Especially endoscopic retrograde pancreatography failure cases, it seems to be the substitution therapy. We show EUS-guided pancreatic duct (PD) access techniques and outcomes. EUS-guided PD intervention is divided into two types, antegrade techniques and rendezvous techniques, following EUS-guided pancreatography. In the antegrade technique, pancreaticoenterostomy is carried out by stent placement between the PD and the stomach, duodenum, or jejunum. Transenteric antegrade PD stenting is conducted by stent placement, advancing anteriorly into the PD through the pancreatic tract. The rendezvous technique is carried out by using a guidewire through the papilla or anastomotic site for retrograde stent insertion. In terms of EUS-guided PD stenting, 11 case reports (75 patients 35 normal anatomy, 40 altered anatomy) have been published. The technical success rate was greater than 70%. Early adverse events, including severe hematoma and severe pancreatitis, occurred in seven (63.6%) of 11 reports. Regarding the rendezvous technique, 12 case reports (52 patients 22 normal anatomy, 30 altered anatomy) have been published. The technical success rate ranged from 25% to 100%. Once stents were placed, all patients became free of symptoms. Early mild adverse events occurred in four (36.4%) of 11 reports. In conclusion, although it can be risky because of possible serious or even fatal adverse events, including pancreatic juice leakage, perforation and severe acute pancreatitis, EUS-PD access seems to be promising for treating symptomatic pancreatic diseases caused by PD stricture and pancreaticoenterostomy stricture.



## Faculty Abstract

### A fully covered self-expanding metallic stent customized for cystogastrostomy

**Natsuyo Yamamoto<sup>1</sup>, Hiroyuki Isayama<sup>1</sup>, Hiroshi Kawakami<sup>2</sup>,  
Naoki Sasahira<sup>1</sup>, Kazuhiko Koike<sup>1</sup>**

(1.Department of Gastroenterology, Graduate School of Medicine,  
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2.Department of Gastroenterology, Graduate School of Medicine, Hokkaido University, Sapporo, Japan)



#### Objective

Endoscopic transluminal treatment of pancreatic fluid collection(PFC) has been reported as an effective alternative approach to surgical treatment. Recently some reported the efficacy of fully covered self-expanding metallic stent (FCSEMS) customized for cystogastrostomy. A wide, short stent with an anti-migration system (Nagi stent, Taewoong medical, Korea) has been introduced.

#### Methods

Between 2011 and 2013, 11 patients underwent who underwent endoscopic treatment of PFC (6 with pseudocyst and 5 with walled-off necrosis) with this FCSEMS in 3 hospitals. An FCSEMS was deployed after endoscopic ultrasound-guided puncture via the transgastric route. Irrigation and necrosectomy was performed at the discretion of the endoscopist. Technical and clinical success rate, complications, and removability were evaluated.

#### Results

The FCSEMS was inserted successfully in all cases (11/11, 100%). Clinical success was achieved in 9 of 11 cases (81.8%). No early complications associated with the procedure were observed. Late complications were observed in 1 cases (bleeding). Asymptomatic migration was observed in one case. Endoscopic necrosectomy via the FCSEMS was performed 5 patients. The FCSEMS was removed without any complications in all 8 cases where it was attempted after the procedure had been completed (100%).

#### Conclusion

The endoscopic approach using this new FCSEMS is feasible for the treatment of PFC.

## Faculty Abstract

### New paradigm for distal stenting

### Antireflux stent: Mechanical gatekeeper of the sacred duct



**Tsuyoshi Hamada**

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

**Objective:** Our multicenter retrospective study showed duodenal tumor invasion is a risk factor for early dysfunction of self-expandable metal stent (SEMS) for distal malignant biliary obstruction (*Gastrointest Endosc* 2011;74:548-55), and the enhanced duodenobiliary reflux is a key contributor for this complication. To overcome this problem, we conducted a prospective pilot study to evaluate a newly designed antireflux metal stent (ARMS) as a reintervention for SEMS occlusion.

**Methods:** Patients with nonresectable distal malignant biliary obstruction were included who experienced prior SEMS occlusion due to sludge or food impaction between March, 2010 and October, 2012 at two Japanese tertiary care centers. The occluded SEMSs were endoscopically removed, if possible, and subsequently replaced by an ARMS. We evaluated the technical success rate and complications of ARMS and compared the time to occlusion of ARMS with that of prior SEMS.

**Results:** In total, 17 patients were enrolled in this study. An ARMS was successfully placed in all patients in a single procedure. No procedure-related complications were observed. Stent occlusion occurred in two patients (12%); one by sludge, the other by an unknown cause. Stent migration occurred in four patients (24%). Stent patency rate of ARMS was higher than that of prior SEMS (87% vs. 42% in 3 months and 87% vs. 28% in 6 months).

**Conclusion:** The present ARMS provides a technically feasible, safe, and effective reintervention for SEMS occlusion due to sludge or food impaction. However, high rate of stent migration was problematic and anti-migration system should be considered to further improve the outcomes of ARMS.



## Free Paper : Oral Session

### A multicenter, prospective, randomized, controlled trial to determine the efficacy of endoscopic sphincterotomy prior to self-expandable metallic stent placement for unresectable pancreatic cancer patients: ESSENCE trial in Hokkaido

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9 Department of Gastroenterology, Seitetsu Memorial Hospital)

**OBJECTIVE:** To examine the necessity of endoscopic sphincterotomy (ES) prior to endoscopic self-expandable metal stent (SEMS) placement for distal biliary obstruction in patients with unresectable pancreatic cancer.

**DESIGN:** A randomized controlled trial conducted at 25 secondary or tertiary referral hospitals in Hokkaido, Japan.

**RESULTS:** A total of 200 patients were included and allocated equally into two groups, non-ES and ES. Two patients in the non-ES group and four patients in the ES group, who could not undergo biliary cannulation, were excluded; consequently, 98 and 96 patients in the non-ES and ES groups, respectively, were analyzed. The procedural time of SEMS placement was significantly shorter in the non-ES group than the ES group (387.9±203.3 sec vs. 576.7±310.3 sec, P<0.001). The rates of early (30 days) complications including post-procedural pancreatitis, bleeding, perforation, etc., in the non-ES group and ES group were similar (15.3% vs. 15.6%; 95% one-sided CI lower limit, -8.9%; P = 0.089 for noninferiority margin of 10%). Furthermore, the rate of late (>30 days) complications consisting of cholecystitis, pancreatitis, bleeding, and duodenal ulcer (3.1 vs. 2.1%), median time to SEMS dysfunction (not reached vs. 629 days), and overall survival time (median, 202 vs. 258 days) were not significantly different between the non-ES and ES groups.

**CONCLUSION:** ES had no effect on the incidence of complications, SEMS patency, and patient survival. Therefore, it may be unnecessary to perform ES prior to SEMS placement for distal biliary obstruction due to unresectable pancreatic cancer.

**Free Paper : Oral Session****Performance of Procore Needle (19 Gauge and 22 Gauge) for Endoscopic Ultrasound Fine Needle Biopsy****Ngui CS, Mesenas SJ , Ong WC, ,Kong CS, Tan D**

(Gastroenterology and Hepatology Department, Singapore General Hospital, Singapore)

**AIM**

Endoscopic ultrasound (EUS) fine needle biopsy (FNB) has become a valuable tool for diagnosis and staging of gastrointestinal and non-gastrointestinal lesions. Our aim is to describe the performance, accuracy and safety profile of 19G and 22G Procore needles (Cook Medical Inc, Limerick Ireland).

**METHODOLOGY**

We retrospectively reviewed patients referred to for EUS-FNB with 19G and 22G ProCore needles. Seventeen patients were identified with 24 lesions. EUS-FNB was performed with a convex array linear echoendoscope (Olympus, GF-UCT140-AL5, Japan) attached to Prosound 5/SSD-500 (Aloka Co. Ltd. Tokyo, Japan) ultrasound machine. Results were compared to surgical histopathology, or global clinical and radiological assessment and follow-up on non-operated cases.

**RESULTS**

EUS-FNBs were technically feasible in 21 (87.5%) cases. Clinical data of 21 lesions from 17 patients (14 male, 3 females) were included for analysis. Mean age of patients were  $63.6 \pm 10.6$  years, (range 39.2-75.6). Both 19G and 22G ProCore needle were used in 9 (42.9%) and 12 (57.1%) lesions. Mean size of lesion was  $29.2 \pm 12.8$  mm, (range 10.0-62.0 mm). Mean passes performed were  $2.3 \pm 1.2$  (range 1-5) with median of 3 passes. Three cases from 22G needle did not yield adequate tissue. No statistical significance in the type of needle used for sampling adequacy ( $p=0.229$ ). The sensitivity, specificity, positive predictive value and negative predictive value and accuracy for malignancy were 100.0%. No complication was noted.

**CONCLUSION**

The performance of EUS-FNB with 19G and 22G ProCore needle is an accurate and safe procedure in our center. Both needles were suitable for tissue procurement.



## Free Paper : Oral Session

### Can Early Double Guidewire Technique Facilitate Common Bile Duct Cannulation and Reduce Post ERCP Pancreatitis?

#### -Results of a Multicenter Prospective Randomized Controlled Trial: EDUCATION Trial-

Naoki Sasahira<sup>1</sup>, Hiroyuki Isayama<sup>2</sup>, Hiroshi Kawakami<sup>3</sup>, Yukiko Ito<sup>4</sup>, Saburo Matsubara<sup>5</sup>, Hirotohi Ishiwatari<sup>6</sup>, Minoru Uebayashi<sup>7</sup>, Rie Uchino<sup>8</sup>, Hiroshi Yagioka<sup>9</sup>, Osamu Togawa<sup>10</sup>, Nobuo Toda<sup>11</sup>, Naoya Sakamoto<sup>3</sup>, Junji Kato<sup>6</sup>, and Kazuhiko Koike<sup>2</sup>,  
on behalf of Japan EDUCATION study group

(1 Sempo Tokyo Takanawa Hospital, 2 The University of Tokyo, 3 Hokkaido University, 4 Japan Red Cross Medical Center, 5 Tokyo Metropolitan Police Hospital, 6 Sapporo Medical University, 7 Japan Red Cross Kitami Hospital, 8 Kanto Central Hospital, 9 JR Tokyo General Hospital, 10 International Medical Center, Saitama Medical University, 11 Mitsui Memorial Hospital, )

**Objective:** Double guidewire cannulation method (DGW) is one of the rescue techniques for wire-guided cannulation (WGC) during ERC. We hypothesized that early DGW at the first unexpected insertion of guidewire into MPD might facilitate CBD cannulation and reduce post ERCP pancreatitis (PEP), and conducted RCT of early DGW vs. repeated WGC.

**Methods:** All patients with naïve papilla for biliary intervention were primarily registered and those with unintentional insertion of guidewire into MPD were randomized. Initial standard WGC or subsequent randomized method was limited in 10 attempts and 10 minutes.

**Results:** A total of 707 participants were primarily enrolled. The successful cannulation into CBD on the first attempt was achieved in 334 patients with a PEP rate of 3.9%. After unintentional insertion of guidewire into MPD, 274 patients were randomized (137 patients in each group). Success rate of CBD cannulation within the limits was 75.2% and 70.1% in early DGW and repeated WGC ( $p=0.42$ ). The final cannulation rate was 97.8% and 97.1% ( $p=0.70$ ). PEP rate was 19.7% and 16.8% ( $p=0.64$ ). Among 98 patients with failed cannulation into both CBD and MPD within the first limits, 79 patients finally completed the planned therapeutic procedure with PEP rate of 15.3%. Overall final cannulation rate and PEP rate in total study population of 707 patients were 96.3% and 11.0%, respectively.

**Conclusion:** Early DGW neither facilitated CBD cannulation nor reduced PEP. Of all patients with WGC-ERC, only patients with successful CBD cannulation without unintentional GW insertion into MPD achieved a low rate of PEP.

**Free Paper : Oral Session****Comparison of the safety profiles of endoscopic papillary balloon dilation and sphincterotomy in young patients with CBD stones and gallstones**

**Hyun Jong Choi, Jong Ho Moon, Dong Choon Kim, Yu Ri Seo, Tae Hoon Lee, Sang-Woo Cha, Young Deok Cho, Sang-Heum Park, Sun-Joo Kim**

(Digestive Disease Center and Research Institute, Department of Internal Medicine, Soon Chun Hyang University School of Medicine, Bucheon and Seoul, Korea)

**Objectives:** Endoscopic biliary sphincterotomy (EBS) is can result in permanent loss of sphincter function. Moreover, its long-term complications are unknown, particularly in younger patients. Endoscopic papillary balloon dilation (EPBD) is an alternative procedure that preserves sphincter function, although it is associated with a higher risk of pancreatitis than is EBS. The aim of this study was to evaluate the safety and outcomes of EPBD with limited indications for removal of bile duct (BD) stones combined with gallstones in patients younger than 40 years.

**Methods:** Total 132 (age < 40 years) patients with known CBD stones combined with gallstones were enrolled. Sixty-two patients underwent 8–10-mm EPBD for extraction of BD stones. Seventy patients underwent EBS. The rates of BD clearance and post-ERCP complications were compared between two groups.

**Results:** Complete BD clearance was achieved in 98.4% (61/62) of the EPBD group and 100% (70/70) of the EBS group. Mechanical lithotripsy was required in 8.1% (5/62) of the EPBD group and 8.6% (6/70) of the EBS group. The early complication rates were 8.1% (5/62) (five pancreatitis; mild four, moderate one) in the EPBD group and 11.4% (8/70) (five (7.1%) pancreatitis; mild four, moderate one; two bleeding; one perforation) in the EBS group. The recurrence rates of BD stones were 1.6% (1/62) in the EPBD group and 5.7% (4/70) in the EBS group.

**Conclusions:** Endoscopic papillary balloon dilation is a safe and effective procedure for removal of BD stones combined with gallstones in young patients with a longer life expectancy.



## Free Paper : Oral Session

### Non-fluoroscopic common bile duct stenting for prompt symptomatic relief for choledocholithiasis during pregnancy

**Cheuk-Kay Sun MD**

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

**Objective:** To evaluate the feasibility of radiation- and sedative-free common bile duct (CBD) stenting for prompt symptomatic relief in pregnant women with choledocholithiasis.

**Methods:** Between March 2003 and March 2013, totally 5 pregnant patients of mean age  $29.4 \pm 5.6$  and gestational age  $20.4 \pm 9.1$  weeks with symptomatic choledocholithiasis receiving endoscopic common bile duct stenting at a single tertiary care center were retrospectively reviewed. Clinical presentations, procedural time, serum biochemical parameters, complications, and length of hospitalization were analyzed.

**Results:** Of all patients, upper abdominal pain with CBD dilatation was the most common presentation (100%) with a mean CBD diameter of  $1.1 \pm 0.2$  cm. Gallstones were noted in 4 patients (80%). No premedication was given for endoscopic biliary stenting except for one patient receiving a single dose of antispasmodic. Mean procedure time was  $16.3 \pm 15.7$  min. All patients achieved post-procedural symptomatic relief with serum total bilirubin levels decreased from  $2.5 \pm 1.0$  mg/dL to  $0.82 \pm 0.4$  mg/dL before and after the procedure, respectively ( $p=0.01$ ). One patient experienced post-stenting pancreatitis that subsided after conservative treatment, while other patients were complication-free. Endoscopic retrieval of CBD stones was performed after a mean period of  $9.8 \pm 5.6$  months after stenting. Mean hospitalization period was  $6.2 \pm 4.1$  days. Mean follow-up period was  $43.2 \pm 34.3$  months after uneventful discharge.

**Conclusion:** Radiation- and sedative-free CBD stenting with minimal manipulation may be a feasible therapeutic option for prompt symptomatic relief for symptomatic choledocholithiasis during pregnancy to minimize potential risks to the fetus.

**Key words:** Choledocholithiasis, pregnancy, biliary stenting

**Free Paper : Oral Session****A COMPARISON OF BILIARY STENT IN PANCREATIC CANCER PATIENTS WITH MALIGNANT BILIARY OBSTRUCTION DURING NEOADJUVANT CHEMORADIOTHERAPY : Plastic VS Metallic stent.**

**Hiroyuki Inoue<sup>1</sup>, Reiko Yamada<sup>1</sup>, Keiichiro Nojiri<sup>1</sup>, Katuhito Ninomiya<sup>1</sup>, Noriyuki Horiki<sup>2</sup>, Yoshiyuki Takei<sup>1</sup>**

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**BACKGROUND:** Neoadjuvant chemoradiotherapy (NCRT) for pancreatic cancer is increasingly being used. Neoadjuvant regimen in our institution would require 5 weeks of chemoradiotherapy, followed by a recovery period of an additional 4 to 6 weeks before surgery.

**Methods:** We retrospectively analyzed patients who received biliary stent placement between April 2006 and December 2012. Fifty-seven patients with locally advanced pancreatic cancer and biliary obstruction had stent placement (19 cases 8.5Fr, 15 cases 10Fr, 23 cases Metallic stent). A fully covered self-expandable metallic stent was used in metallic stent group. In 10Fr stent group and in metallic stent group, Endoscopic sphincterotomy (ES) was performed before stent placement, 8.5Fr group received stent placement without ES.

**RESULTS:** Stent occlusion occurred during NCRT 6 patients (31.5%) in 8.5Fr group, 6 patients (40%) in 10Fr group and 2 patients (8.7%) in metallic stent group. There was significant difference between PS group and SEMS group in occlusion rate. The median duration of stent patency in metallic stent group was statistically significant longer than in plastic stent group ( $P=0.049$ ). Cholecystitis occurred 1 patient (2.9%) in PS group and 5 patients (21.7%) in metallic stent group respectively ( $p=0.034$ ).

**CONCLUSION:** Plastic stents do not maintain patency during the required time for neoadjuvant chemoradiotherapy regimen. This study suggests that the plastic stent size does not affect occlusion rate, the duration of stent patency. Metallic stents placement may be an effective strategy. Larger study are required to confirm the optimal stent during neoadjuvant chemoradiotherapy for pancreatic cancer.



## Free Paper : Poster Session

### Ex Vivo Magnifying Endoscopic Observation of Non-Neoplastic Bile Duct Mucosa: Comparison of Endoscopic Findings with Histopathology

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**Objective:** Endoscopic findings of non-neoplastic bile duct mucosa using peroral cholangioscopy with narrow band imaging (NBI) have not yet been established. This is a fundamental study ex vivo to compare magnifying endoscopic findings and histopathological findings. **Methods:** 32 common bile ducts which were surgically resected were enrolled in this study. These specimens included non-neoplastic bile duct mucosa obtained from 32 patients. We cut each common bile duct open for ex vivo endoscopic observation of its mucosa. We used a magnifying endoscope (FH-260AZI or H-260Z; Olympus Medical Systems, Tokyo, Japan), and utilized both conventional white light imaging and NBI (CV-260SL processor, CVL-260SL light source; Olympus). After histological diagnosis, the 32 specimens were classified into two categories based on the absence or presence of histological inflammation. Non-inflammatory mucosa was assigned to group A and inflammatory mucosa was to group B. Then we examined the relationship between the magnifying endoscopic findings and microscopic histopathology. **Result:** 15 specimens of bile duct mucosa were classified as group A and 17 specimens as group B. In the 15 cases of group A, many oval-shaped, depressed areas and a fine, regular network of microvessels were observed using magnifying endoscopy. In the 17 cases of group B, we could not clearly see these findings. In all cases, we could see these findings more clearly when magnifying endoscopy with NBI was used. **Conclusion:** Oval-shaped, depressed areas and a fine, regular network of microvessels are the characteristic features of normal bile duct mucosa. Inflammation obscures these features.

### Evaluation of residual stone after removal common bile duct stone by peroral direct cholangioscopy (PDC) using an ultraslim endoscope.

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#### Background

Complete bile duct clearance is generally confirmed by cholangiography. However, with a small fragment, dilated duct or marked pneumobilia, confirmation of complete removal stones can be difficult. Stone recurrence may be associated with the presence of residual stones. We assess residual stones after removal of common bile duct stones by PDC using ultraslim endoscope.

#### Method

Fifteen patients were enrolled. Indications for PDC were to confirm a complete stone removal after endoscopic lithotomy, and to remove residual stones if they were found. An ultraslim endoscope used in this study was the GIF-XP260N (Olympus, Co, Tokyo, Japan). Endoscopic procedures are as followed; It was inserted perorally and was advanced into the major papilla. The ampulla of Vater was endoscopically visualized by retroflexing the endoscope in the distal second portion of the duodenum. We used technique of introducing into the duct under intraductal balloon guidance. The rate of successful bile duct insertion, residual stone, removal residual stone, adverse events were assessed.

#### Result

The rate of inserting to the biliary system was 93 % (14/15). Among the case with successful insertion to the bile duct, residual stones were detected in 21.4% (3/14). Successful stone removal with PDC was achieved in each patient (3/3). The incidence of procedure-related adverse events was found in 6.7% (1/15).

#### Conclusion

PDC appears to be a useful diagnostic tool to confirm complete removal of common bile duct stones. However since this study is conducted in small series, a larger study may be needed.

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**Free Paper : Poster Session**

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**“Needle-Knife Precut Papillotomy with a Small Incision over a Pancreatic Stent improves the Success Rate and Reduces the Complication Rate in Difficult Biliary Cannulations”**

**Kensuke Kubota, Yuji Fujita, Yusuke Sekino, Kunihiro Hosono, Atsushi Nakajima**  
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**Objective:** To validate the efficacy, feasibility and safety of Needle-knife precut papillotomy with a small incision using a layer-by-layer method over a pancreatic stent (NKPP-SIPS) in difficult biliary cannulation (DBC), then, we showed our techniques using video.

**Methods:** We prospectively divided the patients in chronologically, in terms of the period during which the procedure was performed, into two groups: group A; needle knife precut papillotomy (NKPP) performed; group B; NKPP-SIPS performed. NKPP was performed without pancreatic stent placement and the cut was made starting at the papillary orifice, extended upward over a length of more than 5-10 mm for deroofing the papilla. In NKPP-SIPS, a pancreatic stent was placed initially as a guide, and for a preventing post-ERCP pancreatitis, the incision was begun at the papillary orifice in a layer-by-layer fashion and extended upward in 1-2 mm increments, not going beyond the oral protrusion, finally measuring less than 5 mm in length.

**Results:** NKPP and NKPP-SIPS were performed in 47 and 114 of the patients, respectively. The success rates of bile duct cannulation increased from 87.2% (41/47) in group A to 96.5% (110/114) in group B ( $p<0.05$ ). The overall complication rate of PS was 27.7% (13/47) in group A, and 7% (8/114) in group B ( $p<0.001$ ).

**Conclusions:** NKPP-SIPS significantly improved the success rate and reduced the complication rate of DBC, therefore, a small incision starting at the orifice of the PS is enough, feasible and safe in DBC, if a pancreatic stent is inserted at the outset.

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**Utility of the Short Single-Balloon Enteroscope (Short-SBE to Perform Therapeutic ERCP in Patients with Surgically Altered Anatomy**

**Kei Yane, Hiroyuki Maguchi, Kuniyuki Takahashi, Akio Katanuma, Manabu Osanai**  
**Toshifumi Kin, Ryo Takaki, Kazuyuki Matsumoto, Katsushige Gon, Tomoaki Matsumori, Akiko Tomonari**  
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**Objective**

The objective of this study was to evaluate the utility of short single-balloon enteroscope (SBE) for therapeutic ERCP in patients with surgically altered anatomy.

**Methods**

Between June 2011 and October 2012, we performed therapeutic ERCP in 34 patients (52 procedures) with surgically altered anatomy using a prototype short SBE, SIF-Y0004 (Olympus, Tokyo, Japan), which has 152cm in working length and a 3.2mm working channel. The surgical methods included pancreaticoduodenectomy (PD) in 13 patients, Roux-en-Y gastrectomy (R-Y) in 9 patients, hepaticojejunostomy (H-J) in 8 patients, and Billroth II gastrectomy (B-II) in 4 patients. Indications for ERCP were bile duct stones and cholangitis ( $n=20$ ), biliary stricture ( $n=5$ ), hepaticojejunostomy stricture ( $n=23$ ), and pancreaticojejunostomy stricture ( $n=4$ ).

**Results**

Overall, the success rate of short SBE-ERCP in all procedures was 85% (44/52). With regard to the anatomy, the success rate of the procedure in patients with PD, R-Y, H-J, B-II were 74% (14/19), 88% (15/17), 92% (11/12), 100% (4/4), respectively. The scope could not reach the papilla or anastomotic site in 3 cases (PD 1, R-Y 1, H-J 1). Bile duct cannulation failed in 3 cases (PD 2, R-Y 1) and pancreatic duct cannulation failed in 2 PD cases. The mean procedural time was 60 min (18-112 min). Intestinal perforation during endoscopic insertion occurred in 1 (2%) patient with PD anatomy, and the patient required urgent laparotomy. No other adverse events were observed.

**Conclusions**

ERCP using short SBE is a feasible and less invasive method in patients with surgical altered anatomy.



## Free Paper : Poster Session

### HOW TO TREAT PANCREATIC DISEASES VIA MINOR PAPILLA ENDOSCOPICALLY - OUR EXPERIENCES OF 96 CASES -

Tadao Tsuji

(Saitama City Hospital, Japan.)

**Introduction :** We have experienced 96 cases of pancreatic diseases treated via minor papilla endoscopically. They consisted of 60 alcoholic chronic pancreatitis, 10 idiopathic chronic pancreatitis, 8 divisum, 3 cancers in Wirsung duct, 3 hereditary pancreatitis, 5 IPMC, 2 juvenile pancreatitis, 2 anomalous pancreatobiliary union, 2 AIP and 1 chronic pancreatitis due to hyperparathyroidism. In these cases, treatments via major papilla were unsuccessful, however, treatments via minor papilla were successful.

**Objective and Method :** Evaluation of the efficacy and safety of endoscopic treatment via minor papilla. The indications were in such conditions as narrowing of the Wirsung duct - 82 (inflammatory and/or stone impaction 79, carcinoma located in W-duct 3), divisum - 8, and stones in the Santorini duct - 3, dilation of the orifice of minor papilla (IPMC) - 3. The procedures consisted of guide-wire (+) EPST - 74, guide-wire (-) EPST - 1, balloon dilation) alone - 3, Rendezvous method - 5, Rendezvous precut method - 11, free hand method - 2.

**Results;** These procedures were successful in 96 cases and no major problems occurred. In the 71 stone(+) cases, stone-free was 97% (69/71), pain-free was 100% ( 71/71 ). In other 25 cases, the results were good.

**Conclusions;** 1. The main indications for these procedures were in such conditions as severe narrowing of the Wirsung duct. 2. Effects of these therapies were good (pain-free 100%, stone-free 97%) and no major problems occurred after this procedure. 3. Treatment via minor papilla is a safe and useful method.

### Comparison of long-term outcomes after endoscopic sphincterotomy versus endoscopic papillary balloon dilation: A propensity score-based cohort analysis

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Seiji Adachi<sup>1)</sup>, Masahito Shimizu<sup>1)</sup>, Eiichi Tomita<sup>2)</sup>, and Hisataka Moriwaki<sup>1)</sup>

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**Background:** Endoscopic sphincterotomy (ES) is widely performed in patients with common bile duct stones (CBDS). However, the long-term outcomes of patients following ES have not been sufficiently elucidated. Impaired papillary function following ES may result in additional late complications. In contrast, endoscopic papillary balloon dilation (EPBD)—another option for treating CBDS—is expected to preserve papillary function. This study aimed to compare the long-term outcomes of patients with CBDS treated with ES to those treated with EPBD in a large cohort. In addition, a subgroup analysis was performed, according to the status of the gallbladder (GB).

**Methods:** A cohort study was performed using propensity score matching to reduce treatment-selection bias. This involved the analysis of follow-up data of 1086 patients who underwent EPBD or ES for CBDS.

**Results:** Propensity score matching extracted 246 pairs of patients. The median (interquartile range) follow-up period after EPBD or ES was 93.5 (46.8–129.2) months and 90 (42–139.3) months, respectively. The incidence of CBDS recurrence after EPBD and ES were 8.5% and 15.0%, respectively. The hazard ratio (95% CI) was 0.577 (0.338–0.986) (P = 0.044). Based on the status of the GB, the incidence of CBDS recurrence was significantly different between post-EPBD and post-ES in the group with cholecystectomy after EPBD/ES (P = 0.013).

**Conclusions:** The incidence of biliary complications was significantly lower in patients after EPBD than in those after ES, and this outcome appeared most markedly in patients who underwent cholecystectomy after EPBD or ES.

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## Free Paper : Poster Session

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### Clinical results of HANARO biliary stent for management of biliary obstruction

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#### <Objective>

HANARO stent®(M.I.Tech, Korea) is newly developed braided Self-Expanding Metal Stent(SEMS), which is considered to be equipped with the ideal balance of radial force and axial force. Here we reported the clinical result on efficacy and adverse event of the endoscopic stenting in unresectable malignant biliary obstruction and benign biliary obstruction.

#### <Methods>

In the period of 9 months between March and November 2012, 16 patients with unresectable malignant biliary obstruction and 3 with benign biliary obstruction underwent stent placement. Patients with pancreatic cancer, which is to be treated or being treated by chemotherapy were placed uncovered type, whereas those which is to be treated by BSC were placed covered type with lasso. Covered type with lasso was selected in cases of benign biliary obstruction, since placed stents were originally to be removed on the next day of placement. In all cases, stents were able to place, protruded from papilla of Vater after endoscopic sphincterotomy.

#### <Results>

Median follow-up period was 304 days. No collapse of stent was encountered. Although acute cholecystitis occurred in one case treated by uncovered type, it was recovered by percutaneous transhepatic gallbladder aspiration. Apart from this case, no evident adverse events or migration were seen. Removal of stents was attempted in all cases with benign biliary obstruction. No adverse events were observed in both cases which continue to be followed up at stent free.

#### <Conclusion>

Placement of HANARO® stent is efficient and safe in unresectable malignant or benign biliary obstruction.

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### Risk factors for stent occlusion after endoscopic metallic stent placement in patients with unresectable malignant biliary stricture

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**Objective:** The objective of this study was to investigate risk factors for stent occlusion after endoscopic metallic stent (MS) placement in unresectable malignant biliary stricture.

**Methods:** Between April 2005 and October 2012, 139 patients with unresectable malignant biliary stricture (mean age, 75 ± 11 yrs.; 70 males, 69 females) who successfully underwent endoscopic MS placement were included in this study. Patients with hilar bile duct stricture and those with insufficient data were excluded from the study. Main outcome measurements were stent patency and risk factors for stent occlusion. Stent patency was analyzed by the Kaplan-Meier method and risk factors were assessed by Cox regression analysis.

**Results:** Seventy-nine patients had pancreatic cancer, 38 had bile duct cancer, 9 had lymph node metastases from other cancers, 8 had gallbladder cancer, 3 had ampullary cancer, and 2 had cystic duct cancer. The stents used were uncovered MS in 31 patients, partially covered MS in 69, and fully covered MS in 39. Cholangitis at the time of stenting was seen in 26% (36/139). At a mean follow-up period of 272 days, stent occlusion occurred in 32% (45/139). Mean stent patency was 527 days (median, 306 days). Univariate analysis including 15 factors revealed that sex (male,  $p = 0.04$ ) and cholangitis at the time of stent placement ( $P = 0.0005$ ) were risk factors for stent occlusion. Multivariate analysis showed that cholangitis was the only significant risk factor for stent occlusion (HR 2.8, 95%CI 1.5-5.2,  $p = 0.001$ ).

**Conclusion:** Endoscopic MS placement for unresectable malignant stricture should be considered after improvement of cholangitis due to the high risk of stent occlusion.



## Free Paper : Poster Session

### Risk for technical failure of endoscopic multiple metal stenting by stent-in-stent method for unresectable malignant hilar biliary obstruction

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**Objectives:** Endoscopic multiple metal stenting (EMMS) by stent-in-stent method (SIS) has been reported to be effective for the management of unresectable malignant hilar biliary obstruction (UMHBO), but remains technically challenging. The aim of this study was to elucidate predictor of unsuccessful EMMS by SIS method.

**Methods:** Between January 2011 and March 2013, 50 patients (median age 73, male/female 28/22, cholangiocarcinoma/gallbladder carcinoma/metastatic diseases 25/20/5, Bismuth type II/III/IV 18/15/17, laser-cut/braided 31/19) with UMHBO underwent EMMS by SIS method. We retrospectively evaluated the technical success rate, complications and stent patency.

**Results:** EMMS by SIS method was successful in 41 patients (82%, 95% confidence interval (CI); 69.2-90.2). The reason for technical failure was as follows: failure of multiple guidewire insertion in 3, failure of guidewire insertion through the first stent in 3 and failure of the second stent placement through the first stent in 3. Unilateral multiple stent placement and metastatic diseases were significantly predictors of technical failure (Odds ratio 10.3, 95%CI; 1.2-103.7). Except in cases of multiple guidewire insertion failure, braided type SEMS placement was significantly associated with technical failure. Early and late complications were observed in 7 (14%) and 13 (26%) patients respectively. Median stent patency was 171 days (95%CI; 117-285).

**Conclusions:** Unilateral multiple stent placement and metastatic diseases were significant risk factors for technical failure in EMMS by SIS method. Laser-cut type stent might be preferable to braided type stent in SIS method.

### Endoscopic double stenting for biliary obstruction and duodenal obstruction caused by pancreatobiliary malignancies

Yoshihide KANNO, Naotaka FUJITA, Kei ITO  
(Sendai City Medical Center)

**Objective:**

The aim of this study was to retrospectively evaluate the efficacy and safety of endoscopic double stenting for malignant biliary and duodenal obstructions.

**Methods:**

Patients who received endoscopic SEMS placement for malignant biliary and duodenal obstructions were included. In principle, biliary drainage (BD) was performed with endoscopic transpapillary stent placement (ETS). When ETS was difficult, endosonography-guided biliary drainage (ESBD) or percutaneous transhepatic biliary drainage (PTBD) was performed as an alternative. Main outcome measures were complications, functional success, time to dysfunction, and survival.

**Results:**

Twenty-one patients were included (males, 13; mean age, 72 +/- 10 yrs). Causative disease of obstruction was pancreatic cancer in 13 patients and biliary cancer in 8. BD was performed with ETS in 13, ESBD in 6, and PTBD in 2. Nine patients were diagnosed as having both biliary and duodenal obstructions simultaneously, and the other 12 were diagnosed as having biliary obstruction first. The functional success rate of BD was 100% and that of duodenal stenting (DS) was 86% (18/21). In functionally successful patients, median time to dysfunction of BD was 141 days (95% confidence interval [95%CI] could not be calculated) and that of DS was 75 days (95%CI, 22-128). Median patient survival after completion of both interventions was 55 days (95%CI, 1-109).

**Conclusion:**

Endoscopic double stenting for biliary and duodenal obstructions caused by pancreatobiliary malignancies was safe and effective as a palliative treatment for debilitated patients at the latest stage of malignancy.

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## Free Paper : Poster Session

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### Re-intervention of duodenal stenting for malignant gastric outlet obstruction

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**Objectives:** The information of re-intervention is limited. We therefore conducted the retrospective analysis to clarify the efficacy and safety of re-intervention for duodenal stenting.

**Methods:** Eighteen patients who performed re-intervention as stent-in-stent fashion were evaluated.

**Results:** The study population consisted of 15 males (83%) with a median age of 67 years. The etiologies of GOO were pancreatic cancer (61%), biliary tract cancer (11%), and gastric cancer (22%). The stents used for 1st stent and 2nd stent were: WallFlex / WallFlex = 11, WallFlex / ComVi = 1, ComVi / ComVi = 4, ComVi / Niti-S = 1, and Niti-S / WallFlex = 1. Technical success rate and clinical success rate was 100% and 88.9%, respectively. Eight patients (44%) could take solid food after stent placement. The median eating period was 3.0 months and the median survival time was 3.2 months. Three patients (17%) experienced stent re-occlusion and two of them with good performance status were inserted 3rd stent. Major complication of re-intervention was GI perforation in two patients (11.1%) and insufficient expansion in one patient (6%). All of the two patients with GI perforation were inserted WallFlex duodenal stents both as 1st and 2nd stent.

**Conclusions:** Re-intervention of duodenal stent was feasible but more attention was need especially about GI perforation. In particular, inserting WallFlex duodenal stents both as 1st and 2nd stent might be the risk of GI perforation.

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### Clinical usefulness of combined use of color Doppler and contrast-enhanced harmonic EUS for the assessment of visceral vascular diseases

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**Objective:** We evaluated the clinical usefulness of the combination of color Doppler and CEH-EUS in diagnosing visceral vascular diseases and in assessing morphological and hemodynamic characteristics required for adequate patient management.

**Methods:** We analyzed patients with clinically suspected visceral vascular disease, as determined by CT scan between February, 2012, and March, 2013. EUS was performed to evaluate vascular status of celiac artery (CA) and superior mesenteric artery (SMA).

**Results:** We assessed a total of 12 patients. CT suggested dissection of the CA, SMA, and their branch arteries in nine patients; stenosis or occlusion of the splanchnic vessels in two patients; and periarterial soft tissue cuffing surrounding the CA in one patient. EUS correctly identified all visceral vascular lesions. EUS also identified one undefined dissection not detected on abdominal CT. EUS showed an intimal flap in five patients and blood flow of the true lumen and thrombi of the false lumen in eight patients. In addition, the stenotic area could be calculated using color Doppler EUS. The patient with SMA dissection and the patient with total occlusion of the SMA and CA due to thrombosis underwent surgical thrombectomy and angioplasty. EUS showed no flow signal within a long segment of the SMA, indicating its total occlusion, in both patients.

**Conclusion:** The combination of color Doppler and CEH-EUS may be a promising diagnostic modality to assess the splanchnic artery without exposure to radiation. Moreover, EUS is a useful tool in determining appropriate treatments for patients with isolated mesenteric artery dissection.



## Free Paper : Poster Session

### Findings of Contrast-Enhanced Harmonic Endoscopic Ultrasonography for Pancreatic Solid Tumor and the Feasibility for diagnosing pancreatic ductal adenocarcinoma

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**Objectives:** Contrast-enhanced harmonic endoscopic ultrasonography (CEH-EUS) using the 2nd generation contrast agent is expected for the newer modality to improve diagnosis of pancreatic solid tumor. This study evaluated the characterization of pancreatic solid tumor on CEH-EUS and the ability of CEH-EUS for differentiating pancreatic adenocarcinoma respectively.

**Materials and Methods:** A total of 76 consecutive patients with pathologically proven pancreatic solid tumor who received CEH-EUS between January 2010 and May 2012 were reviewed. The lesions were categorized according to their intensities (non-enhancement, hypo-enhancement, iso-enhancement, and hyper-enhancement compared to parenchyma of normal pancreas) and morphologic patterns (non-enhancement, reticular, and diffuse) of enhancement and analyzed. Pathologic confirmations were made by EUS-FNAs, tru-cut biopsies, and surgical specimens. After then, we evaluated the diagnostic accuracy of CEH-EUS in depicting pancreatic ductal adenocarcinoma with or without anatomical findings supporting malignancies.

**Results:** A total of 52 cases with pancreatic ductal carcinoma showed CEH-EUS findings with non-enhancement (28/52), hypo- or iso-enhancement with reticular pattern (21/52), and hyper-enhancement with diffuse pattern (3/52). CEH-EUS depicted non-enhancement and reticular enhancement pattern diagnosed pancreatic ductal adenocarcinomas with a sensitivity of 94.2% and a specificity of 81.8%, respectively.

**Conclusions:** CEH-EUS is a useful modality for differentiating pancreatic ductal adenocarcinoma from other solid tumors.

**Keywords:** CE-EUS, CEH-EUS, pancreatic ductal adenocarcinoma, pancreatic solid tumor

**Table 1.** Patients and Tumor Characteristics (N=76)

Patients	
Sex - no. (%)	
Male	44 (57.9)
Female	32 (42.1)
Age - mean $\pm$ s.d. (range)	59.1 $\pm$ 12.6 (29 ~ 90)
Tumor	
Size - mm, mean $\pm$ s.d. (range)	35.3 $\pm$ 13.3 (15.0 ~ 73.2)
Location - no. (%)	
Head	39 (51.3)
Body	21 (27.6)
Tail	13 (17.1)
Multiple	3 (3.9)
Pathological Diagnosis - no. (%)	
Ductal adenocarcinoma	52 (68.4)
Neuroendocrine tumor	9 (10.5)
Solid pseudopapillary neoplasm	2 (3.9)
Inflammatory change	5 (6.6)
Metastasis	2 (2.6)
others <sup>†</sup>	6 (7.9)

<sup>†</sup> 2 cases of diffuse large B cell lymphoma, 1 case of undifferentiated pleomorphic sarcoma and 3 cases of gastrointestinal stromal tumor

**Table 2.** CEH-EUS findings of pancreatic solid tumor categorized by Intensities and Morphologic Patterns of Enhancement

		Intensity of Enhancement (N)					Total
		non	hypo	iso	hyper		
Morphologic Pattern of Enhancement (N)	non	31	0	0	0	31	
	reticular	0	19	7	0	26	
	diffuse	0	1	5	13	19	
Total		31	20	12	13	76	

**Table 3.** CEH-EUS findings of pancreatic solid tumor categorized by Intensities and Morphologic Patterns of Enhancement

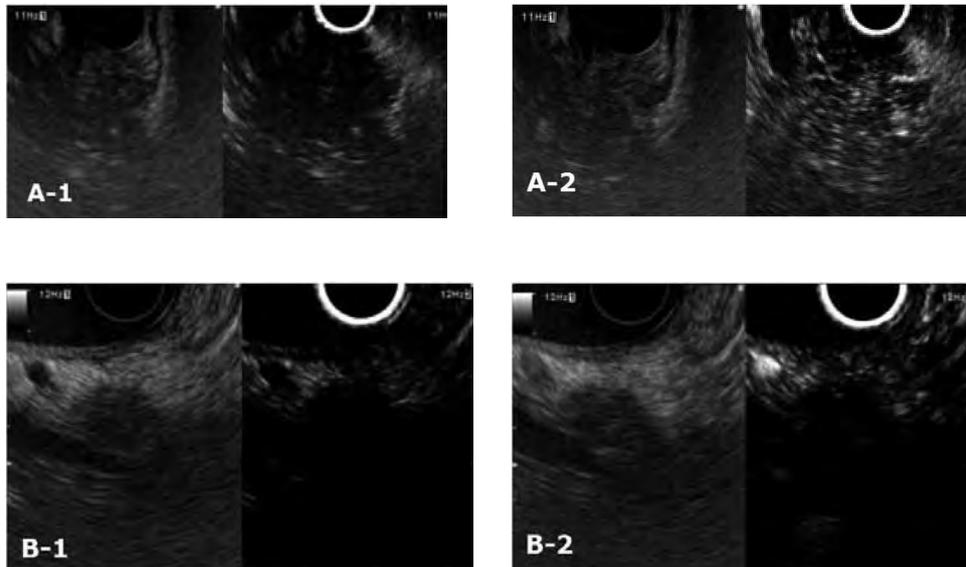
	Intensity (N)				Morphology (N)		
	non	hypo	iso	hyper	non	reticular	diffuse
Ductal adenocarcinoma	28	15	6	3	28	21	3
Neuroendocrine tumor	2	0	1	5	2	0	6
Solid pseudopapillary neoplasm	0	2	0	1	0	1	2
Inflammatory change	0	0	4	1	0	1	4
Metastasis	0	1	0	1	0	1	1
others	1	2	1	2	1	2	3

**Table 4.** Sensitivity and Specificity of CEH-EUS in depicting pancreatic ductal adenocarcinoma as a nonenhancement or enhancement with reticular pattern

	Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)
Total (n=74)	94.2% (83.1-98.4)	81.8% (58.9-94.0)	92.5% (80.9-97.6)	85.7% (62.6-96.2)

**Free Paper : Poster Session**

**Figure 1.** Typical contrast-enhanced harmonic endoscopic ultrasonographic (CEH-EUS) finding for pancreatic ductal adenocarcinoma. A-1, Both Conventional B-mode imaging (left) and CEH-EUS imaging (right) showed hypoechoic mass on pancreas head. A-2, CEH-EUS imaging showed reticular-patterned enhancement of mass. B-1. Both images showed hypoechoic mass on pancreas head, B-2. Mass was not enhanced after infusing contrast although splenic artery beside of mass was enhanced.

**Diagnostic yield of EUS-guided FNA of pancreatic solid masses and lymph nodes using triple assessments including on-site cytopathology for one pass specimen**

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**Objectives:** EUS-FNA is becoming the standard tool for tissue acquisition for pancreatic mass lesion. But, the results of single cytologic or histologic evaluation are not satisfactory. The aim of this study was to evaluate the diagnostic yield of triple approach which cytology and histologic assessments with rapid on-site cytopathologic evaluation for one pass specimen during EUS-FNA in pancreatic solid masses and lymph nodes (LNs).

**Methods:** A prospective study was performed in 74 patients undergoing EUS-FNA to evaluate pancreatic solid masses or LNs. After one pass using 22 (transgastric pass) or 25 G (transduodenal pass) needle, specimen was divided three segments. Air-dried smears with first segment were stained with Diff-Quick stain and immediately reviewed by cytopathologist to ascertain sample adequacy and onsite diagnosis. Second or third segment of each pass specimen prepared for Papanicolaou stain or histologic analysis with immunohistochemical (IHC) stain.

**Results:** Of 74 patients, pancreatic masses and LNs were 58 (78.4%) and 16 (21.6%) patients. An onsite diagnosis was established in 50 (67.6%) patients with a mean of 1.60 needle passes. The diagnosis using cytology and histology with IHC stain were achieved in 65 (87.8%) and 62 (83.8%) patients, respectively. The sensitivity of cytology and histology was 89% and 82%, respectively. The triple assessments showed 97% sensitivity and 100% specificity.

**Conclusions:** On-site cytopathologic evaluation combined with cytologic and histologic analysis with IHC stain for one pass specimen can contribute to achieve the good results with EUS-FNA in pancreatic solid masses and LNs.



## Free Paper : Poster Session

### Comparison of EUS-fine needle biopsy with EUS-fine needle aspiration as a historical control for diagnosis of pancreatic solid masses

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**Objectives:** EUS-FNA is the current standard of method for sampling pancreatic solid masses, but cytologic analysis has several limitations for diagnostic accuracy. To overcome the cytology, biopsy needles have been developed to obtain histologic samples during EUS. The aim of this study was to compare EUS-FNB needle with EUS-FNA needle as a historical control for diagnosis of pancreatic solid masses.

**Methods:** Between March 2012 and September 2012, 38 patients underwent EUS-FNB using biopsy needle (ProCore), and between July 2011 and February 2012, 42 patients underwent EUS-FNA using conventional needle (Echotip) as a historical control for diagnosis of pancreatic solid masses. After one pass, specimen was divided three segments for on-site, cytologic and histologic evaluations.

**Results:** An on-site diagnosis was established higher in FNB group (89.5% vs 61.9%,  $p=0.005$ ). The median number of passes for adequate tissue acquisition was significantly lower in FNB group (1.47 vs 2.02,  $p=0.012$ ). There were no significant difference in the rate of diagnosis using cytology (94.7% vs 85.7%,  $p=0.269$ ) and histology (81.6% vs 78.6%,  $p=0.781$ ) between FNB and FNA, respectively. The rates of diagnosis of triple approach which cytology and histologic assessments with rapid on-site cytopathologic evaluation in FNB and FNA were also no significant difference (97.4% vs 92.9%,  $p=0.617$ ).

**Conclusions:** The EUS-FNB needle was more effective to achieve on-site diagnosis and showed comparable overall diagnostic rate using the lower number of needle passes in comparison with FNA needle. In this respect, EUS-FNB needle is considered to be more useful in absence of on-site cytopathologist.

### Pancreatic juice cytology and EUS-FNA for the diagnosis of pancreatic tumor

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**Objective:** EUS-FNA can now provide a cytopathological diagnosis of pancreatic malignancy with higher success rates. However, EUS-FNA cannot be carried out for lesions of minimally invasive carcinoma, because they cannot be detected by EUS, and in cases of intraductal papillary mucinous carcinoma (IPMC), due to the potential for needle tract seeding. A recent study has shown that pancreatic juice cytology (PJC) is useful for diagnosing pancreatic cancer. The present aim was to evaluate whether PJC strengthens the diagnostic power of EUS-FNA for pancreatic masses.

**Methods:** A total of 161 patients, who were suspected to have a pancreatic mass on conventional ultrasound and/or computed tomography, was enrolled.

**Results:** An adequate specimen was obtained in 96.0% for EUS-FNA and in 98.9% for PJC. The sensitivity, specificity, positive predictive value, negative predictive value, and accuracy were 86.0%, 100%, 100%, 70.5%, and 89.5% for EUS-FNA, and 71.4%, 100%, 100%, 84.4%, and 88.8% for PJC, respectively. EUS-FNA and/or PJC for the diagnosis of pancreatic tumor had a sensitivity of 92.5%, specificity of 100%, positive predictive value of 100%, negative predictive value of 91.7%, and accuracy of 95.9%. The diagnostic accuracy of EUS-FNA and/or PJC was significantly higher than that of EUS-FNA alone or PJC alone.

**Conclusion:** PJC improved the diagnostic utility of EUS-FNA for pancreatic tumor.

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## Free Paper : Poster Session

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### The role of EUS in diagnosis and treatment of autoimmune pancreatitis.

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**BACKGROUND AND OBJECTIVE:** Although EUS is useful for diagnosis of tumors in the pancreas, the EUS findings are not employed in the International criteria for autoimmune pancreatitis (AIP) {ICDC2008} and Clinical diagnostic criteria for AIP 2011 {CDC2011}. **OBJECTIVE:** The aim of the study was to investigate the role of EUS in diagnosis and treatment of AIP.

**METHODS:** EUS findings of 21 patients that were diagnosed with AIP using the ICDC2008 and CDC2011 were re-evaluated. EUS findings included the following features ; a: lobularity, b: strands, c: hyperechoic foci, d: duct penetrating sign, e: capsule like rim, f: mass forming pancreatitis, g: iso-enhancement on contrast enhanced EUS. Changes in EUS findings were evaluated 2 months

after the steroid therapy. EUS-FNA was performed in all patients.

#### RESULTS

EUS findings: a, b, c, d, e, f and g were observed in 81%, 100%, 100%, 86%, 48%, 80% and 81%, respectively. Other imaging modalities failed to exclude a pancreatic carcinoma in 11 patients with focal type of AIP. However, EUS images and histology obtained by EUS-FNA showed typical findings of AIP in these patients. In 9 patients who received steroid therapy, lobularity and strands disappeared.

**CONCLUSION:** EUS is useful for discrimination of focal AIP from pancreatic carcinoma and evaluation of response to steroid therapy. Strands, lobularity observed by EUS may reflect the disease activity.

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### Role of contrast-enhanced harmonic EUS in differentiating malignant from benign lymphadenopathy

Takeshi Miyata, Masayuki Kitano, Masatoshi Kudo

(Kinki university Faculty of Medicine Department of Gastroenterology and Hepatology)

**Background:** The most important parameter for determining the optimal treatment of upper gastrointestinal tumor is accurate staging accomplished by TNM (Tumor, Node, and Metastasis) classification. The diagnosis of intra-abdominal lymphadenopathy is often a challenge for endoscopists and radiologists. Contrast-enhanced harmonic EUS (CH-EUS) has made it possible to observe microvasculature of digestive organs.

**Aim:** To evaluate the microvasculature of intra-abdominal lymphadenopathy by CH-EUS and to investigate its usefulness for discriminating between malignant and benign lesions.

**Patients and Methods:** Fifty-five patients who were diagnosed upper gastrointestinal tumor with intra-abdominal lymphadenopathies underwent EUS and seventy-eight lymphadenopathies were observed between June and January 2011. Those patients were evaluated the size (short and long axes), shape (round or oval), and edge characteristics (sharp or fuzzy) by plain EUS. After changing to specific mode for CH-EUS, the vascularity of intra-abdominal lymphadenopathies was observed. The lesions were classified according to their vascular patterns. The lesions were categorized by two physicians as having heterogeneous or homogeneous enhancement. How the benign and malignant groups differed in terms of features on plain EUS and enhancement patterns on CH-EUS was examined. The effectiveness of plain EUS and CH-EUS in differentiating malignant from benign lesions was evaluated. CH-EUS was performed by using the extended pure harmonic detection mode (a specific mode for contrast harmonic imaging).

**Results:** Of the 20 malignant lesions, 19 (95%) exhibited heterogeneous enhancement. Of the 58 benign lesions, 56 (97%) exhibited homogeneous enhancement ( $P < 0.001$ ), respectively. The malignant and benign lesions groups differed significantly in terms of homogeneous and heterogeneous enhancement ( $P < 0.001$ ). The sensitivity, specificity, and accuracy with which CH-EUS differentiated malignant from benign lesions were 95%, 97%, and 97%, respectively. By receiver operating characteristics (ROC) analysis, short axes 11mm and long axes 19mm provided the best sensitivity and specificity for predictive malignancy. In addition, according to previous reports, we determined predictive malignancy as round shape, and sharp edge. The sensitivity, specificity, and accuracy with which short axes over 11mm predicted malignancy were 80%, 79%, and 79%, respectively. Those values of long axes over 19mm predicted malignancy were 65%, 62%, and 63%, respectively. Those values of round shape predicted malignancy were 60%, 74%, and 71%, respectively. Those values of sharp edge predicted malignancy were 90%, 28%, and 44%, respectively. The diagnostic accuracy of CH-EUS was significantly higher than any other parameters of plain EUS.

**Conclusion:** CH-EUS depicted the microvasculature of intra-abdominal lymphadenopathy very clearly and may be useful for characterizing such lesions.

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## Free Paper : Poster Session

### EUS-Guided Fine Needle Tattooing of Small Pancreatic Lesions

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Departments of Hepato-Biliary-Pancreatic Oncology<sup>2)</sup>

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

**<Background>** For small pancreatic lesions, accurate preoperative localization is important for determining the type of operation and the extent of that resection. EUS-guided fine-needle tattooing (EUS-FNT) is an ideal technique for preoperative marking of lesions to reduce operating time and complication.

**<Objective>** To assess the feasibility, safety, and efficacy of EUS-FNT using ICG.

**<Methods>** Indocyanine green was injected on the day before surgery using 22G needle into pancreas parenchyma adjacent to previously diagnosed lesion. ICG fluorescent camera will be used to detect tattooed area during the operation.

**<Results>**

Between April 1st, 2011 ~ March 31st, 2013, three patients had EUS-FNT before surgery. The median previously detected tumor size was 8.2mm. All lesions were not visualized by prior preoperative pancreatic protocol CT. EUS-FNT was feasible in all cases. There were no acute complications, such as bleeding, abdominal pain, fever, or pancreatitis at the time of the injection. During a surgery, the tattooed spot was clearly recognized in two cases but slightly difficult in one case due to spreading of ICG. There was no evidence of inflammation or bleeding around the tattooed area.

**<Conclusions>**

Preoperative EUS-FNT of lesions was technically feasible and safe, and it may assist in the localization of small pancreatic lesions during the operation.

### Outcomes of Endoscopic ultrasound guided transmural drainage of peripancreatic fluid collections arising after surgical operation and pancreatic trauma-Including successful removal of gossypiboma-

Katsushige Gon, Akio Katanuma, Hiroyuki Maguchi

(Center for gastroenterology, Teine-Keijinkai Hospital)

Peripancreatic fluid collections (PFCs) after surgical operation and pancreatic trauma are caused by leaks of pancreatic juice, and its treatment is sometimes challenging.

**Aim :** To evaluate the role of EUS-GTD in the management of PFCs. **Methods :** Between June 2000 and January 2013. 64 patients underwent EUS-GTD, and out of those, 12 patients (8 men, 4 women; mean age 59 years; range, 39-79 years) had PFCs caused by surgical operation or trauma. Following points were evaluated. 1) Underlying disease and cause of PFCs. 2) Time to initial EUS-GTD. 3) Technical success and complication. 4) Methods of initial drainage and its effect. 5) Long-term follow-up results. **Results :** 1) 9 cases were after pancreatic resection (PD2, DP7), the other 3 cases were after either laparoscopic-colonic resection for ascending colonic cancer, pseudocyst caused by gossypiboma in alteration of vessel of esophageal varices, pancreatic trauma after traffic accident. 2) Mean time to initial EUS-GTD was 74 days (range, 10-10021 days). 3) Technical success was achieved in 11/12 (91%). No procedural complications were encountered. 4) Initial drainage methods were external-drainage 7, internal-drainage 2, both internal and external-drainage 2. 10 of 11 improved with a resolution. The remaining 1 case of gossypiboma was successfully removed of gauze endoscopically. 5) At a mean follow-up of 261 days (range 10-1530 days), no recurrence was recorded.

**Conclusion :** EUS-GTD has been shown to be an effective and safe procedure for PFCs.

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## Free Paper : Poster Session

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### **Endoscopic ultrasound-guided antegrade treatments for biliary disorders in patients with surgically altered anatomy.**

**Takuji Iwashita, Ichiro Yasuda, Shinpei Doi, Shinya Uemura, Masatoshi Mabuchi, Tsuyoshi Mukai, Hisataka Moriwaki**  
(First Department of Internal Medicine, Gifu University Hospital, Gifu, Japan)

**Introduction:**Endoscopic retrograde cholangiopancreatography (ERCP) in patients with surgically altered upper gastrointestinal and biliary anatomy is challenging even with an application of a double balloon or single balloon enteroscopy. Several EUS-guided biliary access techniques have been reported as effective alternatives. EUS-guided antegrade treatments (AG) have been developed more recently but have not yet been studied well.

**Aims:**To evaluate the feasibility and safety of EUS-AG for biliary disorders in patients with surgically altered anatomies.

**Methods:**We retrospectively identified all the patients for whom EUS-AG was attempted at our hospital between 4/2012 and 11/2012. EUS-AG was performed as follows: The left intra-hepatic bile duct (IHBD) was initially punctured from the intestine followed by cholangiography, antegrade guidewire manipulation and bougie dilation of the fistula. Either antegrade biliary stenting (ABS) with uncovered metallic stent or antegrade balloon dilation (ABD) was performed depending on the biliary disorders. In patients with stone, the stones were antegradely pushed out of the bile duct into the intestine, using a balloon. A naso-biliary drainage tube (NBD) was placed after ABD. Repeat ABD was performed if necessary.

**Results:**EUS-AG was attempted in 7 patients, of whom 5 had choledocholithiasis, 1 had distal malignant biliary obstruction, and 1 had bilioenteric anastomosis stricture. EUS-AG was not performed in 1 patient because the results of the EUS and EUS-cholangiography did not indicate the presence of stones. In the remaining 6 patients, the IHBD was successfully punctured, followed by cholangiography, guidewire insertion, and bougie dilation. ABS for biliary obstruction and ABD were successfully performed in 1 and 5 patients, respectively. NBD was placed through the fistula after ABD and was removed after confirming the resolution of the biliary disorders. The cholangiography revealed residual stones, and antegrade procedures were repeated twice in 1 patient. Mild complications were observed in 2 patients.

#### **Conclusion**

EUS-AG for biliary disorders in patients with surgically altered anatomy is feasible. Further studies are warranted to confirm this finding.



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