To the meeting venue:

The hotel and convention center are twin towers which are linked at the bottom. The access to the convention center is located on the 5th floor. Please take the elevator (to the right of the Reception on the 1st floor or from your room) to the 5th floor, and then follow the signs to the Convention Center.

Zhonghua Halls and Nanjing Halls are on the 5th floor of the Convention Center. Please use the escalators to get to the 7th floor for Rooms 725, 730, 733, and 736.

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SGI 2018

The 12th Annual Meeting of the Society of Gastrointestinal Intervention

GI Interventional Oncology

October 18–20, 2018
International Youth Convention Center, Nanjing, China

PROCEEDING BOOK

www.sgi2018nanjing.com

SGI 2018

The 12th Annual Meeting of the Society of Gastrointestinal Intervention

Welcome Message

Dear colleagues,

On behalf of the committee of the Society of Gastrointestinal Intervention (SGI), we cordially invite you to join the 12th annual meeting of SGI which will take place from October 18th to 20th, 2018 at the International Youth Convention Center, Nanjing, China.

Founded in 2007, the SGI aims to maximize interdisciplinary collaborations, share technological innovations, foster future specialists, and become a role model as a unique international meeting in the field of gastrointestinal (GI) interventions. The SGI is continuously devoted to build a high platform for multidisciplinary communications among interventional radiologists, endoscopists, and surgeons. The scientific program of SGI 2018 will focus on the latest trends in GI interventions for cancer. It will be an interactive meeting based on expert lectures, presentations, and live demonstrations. Workshops on GI interventional procedures will be also held. All participants will very much enjoy the opportunity for sharing their education, experiences, researches, innovations, managements, etc. We would like to encourage you to submit your abstracts for potential oral or poster presentations.

We are proud to announce that the venue of SGI has been relocated to a charming city in China from the previous host, beautiful Korea. Nanjing, only one and a half hours away from northern Shanghai by express train, is situated in the golden Yangtze River Delta. As a historical city and the capital of Jiangsu Province, Nanjing represents many of the 3000-year Chinese culture. With its majestic landscapes and epic history and cultures, it has become a hotspot for tourists who hunt for its beauty and values.

SGI 2018 and the city of Nanjing will be ready to welcome you, show you, and bring you academic, spiritual, and physical enjoyment. We look forward to your participation in SGI 2018!

Sincerely yours,

DongKi Lee

– President –

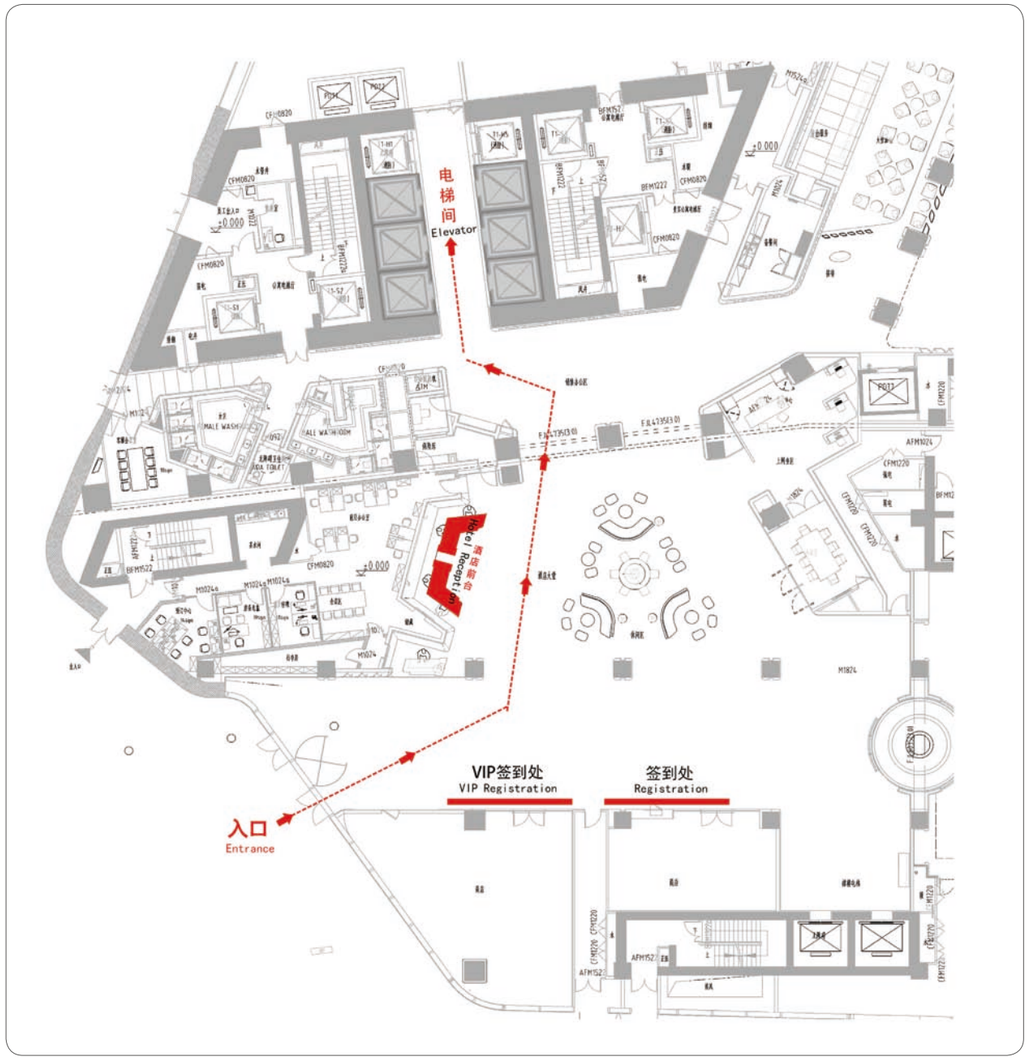
Gao-Jun Teng

– Local President –

Young Deok Cho

– Secretary General –

Floor plan 1F



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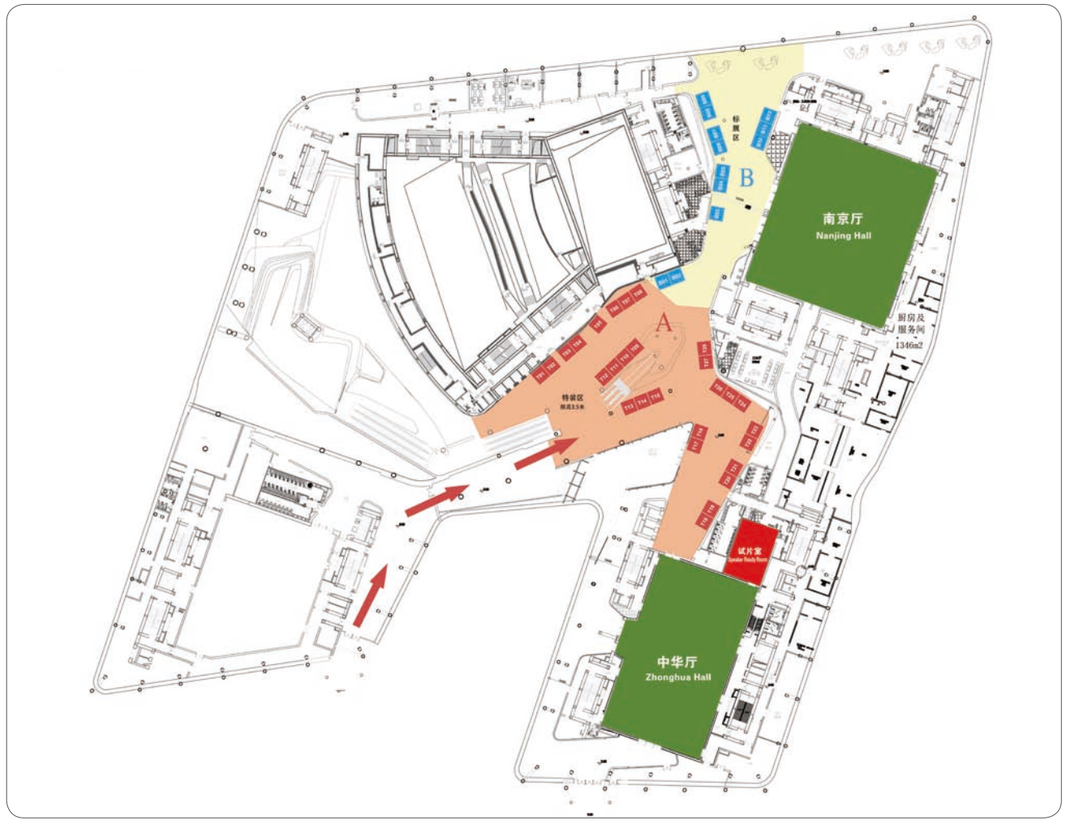
Floor plan 5F



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T28	BOSTON SCIENTIFIC 波科国际医疗贸易(上海)有限公司

Invited Faculties

Korea	Jeong-Sik Byeon	Asan Medical Center, University of Ulsan College of Medicine
Korea	Bo-In Lee	Seoul St. Mary's Hospital, College of Medicine, The Catholic University of Korea
China	Rui-Hua Shi	Zhongda Hospital, Southeast University
China	Zhi-Ning Fan	The First Affiliated Hospital with Nanjing Medical University & Jiangsu Province Hospital
Korea	Jun Chul Park	Yonsei University College of Medicine
UK	Hans-Ulrich Laasch	The Christie NHS Foundation Trust
China	Tian-Zhi An	Affiliated Hospital of Guizhou Medical University
Korea	Chan Gyoo Kim	National Cancer Center
Korea	Hyunsoo Chung	Seoul National University College of Medicine
Korea	Joo Young Cho	Cha Bundang Medical Center, Cha University College of Medicine
USA	Richard A. Kozarek	Virginia Mason Medical Center, University of Washington
Korea	Ho-Young Song	Asan Institute for Life Sciences, University of Ulsan College of Medicine, Asan Medical Center
USA	Shayan Irani	Digestive Disease Institute, Virginia Mason Medical Center
Korea	Chang Won Kim	Pusan National University School of Medicine, Pusan National University Hospital
China	Zhen-Ling Ji	Zhongda Hospital, Southeast University
Korea	Dong Jae Shim	Incheon St. Mary's Hospital, The Catholic University of Korea
China	Chun-Qing Zhang	Provincial Hospital Affiliated to Shandong University
China	Jiaywei Tsauo	National Cancer Center/ Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College
USA	Michel Kahaleh	Weill Cornell Medical College, Cornell University
Korea	Sung-Gwon Kang	S&G Biotech Inc.
Japan	Hiroyuki Isayama	Graduate School of Medicine, Juntendo University
China	Gao-Jun Teng	Zhongda Hospital, Southeast University
USA	Kenneth F. Binmoeller	California Pacific Medical Center
Korea	Jae Hee Cho	Gachon University, Gil Medical Center
Korea	Sang Hyub Lee	Seoul National University Bundang Hospital, Seoul National University College of Medicine
Korea	Jong Soo Shin	Hallym University Dongtan Sacred Heart Hospital
Korea	DongKi Lee	Gangnam Severance Hospital, Yonsei University College of Medicine
Korea	Dong Il Gwon	Asan Medical Center, University of Ulsan College of Medicine
Korea	Jong Yun Won	Yonsei University College of Medicine
Korea	Don Haeng Lee	Inha University School of Medicine, Inha University Hospital
China	Jian-Jun Luo	Zhongshan Hospital, Fudan University
China	Feng Duan	Chinese PLA General Hospital
China	Xiao-Li Zhu	Department of Interventional Radiology The First Affiliated Hospital of Soochow University
Korea	Dong Ho Hyun	Samsung Medical Center, Sungkyunkwan University School of Medicine
Korea	Dae Won Jun	Hanyang University College of Medicine

China	Shu-You Peng	The Second Affiliated Hospital of Zhejiang University School of Medicine
China	Hai-Dong Zhu	Zhongda Hospital, Southeast University
China	Jun-Hui Sun	The First Affiliated Hospital, School of Medicine, Zhejiang University
China	Fei Gao	Sun Yat-Sen University Cancer Center
China	Qing-Song Tao	Zhongda Hospital, Southeast University
Korea	Hyuk Lee	Samsung Medical Center, Sungkyunkwan University School of Medicine
Korea	Jin Kim	Korea Cancer Center Hospital, Korea Institute of Radiological and Medical Sciences
Korea	Dong Hoon Yang	Asan Medical Center, University of Ulsan College of Medicine
UK	Raman Uberoi	John Radcliffe Hospital, Oxford University Hospitals
Japan	Koichiro Yamakado	Hyogo College of Medicine
Korea	Se Hwan Kwon	Kyung Hee University Medical Center
Argentina	Mariano E. Giménez	Hospital de Clínicas José de San Martín, University of Buenos Aires
Korea	In Joon Lee	National Center Center
Korea	Min Woo Lee	Samsung Medical Center, Sungkyunkwan University School of Medicine
Taiwan	Kai-Wen Huang	National Taiwan University Hospital
USA	Edward W. Lee	Ronald Reagan-UCLA Medical Center
Korea	Jung-Hoon Park	Asan Medical Center, University of Ulsan College of Medicine
Egypt	Nader Bakheet	Cairo University
Korea	Jin Hyoung Kim	Asan Medical Center, University of Ulsan College of Medicine
Japan	Teiji Kuzuya	Nagoya University Graduate School of Medicine
USA	Kevin Kim	Yale School of Medicine
USA	Jeffrey H. Lee	The University of Texas MD Anderson Cancer Center
Japan	Reiko Ashida	Osaka International Cancer Institute
USA	Walter Park	Stanford Gastroenterology and Digestive Health Clinic
China	Li-Zhi Niu	Fuda Cancer Hospital, Jinan University School of Medicine
China	Zhong-Min Wang	Ruijin Hospital, Shanghai Jiao Tong University School of Medicine
Korea	Eui Kyu Chie	Seoul National University College of Medicine
Korea	Jinhong Park	Asan Medical Center, University of Ulsan College of Medicine
Korea	Man-Deuk Kim	Yonsei University College of Medicine
China	Qi Zhang	Zhongda Hospital, Southeast University
Korea	Jong Woo Kim	University of Ulsan College of Medicine, Asan Medical Center
Korea	Kichang Han	Severance Hospital, Yonsei University College of Medicine
China	Bing-Rong Liu	Hospital of the GI Diseases, The First Affiliated Hospital of Zhengzhou University
China	Ping-Hong Zhou	Zhongshan Hospital, Fudan University
Korea	Yunho Jung	Soonchunhyang University Seoul Hospital
China	Shu-Tian Zhang	Beijing Friendship Hospital, Capital Medical University
Spain	Jose Ramón Armengol-Miró	Vall d'Hebron University Hospital, Wider-Barcelona
China	Zhen-Dong Jin	Changhai Hospital of Shanghai
Korea	Sang Myung Woo	Graduate School of Cancer Science and Policy, National Cancer Center
Japan	Naoki Hiki	Cancer Institute Hospital of the Japanese Foundation for Cancer Research

China	Ze-Kuan Xu	First Affiliated Hospital of Nanjing Medical University
China	Cai-Lian Wang	Zhongda Hospital, Southeast University
China	Lu Yin	Ruijin Hospital Affiliated to Shanghai Jiaotong University School of Medicine
Korea	Jin Hong Kim	Ajou University School of Medicine
Korea	Yun Hwan Kim	Korea University Anam Hospital, Korea University College of Medicine
Korea	Hyun-Ki Yoon	University of Ulsan College of Medicine, Asan Medical Center
Korea	Hwoon-Yong Jung	University of Ulsan College of Medicine, Asan Medical Center
Korea	Seungmin Bang	Yonsei University College of Medicine
Korea	Young Deok Cho	Soonchunhyang University College of Medicine
Korea	Sangjoon Park	Catholic Kwandong University College of Medicine, International St. Mary's Hospital
Korea	Jong Jun Shim	Soonchunhyang University Hospital Bucheon
China	Ruo-Yu Hu	Zhongda Hospital, Southeast University
USA	Sui Shen	University of Alabama at Birmingham
China	Jun-Sheng Li	Zhongda Hospital, Southeast University
China	Xiao-Long Qi	CHESS Group
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China	Bin Liu	The Second Hospital of Shandong University
China	Zhang-Jun Cheng	Zhongda Hospital, Southeast University
China	Yun-Shi Zhong	Zhongshan Hospital, Fudan Univeristy
China	Bing-Yan Liu	Shanghai St. Luke's Hospital
China	Xin Shi	Zhongda Hospital, Southeast University
China	Rui Li	The First Affiliated Hospital of Soochow University
China	Jian-Song Ji	Affiliated Lishui Hospital of Zhejiang University
China	Ming Ding	Zhongda Hospital, Southeast University
China	De-Chao Jiao	The first Affiliated Hospital of Zhengzhou University
China	Zhen Zhao	Zhongda Hospital, Southeast University
China	Fei Jiang	Changhai Hospital of Shanghai
China	Ying Lv	The Affiliated Nanjing Drum Tower Hospital of Nanjing University Medical School
China	Hai-Peng Yu	Tianjin Medical University Cancer Institute & Hospital
China	Jie Pan	Peking Union Medical College Hospital
China	Jian Lu	Zhongda Hospital, Southeast University
China	Juan Liu	Zhongda Hospital, Southeast University
China	Xiao-Feng Chen	The First Affiliated Hospital of Nanjing Medical University
China	Bin Xiao	First Affiliated Hospital of Nanjing Medical University
China	Jie-Fang Guo	Changhai Hospital of Shanghai
China	Xi-Tai Sun	The Affiliated Nanjing Drum Tower Hospital of Nanjing University Medical School
China	Gui-Qi Wang	National Cancer Center/Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College
China	Yue-Wei Zhang	Beijing Tsinghua Changgung Hospital
China	Rong Chen	Zhongda Hospital, Southeast University
China	Zhuo Yang	The General Hospital of Shenyang Military Region
China	Si-De Liu	Nanfang Hospital, Southern Medical University

China	Zhi Wang	Zhongda Hospital, Southeast University
China	Chen Liu	Beijing Cancer Hospital
China	Xiao-Ping Gu	The Affiliated Nanjing Drum Tower Hospital of Nanjing University Medical School
China	Mu-Huo Ji	Zhongda Hospital, Southeast University
China	Jing-Min Wang	Zhongda Hospital, Southeast University
China	Jun Chen	Cancer Hospital of Jiangsu Province, Cancer Institution of Jiangsu Province
China	Hong-Guang Wang	People's Hospital of Jilin City
China	Shun He	National Cancer Center/Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College
China	Jia-Ping Li	The First Affiliated Hospital, Sun Yat-Sen University
China	Zheng-Qiang Yang	The First Affiliated Hospital of Nanjing Medical University
China	Hui-Min Lu	West China Hospital, Sichuan University
China	Gang Zhao	Shanghai East Hospital
China	Lu Wang	Zhongshan Hospital, Fudan Univeristy
China	Wei-Dong Jia	The First Affiliated Hospital of USTC (Anhui Provincial Hospital)
China	Zhi Wang	Zhongda Hospital, Southeast University
China	Ling-Xiao Liu	Zhongshan Hospital, Fudan University
China	Guang-Shao Cao	Henan Provincial People's Hospital
China	Hai-Bin Shi	The First Affiliated Hospital of Nanjing Medical University
China	Lin Zhang	Beijing Tsinghua Changgung Hospital
China	Jiang-Tao Li	Zhejiang University 2nd Hospital
China	Ting-Sheng Ling	The Affiliated Nanjing Drum Tower Hospital of Nanjing University Medical School
China	Yao-Ping Shi	Renji Hospital, School of Medicine, Shanghai Jiaotong University
China	Gang Deng	Zhongda Hospital, Southeast University
China	Tong-Guo Si	Tianjin Medical University Cancer Institute & Hospital
China	Ying-Kun He	Henan Provincial People's Hospital
China	Hong Chen	Zhongda Hospital, Southeast University
China	Zhe Wang	Affiliated Zhongshan Hospital of Dalian University
China	Wu-Wei Yang	Chinese PLA General Hospital
China	Lin-Zhong Zhu	Beijing Cancer Hospital
China	Lin-Sun Li	The First Affiliated Hospital of Nanjing Medical University
China	Liang Zong	Northern Jiangsu People's Hospital, China
China	Di-Wen Zhu	The First Affiliated Hospital of Xinjiang Medical University
China	Fang-Yu Wang	Jinling Hospital, Clinical School of Medical College, Nanjing University
China	Yu Wang	Zhongda Hospital, Southeast University
China	Wei-Wei Ding	Jinling Hospital, Clinical School of Medical College, Nanjing University
China	Xu He	Nanjing First Hospital, Nanjing Medical University
China	Yu-Liang Li	The Second Hospital of Shandong University
China	Lin Miao	The Second Affiliated Hospital of Nanjing Medical University
China	Cai-Fang Ni	First Affiliated Hospital of Soochow University
China	Fen-Qiang Li	The First Hospital Affiliated to Lanzhou University
China	Ye-Fa Yang	Eastern Hepatobiliary Surgery Hospital

China	Hao Xu	The Affiliated Hospital of Xuzhou Medical College
China	Chuan-Sheng Zheng	Union Hospital, Tongji Medical College, Huazhong University of Science and Technology
China	Huai Li	Cancer Hospital, Chinese Academy of Medical Sciences
China	Guo-Liang Shao	ZheJiang Cancer Hospital
China	Hai-Liang Li	The Affiliated Cancer Hospital of Zhengzhou University, Henan Cancer Hospital
China	Kang-Shun Zhu	The Second Affiliated Hospital of Guangzhou Medical University
China	Guo-Hui Xu	Sichuan Cancer Hospital
China	Long Jin	Beijing Friendship Hospital, Capital Medical University
China	Zai-Ming Lu	Shengjing Hospital, China Medical University
China	Cai-Xia Li	Qilu Hospital, Shandong University
China	Wei Mou	Southwest Hospital
China	Jian-Bin Wu	The Second Affiliated Hospital and Yuying Children's Hospital of Wenzhou Medical University
China	Hua Xiang	Hunan Provincial People's Hospital
China	Wei-Fu Lv	The First Affiliated Hospital of USTC (Anhui Provincial Hospital)
China	Zhi-Yuan Wu	Ruijin Hospital Affiliated to Shanghai Jiaotong University School of Medicine
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China	Xiao-Bo Hu	Jinling Hospital, Clinical School of Medical College, Nanjing University
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China	Li Zhu	General Hospital of Ningxia Medical University
China	Chang Zhao	Affiliated Tumor Hospital of Guangxi Medical University
China	Chuang He	Southwest Hospital
China	Rong Ding	Yunnan Tumor Hospital
China	Sen Jiang	Tongji University Affiliated Shanghai Pulmonary Hospital
China	Dong Lu	The First Affiliated Hospital of USTC (Anhui Provincial Hospital)
China	Zhu-Ting Fang	Provincial Hospital of Fujian
China	Zhi-Jin Chen	Ruijin Hospital Luwan Branch, Shanghai Jiao Tong University School of Medicine
China	Shi Zhou	The Affiliated Hospital of Guizhou Medical University
China	Hui Xue	First Affiliated Hospital of Xi'an Jiaotong University
China	Ying-Chun Li	The 2nd Affiliated Hospital of Kunming Medical University
China	Hong-Shan Zhong	The First Affiliated Hospital of China Medical University
China	Chang-Long Hou	The First Affiliated Hospital of USTC (Anhui Provincial Hospital)
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China	Rui-Fan Yuan	The Second Affiliated Hospital of Nantong University
China	Zhen-Hai Di	The Affiliated Hospital of Jiangsu University
China	Wei-Jun Fan	Sun Yat-Sen University Cancer Center
China	Xin Ye	Shandong Provincial Hospital Affiliated to Shandong University
China	Cheng-Li Li	Shandong Medical Imaging Research Institute Affiliated to Shandong University
China	Bo Zhai	Renji Hospital, School of Medicine, Shanghai Jiaotong University
China	Xiao-Qing Zhu	First Affiliated Hospital of Soochow University
China	Wen Fang	Zhongda Hospital, Southeast University
China	Ge Wang	The Second People's Hospital of Changzhou
China	Tong-Qing Xue	Huaiyin Hospital of Huai'an City
China	Hong-Jian Shi	The Affiliated Wujin Hospital, Jiangsu University
China	Peng-Hua Lv	Northern Jiangsu People's Hospital
China	Wen-Bin Ding	The Second Affiliated Hospital of Nantong University
China	Feng Dai	The Second Hospital of Nanjing
China	Yu-Qing Gu	Taicang No.1 People's Hospital
China	Jin-Hua Song	Nanjing First Hospital, Nanjing Medical University
China	Chuan Xu	Sichuan Cancer Hospital
China	Wei-Yu Wang	Anhui Provincial Tumor Hospital
China	Hui Yu	Cancer Hospital of Jiangsu Province, Cancer Institution of Jiangsu Province
China	Yun-Jie Zhu	Third People's Hospital of Yancheng
China	Jian-Ping Gu	Nanjing First Hospital, Nanjing Medical University
China	Jin-He Guo	Zhongda Hospital, Southeast University
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China	Jia-Rui Li	The First Hospital of Jilin University
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China	Guo-Wen Yin	Cancer Hospital of Jiangsu Province, Cancer Institution of Jiangsu Province
China	Qi Wang	The First People's Hospital of Changzhou
China	Duan-Ming Du	The Second People's Hospital of Shenzhen
China	Bao-Qi Shi	Inner Mongolia People's Hospital
China	Shan-Zhi Gu	Hunan Cancer Hospital and The Affiliated Cancer Hospital of Xiangya School of Medicine
China	Guang-Yan Si	Hospital (T.C.M) Affiliated to Southwest Medical University
China	Lei Chen	The Affiliated Suzhou Hospital of Nanjing Medical University
China	Bin Zhou	The Affiliated Hospital of Hangzhou Normal University
China	Xiao Zhang	Chinese PLA General Hospital
China	Ning Xia	Ruijin Hospital Luwan Branch, Shanghai Jiao Tong University School of Medicine
China	Cong Ma	The Second Xiangya Hospital of Central South University
China	Yue-Qi Zhu	Shanghai Jiao Tong University Affiliated Sixth People's Hospital
China	Tao Pan	Zhongda Hospital, Southeast University
China	Cao-Ye Wang	The First People's Hospital of Changzhou
China	Wei-Zhong Zhou	The First Affiliated Hospital of Nanjing Medical University
China	Xu-Dong Qu	Zhongshan Hospital, Fudan Univeristy

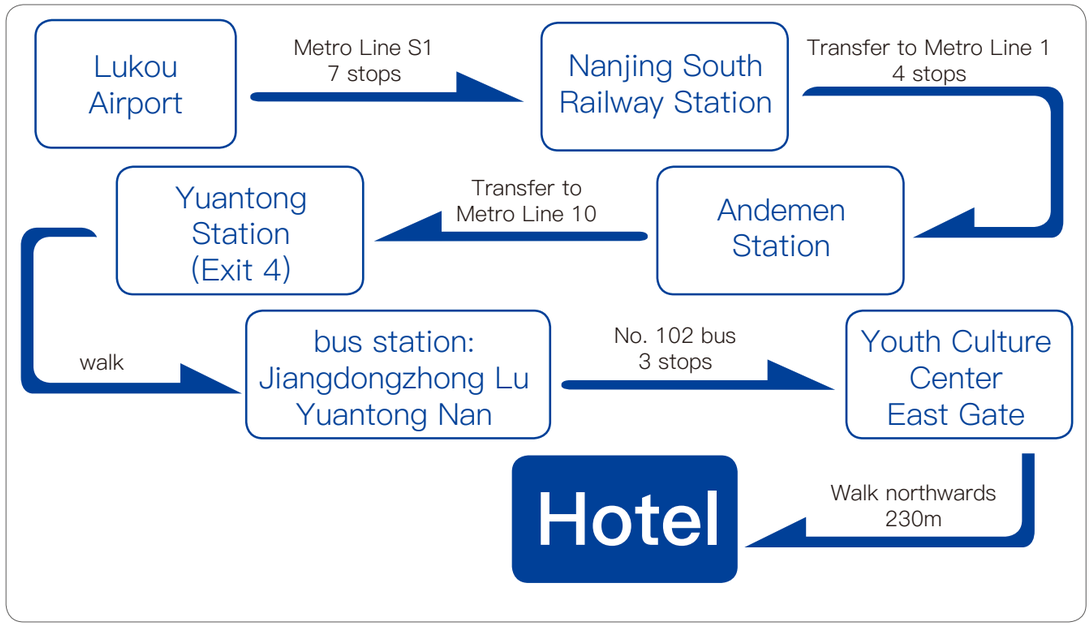
General Information

Registration Time: October 18, 2018 @ 08:00 – 22:00
Registration Location: Nanjing International Youth Convention Hotel (8 Yecheng Road, Jianye District, Nanjing)
Meeting Dates: October 19–20, 2018
Meeting Venue: 5th & 7th floors, Nanjing International Youth Convention Center

Traffic Routes

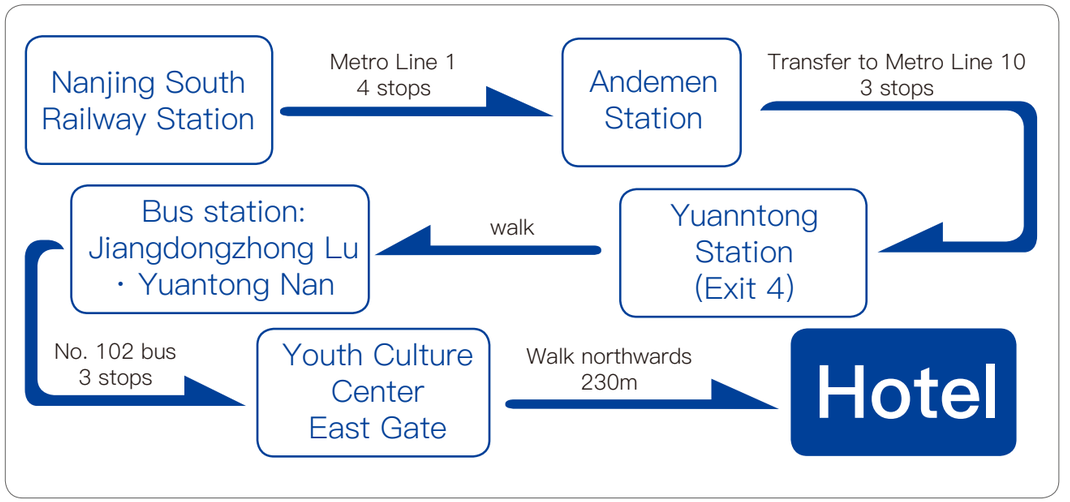
1. Nanjing Lukou International Airport Nanjing International Youth Convention Hotel

- **Around 40 and 44 min**



2. Nanjing South Railway Station Nanjing International Youth Convention Hotel

- **Around 12.5 km and 21min**



October 18, Thursday

13:30–17:40	Chinese Expert Consultation onIntervention Radiology of LiverCancer (Chinese) (Bayer)	Jinshajiang Hall

October 19, Friday

08:00–09:30	Session 1.Local ablation for HCC	Nanjing Hall-A
10:30–11:00	Opening	
11:00–12:20	Keynote Speech	
12:30–13:30	EXPO	
13:30–15:30	Special Session.Esophageal stents: clinical andexperimental applications	
15:30–17:00	Session 2.How to manage ruptured HCC	
17:00–18:30	Session 3.Portal hypertension and portalvenous embolization	
08:00–09:30	Session 4.Endoscopic vs. radiologic approach to the management of colorectalobstruction: which is better?	Nanjing Hall-B
10:30–11:00	Opening	
11:00–12:20	Keynote Speech	
12:30–13:30	EXPO	
13:30–15:00	GI Bleeding Session – 1 (Chinese)(Boston Scientific)	
15:30–17:00	GI Bleeding Session – 2 (Chinese)(Boston Scientific)	
17:00–18:30	CCI Youth Session – 1 (Chinese)	
08:00–09:30	Case-based Discussion 1.Feeding strategy in the palliativemanagement of gastrointestinalcancer	Zhonghua Hall-A
12:30–13:30	Luncheon Sysmposium – 1.Micro-Tech (Nanjing) Co., Ltd.	
13:30–15:00	Session 5.Endoscopic treatment forcomplication after GI oncology	
15:30–17:00	Session 6.Hybrid approaches in managementof gastric tumor	
17:00–18:30	Session 7.Endoscopic treatment for oncologiccomplications	
08:00–09:30	Debate Session.Cystic pancreatic neoplasms: what’s new in2018? (pancreatic cysts – why thecontroversy?)	Zhonghua Hall-B
12:30–13:30	Luncheon Sysmposium – 2.Boston Scientific	
13:30–15:00	Session 8.Recent progress of local ablation therapy forpancreatobiliary malignancy	
15:30–17:00	Session 9.Interventional management in pancreatobiliary malignancy	
17:00–18:30	Session 10.Tumor ablation therapies	
08:00–09:30	Session 11.The treatment of intermediate-stage HCCs	Zhonghua Hall-C
12:30–13:30	EXPO	
13:30–15:00	Session 12.Dark and light of radiation therapy in colorectal cancer	
15:30–17:00	Session 13.Debatable issues in the management ofcolorectal neoplasia	
17:00–18:30	Session 14.The cutting edge of colorectal endoscopicsubmucosal dissection	
07:30–08:30	● Live Demonstration-1	Room 725
08:45–09:45	● Live Demonstration-2	
12:00–13:00	● Live Demonsration-3	
13:30–14:30	● Video Session-1	
15:30–18:30	● Live Demonsration & Video Session	
12:30–13:30	EXPO	Room 736
13:30–15:00	Session 15.Lung metastases	
15:30–17:00	Session 16.A guide to better manuscript writing inEnglish	
17:30–19:30	Editorial Board Meeting	

12:30–13:30	EXPO	Room 730
13:30–15:00	Chinese Session- 1.	
15:30–17:00	Session 17.Sedation symposium	
17:00–18:00	SGI Steering Committee Meeting	
12:30–13:30	EXPO	Room 733
13:30–15:00	CCI-RISE (Radiologist InterventionalSkill Enhancement) Project	
15:30–18:30	CCI-RISE (Radiologist InterventionalSkill Enhancement) Project	

October 20, Saturday

08:30–10:00	Tumor Ablation Session – 1.	Nanjing Hall-A
10:30–12:30	Tumor Ablation Session – 2.	
12:30–13:30	EXPO	
13:30–15:30	Tumor Embolization Session.	
15:30–17:15	CCI Youth Session – 2	
08:30–10:00	Session 18.Approaches to clinical T1b cancers inupper gastrointestinal tract	Nanjing Hall-B
10:30–12:30	Session 19.Management of gastrointestinal stromaltumor (GIST)	
12:30–13:30	EXPO	
13:30–15:00	Session 20.Stretagies for the multidisciplinarymanagement of colorectal cancer	
15:30–17:00	Session 21.Complications related to endoscopic orradiologic intervention of colorectalneoplasia: risk and management	
08:30–10:00	Session 22.Introduction of palliative interventionfor pancreatic cancer	Zhonghua Hall-A
10:30–12:30	Session 23.Management of complications afterpancreatobiliary surgery	
12:30–13:30	EXPO	
13:30–15:00	Session 24.Recent progress in CBD stones removal under ERCP	
15:30–17:00	Case-based Discussion 2.Management of acute cholecystitis	
17:00–18:30	Free Paper Session – 3.	
08:30–10:00	Session 25.New strategy for overcoming the stentobstruction in malignant obstruction	Zhonghua Hall-B
10:30–12:30	Session 26.Non-conventional access for biliary andduodenal stents	
12:30–13:30	EXPO	
13:30–15:00	Session 27.Multidisciplinary management of necrotizing pancreatitis	
15:30–17:00	Session 28.Bile duct injury: When to repair with surgery and when to use minimally invasive procedures	
17:00–18:30	Free Paper Session – 4.	
08:30–10:00	Free Paper Session – 1.	Zhonghua Hall-C
10:30–12:30	Session 29.Management of HCC with PVTT	
12:30–13:30	EXPO	
13:30–15:00	Chinese Session- 2 (Chinese).	
15:30–17:00	Session 30.Other tumor ablation or intervention sessions	
08:30–12:30	● Hands-on WorkshopPercutaneous biliary intervention	Room 725
14:00–15:00	● Live Demonstration-4	
15:30–17:00	● Video Session-2	
07:30–08:30	SGI Editorial Committee Meeting	Room 730
08:30–10:00	Free Paper Session – 2.	
10:00–12:30	Chinese Red Cross Fundation iHOPE(interventional Hengrui OncologyPatient Embrace) Project	

October 18, Thursday

Jiuzhou Hall

14:00–20:00	Speaker Ready Room

Jinshajiang Hall

13:30–17:40	Chinese Expert Consultation on Intervention Radiology of Liver Cancer
	Moderator(s)：滕皋军，王建华
	Panel Discussion/Expert Comment 郑传胜 李 槐 邵国良 黎海亮 朱康顺 许国辉 金 龙 张跃伟 卢再鸣 李彩霞 牟 玮 杨正强 吴建兵

October 19, Friday

Jiuzhou Hall

07:30–18:00	Speaker Ready Room

Nanjing Hall

10:00–11:00	Opening Ceremony	
11:00–12:20	Keynote Speech	
	Moderator(s)：Young Deok Cho, Hai-Bin Shi	
11:00–11:20	**Lee DongKi** Overcoming the unmet needs of biliary metal stent	Yonsei University, Korea
11:20–11:40	**Gao-Jun Teng** Irradiation stents: innovation and application	Zhongda Hospital, Southeast University, China
11:40–12:00	**Michel Kahaleh** Therapeutic EUS: the future of endoscopy	Weill Cornell Medical College, Cornell University, USA
12:00–12:20	**Bing-Rong Liu** The study on the advancement of Natural orifice transluminal endoscopic surgery (NOTES)	The First Affiliated Hospital of Zhengzhou University, China

Nanjing Hall - A

08:00–09:30	**Session 1. Local ablation for HCC**	
	Moderator(s)：Edward W. Lee, Hai-Bo Shao	
08:00–08:20	**Min Woo Lee** Radiofrequency ablation: is expansion of indication justified?	Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea
08:20–08:40	**Hai-Bo Shao** DEB-TACE vs. Microwave ablation: imaging and pathology	The First Hospital of China Medical University, China
08:40–09:00	**Bin Liu** CT-guided Percutaneous Microwave Ablation for Liver Tumors	The Second Hospital of Shandong University. China
09:00–09:20	**Edward W. Lee** Irreversible electroporation: mechanism and indication	Ronald Reagan-UCLA Medical Center, USA
09:20–09:30	**Discussion**	

13:30–15:30	**Special Session. Esophageal stents: clinical and experimental applications**	
	Moderator(s)：Richard A. Kozarek, Ho-Young Song	
13:30–13:45	**Hans-Ulrich Laasch** The Role of Esophageal Stents in Malignant Esophageal Strictures	The Christie, UK
13:45–14:00	**Kenneth F. Binmoeller** The underwater method of endoscopic mucosal resection without submucosal injection	California Pacific Medical Center, USA
14:00–14:15	**Ho Young Song** The Role of Esophageal Stents in Benign Esophageal Strictures	University of Ulsan, Korea
14:15–14:30	**Raman Uberoi** How to Treat Endoscope or Stent Induced Esophageal Rupture	Oxford University, UK
14:30–14:45	**Jung-Hoon Park** Nanofunctionalized stent for esophageal stent-related restenosis	University of Ulsan, Korea
14:45–15:00	**Nader Bakheet** Esophageal Stents: Clinical and Experimental Applications Drug Releasing Stents in the Esophagus	Cairo University, Egypt
15:00–15:30	**Discussion**	
15:30–17:00	**Session 2. How to manage ruptured HCC**	
	Moderator(s)：Jong Yun Won, Dong Il Gwon	
15:30–15:50	**TBD** Staging of ruptured HCC: Ruptured versus non-ruptured HCC	TBD
15:50–16:10	**Lin Zhang** Management of HCC with AP-shunts: strategy updates	Beijing Tsinghua Changgung Hospital, China
16:10–16:30	**Jiangtao Li** Open Surgery for Ruptured HCC	Zhejing University 2nd Hospital, Hangzhou, China
16:30–16:50	**Zhang-Jun Cheng** Liver Resection for Ruptured Hepatocellular Carcinoma: Laparoscopic or Open?	Zhongda Hospital, Southeast University, China
16:50–17:00	**Discussion**	
17:00–19:00	**Session 3. Portal hypertension and portal venous embolization**	
	Moderator(s)：Sangjoon Park, Dong Il Gwon	
17:00–17:07	**Jong Yun Won** Topics related with portal hypertension	Yonsei University, Korea
17:07–17:15	**Jong Yun Won** Gastric variceal bleeding: TIPS versus BRTO versus PARTO	Yonsei University, Korea
17:15–17:25	**Don Haeng Lee** Controlling GI bleeding with endoscopically applied hemostatic powder	Inha University, Korea
17:25–17:35	**Jian-Jun Luo** TIPS for gastroesophageal varices--Reconsideration about HVPG and TIPS	Fudan University Zhongshan Hospital, China
17:35–17:45	**Feng Duan** TIPS for gastroesophageal varices--IR for Abernathy Malformation	Chinese PLA General Hospital, China

17:45–17:55	**Xiao–Li Zhu** Embolization of portal venous varices during TIPS: glues or coils?	The First Affiliated Hospital of Soochow University, China
17:55–18:05	**Dong Ho Hyun** Classic BRTO: anatomy and results	Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea
18:05–18:15	**Jong Jun Shim** PARTO: technique and results	Soonchunhyang University Hospital Bucheon, Korea
18:15–18:25	**Dae Won Jung** Management of hepatic encephalopathy related with portosystemic shunt: when and how	Hanyang University, Korea
18:25–18:35	**Sangjoon Park** Principles and indications for portal vein embolization	Catholic Kwandong University College of Medicine, International St. Mary's Hospital, Korea
18:35–18:45	**Shu–You Peng** Advancing from modifying ALPPS to developing a new model for treating liver carcinoma	Zhejiang Univeristy, China
18:45–18:55	**Xiao–Long Qi** HVPG guided diagnosis and management for portal hypertension: CHESS updates	CHESS Group
18:55–19:00	**Discussion**	

Nanjing Hall – B

08:00–09:30	**Session 4. Approaches to the management of colorectal obstruction**	
	Moderator(s): Kenneth F. Binmoeller, Xin Shi	
08:00–08:20	**Yun–Shi Zhong** Cutting Edge in the Endoscopic Management for Benign Colorectal Stricture?	Zhongshan Hospital of Fudan University, China
08:20–08:40	**Bing–Yan Liu** Stent implantation for Intestinal fistula	TongRen Hospital Affiliated to Shanghai Jiaotong University School of Medicine, China
08:40–09:00	**Xin Shi** Surgical treatment of colorectal obstruction	Zhongda Hospital, Southeast University, China
09:00–09:20	**Se Hwan Kwon** Radiologic Stent for the Treatment of Malignant Colorectal Obstruction	Kyung Hee University Hospital, Korea
09:20–09:30	**Discussion**	
13:30–15:30	**GI Bleeding Session – 1 (presented in Chinese only)**	
	Moderator(s): 向华, 吕维富	
13:30–13:45	**杨业发** 胆道狭窄射频治疗的新进展	海军军医大学附属东方肝胆外科医院
13:45–14:00	**吴志远** BRTO治疗消化道出血	上海交通大学医学院附属瑞金医院
14:00–14:15	**金桂云** 消化道出血的介入治疗	海南医学院第一附属医院
14:15–14:30	**赵中伟** 介入对消化道急诊出血的意义	丽水市中心医院
14:30–14:45	**张学强** 弹簧圈在消化道出血中的作用	河北医科大学第二医院
14:45–15:00	**Discussion** **Shicheng He 何仕诚, Xiaoyong Huang 黄小勇, Mingsheng Huang 黄明声**	
15:30–17:00	**GI Bleeding Session – 2 (presented in Chinese only)**	

	Moderator(s): 韩国宏, 杨业发	
15:30–15:45	**赵剑波** Tips中曲张静脉的栓塞经验	南方医科大学南方医院
15:45–16:00	**管 圣** Tips手术的经验之我见	新疆维吾尔自治区人民医院
16:00–16:15	**孙军辉** PVE的栓塞治疗	浙江医科大学一附院
16:15–16:30	**李 雷** Tips术中栓塞曲张的胃管食底静脉	青岛市中心医院
16:30–16:45	**胡小波** PTVE联合PSE治疗门脉高压消化道出血	郑州大学第一附属医院
16:45–17:00	**郭应兴** 编织支架在tips手术中的应用	青海大学附属医院
	Panel Discussion/Expert Comment **诸葛宇征, 张春清, 朱光宇**	
17:00–18:45	**CCI Youth Session – 1 (presented in Chinese only) 青委专场–1**	
	Moderator(s): 朱力, 赵昌	
17:00–17:15	**何 闯** CT引导下I–125粒子植入治疗HCC肝外转移的临床应用	陆军军医大学西南医院
17:15–17:30	**丁 荣** 食管支架植入并发症处理病例分享	云南省肿瘤医院
17:30–17:45	**江 森** 房间隔封堵器封堵难治性良性气管食管瘘	上海市肺科医院
17:45–18:00	**鲁 东** 胆道腔内射频消融联合支架植入治疗恶性梗阻性黄疸	安徽省立医院
18:00–18:15	**方主亭** 介入科在结直肠癌肝转移MDT诊疗中的角色	福建省立医院
18:15–18:30	**陈志瑾** CT引导下3D共面模板125I粒子植入近距离照射纵膈恶性肿瘤及淋巴结转移瘤	上海交通大学医学院附属瑞金医院卢湾分院
18:30–18:45	**Discussion**	

Zhonghua Hall – A

08:00–09:30	**Case–based Discussion 1. Feeding strategy in the palliative management of gastrointestinal cancer**	
	Moderator(s): Hans–Ulrich Laasch, Sheng Liu	
08:00–08:20	**Chun–Qing Zhang** Fluoroscopy–assisted endoscopic gastroenterostomy with a bi–flanged lumen–apposing self–expandable metal stent: a preliminary study	Shandong Provincial Hospital Affiliated to Shandong University, China
08:20–08:40	**Tian–Zhi An** Feeding jejunal tube placement: When is the best timing for tube insertion?	Affiliated Hospital of Guizhou Medical University, Guiyang, China
08:40–09:00	**Hans–Ulrich Laasch** Radiologic gastrostomy	The Christie, UK
09:00–09:20	**Jun–Sheng Li** Laparoscopic minimal invasive treatment of severe esophageal hernia disease	Zhongda Hospital, Southeast University, China
09:20–09:30	**Discussion**	
12:30–13:30	**Luncheon Symposium – micro–tech**	
13:30–15:00	**Session 5. Endoscopic treatment for complication after GI oncology**	

	Moderator(s): Hwoon-Yong Jung, Rui-Hua Shi	
13:30–13:50	**Rui-Hua Shi** The optimal treatment strategy for tracheoesophageal fistula with esophageal cancer	Zhongda Hospital, Southeast University, China
13:50–14:10	**Zhi-Ning Fan** Prevention and treatment of refractory stricture after ESD or radiation therapy for esophageal cancer	The First Affiliated Hospital with Nanjing Medical University, China
14:10–14:30	**Jun Chul Park** Endoscopic management of leaks after esophagectomy/ gastrectomy: endoluminal vacuum therapy	Yonsei University, Korea
14:30–14:50	**Ting-Sheng Ling** Endoscopic salvage treatment for Barrett's associated neoplasia after EMR and/or ablation	Nanjing Drum Tower Hospital, China
14:50–15:00	**Discussion**	
15:30–17:00	**Session 6. Hybrid approaches in management of gastric tumor**	
	Moderator(s): Joo Young Cho, Yao-Ping Shi	
15:30–15:50	**Chan Gyoo Kim** Endoscopic Full-Thickness Resection with Laparoscopic Assistance for Gastric Subepithelial Tumors	National Cancer Center, Goyang, Korea
15:50–16:10	**Jian-Song Ji** Preoperative arterial chemoembolization versus systematic chemotherapy: curative effect analyses in advanced gastric cancer patients	Lishui Central Hospital, China
16:10–16:30	**Joo Young Cho** Endoscopic full-thickness resection with sentinel lymph node dissection in early gastric cancer	CHA University, Seongnam, Korea
16:30–16:50	**Naoki Hiki** Laparoscopic endoscopic cooperative surgery in early gastric cancer	Cancer Institute Hospital, Tokyo, Japan
16:50–17:00	**Discussion**	
17:00–18:30	**Session 7. Endoscopic treatment for oncologic complications**	
	Moderator(s): Seungmin Bang, Gang Deng	
17:00–17:20	**Ming Ding** Endobronchial Interventional Therapy for Tracheobronchial Fistula	Zhongda Hospital, Southeast University, China
17:20–17:40	**Shayan Irani** Cholecystitis in Pancreatic CA – Endoscopic Approach	Virginia Mason Medical Center, USA
17:40–18:00	**De-Chao Jiao** Cholecystitis in Pancreatic CA – Percutaneous Approach	The first Affiliated Hospital of Zhengzhou University, China
18:00–18:20	**Kenneth F. Binmoeller** Management of Combined Biliary + Duodenal Obstruction	California Pacific Medical Center, USA
18:20–18:30	**Discussion**	

Zhonghua Hall – B

08:00–09:30	**Debate Session. Cystic pancreatic neoplasms: what's new in 2018? (pancreatic cysts – why the controversy?)**	
	Moderator(s): Jeffrey H. Lee, Seungmin Bang	
08:00–08:20	**Zhen Zhao** Imaging diagnosis of pancreatic cysts	Zhongda Hospital, Southeast University, China
08:20–08:40	**Walter Park** Molecular analysis of pancreatic cyst fluid	Stanford University, USA

08:40–09:00	**Fei Jiang** Ablation of pancreatic cysts	Changhai Hospital, China
09:00–09:20	**Ying Lv** Management of pancreatic cysts — why the controversy?	The Affiliated Nanjing Drum Tower Hospital of Nanjing University Medical School, China
09:20–09:30	**Discussion**	
13:30–15:00	**Session 8. Recent progress of local ablation therapy for pancreatobiliary malignancy**	
	Moderator(s): Young Deok Cho, Qi Zhang	
13:30–13:50	**Jae Hee Cho** Endobiliary RFA for malignant biliary obstruction	Gachon University, Gil Medical Center, Korea
13:50–14:10	**Li-Zhi Niu** Simultaneous Gemcitabine and Irreversible Electroporation Treatment for Unresectable Pancreatic Cancer: Preliminary Experience in a Prospective Randomized Controlled Trial	Affiliated Fuda Cancer Hospital, Jinan University, China
14:10–14:30	**Zhong-Min Wang** Percutaneous intraductal radiofrequency ablation for treatment of biliary stent occlusion: A preliminary result	Ruijin Hospital Luwan Branch, Shanghai Jiao Tong University, China
14:30–14:50	**Tong-Guo Si** Percutaneous cryoablation of advanced pancreatic carcinoma: technique and strategy	Tianjin Medical University Cancer Institute & Hospital, China
14:50–15:00	**Discussion**	
15:30–17:00	**Session 9. Interventional management in pancreatobiliary malignancy**	
	Moderator(s): Yi Zhang	
15:30–15:50	**Jie Pan** Role of interventional radiology in the management of complications after pancreaticoduodenectomy	Peking Union Medical College Hospital, China
15:50–16:10	**Jian Lu** Palliative treatment with radiation-emitting metallic stents in unresectable Bismuth type III or IV hilar cholangiocarcinoma	Zhongda Hospital, Southeast University, China
16:10–16:30	**Juan Liu** Endoscopic management of anastomotic biliary stricture	Zhongda Hospital, Southeast University, China
16:30–16:50	**Xiao-Feng Chen** Immunotherapy for cholangiocarcinoma	Jiangsu Province Hospital, China
16:50–17:00	**Discussion**	
17:00–18:30	**Session 10. Tumor ablation therapies**	
	Moderator(s): Reiko Ashida, Yingkun He	
17:00–17:15	**Bin Xiao** EUS-guided injection therapies	First Affiliated Hospital of Nanjing Medical University, China
17:15–17:30	**Jie-Fang Guo** EUS-guided RFA	Changhai Hospital, China
17:30–17:45	**Xi-Tai Sun** Laparoscopic liver tumor ablation	The Affiliated Nanjing Drum Tower Hospital of Nanjing University Medical School, China
17:45–18:00	**Reiko Ashida** EUS-guided fiducial marker placement	Osaka Medical Center, Japan
18:00–18:15	**Gui-Qi Wang** Future directions in EUS-guided tumor ablation	National Cancer Center/Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, China
18:15–18:30	**Discussion**	

Zhonghua Hall – C

08:00–09:30	**Session 11. The treatment of intermediate-stage HCCs**	
	Moderator(s): Yun Hwan Kim, Hyun Ki Yoon	
08:00–08:10	**Jin Hyoung Kim** Subclassification of intermediate-stage HCC	Asan Medical Center, Korea
08:10–08:20	**In Joon Lee** cTACE in the treatment of intermediate stage HCCs	National Cancer Center, Korea
08:20–08:30	**Teiji Kuzuya** bTACE	Nagoya University Hospital, Japan
08:30–08:40	**Jin Hyoung Kim** DC bead	Asan Medical Center, Korea
08:40–08:50	**Hyun Ki Yoon** Hepasphere	University of Ulsan College of Medicine, Asan Medical Center, Korea
08:50–09:00	**Kevin Kim** When TARE should be incorporated in the BCLC guideline?	Yale School of Medicine, USA
09:00–09:10	**Yue-Wei Zhang** Clinical application of comprehensive interventional therapy in the treatment of hilar tumors: a series of case reports	Beijing Tsinghua Changgung Hospital, China
09:10–09:30	**Discussion**	
13:30–15:00	**Session 12. Dark and light of radiation therapy in colorectal cancer**	
	Moderator(s): Eui Kyu Chie, Rong Chen	
13:30–13:50	**Rong Chen** Update on Clinical Utilization of Radiation Therapy in Colorectal Cancer	Zhongda Hospital, Southeast University, China
13:50–14:10	**Eui Kyu Chie** Complication of Radiation Therapy in Colorectal Cancer	Seoul National University College of Medicine, Korea
14:10–14:30	**Zhuo Yang** Endoscopic Management of Chronic Radiation Proctitis	The General Hospital of Shenyang Military Region, China
14:30–14:50	**Jin Kim** A Shifting Paradigm in Locally Advanced Rectal Cancer Management	Korea Cancer Center Hospital, Korea Institute of Radiological and Medical Sciences, Korea
14:50–15:00	**Discussion**	
15:30–17:00	**Session 13. Debatable issues in the management of colorectal neoplasia**	
	Moderator(s): Jing-Min Wang, Dong Hoon Yang	
15:30–15:50	**Si-De Liu** Therapeutic strategy for early colon cancer in the ESD era	Nanfang Hospital, Southern Medical University, China
15:50–16:10	**Qing-Song Tao** Management of Postoperative Colorectal Fistula	Zhongda Hospital, Southeast University, China
16:10–16:30	**Yun-Shi Zhong** Malignant colonic obstruction: to stent or not to stent?	Zhongshan Hospital of Fudan University, China
16:30–16:50	**Dong Hoon Yang** Dysplasia in the ulcerative colitis: colectomy or endoscopic resection?	Asan Medical Center, University of Ulsan College of Medicine, Korea
16:50–17:00	**Discussion**	
17:00–18:30	**Session 14. The cutting edge of colorectal endoscopic submucosal dissection**	
	Moderator(s): Jeong Sik Byeon, Hong Chen	
17:00–17:20	**Ping-Hong Zhou** Colorectal ESD: Past, present, and future	Zhongshan Hospital of Fudan University, China
17:20–17:40	**Jeong Sik Byeon** Long-term outcome of colorectal ESD in comparison with endoscopic piecemeal resection and surgery	University of Ulsan, Asan Medical Center, Korea
17:40–18:00	**Bo-In Lee** New techniques and devices of colorectal ESD	The Catholic University of Korea, Korea
18:00–18:20	**Zhi Wang** Endoscopic submucosal dissection (ESD) for treating colorectal laterally spreading tumors (LSTs)	Zhongda Hospital, Southeast University, China
18:20–18:30	**Discussion**	

Room 725

07:30–08:30	**Live Demonstration-1**
	Moderator(s): Richard Kozarek, Wen Li
08:45–09:45	**Live Demonstration-2**
	Moderator(s): Young Deok Cho, Bin-Rong Liu
12:00–13:00	**Live Demonsration-3**
	Moderator(s): Hwoon-Yong Jung, Hong-Guang Wang
13:30–14:30	**Video Session-1**
15:30–18:30	**Live Demonsration & Video Session**

Room 736

13:30–15:00	**Session 15. Lung metastases**	
	Moderator(s): Chen Liu	
13:30–13:45	**Chen Liu** Thermal ablation strategy for thoracic oligometastatic lesions of colorectal cancer	Beijing Cancer Hospital, China
13:45–14:00	**Zhe Wang** CT-guided 125I brachytherapy for lung metastases arising from colorectal cancer	Affiliated Zhongshan Hospital of Dalian University, China
14:00–14:15	**Li-Zhi Niu** The Application of a Triple Freeze Cycle Protocols in Advanced Non-small Cell Lung Cancer	Affiliated Fuda Cancer Hospital, Jinan University, China
14:15–14:30	**Wu-Wei Yang** Cryoablation for metastatic lung tumors	Chinese PLA General Hospital, China
14:30–14:45	**Lin-zhong Zhu** Role of inferior phrenic artery in the TACE of lung metastasis	Beijing Cancer Hospital, China
14:45–15:00	**Discussion**	
15:30–17:00	**Session 16. A guide to better manuscript writing in English**	
	Moderator(s): Ho Young Song, Richard A. Kozarek	
15:30–15:50	**Richard A. Kozarek** The ABCs of Writing Medical Papers in English	Virginia Mason Medical Center, USA
15:50–16:10	**Kenneth F. Binmoeller** How to Present Medical Papers in English	California Pacific Medical Center, USA

16:10–16:30	**Ho Young Song** How to Run the Authorship Conference	University of Ulsan, Korea
16:30–17:00	**Discussion** **Richard A. Kozarek, Kenneth F. Binmoeller, Ho-Young Song, Tsauo Jiaywei, Dongki Lee, Koichiro Yamakado, Raman Uberoi, Mariano Eduardo Gimenez**	
17:30–19:30	**CCI-Chinese clinical practice guideline of TIPSS for portal hypertension**	
	Moderator(s): Gao-Jun Teng	
	Panel Discussion/Expert Comment **Shi Zhou, Hua Xaing, YuZheng Zhuge, ChunQing Zhang, Hui Xue, XiaoLi Zhu, JunHui Sun, YingChun Li, HongShan Zhong, JianJun Luo, MingSheng Huang, JianBo Zhao, ChangLong Hou, JiaPing Li, JianJun Li, Fei Gao, Feng Duan, JianSong Ji, ChangLu Yu, Lei Li, TanYang Zhou**	

Room 730

13:30–15:00	**Chinese Session（presented in Chinese only）**	
	Moderator(s)：黎海亮，李迎春	
13:30–13:45	**杨继金** 肝癌dTACE的不良反应	海军军医大学附属长海医院
13:45–14:00	**周　石** TIPS支架直径选择的经验与思考	贵州医学院附属医院
14:00–14:15	**钟红珊** 门体静脉异常分流的封堵治疗	中国医科大学附属第一医院
14:15–14:30	**薛　挥** Tips治疗肝硬化的焦点纷争	西安交通大学第一附属医院
14:30–14:45	**侯昌龙** SOSS的tips治疗经验分享	安徽省立医院
14:45–15:00	**Discussion**	
15:30–17:00	**Session 17. Sedation symposium**	
	Moderator(s): Hans Ulrich Laasch, Tian-Zhi An	
15:30–15:50	**Hans Ulrich Laasch** Analgesia and conscious sedation by non-anaesthetists	The Christie NHS Foundation Trust, UK
15:50–16:10	**Xiao-Ping Gu** Application of opioids in gastrointestinal endoscopy	Nanjing Drum Tower Hospital, China
16:10–16:30	**Mu-Huo Ji** Deep sedation for endoscopy: known knowns and known unknowns	Zhongda Hospital, Southeast University, China
16:30–16:50	**Tian-Zhi An** When should you have an anaesthetist?	Affiliated Hospital of Guizhou Medical University, Guiyang, China
16:50–17:00	**Discussion**	
17:00–18:00	**SGI Steering Committee Meeting**	

Room 733

13:30–15:00	**CCI-RISE (Radiologist Interventional Skill Enhancement) Project**
15:30–18:30	**CCI-RISE (Radiologist Interventional Skill Enhancement) Project**

October 20, Saturday

Jiuzhou Hall

07:30–18:00	**Speaker Ready Room**

Nanjing Hall - A

08:30–10:00	**Tumor Ablation Session – 1**	
	Moderator(s)：庄一平，袁瑞凡，狄镇海	
08:30–08:45	**范卫君** 肾上腺肿瘤的消融治疗	中山大学肿瘤防治中心
08:45–09:00	**叶　欣** 从大数据看热消融治疗早期肺癌的地位	山东省立医院
09:00–09:15	**李成利** 脑胶质瘤微创介入治疗新挑战	山东省医学影像学研究所
09:15–09:30	**翟　波** 肝脏大血管瘤的微波消融治疗	河南省儿童医院　郑州大学附属儿童医院 郑州儿童医院
09:30–09:45	**王忠敏** 纳米刀治疗肾肿瘤的临床应用研究	上海交通大学医学院附属瑞金医院
09:45–10:00	**讨　论** **Wen Fang 方文，Ke Wang 汪舸，Xiaoqing Zhu 朱小庆**	
10:30–12:30	**Tumor Ablation Session – 2**	
	Moderator(s)：薛同庆，石红建，吕朋华	
10:30–10:45	**丁文彬** 肝癌的个体化消融治疗	南通市第一人民医院
10:45–11:00	**戴　峰** TACE联合消融在体积大约10厘米原发性肝癌中应用	南京市肿瘤医院
11:00–11:15	**顾玉青** 术中氩氦刀冷冻消融治疗局部进展期胰腺癌的应用研究	南京医科大学第二附属医院
11:15–11:30	**宋进华** TACE联合射频消融及碘125粒子植入治疗肝癌	南京市第一医院
11:30–11:45	**徐　川** 肝脏肿瘤消融治疗的并发症及处理	苏北人民医院/扬州大学医学院附属医院/扬州市红十字中心医院
11:45–12:00	**讨　论** **Weiyu Wang 王伟昱，Hui Yu 余辉，Yunjie Zhu 朱云杰**	
13:30–15:30	**Tumor Embolization Session（Chinese）**	
	Moderator(s)：顾建平，郭金和，王忠敏	
13:30–13:50	**Hyun-Ki Yoon** Choice of embolic agents in TACE- update from ASAN experience	Asan Medical Center, Korea
13:50–14:10	**郑传胜** TACE治疗原发性肝癌全球循证医学证据	华中科技大学同济医学院附属协和医院武汉协和医院
14:10–14:30	**肖越勇** 骨与软组织肿瘤的冷冻消融治疗	中国人民解放军总医院
14:30–14:50	**李佳睿** 明胶海绵颗粒急诊出血性疾病中的临床应用	吉林大学白求恩第一医院
14:50–15:10	**张跃伟** 可吸收微粒同步药物栓塞肝癌和伴发动静脉瘘的安全性和疗效	北京清华长庚医院
15:10–15:30	**讨　论** **Jian Xu 许健，Guowen Yin 尹国文，Qi Wang 王祁**	
15:30–17:15	**CCI Youth Session – 2 （presented in Chinese only）**	
	Moderator(s) 主　持：于海鹏，杜端明，石宝琪	

15:30–15:45	**古善智** 内窥镜引导肿瘤消融治疗	湖南省肿瘤医院
15:45–16:00	**斯光晏** Tips术后分流道失功的处理	西南医科大学附属中医医院
16:00–16:15	**陈　磊** BRTO 治疗上消化道出血	苏州市立医院东区 (南京医科大学附属苏州医院)
16:15–16:30	**周　兵** 医用胶在小肠出血栓塞治疗中的安全性和有效性探讨	杭州师范大学附属医院
16:30–16:45	**张　肖** 纳米刀消融术在不可切除胰腺癌中的临床应用	中国人民解放军总医院
16:45–17:00	**夏　宁** 125I粒子照射成纤维细胞抑活化蛋白后对胰腺癌细胞转移与侵袭的影响	上海交通大学医学院附属瑞金医院卢湾分院
17:00–17:15	**马　聪** Whipple术后复发所致输入袢综合征的经皮介入治疗	中南大学湘雅二医院

Nanjing Hall – B

08:30–10:00	**Session 18. Approaches to clinical T1b cancers in upper gastrointestinal tract**	
	Moderator(s): Joo Young Cho, Lin-Sun Li	
08:30–08:50	**Hyunsoo Chung** Approaches to clinical T1b EGC: ESD first	Seoul National University, Korea
08:50–09:10	**Liang Zong** Approaches to clinical T1b EGC: Surgery first	Northern Jiangsu People's Hospital, China
09:10–09:30	**Hyuk Lee** Approaches to clinical T1b superficial esophageal cancer: ESD and adjuvant treatments	Sungkyunkwan Universtiy, Seoul, Korea
09:30–09:50	**Ruo-Yu Hu** Less Injury and Better Prognosis — Dialemma of the treatment selection	Zhongda Hospital, Southeast Univeristy, China
09:50–10:00	**Discussion**	
10:30–12:30	**Session 19. Management of gastrointestinal stromal tumor (GIST)**	
	Moderator(s): Zhen-Ling Ji	
10:30–10:50	**Naoki Hiki** Lapascopic resection of the GISTs on the gastoesophagel conjunction	Cancer Institute Hospital, Tokyo, Japan
10:50–11:10	**Ze-Kuan Xu** Laparoscopic Technique for GISTs, value and debate?	First Affiliated Hospital of Nanjing Medical University, China
11:10–11:30	**Bing-Rong Liu** Innovation for endoscopic resection of GISTs	The first Affiliated Hospital of Zhengzhou University, China
11:30–11:50	**Zhen-Ling Ji** Duodenal GIST, laparoscopic or endoscopic?	Zhongda Hospital, Southeast University, China
11:50–12:30	**Discussion**	
13:30–15:00	**Session 20. Stretagies for the multidisciplinary management of colorectal cancer**	
	Moderator(s): Jeffrey H. Lee, Diwen Zhu	
13:30–13:50	**Lu Yin** Bridge-to-surgery stent for malignant colorectal obstruction in various clinical situations	Shanghai Tongji University, China

13:50–14:10	**Jin Hong Park** Local excision after preoperative chemoradiotherapy for rectal cancer: who are the best candidates?	Asan Medical Center, Korea
14:10–14:30	**Jing-Min Wang** Hepatic metastasis of colorectal cancer, resect it or not?	Zhongda Hospital, Southeast University, China
14:30–14:50	**Jeffrey H. Lee** Palliative interventions in the management of unresectable colorectal cancer	MD Anderson Cancer Center, USA
14:50–15:00	**Discussion**	
15:30–17:00	**Session 21. Complications related to endoscopic or radiologic intervention of colorectal neoplasia: risk and management**	
	Moderator(s): Yunho Jung, Fang-Yu Wang	
15:30–15:50	**Ping-Hong Zhou** When the risk of ESD-related complications increases and how to overcome it?	Zhongshan Hospital of Fudan University, China
15:50–16:10	**Yunho Jung** Perforation related to colorectal ESD, can we treat it without surgery?	SoonChunHyang University, Korea
16:10–16:30	**Rui-Hua Shi** How to minimize complications of colorectal stenting	Zhongda Hospital, Southeast University, China
16:30–16:50	**Rui Li** Postpolypectomy bleeding: how to prevent and how to treat?	The First Affiliated Hospital of Soochow University, China
16:50–17:00	**Discussion**	

Zhonghua Hall – A

08:30–10:00	**Session 22. Introduction of palliative intervention for pancreatic cancer**	
	Moderator(s): Jose Ramón Armengol-Miró, Sang Myung Woo	
08:30–08:50	**Jose Ramón Armengol-Miró** Pancreatic pathologhy. Multidisciplinary endoscopic diagnostic and drainage	WIDER-Barcelona, Spain
08:50–09:10	**Bin Liu** Percutaneous Iodine-125 Brachytherapy for Advanced Pancreatic Cancer Pending	The Second Hospital of Shandong University, China
09:10–09:30	**Man Deuk Kim** IRE for locally advanced pancreatic cancer	Yonsei University, Korea
09:30–09:50	**Qi Zhang** Endovascular denervation of celiac plexus block for pain caused by pancreatic cancer	Zhongda Hospital, Southeast University, China
09:50–10:00	**Discussion**	
10:30–12:30	**Session 23. Management of complications after pancreatobiliary surgery**	
	Moderator(s): Man Deuk Kim	
10:30–10:50	**Yu Wan** Imaging characteristics of the common complications after pancreatobiliary surgery	Zhongda Hospital, Southeast University, China
10:50–11:10	**WeiWei Ding** The treatment shifts of pancreatic trauma: more endoscopic therapies are coming!	Jinling Hospital, Clinical School of Medical College, Nanjing University, China

11:10–11:30	**Jong Woo Kim** Transarterial embolization or stent-graft placement: indication, technique, and outcomes	Asan Medical Center, Korea
11:30–11:50	**Jun Chen** Management of postoperative portal vein complications	Jiangsu Cancer Hospital, China
11:50–12:10	**Kichang Han** Percutaneous approach management of loop syndrome	Severance Hospital, Research Institute of Radiological Science, Yonsei University College of Medicine, Korea
12:10–12:30	**Discussion**	
13:30–15:10	**Session 24. Recent progress in CBD stones removal under ERCP**	
	Moderator(s): Jong Soo Shin, Xu He	
13:30–13:50	**Sang Hyub Lee** Endoscopic management of recurrent CBD stones: how to minimize the risk of recurrence?	Korea
13:50–14:05	**Hong-Guang Wang** Peroral cholangioscopy for CBD stone removal	People's Hospital of Jilin City, China
14:05–14:25	**Jong Soo Shin** PTBD biliary stone removal in 916 patients experience. Percutaneous GB stone removal as a next emerging procedure model.	Hallym University, Korea
14:25–14:40	**Shun He** The advance of ERCP in CBD stone: tools and techniques	National Cancer Center/Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, China
14:40–14:55	**YuLiang Li** Percutaneous transhepatic removal of common bile duct stones	The Second Hospital of Shandong University, China
14:55–15:10	**Discussion**	
15:30–17:00	**Case-based Discussion 2. Management of acute cholecystitis**	
	Moderator(s): Chang Won Kim, Dong Jae Shim	
15:30–15:50	**Bing-Rong Liu** Role of endoscopic approach	The first Affiliated Hospital of Zhengzhou University, China
15:50–16:10	**Chang Won Kim** Role of percutaneous approach	Pusan National University, Korea
16:10–16:30	**Zhen-Ling Ji** Cholecystectomy: optimal timing, laparoscopic vs. open	Zhongda Hospital, Southeast University, China
16:30–16:40	**Lin Miao** Case 1 – Endoscopic approach	The Second Hospital of Nanjing Medical University, China
16:40–16:50	**Dong Jae Shim** Case 2 – Percutaneous approach	The Catholic University of Korea, Korea
16:50–17:00	**Discussion**	
17:00–18:30	**Free Paper Session – 3**	
	Moderator(s): Cao-Ye Wang	
17:00–17:10	**Derek Edwards** Defining "Radial Force" and assessment standards for GI stents.	The Christie NHS Foundation Trust, UK
17:10–17:20	**Yozo Sato** Transarterial chemoembolization using cisplatin-loaded hepasphere for patients with unresectable hepatocellular carcinoma.	Aichi Cancer Center Hospital, Japan

17:20–17:30	**Juan Qin** Risk Prediction of Haemorrhage after 125I seed-loaded stent placement for Patients with Esophageal Squamous Cell Carcinoma: Development of a Prediction Model	Zhongda Hospital, Southeast University, China
17:30–17:40	**CaoYe Wang** Esophageal balloon pyloroplasty in the treatment of gastric paralysis after esophageal and cardiac cancer surgery	The First People's Hospital of Changzhou, China
17:40–17:50	**Hao Huang** Assessment of the Probability of Post-thrombotic Syndrome in Patients with Lower Extremity Deep Venous Thrombosis	Nanjing First Hospital, China
17:50–18:00	**Zi-Fan Zheng** Evaluation of colon capsule endoscopy for assessing mucosal inflammation in ulcerative colitis based on Mayo endoscopic subscore: result from a diagnostic meta-analysis	Southern Medical University, China
18:00–18:10	**Chu-Hui Zeng** The exploration of a novel biodegradable drug-eluting biliary stent for benign biliary stricture	Zhongda Hospital, Southeast University, China
18:10–18:30	**Discussion**	

Zhonghua Hall – B

08:30–10:00	**Session 25. New strategy for overcoming the stent obstruction in malignant obstruction**	
	Moderator(s): Jin Hong Kim, Don Haeng Lee	
08:30–08:50	**Sung-Gwon Kang** New wire material, membrane material, and manufacture	S&G Biotech Inc., Korea
08:50–09:10	**Hiroyuki Isayama** New stent design: antireflux, antimigration, etc	Juntendo University, Japan
09:10–09:30	**Don Haeng Lee** New anti-cancer stent: dug-eluting stent	Inha University, Korea
09:30–09:50	**JiaPing Li** Comparison of intraluminal radiofrequency ablation and stents vs. stents alone in the management of malignant biliary obstruction	The First Affiliated Hospital, Sun Yat-Sen University, China
09:50–10:00	**Discussion**	
10:30–12:30	**Session 26. Non-conventional access for biliary and duodenal stents**	
	Moderator(s): Michel Kahaleh, Jiaywei Tsauo	
10:30–10:50	**Mariano Eduardo Giménez** Duodenal stent: Transgastric and transhepatic route. Indications, technique and results.	Hospital de Clínicas José de San Martín, University of Buenos Aires, Argentina
10:50–11:10	**Chun-Qing Zhang** Echoendoscopic biliary stent. Transgastric and transduodenal route. Technique and results.	Shandong Provincial Hospital Affiliated to Shandong University, China
11:10–11:30	**Jiaywei Tsauo** Biliary stent placement: Transjugular route: indications, technique, and results	National Cancer Center/ Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, China
11:30–11:50	**Michel Kahaleh** Echoendoscopic union between the gallbladder and the duodenum. Useful in acute cholecystitis?	Weill Cornell Medical College, Cornell University, USA
11:40–12:30	**Discussion**	

13:30–15:00	**Session 27. Multidisciplinary management of necrotizing pancreatitis**	
	Moderator(s): Kenneth F. Binmoeller, Hao Xu	
13:30–13:50	**Jae Hee Cho** Endoscopic step–up approach for necrotizing pancreatitis: When and How? Or Safe Access, Debridement & Drainage of WON	Gachon University, Gil Medical Center, Korea
13:50–14:10	**Zheng–Qiang Yang** Interventional management of procedure–related complications	First Affiliated Hospital of Nanjing Medical University, China
14:10–14:30	**Richard A. Kozarek** Is it Real? Short and Longterm Outcomes for Dual Modality Drainage for Pancreatic WON	Virginia Mason Medical Center, USA
14:30–14:50	**Hui–Min Lu** Minimal invasive surgical strategies of SAP – West China experiences	West China Hospital, Sichuan University, China
14:50–15:00	**Discussion**	
15:30–17:00	**Session 28. Bile duct injury: When to repair with surgery and when to use minimally invasive procedures**	
	Moderator(s): DongKi Lee, CaiFang Ni	
15:30–15:50	**Gang Zhao** How to avoid bile duct injury in complicated laparoscopic cholecystectomy	Shanghai East Hospital, China
15:50–16:10	**Jiangtao Li** In post–surgical biliary partial stenosis I prefer surgery.	Zhejing University 2nd Hospital, Hangzhou, China
16:10–16:30	**Xu–Dong Qu** In post–surgical biliary partial stenosis I prefer minimally invasive procedures. Which? Why?	Zhongshan Hospital, Fudan University
16:30–16:50	**DongKi Lee** In total post–surgical biliary strictures. Minimally invasive therapy can also be offered.	Yonsei University, Korea
16:50–17:00	**Discussion**	
17:00–18:30	**Free Paper Session – 4**	
	Moderator(s): Wei–Zhong Zhou	
17:00–17:10	**Gareth Davies** Partially covered, double knitted colonic stents improve outcome for malignant colonic strictures.	Royal Glamorgan Hospital, USA
17:10–17:20	**BinYan Zhong** Bariatric Arterial Embolization for Obesity: A Review of Early Clinical Evidence	First Affiliated Hospital of Soochow University, China
17:20–17:30	**WeiZhong Zhou** A comparative study of percutaneous stent placement with or without iodine–125 seeds strand for malignant biliary obstruction	First Affiliated Hospital of Nanjing Medical University, China
17:30–17:40	**Hui Zheng** The analysis of prognostic factors for the treatment of gastroesophageal varices bleeding with transjugular intrahepatic portosystemic shunt	Union Hospital of Fujian Medical University, China
17:40–17:50	**Min Ai** Endovascular embolization of arterial bleeding in patients with severe acute pancreatitis	Jinling Hospital, Clinical School of Medical College, Nanjing University, China

17:50–18:00	**LinLin Wu** Comparative analysis of the clinical efficacy of radiofrequency ablation between ultrasound and CT guided in treating hepatocellular carcinoma	Changhai Hospital of Shanghai
18:00–18:10	**Si–Liang Chen** The effect of puncture of portal vein in TIPS with covered stent	Nanfang Hospital, Southern Medical University, China
18:10–18:30	**Discussion**	

Zhonghua Hall – C

08:30–10:00	**Free Paper Session – 1**	
	Moderator(s): Yue–Qi Zhu	
08:30–08:40	**Miquel Masachs–Peracaula** ENDOSCOPIC STENTING FOR GASTRODUODENAL OUTLET OBSTRUCTION	University Vall Hebron Hospital Barcelona, Spain
08:40–08:50	**Hong–Jian Shi** Percutaneous sclerotherapy for treatment of large volume hepatic hemangioma	The Affiliated Wujin Hospital, Jiangsu University, China
08:50–09:00	**Yue–Qi Zhu** Biodegradable magnesium alloy stent insertion into esophagus: the technique feasibility and tissue reaction evaluation	Shanghai Jiaotong University Affiliated Sixth People's Hospital, China
09:00–09:10	**Jin Ho Kim** Complications after transarterial radioembolization of non–HCC hepatic tumors	Korea University Anam Hospital, Korea
09:10–09:20	**HaiFeng Zhou** A Model of Artificial Neural Network for Predicting Early Biliary Infection in Patients Underwent Percutaneous Transhepatic Biliary Stent Placement	Zhongda Hospital, Southeast University, China
09:20–09:30	**ZengLin Wang** Clinical Application of CT–guided Percutaneous Enterost	Provincial Hospital of Fujian, China
09:30–09:40	**Lin Zheng** Sorafenib Improves Lipiodol Deposition in Transarterial Chemoembolization of Patients with Hepatocellular Carcinoma: A Long–term, Retrospective Study	The Affiliated Cancer Hospital of Zhengzhou University, Henan Cancer Hospital, China
09:40–10:00	**Discussion**	
10:30–12:30	**Session 29. Management of HCC with PVTT**	
	Moderator(s): Koichiro Yamakado, HaiDong Zhu	
10:30–10:45	**Koichiro Yamakado** Management of HCC with PVT	Hyogo College of Medicine, Japan
10:45–11:00	**Lu Wang** Surgical resection or liver transplantation	Zhongshan Hospital, Fudan Univeristy, China
11:00–11:15	**Cai–Lian Wang** Targeted therapy in liver cancer	Zhongda Hospital, Southeast Univeristy, China
11:15–11:30	**HaiDong Zhu** Intervention: stenting+ brachytherapy	Zhongda Hospital, Southeast Univeristy, China

11:30–11:45	**Sui Shen** Dosemetry Optimization for 125I Seed–loaded Stent for Portal Vein Tumor Thrombosis Treatment	University of Alabama Birmingham Medical School, USA
11:45–12:00	**Wei–Dong Jia** Surgical treatment of hepatocellular carcinoma with portal vein tumor thrombus	Anhui Provinvial Hospital, China
12:00–12:15	**Zhi Wang** Atypical imaging features of HCC	Zhongda Hospital, Southeast University, China
12:15–12:30	**Discussion**	
13:30–15:00	**Chinese Session– 2 (Chinese)**	
15:30–17:00	**Session 30. Other GI tumor ablation or intervention sessions**	
	Moderator(s): Sang Hyub Lee, Jae Hee Cho	
15:30–15:45	**JunHui Sun** Embolotherapy for Neuroendocrine Liver Metastases	The First Affiliated Hospital, School of Medicine, Zhejiang University, China
15:45–16:00	**Fei Gao** A preoperative mathematic model for computed tomographic guided microwave ablation treatment of hepatic dome tumors	Sun Yat–Sen University Cancer Center, China
16:00–16:15	**Ling–Xiao Liu** Loco–regional Therapy for unresectable Gastrointestinal Neuroendocrine tumor with liver metastases	Zhongshan Hospital, Fudan University, China
16:15–16:30	**Kai–Wen Huang** Cryoablation: advantage and pitfall compared to RFA	National Taiwan University Hospital, Taiwan
16:30–16:45	**Guang–Shao Cao** UAE of Cesarean Scar Pregnancy	Henan Provincial People's Hospital, China
16:45–17:00	**Fen–Qiang Li** Experience of treatment digestive system arterial hemorrhage in Interlock coil	The First Hospital of Lanzhou University, China
17:00–17:15	**Discussion**	

Room 725

08:30–12:30	**Hands–on Workshop**
14:00–15:00	**Live Demonstration–4**
	Moderator(s): Jose Ramón Armengol–Miró, Jie–Fang Guo
15:30–17:00	**Video Session–2**

Room 730

07:30–08:30	**SGI Editorial Committee Meeting**	
08:30–10:00	**Free Paper Session – 2**	
	Moderator(s): Tao Pan	
08:30–08:40	**Monder Abu–Suboh–Abadia** Diagnostic rentability of Contrast–Enhanced Harmonic Endoscopic Ultrasound (CH– EUS) as a complementary method to Endoscopic Ultrasound–Guided Fine Needle Aspiration Biopsy (EUS FNA) in the study of solid pancreatic lesions.	Vall Hebron University Hospital W.I.D.E.R. Barcelona, Spain

08:40–08:50	**Don Haeng Lee** Controlling GI bleeding with endoscopically applied hemostatic powder	Inha University, Korea
08:50–09:00	**Tao Pan** In vitro evaluation of irinotecan loaded bioresorbable microspheres for arterial chemoembolization	Zhongda Hospital, Southeast University, China
09:00–09:10	**ZhongZhi Jia** Angiography Findings and Endovascular Management of Acute Nonvariceal Gastrointestinal Bleeding: A Pictorial Essay	Changzhou Second People's Hospital, China
09:10–09:20	**XueFeng Luo** Long–term patency and clinical outcome of the transjugular intrahepatic portosystemic shunt using the expanded polytetrafluoroethylene stent–graft	Nanshi Hospital of Nanyang , China
09:20–09:30	**ZiYuan Zou** Comparative efficacy of primary prophylactic interventions to prevent variceal hemorrhage: Results of a Bayesian network meta–analysis	Nanfang Hospital, Southern Medical University, China
09:30–09:40	**WenLong Fan** Abdominal aorta balloon occlusion vs prophylactic uterine artery catheterization and embolization in performing cesarean section for delivery women with pernicious placenta previa	First Affiliated Hospital of Nanjing Medical University, China
09:40–10:00	**Discussion**	
10:00–12:30	**Chinese Red Cross Fundation iHOPE (Interventional Hengrui Oncology Patient Embrace) Project**	

Multiple-electrode radiofrequency for paraesophageal tumor in rabbits: a preclinical experiment for safety and efficiency

Zhicheng Jin, Long Ling, Gao - Jun Teng

Zhongda Hospital, Southeast University

Objectives: To evaluate the safety and efficiency of intra–esophageal multiple–electrode radiofrequency in rabbits with paraesophageal tumor.

Materials and Methods: With percutaneous puncture technique, VX2 fragments were implanted into the space between esophagus and trachea at the level of thyroid in 24 adult rabbits. Then the rabbits were equally randomized into 2 groups and treated with intra–esophageal multiple–electrode radiofrequency under image guidance (Group A) or sham radiofrequency (Group B), respectively. Rabbits were observed until their natural death. Pathological changes of esophagus were examined for all rabbits after their deaths.

Result: 2 sever complications were caused by radiofrequency and one led to death by suffocation. There was no other sever procedure–related complications after radiofrequency. The rabbits in Group A survived longer than those in Group B (the mean survival time: 23.4 ±6.8 days vs 18.0 ±4.3 days, P<0.05).The pathological examination showed no obvious changes in the structure of esophagus.

Conclusions: Intra–esophageal radiofrequency could prolong the life of rabbits with paraesophageal tumor. There could be sever complication. More researches should be done to find an appropriate temperature range of intra–esophageal radiofrequency.

Endoscopic stenting for gastrointestinal outlet obstruction

Miquel Masachs - Peracaula,Luis Alcala - Gonzalez,Monder Abu - Suboh - Abadia,Jordi Armengol - Bertroli,Mario Pascasio,Anna Benages - Curell,Mdolores Castillo - Cejas,Denisse Sihuay,Jorge Guevara,Marc Pigrau,Joan Dot - Bach,Josep Ramon Armengol - Miró

University Vall Hebron Hospital Barcelona Spain

Background: Gastroduodenal outlet obstruction (GOO) is the clinical and pathophysiological consequence of any disease process that produces a mechanical impediment to gastric emptying. Advanced upper gastrointestinal tract cancers present late and life expectancy is limited. Endoscopic stenting for malignant outlet obstruction is the primary strategy by which to palliate this complication.

Methods: The aim of this study was to retrospectively evaluate the efficacy of endoscopic stent placement for gastroduodenal outlet obstruction. All patients who underwent gastroduodenal stenting from September 2013 to may 2018 were included. All the patients had symptomatic gastric outlet obstruction of malignant origin with nausea, vomiting and decreased oral intake. We use uncovered self–expandable metallic stents (CSEMS). From September 2013 to January 2016 Colonic SEMS (Hanaro® M.I. Tech stent, 22mm–23mm–11cm) were used, from march 2016 to may 2018 Duodenal SEMS (Evolution® Cook Medical. 22mm–27mm–9cm), Data on comorbities, outcomes and clinical evolution were recorded from electronical medical records, patients were followed up until June 2018 or death.

Results: In our hospital 36 patients had a stent placed between September 2013 and may 2018. The Mean age was 68 years; 20 men and 16 women. The malignancies were Pancreatic cancer 44, 5%, gastric cancer 25% cholangiocarcinoma 8,3% and Metastasis 22,2%. The site of obstruction was pyloric in 27,8%, pyloroduodenal in 8,3% second duodenal portion in 44,5% third portion 11,1% and anastomosis in 8,3%.14 patients were treated with uncovered colonic SEMS and 22 patients were treated with uncovered duodenal SEMS. Immediate complications was seen in 3 patients, 1 case of bleeding, 1 case of perforation and 1 case of bronchoaspiration post procedure, all resulting in patients death. A total of 33 patients had a good clinical outcome, with relief of GOO symptoms. During the follow up 29 patients died, most of them due to progression of cancer. Median functional stent days were 76 days (Range 0–418 days), late complications were 2 bleedings related to stent, 1 perforation, 5 obstructions, 1 migration and 1 cholangitis with hepatic abscess. 3 patients required reestenting with only 1 successful case, 1 patient had a gastrojejunostomy post stent and 1 patient had a radiological stent placement.

Conclusions: Palliative stenting for gastroduodenal obstruction is a safe, feasible and effective therapy to treat patients with malignant gastroduodenal outlet obstruction.

Diagnostic rentability of contrast-enhanced harmonic endoscopic ultrasound (CH- EUS) as a complementary method to endoscopic ultrasound-guided fine needle aspiration biopsy (EUS FNA) in the study of solid pancreatic lesions.

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Background and Objectives: The use of contrast agents in contrast–enhanced harmonic EUS (CH–EUS), is an emerging technique in the differential diagnosis of solid pancreatic lesions. However as yet there is no established standardized method. The objective of our study is to establish it's diagnostic rentability versus the gold standard of histological study obtained by Endoscopic Ultrasound–Guided Fine Needle Aspiration Biopsy (EUS–FNA) or from the surgical piece pathology.

Method: We included sixteen patients prospectively (median age 66.25 years, range 34–83 years, 10 males) who were referred to the endoscopy service of our hospital for echo endoscopic study of a solid pancreatic lesion previously diagnosed by CT, MRI or abdominal ultrasound. The lesion was evaluated by EUS in B mode, after the intravenous administration of 4.8 mL of Sonovue ®. The lesions vascularity was evaluated with CEH–EUS and the process completed with EUS–FNA.

Results: The median size of the lesions was 23.5 mm (range 9 – 45 mm). The final diagnosis of the lesions were pancreatic adenocarcinoma (n=7), neuroendocrine tumour (n=8), inflammatory mass (n=1). By considering the hypoenhancing pattern as diagnostic for adenocarcinoma we obtained values of Sensitivity

of 81.8%, Specificity of 100% and a negative predictive value of 80%.

Conclusion: The use of CEH–EUS allows us to diagnosis pancreatic lesions and the combination of this technic with EUS–FNA elevates the diagnostic rentability in the differential diagnosis of solid pancreatic lesions.

A comparative study of percutaneous stent placement with or without iodine-125 seeds strand for malignant biliary obstruction

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A comparative study of percutaneous stent placement with or without iodine–125 seeds strand for malignant biliary obstruction

Purpose: To compare the effectiveness and safety between self–expandable metallic stent (SEMS) and a combination of SEMS and iodine–125 seeds strand in the management of malignant obstructive jaundice (MOJ).

Materials and Methods: From November 2015 to October 2017, 132 patients with MOJ were included in this study. Forty–five patients underwent insertion of SEMS and iodine–125 seeds strand (Seeds group) and the other 87 patients only underwent SEMS placement (Control group). Technical success defined as accurate and successful deployment of SMES with or without iodine–125 seeds strand, clinical success defined as a reduction in serum bilirubin level by 20% within 1 week after procedure compared with the baseline, complications, primary stent patency, overall survival were evaluated.

Results: The technical success was 100% in both groups. The stents with sizes of 8*60mm and 8*80mm were the most commonly used in both groups. In the Seeds group, an average of 14 seeds (range 8–22) were implanted into the bile duct as a strand. The clinical success was similar between the two groups (93.3%, Seeds group versus 95.4%, Control group). Major complication only occurred in one patient in the Control group. The median primary stent patency was 194 days in the Seeds group, which was significantly longer than the 86 days in the Control group (P=0.049). The median overall survival was 194 days in the Seeds group, which was also significantly longer than the 96 days in the Control group (P=0.031).

Conclusion: A combination of self–expandable metallic stent and iodine–125 seeds strand is effective and safe in the management of MOJ, which could improve both stent patency and patients' survival.

Complications after radioembolization of non-HCC hepatic tumors

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Radioembolization, an increasingly used treatment option for primary and metastatic liver cancers, involves intra–arterial delivery of microspheres containing yttrium–90 (90Y), a high–energy pure beta–emitter. As a form of brachytherapy, radioembolization can cause radiation–related changes in the adjacent structures around the target lesion. Moreover, the delivery of radioactive microspheres to non–target organs can cause complications. We describe two cases, a 78–old woman and a 49–old man who developed hepatic abscess after trans–arterial radioembolization of recurred liver tumors. Two patients was performed hepaticojejunostomy few years ago before radioembolization. We think that receiving post–hepaticojejunostomy radioembolization may have affected the formation. Because ascending infection is the easiest route for microorganism to access the hepatic parenchyma, the presence of a bilioenteric anastomosis is a strong predisposing factor. Patients improved after percutaneous drainage of abscess. Radioembolization using 90Y is being actively investigated as an effective and safe treatment option for various kinds of hepatic malignancies. But radioembolization can cause several complications. Management decisions about imaging–detected complications should be made based on the correlation of clinical symptoms and laboratory findings.

Diagnostic performance of FDG positron emission tomography/computed tomography for patients with extrahepatic cholangiocarcinoma

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Background: This study aimed to evaluate the diagnostic values of 18F–fluoro–2–deoxy–D–glucose (FDG) positron emission tomography/computed tomography (PET–CT) in patients with extrahepatic cholangiocarcinoma.

Methods: One hundred sixty–three patients with confirmed diagnosis of extrahepatic cholangiocarcinoma (including hilar and common bile duct cancer) who underwent FDG PET–CT at a single tertiary referral center between April 2008 and December 2014 were retrospectively and consecutively recruited and analyzed in the current study.

Results: One hundred and thirty (79.8%) out of 163 primary tumor lesions were correctly detected by FDG PET–CT, compared to 154 (94.5%) out of 163 primary tumor lesions in MDCT and 75 (97.4%) out of 77 primary tumor lesions in MRI. Thirty (18.4%) and 18 (23.4%) primary tumor lesions were detected in MDCT and MRI, respectively, and not detected in PET–CT (p <0.01 compared to MDCT, p <0.01 compared to MRI). Regional lymph node metastases were detected in 29 out of 64 (45.3%) patients by FDG PET–CT, in 49 out of 64 (76.6%) patients by MDCT, and in 23 out of 28 (82.1%) patients by MRI. Twenty–five (39.1%) out of 64 patients and 14 (50.0%) out of 28 patients showed false negative findings in regional lymph node metastasis by FDG PET–CT compared to MDCT (p <0.01) and MRI (p <0.01), respectively. Distant metastases were detected in 11 out of 13 (84.6%) patients by FDG PET–CT, in 9 out of 13 (69.2%) patients by MDCT, and in 6 out of 6 (100.0%) patients by MRI. There were no statistically significant differences in diagnostic performances of MDCT, MRI and PET–CT for detection of distant metastasis.

Conclusions: FDG PET–CT showed less reliable sensitivity in detecting primary tumor mass, and regional lymph node involvement which could be detected by MDCT or MRI.

Powdered collagen for track embolisation after high-risk percutaneous biopsy

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1.The Christie
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Purpose: Increasing numbers of clinical trials, refinement in patient–tailored chemotherapy and the increasing ability to map the genomes of tumour tissue are resulting in an increasing need for large–volume percutaneous biopsies and high–risk biopsies. We illustrate the ease of use and increased safety margin offered by track plugging in hypervascular organs, patients with impaired clotting or biopsies requiring several large tissue cores.

Materials and Methods: A microfibrillar collagen (Avitene flour, Bard Ltd, Crawley, UK) licensed for inducing haemostasis during surgical procedures was mixed with sterile water to form an injectable paste. 0.5g Avitene were mixed with 4–5ml sterile saline, depending on the viscosity required. Biospy was performed with 18G coaxial systems (Temno Evolution, UK Medical, Sheffield, UK). Using a 2ml Luer–lock syringe the collagen paste was applied through the 17G access needle after biopsy was complete. The collagen was injected while withdrawing the needle, casting out the full length of the biopsy track. For CT guided biopsy, the collagen was mixed with non–ionic contrast to achieve radiopacity, but this is an off–label use. Institutional review board (IRB) approval was granted for this and toxicology studies are in progress.

Results: There is increasing need for track embolisation, as newer oncology trials require an increased number of biopsy samples or increased needle gauge to allow for tumour receptor analysis and genomic studies. Other indications are an increasing number of patients on anticoagulant or anti–platelet therapy. We demonstrate the use in high–risk liver biopsy, splenic biopsy, thyroid biopsy and trans–splenic pancreatic biopsy using ultrasound as well as CT guidance.

Conclusion: Track embolisation with collagen paste allows core biopsies in circumstances, where the risk of haemorrhage is traditionally regarded as too high to perform the procedure. It is easy to apply, cheap and increases the safety of the procedure.

Complications after transarterial radioembolization of non-HCC hepatic tumors

Jin Ho Kim[1],Yun Hwan Kim[1],Sung Bum Cho[1],Hwan Hoon Chung[2],Seung Hwa Lee[2],Myung Gyu Song[3],Tae - Seok Seo[3],Sung - Joon Park[3]

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Radioembolization, an increasingly used treatment option for primary and metastatic liver cancers, involves intra–arterial delivery of microspheres containing yttrium–90 (90Y), a high–energy pure beta–emitter. As a form of brachytherapy, radioembolization can cause radiation–related changes in the adjacent structures around the target lesion. Moreover, the delivery of radioactive microspheres to non–target organs can cause complications. We describe two cases, a 78–old woman and a 49–old man who developed hepatic abscess after trans–arterial radioembolization of recurred liver tumors. Two patients was performed hepaticojejunostomy few years ago before radioembolization. We think that receiving post–hepaticojejunostomy radioembolization may have affected the formation. Because ascending infection is the easiest route for microorganism to access the hepatic parenchyma, the presence of a bilioenteric anastomosis is a strong predisposing factor. Patients improved after percutaneous drainage of abscess. Radioembolization using 90Y is being actively investigated as an effective and safe treatment option for various kinds of hepatic malignancies. But radioembolization can cause several complications. Management decisions about imaging–detected complications should be made based on the correlation of clinical symptoms and laboratory findings.

Clinical application of CT-guided percutaneous enterost

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Objective: To explore the clinical application value of CT–guided percutaneous enterostomy.

Methods: The success rate, complications and technical key points of 20 patients undergoing CT–guided percutaneous enterostomy in our hospital from March 2017 to June 2018 were retrospectively analyzed. Meanwhile, it also compared with surgical operation, so as to explore its clinical application value. Of them, 5 patients could not receive gastrostomy due to multiple causes, such as combined nasopharyngeal bleeding and repeated aspiration pneumonia; 8 could not undergo surgery or stent implantation as a result of postoperative recurrence of esophageal carcinoma and gastric cancer, accompanying with digestive tract obstruction; 1 had malignant tumor that involved the small intestine; and 6 had peritoneal metastasis of malignant tumor, with multiple small intestine obstruction. The technical key points of CT–guided percutaneous enterostomy were shown as follows. (1) In CT–guided percutaneous enterostomy for patients with no small intestine obstruction, the 4F catheter was first placed into the jejunal flexure under the guidance of the guiding wire through a nasal or oral approach under X–ray scan. Subsequently, 654–2 10mg was injected intramuscularly, and gas was injected to the upper segment of jejunum for dilation to low tension. The site with obvious dilation and close to abdominal wall jejunum was selected as the puncture point under CT positioning. The KuLiAiKe gastrointestinal wall and abdominal wall fixator was then used to fix the intestinal wall and abdominal wall in an isosceles triangle shape. After central local anesthesia, the COOK NPAS suite and 12F external drainage tube were indwelled. (2) For patients with restricted small intestine stenosis and obstruction that could not receive surgical resection, the dilated small intestine in proximal end of lesion was selected for puncture. Typically, CT–guided enterostomy was carried out first for decompression for 2 weeks, followed by digital X–ray–guided Bonston duodenum metal stent placement and removal of enterostomy catheter through the enterostomy opening. (3) For patients with peritoneal metastasis of malignant tumor accompanying with multiple small intestine obstruction, the small intestine under the greatest dilation and close to the abdominal wall was selected for puncture, followed by CT–guided percutaneous enterostomy for decompression. The nasogastric tube could be removed, and liquid could be taken intermittently.

Results: 20 patients had received CT–guided percutaneous enterostomy under general anesthesia, with the one–time success rate of 90% (18/20). Meanwhile, no death case, no obvious complication, no bleeding, no peri–fistula leakage or infection was reported. Thus, the goals of symptom relief and partial

or complete management of enteral nutrition were attained.

Conclusions: Compared with surgical enterostomy, CT–guided percutaneous enterostomy is safe, simple and effective, especially for advanced tumor patients. Thus, it is worthy of being promoted in clinic.

A model of artificial neural network for predicting early biliary infection in patients underwent percutaneous transhepatic biliary stent placement

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Purpose: To establish a model of artificial neural network (ANN) for predicting the occurrence of early biliary infection (EBI) after percutaneous transhepatic biliary stent placement (PTBS) in malignant biliary obstruction (MBO).

Materials and Methods: This retrospective study was approved by the Institutional Review Boards at all participating centres. All consecutive patients treated with PTBS for MBO at Cohort A and Cohort B were enrolled in the developing group and the validation group, respectively. The related risk factors were identified by univariate analyses in the developing group, which were used to establish the ANN model. The importance of the risk factors was compared. The predictive accuracy was determined by the receiver operating characteristic curve and the area under curve (AUC). The ANN model was validated in the validation group.

Results: A total of 182 patients were included in the developing group, and 61 patients were included in the validation group. The related risk factors were length of obstruction (OR: 1.053 [95% CI: 1.014–1.094]; P = 0.008), diabetes (OR: 5.680 [95% CI: 2.418–13.344]; P < 0.001), location of obstruction (OR: 2.372 [95% CI: 1.163–4.836]; P = 0.018), history of surgeries in the gut or endoscopic retrograde cholangiopancreatography (OR: 5.119 [95% CI: 2.409–10.875]; P < 0.001), pre–procedural PTBD (OR: 0.398 [95% CI: 0.190–0.832]; P = 0.014) and gallstones (OR: 3.176 [95% CI: 1.275–7.914]; P = 0.013). These related risk factors were all selected into the ANN model. The importance of risk factors was shown decreasingly as following: diabetes (0.259), length of obstruction (0.206), location of obstruction (0.172), pre–procedural PTBD (0.137), history of surgeries in the gut or endoscopic retrograde cholangiopancreatography (0.126) and gallstones (0.099). The AUC of the ANN model was 0.891 in the developing group. In the validation group, the overall accuracy of prediction was 75.4%, with the sensitivity was 36.4% and the specificity was 84.0%.

Conclusion: The ANN model based on the clinical features facilitated the early and accurate prediction of EBI in patients with MBO who underwent PTBS.

Transarterial chemoembolization using cisplatin-loaded hepasphere for patients with unresectable hepatocellular carcinoma.

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Objectives: The purpose of this study was to investigate the safety and efficacy of transarterial chemoembolization (TACE) using cisplatin–loaded hepasphere in patients with unresectable hepatocellular carcinoma (HCC).

Materials and Methods: From April 2014 to May 2015, 32 patients [male/female, 28/4; median age, 73.5 years; Child–Pugh score A/B, 26/6; Barcelona Clinic Liver Cancer (BCLC) stage B/C, 20/12; performance status 0/1, 29/3; median tumor size 5.9cm (range 1.1–14); tumor number 5⩾, 18; vascular invasion –/+, 23/9; extra hepatic spread –/+, 24/8] underwent 39 cycles of TACE using cisplatin–loaded hepasphere (maximum usage dose of cisplatin, 100mg). The additional embolization using embosphere and/or gelatin sponge particles was performed in 19 patients. Twenty–four patients had received prior treatments including TACE (n = 14), resection (n = 7), radiofrequency ablation (n = 5), radiation (n = 2), hepatic arterial infusion (n = 1), and systemic chemotherapy (n = 4).

Tumor response according modified RECIST, progression free survival (PFS), overall survival (OS), and adverse reactions (AEs) according to CTCAE ver 4.0 were investigated retrospectively.

Results: The objective response rate was 65.5% (19/29) and disease control rate was 89.7% (26/29) (CR/PR/SD/PD/NE, 1/18/7/3/3). The median PFS and OS in all patients were 8.4 months and 18.3 months, respectively. The median OS was 18.3 months in BCLC stage B patients and 10.4 months in stage C patients, (P = 0. 237). The median OS was 31.6 months in the 19 responders (CR + PR) and 13.7 months in the 10 non–responders (SD + PD), respectively (P = 0.217). The most common grade 3 or 4 adverse events were the elevation of aspartate (25%, 8/32) and alanine aminotransferase (15.6%, 5/32).

Conclusion: Even though patients with locally advanced HCC were included, the AEs were mild and the response rate was relatively high. TACE using cisplatin–loaded hepasphere was safe and promising in patients with unresectable HCC.

Defining “Radial Force” and assessment standards for GI stents.

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Purpose: The term “radial force” is used by all stent manufacturers as a measure to describe the ability of the stent to expand against constricting tissue. While assessing this is an FDA recommendation, no agreed standards for measuring and describing expansion force exist. There is not even an understanding what the ideal strength of a stent is and at which point the risk of perforation becomes too high.We describe an initial

assessment of stent expansion force in current colonic stents and suggest a standardised way of testing it to allow meaningful comparison.

Materials and Methods: In the context of the British CReST2 colonic stent trial all manufacturers of GI stents were asked to supply samples of colonic stents. The size requested was 24x100mm or the closest possible. Testing was performed by Machine Solutions Inc. (MSI), a manufacturer of medical device testing and manufacturing equipment in Flagstaff, AZ, USA. MSI also provides contract 3rd party device testing services. Stents were inserted into an RX650 compression tool. Stents were compressed concentrically from their unconstrained configuration and released back to their full size. The RX650 measures and records radial stiffness and strength, chronic outward force during expansion, and radial reactive force during compression of interventional devices. Testing was performed at approximately 37°C to reflect the clinical situation.The force needed to compress the stents and the force exerted by the stent on expansion were averaged over 3 compression cycles and displayed in a loop diagram.

Results: A total of 27 different stents were tested: 26 metal and 1 biodegradable stent. Of the 26 metal stents, 15 were braided and 11 were of a knitted construction. 13 stents were covered (7 by silicone dipping, 6 by membrane). Differences in filament size and the effects of covering membranes limited the maximum compression to 5mm (15Fr) to allow comparison. A very large range of forces were recorded, varying by a factor of 24. Some of the larger silicone-dipped braided stents exceeded the load of the test system.

Median radial force was 30.0N (range 5.6–131N) for braided stents and 20.9N (8.7–48.9N) for knitted stents. A covering membrane did not significantly increase the force required for compression, but silicone dipping increased this by between 4 and 7 times.

Discussion: No "gold standard" for stent expansion force exists. This is reflected in the vast differences in the forces observed, which indicates that stents are manufactured without a scientific goal in mind. We suggest that concentric compression should be used as this more accurately reflects the expansion of the stent in vivo. The parameter "hoop force", which takes the stent length into account, may be a more appropriate measure.International standards need developing for stent testing to ensure that results given by manufactures are comparable.

Eus-guided gallbladder drainage with a lumen-apposing metal stent vs. Endoscopic transpapillary gallbladder drainage for the treatment of acute cholecystitis

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Introduction: There is an evolving role for EUS-guided transmural gallbladder drainage (EUS-GBD) in non-operative candidates with acute cholecystitis. Endoscopic transpapillary gallbladder drainage (ETP-GBD) is a well-established method for gallbladder drainage however requires a refined endoscopic skillset and an ERCP which carries some inherent procedural risk. To date there lacks any formal comparison between EUS-GBD and ETP-GBD. We compared the procedural outcomes of 71 consecutive patients undergoing EUS-GBD vs. ETP-GBD retrospectively at a single U.S.-based, high volume endoscopy center.

Methods: For the study period May 2013 to Jan 2018 we retrospectively analyzed data from a prospectively collected database of consecutive patients with acute cholecystitis and deemed non-surgical candidates. Disease was graded in severity according to Tokyo classification. All patients > 18 years old who underwent EUS-GBD and/or ETP-GBD were included in the analysis. Both electrocautery enhanced and non-electrocautery enhanced LAMS (AXIOS stent, Boston Scientific) were used in this study. The initial EUS puncture site was either the duodenal bulb or prepyloric antrum. For ETP-GBD cases, guidewire access was obtained and then a 7x15 cm double pigtail plastic cystic duct stent was placed in a transpapillary position.

Results: A total of 39 patients had EUS-GBD and 32 patients had ETP-GBD. Demographics data was similar between groups (Table 1). Technical success was observed in 39/40 (97.5%) patients who underwent first attempt at EUS-GBD. One patient did not have an appropriate window for LAMS placement and went on to receive an ERCP with transpapillary stent placement. All stent deployments for EUS-GBD were successful. Technical success rate for ETP-GBD arm was 32/38 (84.2%, p = 0.040) with failure in 6 cases due to cystic duct obstruction. Three of the successfully performed ETP-GBD patients underwent subsequent EUS-GBD for recurrent cholecystitis. Clinical success did not reach statistical significance although was slightly higher in the EUS-GBD group (97.4% vs. 90.6%, p = 0.22) (Table 2). Median follow up was 7 mo. for the EUS-GBD arm and 6.5 mo. for the ETP-GBD arm. Reintervention rates, hospital length of stay and overall adverse event rates were similar between groups. However there was significantly more recurrent cholecystitis in the ETP-GBD arm (2.5% vs. 15.6%, p = 0.010).

Conclusions: Our study shows that EUS-guided transmural GBD is a feasible option with comparable outcomes compared to ETP-GBD. EUS-GBD may be associated with lower rates of recurrent cholecystitis and higher rates of technical success. ETP-GBD should be considered the first line treatment for patients who are surgical candidates but require temporizing measures or require an ERCP for alternative reasons. Prospective trials are needed to fully compare both methods and long term outcomes.

Bariatric arterial embolization for obesity: a review of early clinical evidence

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Obesity is a worldwide public health epidemic that leads to increased morbidity, mortality, and cost burden to health care. Although bariatric surgery has been recognized as a standard invasive treatment for obesity, it is accompanied by relatively high morbidity and cost burden, as well as limited treatment outcome. Therefore, alternative treatments with lower morbidity and cost for surgery that target patients who are obese, but not morbidly obese, are needed. A minimally invasive trans-catheter procedure, named Bariatric Arterial Embolization or Bariatric Embolization (BAE), has been identified as a potential solution, based on its safety and preliminary efficacy profiles. The purpose of this review is to introduce up-to-date clinical data, and discuss future directions for BAE for the treatment of obesity.

Massive hemobilia caused by portal vein pseudoaneurysm with porto-biliary fistula: successful treatment by stentgraft placement in portal vein

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Objectives: Although hemobilia is caused by various conditions, portal vein pseudoaneurysm is an extremely rare cause of hemobilia. There are no standard treatment strategies for portal vein pseudoaneurysm. Previous case reports exhibited conservative treatment, open surgical repair, and percutaneous transhepatic stentgraft placement.

Materials and Methods: We report a case of hemobilia due to portal vein pseudoaneurysm with porto-biliary fistula, which was successfully treated by stentgraft placement via the percutaneous transhepatic approach.

Result: The case was 54-year-old man with a history of hepatic hilar cholangiocarcinoma treated by proton beam therapy. Additionally, Hilar lymph node recurrence was treated by chemotherapy and surgical resection. After these treatments, endoscopic biliary drainage was performed repeatedly because of stricture at the hilar bile duct, and fully covered metallic stent was placed. However, frequent exchange of biliary stent was needed due to obstruction, and after 3rd time exchange, massive biliary hemorrhage had been observed during the exchange procedure every time. Contrast enhancement CT revealed portal vein pseudoaneurysm adjacent to biliary stent at the confluent portion of right and left portal vein. We diagnosed portal vein pseudoaneurysm with porto-biliary fistula was the hemorrhagic origin, and IR treatment was attempted.

Percutaneous transhepatic portography via the peripheral portal vein branch at left lateral superior segment revealed the severe stricture at the confluent portion. A 5F catheter was advanced into the pseudoaneurysm through the stricture, and contrast study revealed extravasation into the duodenum along the outer space of covered biliary stent. This findings strongly suggested that portal vein pseudoaneurysm with porto-biliary fistula was the cause of hemobilia. The catheter was advanced into the portal vein trunk, and a guidewire is exchanged with a stiff type. The covered biliary stent (10mm diameter, 60mm length, Niti-S stent) was placed from the portal vein trunk to the left portal vein branch.After the IR procedure, no biliary hemorrhage was observed when exchanging biliary stent. Endoscopic cholangioscopy revealed the large hole at the hilar bile duct, which was entirely covered with portal vein stentgraft.

Conclusion: Massive hemobilia caused by portal vein pseudoaneurysm with porto-biliary fistula was successfully treated by stentgraft placement in portal vein.

Endoscopic balloon-occluded percutaneous ablation using absolute ethanol for postoperative recurrent bile leak

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Background/Aims: The bile leak following hepatobiliary and pancreatic surgery can be intractable and recurrent. Several therapeutic options such as interventional radiology and endoscopic drainage can be applied, but this depends on the situation and whether such therapies would be successful. We will report a case which was successfully treated by hybrid procedures in accordance with percutaneous ablation using absolute ethanol and endoscopic balloon occlusion during endoscopic-retrograde-cholangiography-related procedure.

Case: 70-year-old-man, who was suffering from abdominal pain and fever for a month, admitted to our hospital. Mild redness and tenderness were recognized on his right upper abdomen. This was the fourth admission for recurrent bile leak after central bisegmentectomy of the liver for hepatocellular carcinoma. In addition, he had gastric ulcers and type2 diabetes mellitus. Computed tomography showed abscess formation from the right subphrenic space to the subcutaneous of the right upper flank. Therefore, we performed percutaneous abscess drainage immediately. The discharge volume ranged from 100 to 200 ml/day for approximately 10 days. The discharge volume didn't decrease even though endoscopic biliary drainage (EBD) was also used on the 11th day. Computed tomography under fistulography revealed the communication with the hilar bile duct. Endoscopic balloon-occluded percutaneous ablation, using absolute ethanol, was performed on the 25th day to prevent the damage to the bile duct due to the inflow of absolute ethanol. The volume from the bile leak decreased immediately and the communication with the bile duct had disappeared by the 28th day. A complete recovery was achieved due to the combination of endoscopic drainage with percutaneous ablation.

Conclusion: In cases with communicating biliary fistula and bile leak, endoscopic balloon-occluded ablation using ethanol may be considerably effective if the precise site of bile leak is identified.

Half double designed self-expandable metallic stent in management of malignant sigmoid colon and rectal obstruction: preliminary results

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Purpose: To demonstrate the clinical effectiveness and safety of a 24-dimaeter half double designed self-expandable metallic stent (HDDSEMS) in the management of malignant colo-rectal obstruction as a bridge to surgery or palliation for inoperable patients.

Materials and Methods: Between March 2017 and June 2018, 21 patients (12 males and 9 females; median age, 65 years; age range, 35-95 years) were selected to receive decompressive therapy for malignant colonic obstruction by implanting HDDSEMS. The 24mm-

HDDSEMS with 30mm flare ends and double design in the distal half was placed by using a 4.0 mm delivery system under fluoroscopic guidance. The obstruction was located in the sigmoid colon (n=11), and the rectum (n=10). The intended uses of the HDDSEMS were as a bridge to elective surgery (BS) in 11 patients and for palliation in 10.

Results: A 100% technical success rate was achieved for the stent placement. There is no evidence of major complication such as perforation, migration and massive bleeding. The bowel obstruction resolved in 48 hours after successful stent placement. 150cc–200cc of glycerin was infused throgh the guiding catheter just after stent deployment to avoid fecal impaction at the waist segment of expanding stent.

Conclusion: The placement of a 24mm–HDDSEMS appears to be safe and clinically effective in the management of malignant recto–sigmoid obstruction, especially with unfavorable anatomic sites such as looped and curved sigmoid colon and proximal rectum close to the surgical margin.

Development and experience with an insulated scissors-type knife (SB knife)

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Aim: Endoscopic submucosal dissection (ESD) is technically difficult and carries risks of perforation and bleeding. We have developed an SB knife Jr type (SBJr), which is a short scissors–type knife with insulating coating, in collaboration with SUMITOMO BAKELITE CO. (Tokyo, Japan). We have used the SBJr in colorectal ESD and evaluated its performance and safety.

Instruments and Methods: The SBJr has been used on 202 colorectal lesions from January 2008 in Yokkaichi Municipal Hospital. It has short blades for easy handling during delicate work in colorectal ESD. The SBJr was used for both incision and hemostasis. At sites containing blood vessels or bleeding, the vessels were grasped and coagulated with a soft coagulation wave.

Results: All cases were performed ESD successfully. There were 3 cases of perforation during ESD and 1 case of post–operative bleeding, but all cases were cured by conservative therapy.

Conclusion: This short insulated scissors–type knife (SBJr) made it easier to perform colorectal ESD, we conclude that it is easy to handle and is a very effective device in colorectal ESD.

Partial stent-in-stent method using double bare self-expandable metallic stents for malignant hilar biliary stricture

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Objectives: Endoscopic management of unresectable hilar malignant biliary stricture (MBS) using a self–expandable metallic stent (SEMS) is challenging. A newer partial stent–in–stent (PSIS) method is considered a more physiological solution.

Materials and Methods: The EGIS Double Bare Stent (S and G Biotech) is very small (2 mm) cell size. and can prevent tumor ingrowth. Its braided structure is composed of a hook and cross pattern, which facilitates expansion of the stent. An 82–year–old male patient was diagnosed with hilar bile duct carcinoma. Guidewires were passed selectively into the right and left bile ducts; the first stent was placed in the left bile duct. After the mesh was dilated using a balloon, the second stent was deployed in the right bile duct.

Results: The large dilatation of the Double Bare Stent cell greatly reduced the deformation and stenosis of the second stent. The patient had shown no symptoms of jaundice at the time this abstract was submitted.

Conclusion: The EGIS Double Bare Stent has an extremely expandable mesh structure that is useful for partial stent–in–stent methods.

Development of multi-hole self-expandable metallic stent

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Objectives: About malignant obstruction in biliary tree especially hilar area, uncovered stent is obstructed by ingrowth, but covered stents block the bile duct branch and have risk of migration.

Materials and Methods: We developed Multi–Hole Self–expandable Metallic Stent (MHSEMS), which has a hole in each cells, to prevent obstruct the bile duct blanch. And holes may prevent migration by wall tissue and by reduce the tension of the membrane.

MHSEMS were placed in three malignant obstructive patients and one post–endoscopic sphincterotomy bleeding.

Result: All patients improved jaundice and had no complications, complete hemostasis was achieved and the stent was successfully removed. Endobiliary RFA is usefull for ingrowth in MHSEMS.

Conclusion: MHSEMS has a hybrid character between UCSEMS and FCSEME, it will become new treatment methods for the benign and malignant bile duct stricture.

Efficacy and clinical outcome of endoscopic ethanol injection for upper gastrointestinal bleeding from peptic ulcer

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Objectives: While, endoscopic treatment has become a standard therapeutic approach for bleeding from peptic ulcer lesions, the most suitable method among different endoscopic treatments has not been established yet. This study was performed to investigate the hemostatic efficacy and clinical outcome of endoscopic ethanol injection for bleeding from peptic ulcer lesions.

Materials and Methods: We analyzed medical records

of patients who received endoscopic treatment for acute gastrointestinal bleeding from peptic ulcer lesion from January 2007 to June 2013, retrospectively.

Results: Peptic ulcer with Forrest classification Ia, Ib, IIa, or IIb was found in endoscopic examination as a cause of upper gastrointestinal bleeding in a total of 232 patients admitted during the study period. All these 232 patients with bleeding peptic ulcer lesions (mean age, 68.9±14.9, male/female, 152/80) received endoscopic hemostasis. Active bleeding from the peptic ulcer lesions (Forrest classification Ia or Ib) was noted in 76 patients (32.7%). Endoscopic hemoclip placement (EHP), thermal coagulation, and ethanol injection (EEI) were performed as a method of initial endoscopic hemostasis in 87, 105, and 40 patients, respectively. 76 patients with active bleeding received hypertonic saline–epinephrine injection during endoscopic hemostasis. In patients received EEI, primary hemostasis was achieved in all 40 patients. Among patients received EEI, there were 6 cases of recurrent bleeding and secondary hemostasis was achieved with endoscopic treatment and angiographic embolization in 4 and two patients, respectively, and no patients required surgery. The mean duration of initial endoscopic hemostasis, when compared between EHP and EEI group, was significantly longer in EHP group (20.4 vs. 14.5 min, p=0.040).

Conclusion: Most bleeding peptic ulcer lesion can be successfully managed by endoscopic treatment. EEI seems to be useful method of hemostasis for bleeding peptic ulcer lesion, especially when EHP cannot be used in case of huge peptic ulcer lesion.

Partially covered, double knitted colonic stents improve outcome for malignant colonic strictures.

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Purpose: Traditional construction of a colonic stent is of a metal skeleton braided from a single wire, with an optional cover, created by covering the stent in liquid silicone. Bare stents occlude by tumour growth through the metal skeleton, while the silicone fixes the wire struts, resulting in increased stent rigidity and a high migration rate.

Newer stent constructions consist of two layers of a more conformable “knitted” skeleton, which have a membrane sandwiched between the layers. The aim of this study was to assess whether these stents combine the reduction in tumour ingrowth with a reduction in displacement.

Materials and Methods: A web–based registry was constructed by Obsidian Health Ltd. a company specialising in medical data management. Consecutive colonic stent insertions were logged from three experienced departments in different regions in the United Kingdom. Placement of double knitted, membrane covered stents from two different manufacturers (Egis, S&G Biotech & ComVi, TaeWoong) and the outcome was logged. Endpoints were stent failure from occlusion or migration and patient death. Institutional review board approval was granted, which classified the study as an audit, not requiring patient consent.The study was supported by a research grant from the British Society of Interventional Radiology

Results: Over a three–year period 52 patients had 66 stents inserted with a 90% primary technical success rate. The underlying diagnosis was colorectal cancer in 86% and gynaecological cancer in 11% of patients.The median length of stents placed was 100mm (range 80–120mm), the median diameter was 24mm (range 18–24mm). Mean initial stent expansion was 51.5% (range 0–100%).10 patients were excluded due to inadequate follow–up and 55 stent procedures could be analysed (42 patients).The median survival was 211 days (range 5–1238 days). None of the stents occluded by ingrowth of tumour tissue.Displacement of stents was seen in 14.5% (8/55) and occurred at a median of 60 days (range 2–298 days) after insertion. Five of these 8 patients (62.5%) did not have recurrent of symptoms and did not require further intervention. The majority of patients (5/8, 62.5%) who had experienced stent migration had received further chemotherapy, which had resulted in tumour reduction.Overall re–intervention was required in 20% (11/55) of patients: One required balloon dilatation for poor stent expansion, 10 patients had further stents: 3 for stent migration and 7 for a poor clinical response attributed to inadequate stent expansion.

Conclusion: Our results suggest that double knitted, membrane–covered stents are an effective design. It seems to combine the benefits of a covering membrane to prevent stent obstruction, while maintaining the superior conformability and reduced migration of the knitted metal construction. In contrast to traditional silicone–dipped stents the migration rate is much reduced, but stent displacement is related to ongoing chemotherapy in the majority of cases. With the lack of tumour ingrowth the stents apparently displace because they are no longer required. This needs to considered in educating patients and oncologists.

In vitro evaluation of irinotecan loaded bioresorbable microspheres for arterial chemoembolization

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Objective: To evaluate the potential of the drug loadable resorbable microspheres (BRMS) as platforms for irinotecan delivery in arterial chemoembolization.

Materials: BRMS were prepared from carboxymethyl cellulose and chitosan by using an inverse emulsion method. The degradability of these microspheres in 10 μg/mL lysozyme at 37 oC was determined by gravimetry. Drug loading was performed by immersing 100–300 μm BRMS in an irinotecan hydrochloride solution (20 mg/mL) for 2 h. Drug loading efficiency was determined by measuring the irinotecan concentration remaining in the loading solution with a spectrophotometer at 369 nm. The drug distribution inside the microspheres was determined with multiphoton confocal fluorescent microscopy. Release experiments were performed in distilled water (DI), saline (0.9% NaCl, pH = 5.6) and 0.01 M phosphate buffered saline (PBS, pH = 7.4 and pH = 5.5) under static medium conditions. The suspendability of the drug loaded BRMS was tested in water/contrast agent mixtures in different ratios, and then the injectability was tested with microcatheters (ID= 0.021” and 0.027”).

Results: The dry weight of the BRMS showed a consistent decrease over the period of incubation in a 10 μg/mL lysozyme solution with 39.1% mass remaining on day 21. Irinotecan was loaded efficiently onto the 100–300 μm BRMS with a loading percentage of 90.67% and an average of 14% decrease in the microsphere size at 2 h. Confocal imaging revealed an even distribution of irinotecan throughout the BRMS. In different releasing media, drug loaded BRMS released irinotecan at different rates depending on the ion

concentration. At 2 h, the percentage of drug released were 12.7 ± 3.0%, 98.1 ± 2.7%, 99.4 ± 1.0%, and 100.0 ± 0.0% for 100–300 μm BRMS in DI, saline, PBS (pH = 7.4) and PBS (pH = 5.5), respectively. Drug loaded BRMS formed a stable suspension in a 7:3 water/contrast mixture, which could be easily injected through microcatheters without aggregating or clogging.

Conclusions: BRMS are promising as carriers for irinotecan delivery in arterial chemoembolization.

Angiography findings and endovascular management of acute nonvariceal gastrointestinal bleeding: a pictorial essay

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Although most cases of acute nonvariceal gastrointestinal (GI) hemorrhage either spontaneously resolve or respond to medical management or endoscopic treatment, there are still a significant number of patients who require emergency angiography and endovascular management. The most common angiography finding is contrast extravasation. If a hemorrhage source is identified, endovascular treatments including intra-arterial infusion of vasopressin, embolization, covered stent-graft, or combined of them, are usually effective means of successfully controlling hemorrhage while minimizing potential complications. Diagnostic angiography and endovascular management are excellent options for evaluating and managing acute nonvariceal GI bleeding that is refractory to medical and endoscopic therapy.The most common angiography finding is contrast extravasation. Endovascular management including intra-arterial infusion of vasopressin, embolization, covered stent-graft, or combined of them, is minimally invasive treatment with a high successful rate.

The outcomes of transjugular intrahepatic portosystemic shunt through the right branch vs. the left branch of the portal vein in treatment of gastroesophageal varices bleeding

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Objective: To compare the differences of transjugular intrahepatic portosystemic shunt (TIPS) through the right or left branch of the portal vein in patients of gastroesophageal varices bleeding.

Methods: Clinic data of 68 patients of gastroesophageal varices bleeding were analyzed retrospectively. All patients were divided into 2 groups: thirty-four cases in right portal vein branch group (RPVB) , thirty-four cases in left portal vein branch group (LPVB) . The curative effect was compared between two groups.

Results: All TIPS were technically successful. The free of variceal rebleeding rates in RPVB group were 80.87% after 6 months, 76.61% after 12 months, 69.64% after 24 months, and those in LPVB group were 84.87% after 6 months, 80.83% after 12 months, 75.44% after 24 months, and difference was not statistically significant (P=0.67). Stent patency rates in RPVB group were 84.58% after 6 months, 68.34% after 12 months, and those in LPVB group were 90.23% after 6 months, 83.78% after 12 months, which had no significant difference between two groups (P=0.78). Survival rates in RPVB group were 90.14% after 12 months, 72.12% after 48 months, and those in LPVB group were 91.08% after 12 months, 70.06% after 48 months, and difference was not statistically significant (P=0.57). The hepatic encephalopathy incidence rate of RPVB group and LPVB group were 17.65% (6/34)and 26.47% (9/34), respectively, which had no significant difference between two groups (P=0.38).

Conclusion: There is no difference between the right portal vein branch shunt and the left portal vein branch shunt in TIPS treatment of gastroesophageal varices bleeding.

Esophageal balloon pyloroplasty in the treatment of gastric paralysis after esophageal and cardiac cancer surgery

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Objective: To explore the mechanism, treatment and prevention of gastroparesis after esophageal and cardiac cancer surgery. Methods: 37 cases of gastroparesis after esophageal and cardiac cancer surgery were analyzed retrospectively from September 2012 to February 2017.

Results: After the treatment of esophageal balloon pyloroplasty, the abdominal distension and vomiting symptoms of these 37 patients disappeared, and the gastrointestinal decompression drainage volume gradually decreased to less than 400ml per day. Upper gastrointestinal radiography confirmed good gastrointestinal peristalsis condition at 19–38 days, and extubation feeding were given. Among these 37 casese, there was only l case appeared with gastric juice reflux, which choked into the lung, leading to aspiration pneumonia. The disease is under control and eventually cured after strengthening the anti-inflammatory treatment and timely rescue.

Conclusion: Esophageal balloon pyloroplasty should be performed as soon as the diagnosis of gastroparesis is estabished. Gastroparesis after surgery can be cured and avoid surgical intervention. Esophageal balloon pyloroplasty can also reduce complications and reduce the economic burden of patients.

The analysis of prognostic factors for the treatment of gastroesophageal varices bleeding with transjugular intrahepatic portosystemic shunt

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Objective: To analyze the prognostic factors for the treatment of gastroesophageal varices bleeding with transjugular intrahepatic portosystemic shunt.

Methods: A retrospective analysis was performed for the clinical data of 68 patients with gastroesophageal varices bleeding who were received TIPS in our hospital from December 2010 to February 2015. Paired t test was used to compare paired measurement data, the

Kaplan – Meier method was used to calculate the cumulative probability of survival, the log – rank test was used to analyze survival difference, the Cox regression model was used to analyze prognostic factors, and the receiver operating characteristic curve (ROC) and the area under the curve (AUC) were used to determine the optimal cut – off values of prognostic factors.

Results: All TIPS were technically successful. The postoperative follow-up time was (19.4±16.1) months. The 6 – month, 12 – month, 24 – month and 48 – month survival rates were 92.5%, 90.7%, 82.2% and 69.2%, respectively. The Cox regression multivariate analysis showed that age (P=0.009, HR=1.096, 95%CI: 1.023~1.173) and serum albumin (P=0.024, HR=0.872, 95%CI: 0.774~0.982) were independent factors influencing survival. The area under the ROC curve of age was 0.923 (P=0.001,95%CI: 0.849~0.998), and the optimal cut — off value of age was 67.5, with a sensitivity of 66.7% and a specificity of 87.1%. The Kaplan – Meier survival analysis showed that the 1 – year survival rates of patients with age ⩽ 67.5 and > 67.5 were 96.4% and 64.3%, respectively ($\chi2$=10.785,P=0.001).

Conclusion: Age and serum albumin were independent predictors for the survival of gastroesophageal varices bleeding patients treated by TIPS, and patients aged > 67.5 had poor postoperative prognosis.

Multiple imaging modalities guided radiofrequency ablation combined with transarterial chemoembolization for hepatocellular carcinomas in special locations

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Objective: To evaluate safety and effects of RFA combined with TACE guided by multiple imaging modalities for HCC in special compared with conventional locations.

Method: 122 HCC patients were enrolled, including 85 patients in conventional locations and 37 in special locations. The clinical data, OS, PFS and procedure-related adverse events were analyzed.

Results: RFA combined with TACE was successfully performed in all patients. The tumor complete necrosis rate was not significantly (P=0.353) different between the two groups. The PFS was 17 months in the conventional but 14 months in the special location, and the tumor PFS rate was 68.1% in the conventional location, not significantly (P = 0.741) from 59.1% in the special location at 1 year. The OS was 28 months in the conventional but 32 months in the special location. Age and tumor size were significant (P<0.05) prognostic factors for OS, and tumor size was the only significant (P<0.01) prognostic factors for PFS.

Conclusion: RFA guided by multiple imaging modalities combined with TACE may be safe and effective for treating hepatocellular carcinomas in special locations.

The efficacy and influencing factors of transarterial chemoembolization for hepatocellular carcinoma with portal vein tumor thrombosis: a stratified study

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Objectives: To explore the efficacy and influencing factors of transarterial chemoembolization (TACE) in the treatment of hepatocellular carcinoma (HCC) combined with portal vein tumor thrombosis (PVTT).

Materials and methods: The clinical data of 3126 consecutive patients who suffered from advanced HCC and underwent TACE were retrospectively analyzed. A total of 685 patients had a combination of HCC and PVTT. Of these patients, 475 were treated with TACE (Group A) and 210 were given a supportive care (Group B). The local response and overall survival of the two groups were observed and compared, and the influencing factors were examined through COX regression analysis.

Results: The median survival time and cumulative survival rate at 6, 12, and 24 months of Group A were higher than those of Group B (P = 0.002). Multiple COX regression analysis revealed that Child—Pugh classes and PVTT grades were the independent prognostic factors affecting a patient's survival. Stratified analysis demonstrated that the survival time of patients diagnosed with grades I/II PVTT and treated with TACE was superior to that of patients provided with supportive care (P = 0.001), but the survival time of patients with grades III/IV PVTT with or without TACE did not significantly differ (P = 0.662).

Conclusions: TACE can significantly improve local response, increase cumulative survival rate, and prolong the survival duration of patients with HCC and grades I/II PVTT, whereas the efficacy of TACE for patients with grades III/IV PVTT should be further verified, although their local responses were improved. Child—Pugh classes and PVTT grades are essential factors influencing patient prognosis.

Bronchobiliary fistula after multiple transcatheter arterial chemoembolizations for hepatocellular carcinoma: A case report

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Bronchobiliary fistula (BBF) is a rare condition, defined as an abnormal communication between the bronchial system and the biliary tree. Patients with this condition usually present with massive biliptysis, and the mortality rate is high. BBF has been reported to occur in patients with congenital conditions, complications of trauma, hepatic abscesses and biliary tract obstruction (surgical as well as non-surgical). However, to the best of our knowledge, BBF as a complication of transcatheter arterial chemoembolization (TACE) for hepatocellular carcinoma (HCC) has not been reported to date. We herein report a case of BBF developing as a complication following TACE in a 71-year-old male patient with HCC. The patient was treated by placement of a metallic biliary stent followed by percutaneous transhepatic biliary drainage to decompress the intrahepatic biliary tree, and his symptoms were immediately relieved.

BCS associated HCC: clinical and imaging analysis

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Background: Hepatocellular carcinoma (HCC) is a common complication of Budd—Chiari syndrome (BCS). Little was known about the clinical and imaging features of BCS associated HCC. The purposes of this study were to illustrate clinical and imaging features in BCS patients with HCC, and to discuss different the underlying mechanisms of BCS associated HCC.

Methods: 137 consecutive patients with primary BCS were retrospectively studied. 12 BCS patients with HCC were included in this study. BCS were treated with surgical portasystemic shunts, surgical removal, angioplasty and/or stenting, and HCC were managed with TACE, RFA or surgical resection. Imaging features on ultrasonography, CT and the serum AFP level were analyzed.

Results: Male gender was dominant in our cases. All patients were inferior vena cava block and stricture of hepatic venous outflow tract. Obstruction type includes segmental obstruction of IVC, IVC thrombosis formation and IVC vascular malformation. Liver cirrhosis was observed in all patients. Portal vein invasion was found in only 1 patients and no bile duct invasion was found. Most nodules of HCC were located in the right posterior lobe and near the edge of liver, more than 3 cm in diameter and solitary with only 1 nodule. As for enhancement, the nodules exhibited heterogeneous enhancement during the arterial phase and washout during the delayed phase on enhanced CT. The pathological results of the two resected patients were both high differentiated HCC.

Conclusions: BCS patients with inferior vena cava block and stricture of hepatic venous outflow tract seems to be associated with HCC. The HCC nodules seem to be less invasive and the invasiveness seems only associated the diameter of nodules.

Sorafenib improves lipiodol deposition in transarterial chemoembolization of patients with hepatocellular carcinoma: a long-term, retrospective study

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Objectives: we studied the impact of sorafenib addition to TACE on lipiodol retention and compared the OS and TTP of HCC between TACE alone and TACE + sorafenib treatment groups.

Methods: Between April 2004 and March 2012, patients with HCC who were on TACE alone and TACE + sorafenib treatment were identified from the records. Lipiodol deposition was quantified by examining the computed tomography scan images.

Results: Lipiodol deposition of >50% was significantly increased in TACE + sorafenib group (70.87%) compared to TACE alone group (45.11%) . Lipiodol deposition also improved the OS and TTP. The median OS in TACE + sorafenib and TACE alone groups were 38 months and 31 months respectively. Also, the hazard of death was comparatively greater in TACE alone group than TACE + sorafenib group . Moreover, in the MRECIST evaluation, responders (CR + PR) to the treatment were significantly increased after sorafenib administration to TACE patients(66.6%) compared to TACE alone treatment (41.35%).

Conclusion: Lipiodol deposition is significantly increased upon sorafenib addition after TACE along with OS and TTP in patients with HCC.

Acute occlusion of expanded polytetrafluoroethylene-covered transjugular intrahepatic portosystemic shunt: incidence, clinical outcomes, and prognostic factors

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Objectives: The expanded polytetrafluoroethylene (ePTFE)—covered stent has been widely used in the transjugular intrahepatic portosystemic shunt (TIPS) procedure. The purpose of this study was to evaluate the incidence, clinical outcomes, and prognostic factors of acute TIPS occlusion (ATO) in TIPS recipients using ePTFE–covered stents.

Methods: We identified 222 patients who underwent ePTFE–covered TIPS creation for complications of portal hypertension between January June 2015 and June 2017 at a large tertiary center. Medical records and TIPS procedure data were retrospectively reviewed, and the influence of these variables on ATO was assessed by multivariate logistic regression analysis.

Results: TIPS technical success was achieved in 219 patients (98.6%). Two patients were excluded due to missing data, leaving 217 patients for final analysis. ATO occurred in nine patients (4.1%). In all series, parameters that were significantly different between patients with and without ATO were platelets levels, previous splenectomy, portal vein thrombosis, portal cavernoma, stent shortening in the hepatic vein, shunt stenosis, and residual thrombosis below the shunt. On multivariable logistic regression, shunt stenosis (hazard ratio = 36.09; 95% confidence interval [CI]: 2.93—443.96; P = .005), and previous splenectomy (hazard ratio = 22.99; 95% CI: 1.29—408.39; P = .033) were demonstrated as independent, significant risk factors for ATO.

Conclusion: The shunt stenosis and previous splenectomy are vital prognostic factors for ATO in TIPS recipients. These findings suggest that the technical errors during TIPS creation should be addressed immediately. And individualized post–TIPS management strategy was required.

Long-term patency and clinical outcome of the transjugular intrahepatic portosystemic shunt using the expanded polytetrafluoroethylene stent-graft

XueFeng Luo

West China Hospital

Background: Transjugular intrahepatic portosystemic shunt (TIPS) creation is an established treatment option to management the complications of portal hypertension. Recent data on the long–term outcomes of TIPS are scarce.

Materials and methods: In this single–institution

retrospective study, 495 patients underwent TIPS with the Fluency stent-grafts between December 2011 and June 2015 were evaluated. The cumulative rates of TIPS dysfunction, hepatic encephalopathy (HE), survival, and variceal rebleeding were determined using the Kaplan–Meier method. Cox regression analysis was used to assess the parameters on TIPS patency, occurrence of HE and all-cause mortality.

Results: Technical success was 98.2%. TIPS-related complications occurred in 67 patients (13.5%) during the index hospital stay. TIPS creation resulted in an immediate decrease in mean portosystemic pressure gradient from 23.4 ± 7.1 mmHg to 7.6 ± 3.5 mmHg. The median follow-up period was 649 days. Primary TIPS patency rates were 93%, and 73% at 1 and 4 years, respectively, with TIPS establishment via the left portal branch being an independent predicting factor. HE occurred in 151 out of 495 patients (30.5%), and age > 65 was a significant predictor. The cumulative survival rates were 93.4% and 72.6% at 1 and 4 years, respectively. The 1- and 4-year probability of remaining free of variceal bleeding rates were 94.2% and 77.1%, respectively.

Conclusions: This retrospective single-center experience with TIPS using the Fluency stent-grafts demonstrates good long-term patency and favorable good clinical results. TIPS establishment via left portal branch strongly predicts shunt dysfunction.

A tunnel technique for the endoscopic treatment of zenker’ s diverticulum: a single-centre experience

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Background: At present day, there are two types of flexible endoscopic treatment of a Zenker’s diverticulum: the traditional diverticulo-esophagostomy and the novel tunnel technique. The last one benefits in visually controlled elongation of the myotomy to the first part of the oesophagus.

Objective: To compare the results of different methods of endoscopic treatment of a Zenker’s diverticulum.

Patients and methods: Fom June 2014 to November 2017 63 patients were included in the comparative prospective study. The patients were divided in two groups: the group of traditional endoscopic treatment (31 patients) and using the novel tunnel technique (32 patients).

Results: The average time of the surgical intervention did not differ significantly. No pathological changes were detected post-operatively. Following radiographic confirmation of the integrity of the surgical site, the patients were allowed a diet of liquid food. The postoperative period management did not differ in two groups, and the patients were discharged from the hospital two days after the operation.

Conclusions: The initial results of our study prove the tunnel technique for the endoscopic treatment of the Zenker’s diverticulum is safe and provides the best surgical outcome.

Ct-guided microwave ablation for early stage live tumors

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Objectives To investigate the effectiveness and cost of CT-guided percutaneous microwave ablation (MWA) for liver tumors with a diameter<5cm.

Materials and Method Fifty-five consecutive patients with 172 primary or metastatic liver tumor were treated with CT-guided microwave ablation in our center. The diameter of tumors ranged from 1-5 centimeter, with 53 lesions<2cm and 42 lesions>3cm. The primary tumors include hepatocellular carcinoma, rectal cancer, breast cancer, colon cancer and esophagus cancer. Overall survival, disease free survival, local control rate and hospital stay were retrospectively analyzed. Survival curves were constructed with the Kaplan-Meier method and compared by using the log-rank test.

Result The 1, 2 year-overall survival were estimated as 92.72%, 89.09% retrospectively. The 1, 2 year-disease free survival were 90.9%, 78.18%. Log-rank analysis of two sets of data was not significantly different. Hospital stay was 6.62±2.31 days. Cost was 3274.50±233.91 U.S. dollars.

Conclusion MWA demonstrate good 1, 2 year-overall survival and disease free survival, relative shorter hospital stay and less expense. MWA should be considered the better choice for those patients with severe cardiopulmonary comorbidity, as well as those patients who were unwilling to accept surgery.

Percutaneous transhepatic extraction and balloon dilation for simultaneous gallbladder stones and common bile duct stones: a novel technique

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Aim: To evaluate the clinical efficacy and safety of an innovative percutaneous transhepatic extraction and balloon dilation (PTEBD) technique for clearance of gallbladder stones in patients with concomitant stones in the common bile duct (CBD).

Methods: The data of 17 consecutive patients who underwent PTEBD for clearance of gallbladder stones (Figure 1) were retrospectively analyzed. After removal of the CBD stones by percutaneous transhepatic balloon dilation (PTBD) (Figure 2-3), the gallbladder stones were extracted to the CBD and pushed into the duodenum with a balloon after dilation of the sphincter of Oddi. Large stones were fragmented using a metallic basket (Figure 4). The patients were monitored for immediate adverse events including hemorrhage, perforation, pancreatitis, and cholangitis. During the 2-year follow-up, they were monitored for stone recurrence, reflux cholangitis, and other long-term adverse events.

Results: Gallbladder stones were successfully removed in 16 (94.1%) patients. PTEBD was repeated in one patient. The mean hospitalization duration was (15.9±2.2) days. Biliary duct infection and hemorrhage occurred in one (5.9%) patient respectively. No severe adverse events occurred, including pancreatitis or perforation of the gastrointestinal or biliary tract. Neither gallbladder stone recurrence nor refluxing cholangitis

had occurred 2 years after the procedure.

Conclusion: Sequential PTBD and PTEBD are safe and effective for patients with simultaneous gallbladder and CBD stones. These techniques provide a new therapeutic approach for certain subgroups of patients in whom endoscopic retrograde cholangiopancreatography/ endoscopic sphincterotomy or surgery is not appropriate.

Multifactor analysis of the prognosis of obstructive jaundice infection treated by percutaneous transhepatic biliary drainage

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Purpose: Explore the main risk factors affecting the occurrence of infections after operations, and provide references for the clinical prevention and treatment after PTBD ,so as to extend the survival period of the patients.

Methods: In this study we included in January 2016 – September 2017 division for the first time suffered from puncture drainage of biliary stent and (or) treated by pathology or imaging has clearly malignant tumor because of infringement or oppression caused by obstructive jaundice. There were 98 patients, 57 cases of men, women, 41 cases of simple external drainage in 13, the internal and external drainage, 77 cases, 8 cases of stent placement. Multivariate Logistic regression analysis was performed for 14 factors which may affect the prognosis of infection.

Results: Multivariate non–conditional Logistic regression model was used to fit the factors that might affect postoperative infection, and six significant factors (gender, elderly, child–pugh score for liver function, gastrointestinal bleeding, drainage pattern, and high biliary obstruction) were obtained.

Conclusion: Percutaneous transhepatic biliary drainage (PTBD) is a safe and effective treatment for malignant obstructive jaundice. Such patients should pay attention to actively improve liver function, relieve biliary obstruction as soon as possible, restore smooth biliary drainage, and give adequate broad–spectrum antibiotics to strengthen anti–inflammation.

The clinical utility of PIVKA-II&AFP in evaluation of the efficacy and prognosis of TACE in patients with primary hepatic carcinoma

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TACE (Transcatheter arterial chemoembolization) is currently recognized as one of the most commonly used treatments for non–surgical resection of hepatic carcinoma.Nowadays,the mRECIST standard based on imaging data is widely used to evaluate the post–TACE patients with PHC (Primary hepatic carcinoma),but there are still many limitations. Meaurement of specific tumor markers could make up with this limitation,which yields information ancillary to imaging data .Studies have shown that the extent of serum tumor markers is strongly correlated with mRECIST criteria, such as PIVKA–II(Protein induced by vitamin K antagonist–II) , AFP (alpha–fetoprotein).The etiology of PHC in China is mainly HBV,measurement of a combination of PIVKA–II and AFP is clinically valuable in terms of comprehensively monitoring treatment outcomes , predicting prognosis and recurrence , together with radiological analysis.This article discusses the therapeutic efficacy and prognostic value of PIVKA–II and AFP in patients with PHC after TACE .

The role of biopsy in determining treatment strategy in EGC; Surgery versus ESD

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Background/Aims: A biopsy based histologic diagnosis is a critical factor for determining treatment strategy in early gastric cancer (EGC). However, there was no study to investigate the role of biopsy to determine treatment including ER and surgery in EGC. The aim was to compare between histologic diagnosis from biopsy sample and final diagnosis from endoscopic resection (ER) and surgical specimens. Also, we tried to find predictive factors related to discrepancy between biopsy and final histology.

Methods: 1,043 patients with a biopsy diagnosis of gastric adenocarcinoma were treated by ER or surgery in Gangnam Severance Hospital. To compare the histological discrepancy rate, we checked the histologic diagnosis from the biopsy sample and the final diagnosis from the ER and surgical specimen.

Results: 44% of EGC patents were treated by ER, and 56% by surgery. Among patients with ER, histologic discrepancies (Group group 1) was 10.3%. Differentiated–type EGC (D–EGC) based on biopsy and undifferentiated–type EGC (UD–EGC) on ER pathology was 84% of Group group 1. Among them, curative resection (CR) was 33.3%, and non– CR was 66.6%. UD–EGC on biopsy and D–EGC on ER pathology was 16% of Group group 1, and all of them were diagnosed with CR. In surgery group, histologic discrepancy were was 11.0% (group 2). Among histologic discrepancy group(Group group 2), D–EGC on biopsy, and UD–EGC on pathology surgical pathology was 22.1%. All of them were included in beyond expanded indication (EI) for ER. UD–EGC on biopsy and D–EGC on surgical pathologypathology was 17.4% of Group group 2. Among them, patients with absolute indication (AI) of ER was 13.3%, EI was 40%, and beyond EI was 46.7% according to final pathology. In patients with histologic discrepancies on biopsy and final pathology aAge, size, upper–third tumor location in the upper–third segment of stomach, and elevated gross appearance were significant predictive factors for histologic discrepancies between biopsy and final pathology.

Conclusions: Decision of treatment based on biopsy in EGC may be acceptable. However, to To determine the treatment strategy for EGC more properlyaccurately, reduction of histologic discrepancy not only biopsy but also endoscopic characteristics should beis important.

Drug eluting stent

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Gastrointestinal (GI) cancers cause obstruction of the GI tract including biliary tree. Biliary stenting is clinically effective in relieving both malignant and non-malignant obstructions. In advanced biliary cancer, endoscopic stent insertion is the treatment of choice. However, the current stent allows only mechanical palliation of obstructed biliary tract and has no anti-tumor effect. The bile duct cancer usually shows clinical feature of loco regional invasion, so local treatment may have beneficial effects.

The primary role of a drug eluting stent (DES) in gastrointestinal malignancy is that it decreases the tumor re-growth and sustains the stent patency.

And also metallic stent for benign esophageal and biliary stricture show high rate of stricture recurrence after stent removal. The DES may role to decrease restenosis in benign GI stricture.Given these limitations, there have been efforts to develop drug-eluting stents (DESs) and anti-fouling membrane covered stent, which are expected to prolong stent patency by adding anti-hyperplasia or anti-tumor functions. This might not be as impressive as the effect of a vascular DES which decreases the incidence of restenosis and thus increases the survival rate of the patient.

The purpose of our study was to evaluate the efficacy and safety of a developed drug eluting membrane containing Paclitaxel, Gemcitabine or mitomycin through in vitro and animal study. Drug eluting membrane was implanted in mice in which adenocarcinoma cell line was injected and grown in their back. The local delivery of drug was found to have an anti-tumor effect on animal study.

And we developed porcine benign biliary stricture model by RFA. We inserted drug eluting stent in strictured bile duct to evaluate anti-fibrosis effect. In addition the efficacy of anti-fouling membrane were evaluated in vitro and ex vivo.

Palliative treatment with radiation-emitting metallic stents in unresectable Bismuth type III or IV hilar cholangiocarcinoma

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Background: The emerging data for stenting in combination with brachytherapy in unresectable hilar cholangiocarcinoma are encouraging. The aim of this study was to evaluate the efficacy and safety of radiation-emitting metallic stents (REMS) for unresectable Bismuth type III or IV hilar cholangiocarcinoma.

Patients and methods: Consecutive patients who underwent percutaneously placement with REMS or uncovered self-expandable metallic stent (SEMS) for unresectable Bismuth type III or IV hilar cholangiocarcinoma between September 2011 and April 2016 were identified into this retrospective study. Data on patient demographics and overall survival, functional success, stent patency, and complications were collected at the authors' hospital.

Result: A total of 59 patients were included: 33 (55.9%) in the REMS group and 26 (44.1%) in the SEMS group. The median overall survival was 338 days in the REMS group and 141 days in the SEMS group (p<0.001). The median stent patency time was 385 days for REMS and 142 days for SEMS (p<0.001). The functional success rate (87.9% vs. 84.6%, p=0.722) and incidence of overall complications (27.3% vs. 26.9%, p=0.999) did not differ in the two groups.

Conclusions: Placement with REMS is safe and effective in palliation for unresectable Bismuth type III or IV hilar cholangiocarcinoma, and seems to prolong survival as well as patency of stent in these patients.

Endovascular embolization of arterial bleeding in patients with severe acute pancreatitis

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Purpose: Severe acute pancreatitis (SAP) has a high mortality(20%—30%), often due to hemorrhage. This study investigated the role of angiography and endovascular embolization in the management of arterial bleeding in SAP patients.

Materials and Methods: Seventy-six patients with SAP admitted to our hospital between January 2010 and May 2016 underwent angiography. Arterial lesion in 29 patients (29/76; 38.2%) was managed by endovascular embolization, performed by transcatheter techniques using coils and/or gelfoam particles. Patient demographics, the angiographic features of the vascular abnormalities, and the outcome of embolization were assessed.

Results: Angiography enabled the identification of 39 arterial lesions. The splenic artery (15/39; 38.5%) was the most commonly affected vessel. Arterial bleeding (22/76; 28.9%) and pseudoaneurysm formation (11/76; 14.5%) accounted for most of the vascular abnormalities. Among the 29 patients treated by endovascular embolization, technical success was achieved in 93.1% (27/29) and clinical success in 82.8% (24/29). Hepatic and splenic abscess were major complications, occurring in two patients. The hepatic abscess resulted in duodenal and biliary fistulas. Two patients with splenic infarction were asymptomatic. Three patients (3/76; 3.9%) died, two because of hemorrhagic shock and one from a brainstem infarction resulting from hypercoagulability. Rebleeding occurred in five patients (5/22; 22.7%) after a second round of angiography, with bleeding from new sites in four of these patients. The mean interval between successive angiography treatments was 38 days.

Conclusion: In the management of SAP-related fatal arterial leeding, endovascular embolization is a safe and effective method to localize the arterial lesion and achieve complete hemostasis.

Huge hepatic cyst sclerosis with absolute ethanol

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Purpose: This study is to evaluate the safety and efficacy of sclerosis therapy for huge hepatic cyst at one institution.

Materials and methods: Twenty-two patients with huge liver cyst(diameter≥5cm) under absolute ethanol sclerosis therapy were included in this retrospective study from Jan 2015–Jul 2018 at our institution. Among them, 10 patients had multiple lesions, including one

with autosomal dominant polycystic liver disease. The mean diameter was 8.5±6.7cm (range from 4.9–19cm, 7 patients with at least one lesion diameter ⩾10cm). The sclerosis was performed with one session when diameter ⩽8cm, while series planned sessions drainage and sclerosis were performed in diameter ⩾8cm. Periprocedure complications and follow–up data were reviewed.

Results: The technical success rate was 100%. Fever was occurred in 3 cases larger than 10cm while treating at the first 3 days, which was resolved spontaneously after complete drainage. No abscess or bleeding was found in this series. One patients with largest volume liver cyst need repeat drainage and sclerosis at different admissions. 21 cases liver cyst were disappeared or shrinked to less than 4 cm.

Conclusion: Huge hepatic cyst can be treated by sclerosis therapy safely and effectively.

Diagnostic and prognostic value of KRAS mutations in circulating pancreatic ductal adenocarcinoma tumor DNA

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Background: Pancreatic ductal adenocarcinoma (PDAC) is the most common type of pancreatic tumor and one of the most malignant tumors worldwide. Circulating tumor DNA (ctDNA) has significant diagnostic and prognostic value for cancer patients.

Methods: Surgical specimens and plasma samples were obtained from a total of 35 patients with PDAC at the Peking University Cancer Hospital between June 2016 and May 2017. To investigate KRAS mutations (G12R, G12V or G12D) in plasma ctDNA, digital polymerase chain reaction (PCR) was performed on samples obtained from PDAC patients before and after surgical resection.

Results: KRAS mutations (G12R, G12V or G12D) between surgical tissue DNA (tDNA) and preoperative plasma ctDNA (pre–ctDNA) were consistent in 27 of 35 samples (77.1%, kappa index =0.397, P=0.003). Moreover, pre–ctDNA and postoperative plasma ctDNA (post–ctDNA) showed statistically significant associations with CA19–9 levels before surgery (P=0.027 and P=0.003, respectively). In addition, the KaplanMeier univariate and Cox multivariate analysis revealed that pre–ctDNA (G12V), post–ctDNA (G12V), or pre–post ctDNA (G12V, G12D) might be independent prognostic factors for overall survival (OS) and progression–free survival (PFS).

Conclusions: Analysis of pre–ctDNA, post–ctDNA, and pre–post ctDNA showed high PDAC diagnostic and prognostic potential in patients.

A fully covered self–expandable metal stent with special design is useful in patients with high level biliary stricture after biliary operation

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Background: In the treatment of anastomotic biliary stricture (ABS), non–surgical methods have a high success rate, but treatment of high level stricture is still difficult. Recent studies reported that fully covered self–expandable metal stent (FCSEMS) is useful in advanced ABS. However, there are limits that migration rate is high and treatment rate of high level stricture is low. In this study, we investigated efficacy of modified short removable FCSEMS with central waist for high level ABS.

Method: FCSEMS insertion was performed endoscopically on patients with high level ABS after biliary operation. The FCSEMS was maintained initially 3 months and exchanged every 3 months until the stricture was resolved. After removal of the FCSEMS, complications and recurrence were accessed during follow–up.

Results: A total of 84 patients with average age of 54.6 years and 59 males (70.2%) were enrolled. The underlying diseases were hepatocellular carcinoma (60.7%), liver cirrhosis (16.7%), hepatic failure (9.5%) and gallbladder stone (8.3%). The types of previous operation were living donor liver transplantation (79.8%), deceased donor liver transplantation (6.0%), liver lobectomy (7.1%) and cholecystectomy alone (7.1%). The previous procedures to resolve ABS were endoscopic retrograde cholangiopancreatography (ERCP) with plastic stent alone (28.6%), percutaneous transhepatic biliary drainage (PTBD) alone (17.9%), both ERCP and PTBD (25.0%) and others (20.2%). FCSEM was initially inserted in 7 patients. Two FCSEMS were inserted in 9 patients due to multiple ABS and plastic stent insertion was also performed in 48 patients to prevent cholangitis. The technical success rate was 100% and the clinical success rate was 95.2%. Recurrence rate was 21.3%. All the stents were removable. Stent migration was noted in 2 patients (2.2%).

Conclusions: The newly designed FCSEMS is a potentially feasible and effective for the high level ABS.

Percutaneous sclerotherapy for treatment of large volume hepatic hemangioma

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Purpose: To investigate the clinical efficacy of percutaneous sclerotherapy in the treatment of large volume hepatic hemangioma.

Materials and Methods: Fifteen patients with large volume hepatic hemangioma (at least one lesion diameter larger than 5cm, ranged from 4.9–9.9cm) were enrolled in this retrospective study between Jan 2015 and Aug 2018 at one single institution. Among them, 8 patients had single lesion, while the others had multiple lesions. Percutaneous injection of bleomycin

sclerotherapy under CT-guidance was performed by our experienced interventional radiologists. The procedure time, hospital cost, postoperative outcomes, complications and QOL scales were reviewed.

Results: The mean procedure time was (14.6±7.5) min in this sclerotherapy group. The liver dysfunction rate of sclerotherapy was (25%, 3/15) on 3 days post procedure. The mean hospitalization and cost of sclerotherapy group were 3.2±1.3 days and 6500±1200 RMB, respectively. At 6 months follow-up post procedure, the effective rate (CR+PR) of sclerotherapy was (86.7% , 13/15).

Conclusion: Percutaneous sclertotherapy is a safe and simple method alternative to surgery in the treatment of huge hepatic hemangioma.

Comparative efficacy of primary prophylactic interventions to prevent variceal hemorrhage: Results of a Bayesian network meta-analysis

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Objectives: The clinically most important complication of chronic liver diseases is the development of portal hypertension and consequently oesophageal varices with an estimated prevalence of 55.6%. A risk of bleeding from varices is 5–15% with the majority of the initial bleeding occurring within 1 year from varices detection. Accordingly, a mortality from each episode of variceal bleeding is 10–15%. Primary prophylaxis is highly recommended for the prevention of first variceal hemorrhage. Therefore, we performed a direct meta-analysis and Bayesian network meta-analysis to compare the relative efficacy of all agents (traditional non-selective β-blockers, carvedilol, endoscopic variceal ligation, isosorbide-5-mononitrate, and the combination of the aforementioned interventions) for the first prophylaxis of variceal bleeding.

Materials and Methods: A comprehensive electronic computerized literature was performed (until August 2018) to identify original publications with relevant topic from MEDLINE, WEB OF SCIENCE, EMBASE, COCHRANE LIBRARY and SCOPUS regarding the primary prophylaxis for the prevention of the first variceal hemorrhage.

Primary outcomes involved in our research were: (i) all cause of death; (ii) bleeding-related death; (iii) first variceal bleeding. Secondary outcomes were: (i) adverse event; (ii) severe adverse event. Primary outcomes were involved in both direct meta-analysis and network meta-analysis as endpoints to evaluate the efficacy of each intervention whereas the secondary outcomes were only involved in the direct meta-analysis.

Direct meta-analysis was performed using a fixed-effects model to estimate pooled relative risk (RR) and 95% confidence intervals (CIs) incorporating between-study heterogeneity. In the absence of direct (i.e., head-to-head) comparisons of prophylactic strategies against each other,network meta-analysis was performed within Bayesian framework. We modeled the comparative efficacy of any two treatments as a function of each treatment relative to the reference treatment. This approach assumes “consistency” or treatment effects across all included trials. The Bayesian network meta-analyses results were compared with pairwise meta-analyses results to evaluate inconsistency. Also, significant inconsistency was indicated if node-splitting analysis derived $P < 0.05$.

Result: The literature search strategy totally identified 401 records and finally 22 trails (2593 patients) were included. All of these trials were carried out among patients without previous variceal bleeding. Among the RCTs that met the inclusion criteria for the primary prophylaxis, the first RCT was published in 1993 and the most recent publication was from 2018.For all cause death assessment, none of the differences in all comparisons was statistically significant in both pairwise meta-analysis and network meta-analysis.

In the meantime, none of the differences in all comparisons was statistically significant in both meta-analysis and network meta-analysis for bleeding related death assessment. Moreover, node splitting analysis for both all cause death as well as bleeding related death indicated there was no significant inconsistency (all $P>0.05$).

For first variceal bleeding, in the direct meta-analysis, traditional non-selective β-blockers (NSBBs; 11 RCTs; RR, 1.64; 95% CI: 1.22–2.19) and isosorbide-5-mononitrate (IsMn; 1 RCT; RR, 3.31; 95% CI: 1.01–10.84) were inferior to endoscopic variceal ligation (EVL) in decreasing the number of patients with first bleeding from gastroesophageal varices. However, the difference in the comparison between Carvedilol, traditional NSBBs plus EVL, traditional NSBBs plus IsMn and EVL respectively were not statistically significant. Moreover, similarly, IsMn (3 RCTs; RR, 1.90; 95% CI: 1.11–3.24) was inferior to traditional NSBBs in decreasing the proportion of first variceal bleeding (Figure). On Bayesian network meta-analysis, Carvedilol (RR, 0.27; 95% CI: 0.07–0.84) and EVL (RR, 0.24; 95% CI: 0.08–0.57) were shown to be superior to IsMn. When compared with traditional NSBBs, EVL (RR, 0.56; 95% CI: 0.33–0.87) was associated with an improvement whereas IsMn (RR, 2.36; 95% CI: 1.03–5.82) was shown to have an opposite performance. Besides, node splitting analysis for first variceal bleeding indicated there was no significant inconsistency (all $P>0.05$).With regard to adverse events, the analysis indicated increased rates of AEs for traditional NSBBs (4 RCTs; RR, 2.02; 95% CI: 1.36–3.00) under evaluation compared with EVL. In the meantime, with regard to the comparison with traditional NSBBs, the combined prophylactic therapy, EVL plus traditional NSBBs, (1 RCT; RR, 1.71; 95% CI: 1.24–2.38) was associated with increased rates of AEs whereas Carvedilol (1 RCT; RR, 0.41; 95% CI: 0.23–0.74) was associated with a decreased rate.

Finally, as for severe adverse events, the analysis indicated an increased rates of SAEs for traditional NSBBs (5 RCTs; RR, 2.61; 95% CI: 1.07–6.33) and the combined intervention, EVL plus the traditional NSBBs, (1 RCT; RR, 17.00; 95% CI: 1.00–289.13) under evaluation when compared with EVL. In contrast, Carvedilol (1 RCT; RR, 0.12; 95% CI: 0.03–0.49) was associated with a decreased rate.

Conclusion: We made several key observations in the outcome assessments from both direct meta-analysis and Bayesian network meta-analysis: (i) EVL is superior to traditional NSBBs for improving first variceal bleeding, adverse events and severe adverse events, with low, substantial and low confidence in estimates; (ii) Carvedilol, EVL and traditional NSBBs are superior to IsMn for improving first variceal bleeding; (iii) Carvedilol is superior to traditional NSBBs for improving adverse events and to EVL for improving severe adverse events; (iv) independent interventions, traditional NSBBs and EVL, are superior to the combined therapy, traditional NSBBs plus EVL, for improving adverse events and severe adverse events respectively; (v) there is no statistically significant difference between traditional NBSS, carvedilol, EVL, ISMN, and the combination of the aforementioned interventions for the first prophylaxis of variceal bleeding as assessed by all cause of death and bleeding-related death. Further high-quality research is warranted to establish the best therapeutic option.

Comparison of outcomes between stenting and emergency palliative surgery for proximal malignant colon obstruction: randomized trial

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Background: Risk of colonic obstruction caused by malignant neoplasm of proximal colon is about 25 %. Proximal colonic obstruction is generally managed with emergency surgery[1]. However, patients presenting with right–sided colonic obstruction are generally older and have a more advanced tumor stage. Recent reports have shown that emergency surgery can be associated with high morbidity and mortality rates. SEMS insertion has been the treatment of choice for the relief of malignant colorectal obstruction, but stenting in the right colon is technically difficult [4]. A few number of studies have been published with a limited number of patients[2,3]. The purpose of our research work is to compare the results of treatment of patients with proximal malignant obstruction.

Methods: Between December 2012 and September 2017, 63 patients with malignant colon obstruction, which was diagnosed based on radiological and endoscopic findings proximally splenic flexure, were consecutively included into the study. 30 patients were treated with SEMS. In our clinic we used EGIS Colorectal Stent, S&G Biotech., Seoul, Korea. 16 patients were treated with double covered stents and 14 patients with double bare stents. Stent insertion was performed under fluoroscopy and using through–the–scope methods. 33 patients underwent emergency operations: surgical bypass (28 patients) or ileostomy (5 patients). The clinical parameters such as sex, age, type of primary cancer, location of obstruction, and surgical risk score were not significantly different between groups.

Results: Technical success was 93.3 % in stent group and 100% in surgery group (p=0.2245, no significant difference). The cause of failure during stenting was the inability to hold guidewire through the stricture area in the area of hepatic flexion and anastomosis in the transverse colon. Clinical success was 96.4 % in stent group and 96.9% in surgery group (p=0.4746 no significant difference). One patient did not have a complete opening of the stent while maintaining the symptoms of intestinal obstruction. The patient from the surgical group had an increase in symptoms of obstruction after a bypass anastomosis. Both patients were re–operated with stoma formation.The overall complications were significantly lower in the stent group (0% vs 24.2%, p=0.0041). Length of hospital stay (included intensive care unit) was significantly lower in the stent group (4 vs 15 days p=0.012, 0% vs 39.4%, p0.007). Significantly fewer patients needed intensive care after treatment in the stent (0% vs 39.4% p=0.0327). The proportion of patients who underwent stoma creation was significantly lower in the stent group (3.6 % vs 15.1% p=0.036). Time to chemotherapy was significantly lower in the stent group (8 vs 21 daysp=0.024). 1– year survival was 24.4% in emergency surgery group and 35.7% in stent group (p=0.3746 no significant difference).

Conclusions: SEMS insertion in proximal malignant obstruction is safe and effective palliative procedure. Stent procedures may be an alternative treatment option especially for patients with poor physical status. A small numbers of patients were enrolled as a result of the low incidence of proximal malignant colon obstruction. It is necessary to continue study to accumulate material and analyze long–term results.

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Clinicopathologic features of submucosal papillary gastric cancer: Is endoscopic submucosal dissection acceptable?

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Background/Aim: Papillary gastric cancer (GC) is classified as differentiated adenocarcinoma together with well differentiated (WD) and moderate differentiated (MD) adenocarcinoma. However, papillary early gastric cancer (EGC) has higher rate of submucosal (SM) invasion and lymph node metastasis (LNM) than WD or MD EGC. The aim is to evaluate the risk of LNM in SM invasive papillary GC.

Methods: This is a multicenter retrospective study which is involved three tertiary hospitals in South Korea. A total 1,798 lesions with differentiated SM GC treated by curative gastrectomy between March 2001 and December 2012 were enrolled. All sliced pathological slides were review by pathologists and clinicopathological findings associated with LNM were analyzed including tumor size, location, gross type, ulceration, depth and width of SM invasion, and lymphovascular invasion (LVI) .

Results: The proportion of SM papillary GC was 2.8%. LNM showed significantly higher in the order of papillary, MD, and WD (papillary; OR 3.844, 95% CI 1.962–7.530, p<0.001, MD; OR 2.725, 95% CI 2.003–3.707, p<0.001, WD; reference). LNM was found in 27.5% of SM papillary GC (WD; 9.0%, MD; 21.2%). Tumor size, depth and width of SM invasion including LVI were significantly associated with LNM in SM WD and MD GC. Whereas interestingly, only LVI was significant risk factor of LNM in SM papillary GC . Most (85.7%) of SM papillary GC with LNM showed LVI. Lower third location (OR 3.925, 95% CI 1.031–14.945, p=0.045) or elevated

gross appearance (OR 8.075, 95% CI 1.274–51.165, p=0.027) was significantly associated with LVI.

Conclusion: SM papillary GC has highest LNM rate and different features compared to other differentiated SM GC. Thus, endoscopic resection should be carefully considered for SM papillary GC, especially for the lesions with lower third location or elevated gross type.

Efficacy of a the paclitaxel-eluting biliary metal stent incorporated with sodium caprate versus a covered metal stent in malignant biliary obstruction : a prospective randomized comparative study

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Background and study aims: The placement of a self-expandable metallic stent (SEMS) is widely used nonsurgical treatment method in patients with unresectable malignant biliary obstructions but SEMS is susceptible to occlusion by tumor ingrowth or overgrowth. The efficacy and safety of a new generation paclitaxel-eluting biliary metallic stent incorporated with sodium caprate (MSCPM-III) was compared prospectively with those of a covered metal stent (CMS) in patients with malignant biliary obstructions.

Patients and methods: Patients with unresectable distal malignant biliary obstructions (n = 106) were prospectively enrolled in this study at multiple treatment centers. A MSCPM-III was inserted endoscopically in 54 patients, and a CMS was inserted in 51 patients. Patients underwent systemic chemotherapy regimens alternatively according to disease characteristics.

Results: The two groups did not differ significantly in basic characteristics or mean follow-up period. Stent occlusion occurred in 14 patients who received MSCPM-III and in 11 patients who received CMS. Stent patency and survival time did not differ significantly between the two groups (p = 0.936, 0.560). However tumor size at 2 months after stent insertion was significantly decreased in MSCPM-III group with bile duct cancers and stent migration than CMS group. Complications, including cholangitis and pancreatitis, were found to be acceptable in both groups.

Conclusions: Although the use of MSCPM-III produced no significant differences in stent patency or patient survival in patients with malignant biliary obstructions compared with the CMS, this study demonstrated that MSCPM-III has an efficacy of local tumor control and can be used safely in humans.

Evaluation of colon capsule endoscopy for assessing mucosal inflammation in ulcerative colitis based on Mayo endoscopic subscore: result from a diagnostic meta-analysis

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Objectives: Mucosal healing (MH) is the ultimate goal for ulcerative colitis (UC) therapy, however, it is traditionally required an examination by conventional colonoscopy (CC), which is invasive. With the birth and flourishing development of colon capsule endoscopy (CCE), a noninvasive technique can be applied for colon investigation. However, the power in confirming MH between CC and CCE has remained unclear. Therefore, our study aimed to investigate the diagnostic performance of CCE on detecting mucosal lesions, which evaluated via Mayo Endoscopic Subscore (MES), and the sub-group analysis compared diagnostic performance between the first-generation colon capsule endoscopy (CCE-1) and second-generation colon capsule endoscopy (CCE-2).

Materials and Methods: Scopus, MEDLINE, EMBASE, WEB OF SCIENCE and Cochrane library databases were searched (until June 2018) to identify clinical trials that reported the diagnostic performance of CCE to detect mucosal lesions and disease activity in ulcerative colitis. The inclusion criteria were as follows: (1)written in the English language; (2) confirmed or suspected ulcerative colitis; (3) applying CCE to detect mucosal lesions and disease activity; (4) providing sufficient data for the authors to construct a 2×2 contingency table to calculate sensitivity. Articles or abstracts were excluded if they met the following criteria: (1) lacking details of ulcerative colitis and their verification with colonoscopy; (2) no more than 10 patients in the study; (3) published as review articles, position papers, editorials, commentaries, or book chapters. Study quality was assessed by using the QUADAS-2. Two authors (Z Zheng and Y Fu) extracted data from each study independently, and disagreements were resolved by consensus (Z Zou).In virtue of Stata 15.1mp, we performed a meta-analysis to calculate: (1) the pooled sensitivity, specificity, positive likelihood ratio (PLR), negative likelihood ratio(NLR) and diagnostic odds ratio (DOR) for CCE to detect mucosal lesions and disease activity in ulcerative colitis; (2) the summary receiver operating characteristics (SROC) curve and pooled AUC for CCE detect mucosal lesions and disease activity in ulcerative colitis. Likelihood ratio scatter grams were drawn to illustrate the diagnostic efficiency of CCE.

Result: Six studies were totally included in our analysis. The CCE to detect mucosal lesions showed a sensitivity of 96.0% (95% CI: 59.0%-100.0%) and a specificity of 86% (95% CI: 59.0%-96.0%) when MES>1, while a sensitivity of 91.0% (95% CI: 79.0-96.0%) and a specificity of 94.0% (95% CI: 36.0%-100.0%) when MES>0. The PLR, NLR and DOR for CCE to detect MES>1 was 6.8 (95% CI: 1.9, 24.1), 0.04 (95% CI: 0.00, 0.75), 154 (95% CI: 4, 5881), respectively, and the value of PLR, NLR and DOR for CCE to detect MES>0 was 16.3 (95% CI: 0.7, 389.3), 0.10 (95% CI: 0.04, 0.22), 170 (95% CI: 8, 3720), respectively. CCE distinguished UC leision from normal tissue with an AUC of 0.98 (0.96, 0.99) when MES>1, and 0.95 (0.92, 0.96) when MES>0. The sub-group analysis showed that when MES>0, CCE-1 on leison detection with a specificity of 92.31% (95% CI: 64.0%, 100%) and a sensitivity of 80.0% (95% CI: 44.0%,97.0%), and CCE-2 detected leisions with a specificity of 52.0% (95% CI: 33.0%-70.0%) and a sensitivity of 95.0%(95% CI: 88.0%-98.0%). When it comes to MES>1, CCE-1 detected leision with

a specificity of 73.0% (95% CI: 52.0%–88.0%) and a sensitivity of 92.0% (95% CI:84.0%,96.0%), and the diagnose performance of CCE–2 was of a specificity of 73.0% (95% CI: 58.0%–85.0%) and a sensitivity of 96.0%(80%–100%). There was no statistic significance between CCE–1 and CCE–2. The likelihood ratio scatter grams showed that the likelihood ratio profile of CCE was both a criteria of exclusion and a confirmatory criteria tool to diagnose MES>0 (positive likelihood ratio >10; negative likelihood ratio <0.1), while CCE was generally a criteria of exclusion to MES>1 at the patient level (positive likelihood ratio <10; negative likelihood ratio <0.1).

Conclusion: Colon capsule endoscopy, a noninvasive technique for colon investigation, which has been confirmed mucosal inflammation lesions in UC effectively. Our analysis demonstrated that CCE was helpful for not only exclusion criteria but also diagnostic criteria to detect MES>0, while is regarded mostly as an exclusion criteria to detect MES>1. No statistical significance was found on detecting mucosal healing between CCE–1 and CCE–2, indicating CCE–1 is mature in this area.

The safety and efficacy of a large-bore biliary metallic stent in malignant biliary obstruction

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Background/Aims: In patients with unresectable malignant biliary obstructions, self–expanding metallic stent (SEMS) is widely used. However SEMS is susceptible to occlusions by tumor ingrowth, outgrowth and sludge formation. To overcome these adverse effects, we used a novel full covered SEMS (FCSEMS) which has 12mm body diameter and 16mm head diameter like Dumbbell–shaped. The conventional FCSEMS (FCSEMS–C) has 10mm diameter in both head and body. The efficacy and safety of a large–bore dumbbell–shaped FCSEMS (FCSEMS–L) was compared with FCSEMS–C.

Methods: Patients with unresectable distal malignant biliary obstruction was retrospectively enrolled in this study at Gangnam Severance Hospital between January 2011 and February 2018. A total of 46 patients were included. A FCSEMS–L was inserted endoscopically in 23 patients, and a FCSEMS–C was inserted in 26 patients. Clinical characteristics, complications and prognosis were also analyzed.

Results: The two groups did not differ significantly in mean age, male to female ratio, and their underlying disease. Stent occlusion occurred in 3 patients (13%) who received FCSEMS–L and in 13 patients (50%) who received FCSEMS–C. Stent occlusion due to sludge impaction was not occurred in patients with FCSEMS–L, and occurred in 8 patients (34.6%) with FCSEMS–C (p=0.010). There are no difference in mean follow–up period (FCSEMS–L 193.2days vs FCSEMS–C 278.8 days, p=0.236), stent migration (p=0.559), and cumulative stent patency (p=0.691). Complications, including cholangitis and pancreatitis, were found to be acceptable and resolved by conservative management in both groups.

Conclusions: Although the use of a FCSEMS–L produced no significant differences in stent patency or stent migration rate, the FCSEMS–L can be used safely in human bile duct and prevent effectively stent occlusion due to sludge impaction.

Controlling GI bleeding with endoscopically applied hemostatic powder

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A new highly adhesive hemostatic powder (UI–EWD) has been developed to prevent the high re–bleeding rate and circumvent the technical challenges faced during application of conventional hemostatic treatment. The current study aimed to assess the efficacy of UI–EWD as a rescue therapy for the treatment of refractory upper gastrointestinal bleeding (UGIB).

A total of 17 consecutive patients who had failed to achieve hemostasis with conventional endoscopic treatment and had undergone UI–EWD for endoscopic hemostasis in refractory UGIB were prospectively enrolled in the study. We evaluated the success rate of initial hemostasis and rate of re–bleeding within 30 days.

All cases underwent successful UI–EWD application at the bleeding site. Initial hemostasis occurred in 16/17 (94.1%) patients. Re–bleeding within 7 days occurred in 3/16 (18.8%) patients who had achieved initial hemostasis and among 3 cases of rebleeding, 2 cases are bleeding due to tumor. At Day 30, the cumulative incidences of rebleeding rate was also 3/16 (18.8%). In the second–look endoscopy after 24 hours, hydrogel from UI–EWD was found attached at the bleeding site in 11/16 patients (68.8%).

UI–EWD has a high success rate for initial hemostasis in refractory UGIB and shows promising results in the prevention of re–bleeding.

Clinical outcomes in patients undergoing multiple self–expandable metallic stent placement by stent in stent technique for malignant gastric outlet obstruction

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Objectives: Self–expandable metallic stent (SEMS) placement is widely used for relieving the obstructive symptoms of malignant gastric outlet obstruction (MGOO). The aims were to evaluate the efficacy and safety of multiple gastroduodenal stent placement by stent in stent technique and identify predictive factors about stent patency.

Materials and Methods: We retrospectively analyzed data from 170 patients with GOO receiving SEMS by stent in stent technique from July 2006 to July 2018. Among them, 90 patients had been treated with gastroduodenal SEMS placement for MGOO. Technical and clinical success rates were evaluated. And, clinical outcomes with predictors of stent patency were also analyzed.

Results: Among the subjects, 34.4% were treated with secondary SEMS placement, and 9.7% were treated with third SEMS placement because of the previous stent dysfunction. The median stent patency time was 15.7 weeks (range 0–89) in the first SEMS, 10.4 weeks (range 0–44) in the second SEMS, and 11.3 weeks (range 1–29) in the third SEMS. The technical and clinical success rate were 100% and 97.8% in the first SEMS, 100% and 90.3% in the second SEMS, 100% and 100% in the third SEMS. In multivariable analysis, the first SEMS placement of covered type including Comvi stent was correlated with prolonged stent patency (OR 4.549, P=0.001). And both chemotherapy after

the first SEMS placement (OR 8.248, P=0.006) and chemotherapy after the second SEMS placement (OR 7.467, P=0.003) were correlated with prolonged stent patency. Serious complications such as gastrointestinal hemorrhage or perforation did not occur in any patient.

Conclusions: Secondary and third gastroduodenal SEMS placement by stent in stent technique is a safe and effective treatment for the first stent dysfunction in MGOO. The stent placement of covered type and chemotherapy after stent placement is the predictor of stent patency.

Investigating the safety of mixing biological haemostatic agents with radiographic contrast for embolisation during interventional procedures.

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Aims: Several animal–derived embolics and haemostats are used routinely in vascular and non–vascular interventional procedures. These are frequently combined with radiographic contrast to make them visible under fluoroscopy and allow accurate application. While this is common practice, this is an unlicensed application. With tightening of European regulations over the next 2 years “off–label” use is likely to become less acceptable in the future and is becoming a potential risk for litigation.

This research aims to establish whether combining biologic materials with contrast medium potentially represents a biohazard or whether it can be recommended as safe.

Materials and Methods: A commercially available non–ionic contrast (Iohexol 140) was mixed with medical grade pork–derived gelatine and collagen of bovine origin as used for interventional procedures. Control samples were created by using water for injection and physiological saline. The control and trial samples were analysed with a series of analytical methods including light microscopy, mass spectrometry, NMR spectroscopy and high–performance liquid chromatography.The base components were examined individually followed by weekly analysis of the mixtures.

Results: Immediately after mixing swelling of the collagen fibres was demonstrated by optical microscopy in all mixtures. This was followed by slower continued expansion of the fibres, which otherwise remained intact. Associated disintegration of the fibre bundles, led to an additional increase in volume, which was most marked in combination with radiographic contrast. Spectroscopy showed that the spectra of the components were additive and did not change over 8 weeks. No degradation of the base substances was found and there was no evidence of chemical interaction on interim results.

Conclusion: Chemical analysis showed no evidence that the mixing of the embolics with radiographic contrast induced any changes in either component and suggests that the two remain inert. This is reassuring, especially as tests were performed for a much longer period that the physiological dwell time within the body.The purpose of administering the compound is to either induce haemostasis or tamponade and the observed swelling of the collagen fibres may provide an added benefit.

Comparative analysis of the clinical efficacy of radiofrequency ablation between ultrasound and CT guided in treating hepatocellular carcinoma

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Objective: To compare the operation time, adverse reactions, safety and clinical efficacy of US–guided radiofrequency ablation (RFA)with the efficacy of CT–guided RFA in treating hepatocellular carcinoma (HCC)

Methods: From April 2010 to November 2014, 158 patients with HCC received RFA, 59 patients in the ultrasound–guided group and 99 in the CT–guided group. To analyze the differences by using ultrasound–guided or CT–guided radiofrequency ablation in operation time, adverse reactions, complications, safety and efficacy.

Results: There was no significant difference in the rate of postoperative serious adverse reactions. The operation time of ultrasound group was shorter than CT group. After 1–, 3–, 6–, 12–month treatment there was no statistical difference in local control ratio. There was no statistically significant difference between the two groups in the PFS and OS.

Conclusion: Patients with HCC can complete the radiofrequency ablation treatment under the guidance of ultrasound or CT, in which the ultrasound guidance is more simple and quick, the operation time is shorter, and the efficacy is not significantly different than that of CT guidance.

Application of percutaneous gastrostomy under DSA fluoroscopy in patients with esophageal cancer who can not eat

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Objective: To investigate the feasibility, efficacy and complications of percutaneous gastrostomy under DSA X–ray fluoroscopy in patients with esophageal cancer who can not eat.

Method: Twenty–six patients with esophageal cancer who underwent percutaneous gastrostomy under DSA fluoroscopy from August 201 to August 2018 were selected, four patients were complicated with type 2 diabetes mellitus, six with coronary heart disease, two with coronary stents, eight with different grades of hypertension, and two with two types of malignancies. Percutaneous gastrostomy Kit (PEG15) produced by Dalian coolet International Trade Co., Ltd. Firstly, the nasogastric tube was placed and about 1000–1500ml of gas was injected through the nasogastric tube, so that the stomach cavity was fully expanded and the anterior wall of the stomach could be closely attached to the abdominal wall. Under DSA X–ray fluoroscopy, the stomach wall and abdominal wall were fixed with stomach wall fixator before and after the stomach body, then T–shaped support sleeve with PS needle was inserted into stomach vertically, puncture needle was removed, stomach fistula catheter was inserted quickly, air sac was filled with distilled water, and

T–shaped support sleeve was removed. The position of the external fixation plate on the catheter was adjusted moderately.

Result: 1. All patients completed the operation successfully, and the technical success rate was 100%. Among them, 24 patients were successfully placed at one time and 2 patients were successfully placed two times. The average operative time was (20.34 + 0.56) min.2. Intraoperative errors in 2 cases: 1 case was located in the great curvature of gastric body, which caused difficulty in fixing the gastric wall, and was replaced successfully; 1 case was replaced successfully because of loose ligation of gastric wall and abdominal wall suture, and PS needle entered the abdominal cavity along the gap between the two, so the gastric wall was re–fixed and the operation was completed smoothly.3. Postoperative adverse reactions occurred in 7 cases: 2 cases had slight bleeding at the fistula site, 1 case had abdominal pain, but no signs of peritonitis, 1 case had infection at the fistula site and delayed healing, and 1 case had intestinal obstruction on the second day after operation. All the patients were improved after symptomatic treatment without gastric bleeding, abdominal hemorrhage, colon fistula, abdominal fistula and peritonitis. And other serious complications. 4. 6 patients underwent radiotherapy and interventional therapy for the primary tumor after operation. 5. All patients were followed up for the longest period of 6 months and the shortest was 1 weeks. After gastric fistula nutrition, the nutritional status of all patients was improved. The weight gain ranged from 1 to 4.2 kg one month after operation. One patient suffered from obstruction one month after operation and failed to be dredged. Under X–ray fluoroscopy, a 1.5–meter super–slippery super–hard wire was introduced into the gastric fistula along the stoma fistula canal. The super–slippery wire was inserted into the gastric cavity as far as possible. The obstructed gastric fistula was withdrawn and a new gastric fistula was introduced along the wire. One patient developed hyperplasia of granulation tissue around the fistula tube 4 months after operation and was given treatment. The rest of the patients were fed smoothly. There were no cases of detachment, broken tube, gastric ulcer, aspiration pneumonia and asphyxia. A total of 9 patients had replaced gastric fistulas for more than 3 months. Since the follow–up, 18 patients have died, 8 are still in follow–up. Most of the patients died of tumor events, and no gastric fistula–related deaths occurred.

Conclusion: Percutaneous gastrostomy under DSA X–ray fluoroscopy is safe and feasible for patients with esophageal cancer who can not eat. There are no serious complications during and after operation. It has the advantages of small trauma, short operation time, convenient postoperative feeding, simple nursing and quick recovery. It also provides nutritional guarantee for follow–up treatment and is worth popularizing and applying.

CalliSpheres microspheres were used as carriers to load universal dual-target cells and PD-1 immunosuppressive agents for the potential treatment for primary liver cancer

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Title: CalliSpheres microspheres were used as carriers to load universal dual–target cells and PD–1 immunosuppressive agents for the potential treatment for primary liver cancer.

Objectives: Primary liver cancer is a malignant tumor with a high incidence and is a major malignant tumor that seriously harms people's health. At present, the clinical treatment methods mainly include surgery, radiotherapy and chemotherapy and traditional Chinese medicine combined therapy, but the overall efficacy is not ideal. The reason is that the targeting of liver cancer killing is still not enough, so there is a lack of more means to recruit more immune cells.

Materials and Methods: In order to overcome the limitations of solid tumor immune cell therapy, this project plans to innovate cell administration methods (Microsphere administration) Double–targeted CAR–T universal cells combine immune activation and immunosuppression to inhibit tumor cell resistance to CAR–T cell therapy (PD1 inhibition) Careful design of anti–tumor strategies from multiple levels is expected to establish new methods for interventional treatment of solid tumor immune cells. In this study, interventional therapy was combined with cellular immunotherapy.

Result: CalliSpheres microspheres were used as carriers to load universal dual–target cells and PD–1 immunosuppressive agents. Interventional methods were used to deliver immune cell–loaded microspheres to the tumor site, embolize and release.

Conclusion: Immune cells, evaluation of immune microsphere intervention after delivery, changes in the overall immune system, dynamic changes in various cytokines, sustained release capacity of immune microspheres, duration, The use of optical imaging to observe the survival, distribution, homing of CAR–T, changes in tumor size, and the effect of combination therapy provide a solid basis and relevant guidance for the subsequent treatment of solid tumors with clinical interventional immunity.

The exploration of a novel biodegradable drug-eluting biliary stent for benign biliary stricture

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Objective: To explore the optimal ingredient ratio and drug concentration of a novel biodegradable drug–eluting biliary stent for benign biliary stricture.

Methods: Different amounts of paclitaxel (0%, 10%, 20%, and 30%) were added to poly lactic–co–glycolic acid solutions (concentrations of around 100 mg/ml) at different polylactide (PL) / glycolic acid (GA) ratios (50/50, 70/30, and 80/20). The mixture is evenly mixed and then poured into premade moulds, processing into tubular or hollow tubes of various diameters (3.0 mm, 3.2 mm, and 3.4 mm) and thicknesses (0.5 mm, 0.4mm, and 0.3 mm). The stents were soaked in phosphate buffer saline (PBS) of pH 7.4 to test the biodegradability. At Weeks 1, 2, and 3, the stents containing different concentrations of paclitaxel were taken out from PBS, and the biodegradation rates based on different paclitaxel concentrations were calculated.

Results: Paclitaxel releases smoothly and continuously in all stents. The drug release rates varied by the initial concentrations of paclitaxel and the ingredient ratios of PL and GA. When the initial concentration of paclitaxel was 0%, the biodegradations rates were 9.0% at Week 1, 26.0% at Week 2, 34.5% at Week 3 in the 50/50 group; 4.0%, 19.5%, 26.0% in the 70/30 group; and 7.5%, 8.0%, 13.0% in the 80/20 group. When the initial concentration was 20%, the biodegradation rates were 8.0%, 25.0%, 41.5% in the 50/50 group; 5.5%, 18.0%, 32.5% in the 70/30 group; and 8.0%, 12.0%, 22.0% in the 80/20 group. When the initial concentration was 30%, the biodegradations rates were 10.0%, 27.5%, 37.5% in the 50/50 group; 7.5%, 20.0%, 32.0% in the 70/30 group; and 5.0%, 11.5%, 20.0% in the 80/20 group. The biodegradation rates of the resulting stents at a paclitaxel concentration of 20% were 8.5–10.5% (50/50), 4.5–8.0% (70/30), and 6.0–8.0% (80/20) at Week 1; 26.0–28.0% (50/50), 18.5–20.0% (70/30), and 8.0–13.0% (80/20) at Week 2; and 35.0–42.0%

(50/50), 26.0–35.0% (70/30), and 14.0–23.0% (80/20) at Week 3.

Conclusion: In conclusion, ingredient ratios of PL and GA of 80/20 and 70/30 with a concentration of paclitaxel of 20% give the stents steady, slow to moderate biodegradation rates.

Risk prediction of haemorrhage after ^{125}I-seed-loaded stent placement for patients with esophageal squamous cell carcinoma: development of a prediction model

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Background: Iodine-125 (^{125}I) seed-loaded stent placement has served as an effective palliation for malignant esophageal strictures in China. Haemorrhage is a common complication following stent placement. However, the risk factors for such a complication are under debate and there is no accurate predictive nomogram to predict it.

Methods: We performed a retrospective study in advanced esophageal cancer patients who underwent ^{125}I seed-loaded stent placement due to dysphagia. All the potential risk factors of haemorrhage after stent placement were recorded. Univariate and multivariate analyses were used to identify the independent risk factors. The logistic regression coefficient was used to verify the model data. Finally, the ROC curve was used to compare the simulation results with the real results, and the effect of the model was obtained.

Results: A total of 157 patients with esophageal squamous cell carcinoma were included in this study from June 2012 to March 2016 at five hospitals in China. The mean age of the patients was 69.6 (SD 7.9) years old. Haemorrhage was observed in 21 (13.4%) of the included patients. Tumour location (P = 0.045), prior chemoradiotherapy (P = 0.020) were the independent risk factors for haemorrhage. The ROC value of internal validation for this model was 0.686 (95%CI: 0.569–0.802, P< 0.05).

Conclusion: Tumour location and prior chemoradiotherapy are the independent risk factors for haemorrhage. It gives an accurate prediction of haemorrhage for 125I seed-loaded stent placement.

Nanjing Hall -A

Radiofrequency Ablation: Is Expansion of Indication Justified?

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Radiofrequency ablation (RFA) has been widely used as a standard local ablation therapy for hepatocellular carcinoma (HCC) smaller than 3 cm. For HCCs ranging from 3 cm to 5 cm, combined chemoembolization and RFA showed better therapeutic outcomes than RFA alone treatment. Nowadays, microwave ablation (MWA) is emerging as an alternative to RFA due to its capability of faster and larger ablation zone creation. However, RFA is currently a strongly recommended treatment modality with higher level of evidence than MWA. For larger HCCs, no touch RFA using multiple electrodes showed promising results in terms of local tumor control compared to conventional RFA (tumor puncturing RFA). Interventional oncologists should be aware that HCCs with aggressive tumor biology may affect therapeutic outcomes after RFA. For small HCCs such as subcentimeter recurrent HCCs, RFA is also very useful and fusion imaging-guided RFA is a good treatment modality with good technical feasibility and therapeutic outcomes.

Nanjing Hall –A

Irreversible Electroporation: Mechanism and Indication

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Minimally invasive percutaneous tumor ablation methods have been receiving more attention and taking a bigger role in treatment of our cancer patients. Especially, in primary liver cancers, numerous evidences have demonstrated the clinical effectiveness, safety and cost–efficiency of percutaneous tumor ablation. The benefits of percutaneous ablations are (1) safe with improved complication profiles and lower morbidities, (2) decreased healthcare cost with shorter hospital stay and (3) comparable clinical outcomes in non–surgical cancer patients. Currently, a percutaneous tumor ablation for an early–stage HCC is considered curative. There are several new innovative locoregional ablative techniques have been developed in recent years including irreversible electroporation (IRE).

Irreversible Electroporation (IRE aka NanoKnife) is an innovative non–thermal tumor ablation method with the ability to induce nanopores in the cell membrane causes cell death via apoptotic pathway. The cell is exposed to an electrical field with high voltage direct current and microsecond pulse durations. These electrical current pulses lead to cellular apoptosis. Benefits of IRE technology include (1) its short ablation time, (2) ability to spare critical vasculature and ducts, (3) no heat/cold sink phenomenon, (4) ability to use real time US guided imaging, (5) minimal post procedure pain/nerve damages, and (6) inducing natural process for cell death (apoptosis) instead of necrotic cell death. Additional treatment modalities will be compared such as radiofrequency ablation, cryoablation, and microwave ablation, which utilize thermal energy and risk thermal injury to surrounding structures. As experimental preclinical and clinical data have indicated, IRE has been safely utilized to preserve critical structures, reduce tumor volume, and increase overall survival. The purpose of this presentation is to present an overview and background information of IRE ablation and demonstrate both preclinical and clinical evidence of IRE ablation in HCC treatment.

Nanjing Hall –A

The Role of Esophageal Stents in Malignant Esophageal Strictures

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Historically oesophageal stents have been the main method for palliating dysphagia from malignant oesophageal obstruction. They have also been used as a temporary measure for patients undergoing high dose palliative or even curative radiotherapy, but these have not developed into routine applications for removable metal or biodegradable stents.

Data from a national British survey performed in 2004 demonstrated an average survival of three months after oesophagus stenting and an increase in re–intervention reaching 60% at six months[1].

At that time one of the commonest complications was stent displacement with migration rates reported of 16% as a national average but with great variation in between individual devices.

Over the last fifteen years patient survival has dramatically increased with development of newer chemotherapy agents and particularly hormone receptor treatment. Even in patients with metastatic disease survival of twelve to eighteen months is becoming the norm. This may be associated with a reduction in tumour bulk and improvement in dysphagia. As a consequence there is an increased risk of stents displacing and a need for an improvement in stent materials and design[2].

Stent migration is a common problem, but the majority of stents that have slipped into the stomach remain in the stomach and the majority of stents that exit the stomach tend to leave the body through the anus. Nevertheless, there is a small risk of impaction in the small bowel with resulting obstruction or perforation. Consequently, any patient with a migrated stent should be considered for stent removal.

An emerging problem is of stent corrosion, fracture and disintegration. This is a new issue, not seen previously due to the short patient survival, but is now increasingly observed[3-5].

The nickel titanium alloy (Nitinol) used for most stents is relatively vulnerable to corrosion when exposed to the low pH of gastric acid. Stents that have been in situ for several months across the gastroesophageal junction, in the stomach and the gastric outlet stent frequently show fractured wires on CT. Subsequently they may require re–intervention either due to loss of radial force or disintegration of the stent skeleton.

Due to the continued improvement of oncological treatment, better and faster improvement of dysphagia may occur from chemo– and hormone therapy and as a result stent insertion should be regarded more critically. If a rapid response can be expected from oncological treatment, stent insertion might be better delayed and reserved for later in the patient's natural history[6].

In the past proton pump inhibitor therapy was often instigated as an alternative to anti–reflux valves to reduce the symptoms of gastroesophageal regurgitation. In the light of the emerging corrosion problem however it is sensible to have all patients on acid suppression.

The lecture will demonstrate examples of this new challenge and discuss implications for device manufacture and patient after care.

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Nanjing Hall -A

The Role of Esophageal Stents in Benign Esophageal Strictures

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Fluoroscopically guided balloon dilation is an accepted treatment for a variety of esophageal strictures. The overall success rates have been reported to be 70 to 98%. However, in our experience, there are at least two groups of patients in whom balloon dilation is barely effective. In one group, early chronic stage of corrosive stricture, that is, approximately from three weeks to six months after ingestion of a corrosive agent, the esophageal rupture rate is approximately 70% and the recurrence rate 90%. In the other group, late chronic stage of corrosive stricture or radiation fibrosis, balloon dilation up to 10 mm is extremely difficult because the stricture is very tight. Resistant cases of esophageal stricture requiring repeated balloon dilations have a major negative impact on quality of life with complications of aspiration, malnutrition, pain, and esophageal perforation. Surgical procedures, including gastric pull-up and enteral replacement are potentially curative, but they have high rates of morbidity and mortality. Stent placement for benign esophageal strictures in patients with relatively long-life expectancy has not yet reached widespread acceptance because of late adverse events of stent placement, including development of new strictures caused by stent-induced tissue hyperproliferation, stent migration, and esophageal ulceration.

From December 1996 to January 2008, temporary placement of polyurethane or polytetrafluoroethylene (PTFE)-covered retrievable nitinol stents was performed in a total of 55 patients with a benign stricture. The inclusion criteria for temporary stent placement included the following: a tight stricture resistant to balloon dilation at first attempt (n=15), recurrent strictures that had failed at least two trials of balloon dilation (n=39), and esophageal rupture secondary to balloon dilation (n=1). The etiologies of benign esophageal strictures were corrosive injury (n=45), anastomotic stricture after surgery for esophageal atresia (n=2), or corrosive stricture (n=2), radiation fibrosis (n=2), mediastinal fibrosis (n=1), stricture after sclerotherapy (n=1), reflux esophagitis (n=1), and unknown (n=1). The length of the stricture ranged from 1 cm to 19 cm (median, 7 cm).

We removed the stent in cases of complications, such as severe pain resistant to analgesia, formation of new structures, or stent migration. In patients without complications, we electively removed the stent 2 months after placement. For stent removal, a sheath with a dilator was placed over the guidewire (Terumo) that was initially placed across the stent. After removal of the guidewire and dilator, a hook wire was passed through the sheath until it reached the proximal portion of the stent where it hooked onto a nylon thread placed along the inner edge of the stent. Once the hook was securely fastened to the stent, the hook catheter was withdrawn through the sheath, causing stent collapse and permitting its removal along with the sheath and hook catheter.

Stent placement was technically successful in all patients with no procedural complications. After stent expansion, all patients were capable of eating solid and/or soft foods without dysphagia. A total of 66 esophageal stents were placed in the 55 patients. Two stents were placed simultaneously in a single patient to adequately cover the length of a 19-cm stricture. A second stent was placed overlapping a partially downward migrated stent in two patients. Eight additional stents were placed in five patients to treat stricture recurrences. In one patient, after placement of three consecutive stents of 1- to 2-month duration, each failed to treat recurrence; a fourth stent removed after 6 months resulted in successful long-term treatment. Seventeen patients (31%) reported moderate to severe pain during/after the stent placement. Of these, the pain subsided with analgesics in 4 patients, whereas the stent was removed in the remaining 13 patients 2—47 days (mean, 26 days) after stent placement due to severe pain resistant to analgesics. In all patients, removal of the stent resulted in immediate resolution of pain.

Stent migration occurred in 14 patients (25%). In 12 of these 14 patients, stents were removed fluoroscopically (n=7) or surgically (n=1), or spontaneously eliminated through the anus (n=3) or the mouth (n=1) 1—74 days (mean, 23 days) after stent placement. A stent migrated to the stomach in one patient 2 weeks after placement and was removed fluoroscopically without any complications. A stent migrated to the small bowel required surgery for its removal because the migrated stent was caught in the ileocaecal valve and led to intestinal obstruction. New strictures causing recurrent symptoms occurred in 19 patients (35%) 7—196 days (mean, 49 days) after stent placement.

In all cases, stent removal resulted in resolution of stent-induced stricture formation on follow-up esophagography within a 2-month period. Other complications leading to stent removal include minor bleeding (2%) in one patient and food impaction of the stent (2%) resulting in acute exacerbation of dysphagia in another. In ten patients without any complications, the stent was electively removed 2 months after stent placement. In one patient, transmural rupture of the esophagus secondary to balloon dilation was successfully treated by temporary stent placement. Complications associated with stent removal were limited to esophagorespiratory fistula formation, which was diagnosed fluoroscopically upon stent removal in two patients and spontaneously sealed within 1 week of stent removal.

The patients were followed up for a mean of 38 months (range, 1—105 months) after stent removal or migration. Initial improvement was seen in all but two patients (95.3%). One patient with dysphagia to only solid foods reported no improvement in swallowing ability after stent removal, and another patient with radiation fibrosis reported worsening in swallowing ability after stent removal, despite radiographic evidence of good flow of contrast medium through the esophagus. The mean dysphagia score before stent placement and after stent removal was reduced from 2.8 to 1.3 ($p<0.001$). Stricture recurrence necessitating intervention was seen in 38 (69%) out of 55 patients. Thirty-one of the 38 patients with recurrence were treated with balloon dilations (n=26) and additional stent placements (n=5), whereas 7 patients underwent Ivor-Lewis esophagectomy. Maintained patency rates at 1, 3, and 6 months and 1, 2, and 4 years were 58%, 43%, 38%, 33%, 26%, and 21%, respectively. Multivariate Cox regression analysis showed that length of stricture was the only significant factor associated with maintained patency after temporary stenting (odds ratio 2.7, 95% CI 1.41—5.28, P=0.003). Hence, long length of stricture (>7 cm) was associated with decreased maintained patency.

In conclusion, temporary metallic stent placement is safe and useful, but with high recurrence rates especially in patients with a long stricture. Tissue hyperproliferation at the ends of the stented area, represents a major limitation to long-term stent placement. A strategy of prolonging the duration of stent placement is the placement of an overlapping stent at the site of hyperplastic tissue growth. The proximal end of the retrievable stent should be collapsed in stent removal.

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Nanjing Hall -A

How to Treat Endoscope or Stent Induced Esophageal Rupture

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Iatrogenic esophageal perforation is the most common cause of esophageal perforation associated with high mortality of up to 9% either with conservative or surgical management and with a long mean hospital stay of 32.9 days. These occur mainly after endoscopic dilatation performed for peptic strictures, malignant strictures, achalasia, anastomotic strictures, and foreign body retrieval, roughly with a rate ranging from 0 % to 3 % or during esophogeal stent placement. Early recognition of the esophageal perforation is key and management after 24 hours is clearly associated with an increased rate of mortality. Water soluble contrast study, CT with or without oral contrast, and or endoscopy are highly sensitive for diagnosis ang helping to guide therapy. Non-operative management is safe and effective treatment for early perforation (< 24 hours) without clinical signs of sepsis. However endoscopic treatment must be performed within the first 24 hours so as to avoid mediastinitis or pleural effusion. Air insufflation is associated with pneumomediastinum, subcutaneous emphysema, diffusion of infection in surrounding tissue, and impaired respiration so C02 must be utilized. Endoscopic closure is based largely on the size of the perforation (25mm being inaccessible to regular clips) or the location (under the crico-pharyngeal sphincter being the most difficult location for insertion of a stent or clipping). European Society of Gastrointestinal Endoscopy (ESGE) suggest treating perforations < 10mm with TTS clips, treating perforations ranging from 10 to 25mm with OTSC clips, and larger perforations with temporary fully covered self-expanding metallic stents (SEMS) Fully covered stents have a high migration rate particularly for perforation located in the esogastric junction, and partially covered SEMS, which can be retrieved are advised. Although nonoperative management can be effective in around 90% of cases Surgical management including primary repair esophageal exclusion and diversion, and esophagectomy may be required in some patients. In two small retrospective series, endoscopic management was found more effective than SEMS or surgery.

Room 736

A Guide to Better Manuscript Writing in English

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When writing an article, it is important from the outset that you are clear which journal or journal types you are planning to submit the article. This will of course depend on the subject matter and also geography of the people you wish to make aware of your research. The majority of journals will have similar categories of submission article types i.e. case reports, technical reports, clinical or lab-based research, reviews, pictorial reviews etc. Many of them will also share the same guidance but these may also vary significantly i.e. how to arrange the citations, the numbers of words for each paper type and numbers of images etc. You will save a lot of time in returned articles if you adhere to the guidance from the outset. Clearly if you have difficulty with the English, having a fellow author who is either a native speaker or who has a good command of written English can be very advantageous. Some companies offer an editing service, but this can be expensive. Some journals are also willing to help support non-native English authors, but this is variable and limited.

All articles will require a short abstract. For a full research article, it must follow a standard guideline format i.e. Aim/ objectives, Materials and methods, Results, Conclusion. This is then followed by a short clear and precise introduction which sets the scene of why the research is being conducted. In practical terms what is the underlying problem, what is briefly known already for background, what is the key question you wish to answer and how in just a few lines.

This is followed by the Materials and Methods. This should include the type of study i.e. retrospective, prospective, randomized, cohort etc. Clearly define the population group or groups being studied and how they are being selected and why including all the key demographics. Is this a single or multicentre study and is there ethic approval? What are the key interventions in the study. If these are technical, have they been previously described in which case they can be described in brief with a reference to the previous articles. If there is a deviation from these techniques or it is novel and new then these will need to be described in fuller detail. What are the outcome measures and how will these be studied and by whom including any statistical analysis methodologies?

Next are the results which should be brief using tables, bar or pie charts and graphical displays where ever possible as this makes reviewing the results much easier. Flow charts can be extremely useful when there are large population groups with several pathways and outcomes. Keep written text to a minimum. Highlight those results which are statistically significant wit levels of evidence.

In the discussion which follows it is important to ensure that the key results are mentioned and what they add or not as the case may be to the body of knowledge in the field. How do they compare and contrast against any previous studies? Are there any new or novel findings or do they support previous results? A short literature review with comparisons made with the current study are expected, but unless it is a review article avoid trying to discuss every article in the fields and stick to the most important ones. The limitations and constraints of the findings should be mentioned and briefly discussed. How could these be overcome in future studies.

Finally, the conclusion should be a short 3-4-line synopsis of the key findings of the study and recommendations.

Nanjing Hall -A

Nanofunctionalized Stent for Esophageal Stent-related Restenosis

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Current therapeutic strategies are insufficient for suppressing stent-induced restenosis. Here, branched gold nanoparticles (BGNP) coated self-expandable metallic stents (SEMSs) were developed for a local heat induced suppression of stent-related tissue hyperplasia. Our polydopamine (PDA) coating on SEMS allowed BGNP crystal growth on the surface SEMS. The prepared BGNP-coated SEMS showed effective local heating under near infrared laser irradiation. The effectiveness of BGNP-coated SEMS for suppressing stent-related tissue hyperplasia was demonstrated in a rat esophageal model (n=52). BGNP-coated SEMS placement under fluoroscopic guidance was technically successful in all rats. The placed BGNP-coated SEMS in rat esophagus achieved 3 different local heat dose ranges (50, 65 and 80°C) under multimodal fluoroscopic and endoscopic image guided local irradiation. Follow-up endoscopic examination readily monitored the local heating and observed significantly decreased tissue hyperplasia at 4 weeks of local heat treatments (50 and 65°C). Finally, western blot, histology, immunohistochemistry (HSP70, αSMA and TUNEL), and immunofluorescence (Ki67 and BrdU) analyses along with the statistical analysis confirmed that optimized BGNP coated-SEMS mediated local heat treatments inducing the expression of anti-inflammatory HSP70 effectively suppresses tissue hyperplasia after the stent placement in esophagus. Our local heating with nano-functionalized stents represent a promising new approach for suppressing stent-related tissue hyperplasia.

Nanjing Hall -A

Esophageal Stents: Clinical and Experimental Applications Drug Releasing Stents in the Esophagus

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Stents are tubular medical devices used to open blocked channels in our body. The main purpose of the stents is to provide support and prevent occlusion of the stented organ. The term "stent" generally creates an image of coronary stents; however, there are stents for other organs as well. Stents can broadly be classified as vascular and non-vascular depending upon the target organ. Vascular stents are used to clear the occlusion in blood vessels and are used for coronary, carotid, renal, iliac, superficial femoral and tibial arterial occlusions. Non-vascular stents, on the contrary, are used for clearing the occlusion or strictures in the non-vascular organs, for example in the esophagus, biliary duct, trachea, bronchi, sinus cavities, ureters, and urethra.

Initially, bare stents were developed; however, their effect was short-lived. Most vascular bare stents became occluded due to neointimal growth leading to occlusion, i.e. restenosis. Similarly, non-vascular stents used to clear malignant obstruction were occluded due to malignant ingrowth in the stent. Apart from these limitations, the use of stents itself caused side effects such as stent-related discomfort, pain, bacterial colonization (i.e. biofilm formation) and benign hyperplastic growth over the stent. In order to prolong the stent's patency and to avoid side effects, drug-eluting stents (DESs) were proposed. Several classes of drugs have been combined with stents to improve their performance such as antiproliferative, anti-inflammatory, antimicrobials and analgesics, and the selection of these agents depends on the specific requirement for each stenting.

Gastrointestinal (GI) DESs have primarily been investigated for relieving obstructive malignancies of the GI tract. Most GI cancers, especially esophageal, gastric and pancreatic cancers get diagnosed in advanced stages due to minimal symptoms and lack of rigorous screening programs. In the case of esophageal cancer, more than half of the patients present with unresectable disease at diagnosis. Moreover, these malignancies are found in older patients with coexisting diseases hence rigorous treatment is often avoided. Hence, stents are becoming a standard of care for palliation. However, Occlusion caused by malignant tissue growth or foreign body response to stent material often requires re-intervention. To avoid restenosis, DESs are being developed for obstructive GI malignancies. Such treatment modalities could be considered as a means of enhancement rather than replacement of the systemic therapy.

From the point of view of preclinical studies, there exists a clear need for the development of animal models for the obstructive malignant disease of the esophagus. Though studies performed on healthy animals have proved feasibility and safety of the stents so far, no clinical study has been able to prove the efficacy of DES over standard covered stents for these indications. Development of a robust preclinical model will also help in understanding the complex relationship between stent patency and other complications such as stent migration, which may for example be increased due to the shedding of the tumor due to cytotoxicity of drugs

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Nanjing Hall -A

Liver Resection for Ruptured Hepatocellular Carcinoma: Laparoscopic or Open?

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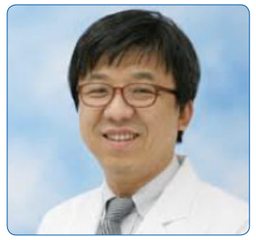
Spontaneously ruptured hepatocellular carcinoma (rHCC) is a relative rare and fatal disease. Various studies have been demonstrated that, when feasible, surgical resection is propriate and could offer comparable overall survival rates in selected patients. However, the role of laparoscopy on tumor recurrence and long-term outcomes in patients undergoing resection for rHCC remains controversial. Some studies indicated that laparoscopic liver resection (LLR) for rHCC might increase the risk of tumor cell dissemination and port-site recurrence, while other studies revealed that laparoscopy does not have an adverse effect on tumor recurrence and overall survival in patients who underwent resection. Further studies are needed to evaluate the feasibility, safety and oncology effect of LLR for rHCC.

Nanjing Hall -A



Portal Hypertension

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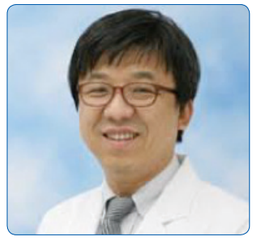

TIPS VS BRTO（Modified BRTO）

Jong Yun Won

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Controlling GI Bleeding With Endoscopically Applied Hemostatic Powder

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Background and Aims: A new highly adhesive hemostatic powder (UI–EWD) has been developed to prevent the high re–bleeding rate and circumvent the technical challenges faced during application of conventional hemostatic treatment. The current study aimed to assess the efficacy of UI–EWD as a rescue therapy for the treatment of refractory upper gastrointestinal bleeding (UGIB).

Patients and Methods: A total of 17 consecutive patients who had failed to achieve hemostasis with conventional endoscopic treatment and had undergone UI–EWD for endoscopic hemostasis in refractory UGIB were prospectively enrolled in the study. We evaluated the success rate of initial hemostasis and rate of re–bleeding within 30 days.

Results: All cases underwent successful UI–EWD application at the bleeding site. Initial hemostasis occurred in 16/17 (94.1%) patients. Re–bleeding within 7 days occurred in 3/16 (18.8%) patients who had achieved initial hemostasis and among 3 cases of rebleeding, 2 cases are bleeding due to tumor. At Day 30, the cumulative incidences of rebleeding rate was also 3/16 (18.8%). In the second–look endoscopy after 24 hours, hydrogel from UI–EWD was found attached at the bleeding site in 11/16 patients (68.8%).

Conclusion: UI–EWD has a high success rate for initial hemostasis in refractory UGIB and shows promising results in the prevention of re–bleeding.

TIPS for Gastroeosphageal Varices-- Reconsideration about HVPG and TIPS

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Some issues of HVPG measurement and TIPS will be discussed.

HVPG measurement plays an important role in the portal hypertension classification, treatment choice and efficacy evaluation. Several factors, such as, intrahepatic HV–HV shunt, HV morphology and heterogeneity of liver fibrosis may affect the precise of HVPG measurement. Early TIPS is recommended in the patients with high risk of treatment failure during acute variceal bleeding. Is Child B with active bleeding on endoscopy a really high risk? Dose MELD> 19, Child C–C1 or hemodynamic state at time of admission have an effect on the outcome of Early–TIPS? Will shunting left/ right branch of portal vein, SPSS embolization, diameter of stent or sub/ complete stent dilation affect the incidence of HE after TIPS?

Conclusion Risk stratification and refined manipulation may improve the accuracy of HVPG measurement and augment the benefit from TIPS.

Emobolization of Portal Venous Varices During Tips: Glues or Coils?

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Background & Purpose Transjugular intrahepatic portosystemic shunt (TIPS) with adjunctive embolotherapy has recently been reported as an effective and safe approach for variceal bleeding for patients with cirrhosis. Nevertheless, few research focuses on embolic agents for embolotherapy. The purpose of this study was to compare treatment efficacy, safety and cost between tissue gel and coil regarding variceal embolization during TIPS.

Materials & Methods This retrospective study included cirrhotic patients with variceal bleeding treated with TIPS combined with variceal embolization between

January, 2016 and August, 2017. Patients were divided into three groups according to embolic agents used in variceal embolization: tissue gel group (Group A), combination group (Group B), and coil group (Group C).

The primary endpoint was 1–year rebleeding rate after TIPS creation. The secondary endpoints included shunt dysfunction, overt hepatic encephalopathy, liver function, and embolic agents–related expense.

Results A total of 60 patients (30, 10, and 20 in Group A, B, and C) were included. Variceal rebleeding occurred in 3 (10%), 0 (0%), and 4 (20%) patients within one year after TIPS creation in Group A, B, and C, respectively. Stent dysfunction occurred in 2 (3.3%) patients and 9 (15.0%) patients experienced overt hepatic encephalopathy. No significant differences were observed between three groups regarding primary and secondary endpoints except embolic agents–related expense, with a significantly lower cost in Group A when compared to the other two groups.

Conclusions Tissue gel has similar treatment efficacy and safety on variceal embolization with significantly lower cost when compares to coil or tissue gel combines with coil for variceal embolization during TIPS.

Keywords Transjugular intrahepatic portosystemic shunt; Variceal bleeding; Variceal embolization; Embolic agents.

PARTO: Technique and Results

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Introduction

Balloon–occluded retrograde transvenous obliteration (BRTO) has been shown to be a suitable therapeutic option for the control of gastric varices. However, BRTO requires prolonged indwelling of an occlusion balloon catheter, which makes this procedure difficult to tolerate in long–term bed–ridden patients. Furthermore, balloon rupture during the BRTO procedure can result in symptomatic pulmonary edema, treatment failure, and ultimately, recurrent variceal bleeding. Recently, modified BRTO was proposed and reported, where a balloon occlusion catheter and sclerosants were replaced with a vascular plug/coils and gelatin sponge to minimize some of the complications and logistical issues associated with the balloon catheter. A study by Gwon et al. reported that vascular plug–assisted retrograde transvenous obliteration (PARTO) successfully induced thrombosis of the gastrorenal shunt as well as gastric varices without complications and subsequent obliteration.

Technique

6 or 7 Fr. Flexor guiding sheath was introduced through the right femoral vein. Using a 4 or 5 Fr. catheter, the left renal vein and the efferent aspect of gastrorenal shunt were accessed coaxially. The vascular plug was deployed halfway at the narrowest region of the gastrorenal shunt through the guiding sheath. The size of the selected vascular plug was approximately 20% larger than the narrowest diameter of the gastrorenal shunt, as measured on CT images. Gelfoam sheets were cut with scissors and gelfoam and contrast agents were mixed into a slurry. Gelfoam slurry was injected through the Cobra catheter to achieve filling and stasis within the entire efferent shunt and varices. The endpoint of gelatin sponge infusion was when the gastric varices were filled completely and/or afferent vasculature was filled on fluoroscopy. On confirmed completion, the vascular plug was deployed completely and detached.

Results

In a recent, prospective study in 73 patients who had undergone PARTO, complete thrombosis of both gastric varices and portosystemic shunt in 72 (98.6%) of 73 patients without procedure–related complications. The thrombosed gastric varices and shunts in 60 patients who had more than 3 months follow–up period were completely obliterated. Therefore, PARTO can be rapidly performed with high technical success rate and durable clinical efficacy for the treatment of gastric varices in the presence of portosystemic shunt.

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Nanjing Hall –A

Management of Hepatic Encephalopathy Related with Portosystemic Shunt: When and How

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Hepatic encephalopathy is a neuropsychiatric syndrome characterized by a variety of neurological abnormalities, such as consciousness and disorientation, which occur in acute or chronic liver disease[1-3].Overt hepatic encephalopathy is defined as a clinical abnormality of disorientation or asterixis. Covert encephalopathy includes minimal hepatic encephalopathy and West–Haven grade[4] I.Hepatic encephalopathy is known to occur in 10 to 14% of patients with liver cirrhosis and in 16 to 21% of patients with decompensated cirrhosis.

Hepatic encephalopathy can be classified as follows according to the presence of underlying liver disease, severity of neurological symptoms, and clinical course. The cause of liver disease is divided into acute hepatic failure (group A), portosystemic shunt (group B), and portal hypertension (group C) including liver cirrhosis. Hepatic encephalopathy is divided into episodic, recurrent, and persistent type. Episodic hepatic encephalopathy is a type of symptom that persists for several hours to several days but does not last any longer. Episodic hepatic encephalopathy can be classified as precipitated or spontaneous. Persistent hepatic encephalopathy is a persistent symptom of at least 4 weeks. It is subdivided into mild, severe, and treatment–dependent, depending on clinical features.

Patients with hepatic encephalopathy should be promptly identified and removed any triggers. In addition, drugs should be used to prevent or inhibit the production of ammonia, which is considered to be a major cause of hepatic encephalopathy.

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Nanjing Hall –B

Radiologic Stent for the Treatment of Malignant Colorectal Obstruction

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The incidence of colorectal obstruction is between 7 and 29 % among patients with colon and rectal cancer. Acute colorectal malignant obstruction is traditionally managed using surgical approaches. However, emergency surgery in patients with unprepared colons is associated with high morbidity and mortality. Moreover, in up to 30 % of patients with colorectal obstruction, curative resection is impossible due to distant metastases, extensive tumor infiltration, or severe medical comorbidities. Recent trends in the treatment of malignant colorectal obstruction indicate that the placement of self–expandable metallic stents (SEMS) is a preferred minimally invasive and low–risk alternative to emergency surgery, and has a high success rate.

To obtain better results, various types of self–expandable nitinol stents, including covered or uncovered metallic stents with endoscopic or fluoroscopic guidance, have been tried, and their advantages and disadvantages are well known. Generally, a covered stent is more resistant to tumor ingrowth that results in longer stent patency, but the disadvantages include stent migration and rigidity. On the other hand, an uncovered stent is flexible and easily applicable, but tumor ingrowth into the stent and resultant obstruction is more frequent. Therefore, uncovered stents are preferred in preoperative cases as a bridge to surgery because of the shorter stent patency from tumor ingrowth. However, it is also noteworthy that coverage did not have a clinically meaningful influence in the patients treated for palliative relief. That is, the functional patency was not significantly different between uncovered and covered stents, and the advantage of the uncovered stent, namely the prevention of migration, exceeds its disadvantage of tumor ingrowth. The aim of this presentation is to review radiologic stent placement under fluoroscopic control alone for the treatment of malignant colonic obstruction.

Room 730

Analgesia and Conscious Sedation by Non-Anaesthetists

Hans - Ulrich Laasch

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All patients attending for interventional procedures are frightened and the most quoted anxiety is about experiencing pain or dying. Many patients will require repeat procedures and every effort must be made to avoid unpleasant experiences to improve rather than aggravate the expectation about "next time". Increased levels of anxiety require increased levels of sedation and the easiest measure to manage this, is a face-to-face consultation with the patient prior to the procedure.

In most cases, optimal pain control is not difficult to achieve, but requires care and dedication.

Topical skin anaesthesia for simple procedures is under used. For fine needle biopsies adequate skin anaesthesia can be achieved by "icing" the skin with ethyl chloride spray. This has a role to play with patients who are allergic to local anaesthetics or where formal local anaesthesia needs to be avoided to optimise the cellular yield for fine needle aspirate cytology.

Good local anaesthesia is an art. It has to be administered with three simple rules:

1.Correct volume

2.Correct place

3.Correct timing

It is important to administer sufficient volumes of local anaesthetic to the pain-sensitive structures involved. For example for a biliary intervention it is important to anaesthetise the skin, the peritoneum and the liver capsule but not so much the subcutaneous fat or intercostal muscles. Lidocaine takes three to four minutes to reach an effect and local anaesthesia should be administered as the first step during a procedure giving it time to work while the trolley is being set up and the patient is being prepared.

Using a small needle (25G) for skin anaesthesia before upgrading to a larger (21G) needle for deeper structures and slow injection of the anaesthetic minimises the unpleasant experience for the patient.

In the UK "deep sedation" using Propofol cannot be administered by non-anaesthetists and the standard combination at present is of a short and fast acting opiate (Fentanyl) and a short acting Benzodiazepine (Midazolam). Fentanyl has some sedative properties and the opiate dose should be optimised initially prior to adding in the Midazolam. It is crucial to allow sufficient time for the drugs to cross the blood/brain barrier and reaching an effect prior to giving further incremental doses. The key to safe sedation is titration of small volumes.

Most centres will monitor patients using the parameters of pulse rate, respiratory rate, blood pressure and pulse oximetry. However by the time hypoxia (< 94%) occurs, the patient has already been over-sedated. Expired measurement of CO2 (capnography) is becoming a standard in anaesthetics and has been recommended for procedural monitoring1, however — arguably — a rise in CO2 also reflects oversedation rather than help avoid it.

Clinical assessment of depth of sedation is very unreliable2. A more objective tool is real time monitoring of frontal lobe EEG activityIn[3-5] our institution EEG monitoring using a bispectral index sensor (BIS) has been used routinely for ten years and has obviated the need for reversal of sedation, although this has not been accepted as a standard.

It is important to decide whether the patient needs primarily pain control or anxiolysis/sedation. Drugs should be administered accordingly, e.g. a radiologic gastrostomy is potentially very painful, but not particularly frightening and can readily be performed under good local anaesthesia and intravenous pain control. On the other hand insertion of an oesophageal stent is not particularly painful, but the patient will benefit from adequate sedation.

In the UK the national guidelines suggest that the interventionist should not be the sedationist6 and BIS-monitoring has allowed our department to hand over the sedation role to the interventional nurses, freeing up the brain of the radiologist to focus on the procedure.

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Room 730

Deep Sedation for Endoscopy: Known Knowns and Known Unknowns

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Over the past decade, the need for sedation outside of the operating room setting has increased significantly. Endoscopic sedation improves technical procedure quality while reducing patient discomfort and is now used nearly universally for gastroenterologic endoscopic procedures worldwide. However, sedation safety during digestive endoscopy has always been a concern. Data from the American Society of Anesthesiologists, Closed Claims database suggest that anesthesia outside of the operating room poses a significant risk for the patient, particularly related to oversedation and inadequate oxygenation/ventilation during monitored anesthesia care.

When assessing the sedation quality, four core domains should be considered, which includes safety, effectiveness, comfortable, and better outcomes. There are multiple axes of debate in anesthesia care for endoscopy: by whom, for which procedure, for which patients, at what level of sedation or general anesthesia, using which drugs, and producing what value, both outcome and cost. Each contribution to this rapidly expanding literature addresses some permutation of these questions. Therefore, large randomized trials are required to define the optimum sedation drugs, sedation depth and sedation provider.

Room 736

The Application of a Triple Freeze Cycle Protocols in Advanced Non-small Cell Lung Cancer

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Objective Comparison of ablation effect and adverse reaction between double/triple freeze cycle protocols for advanced non-small cell lung cancer (NSCLC). Methods The data of patients with pulmonary malignant tumors undercryoablation in our hospital were retrospectively analyzed. The disease remission rate, disease control rate and postoperative adverse reaction were compared between the two groups. Results From Dec 2014 to June 2017, 99 patients received cryoablation for pulmonary malignant tumors 107 times, with a completion rate of 100%. The follow-up time ranged from 7.2 to 21.8 months, with an average follow-up time of 13.2 months. Based on the mRECST standard, the disease remission rate and disease control rate on 3, 6, and 12 months of the triple freeze cycle protocol group were 78.8%, 69.2%, 60.0% and 98.1%, 94.2%, 86.0%, respectively. The disease remission rate and disease control rate on 3, 6, and 12 months of the double freeze cycle protocol group were 70.0%, 64.4%, 52.3% and 93.6%, 88.9%, 72.7%, respectively. According to different tumor diameters, the local recurrence rates of the triple freeze cycle protocol group and the double freeze cycle protocol group were 7.1% and 17.1% (P=0.0384, < 3 cm), 25.0% and 28.6% (P=0.9957, 3 ~ 5 cm), respectively. The disease remission rate of the triple freeze cycle protocol group and the double freeze cycle protocol group were 65.4% and 59.4% (< 3 cm), 54.2% and 43.5% (3 ~ 5 cm), respectively. Adverse reactions were grade 1 or grade 2 within 30 days after cryoablaiton. There was no significant difference between the two groups (P > 0.05). The freeze-thaw cycles was not related to the incidence of pneumothorax or pleural effusion (P > 0.05). Conclusion A triple freeze cycle protocol can obtain better curative effect for advanced NSCLC with tumor diameter < 3cm.

[Keywords] lung neoplasms; cryoablation; triple freeze cycle; remission rate; pneumothorax

Room 736

The ABCs of Writing Medical Papers in English

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Publishing a medical paper in English or any other language presupposes the value of the information. If it's a research project, what question are you addressing? What's your hypothesis? Have you outlined your research plan? Enlisted a mentor or senior researcher? Determined sample size and controls if indicated? Analyzed the outcomes appropriately? Performed the correct statistical test? Done an extensive literature review before and a more focused one after the study is complete?

Assuming that you have a potentially publishable study, outline the manuscript in your native language starting with bullet points and references. Although case reports, meta-analyses, and video submissions all differ somewhat, recognize that most manuscripts are structured as follows: abstract, background or introduction, methods, results, discussion/analysis, conclusion, and references. Prior to formally writing your manuscript. Use the Internet to assist you in "How to write a research paper" unless completely bilingual. I would encourage you to initially write your manuscript in your native language. Know the format of the journal to which you plan to submit. Compile your results, breaking up the information into sections and subsections. Write the conclusions followed by the discussion to support your conclusion. Summarize the main points and significance of your research. Only now should you write the introduction and abstract. Reference while you write. Edit and re-edit your manuscript. Have it reviewed by your mentor and co-authors.

Translate your manuscript. There are multiple websites such as Google Translator that can "roughly translate" your manuscript, but unless you are completely bilingual (in which case you would not have needed to initially write it in your native language), do not depend on an Internet translation or an English translator without a medical background. Consider using a professional medical translation service or professional medical writer.

Revise your manuscript prior to submission based on feedback from your mentor, co-authors, and professional medical translator, as appropriate. Incorporate images, tables, and figures, if they support the submission.

Submit your manuscript with a grammar correct cover letter. If the reviewers request revisions, do not make the manuscript revisions or answer the editor's request in broken English.

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Room 736

How to Run the Authorship Conference

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Scientific papers are the essential source of medical knowledge. Through writing scientific papers, you can share your experiences with other doctors and scholars. Scientific papers are important because they serve as a gauge of the research caliber of the individual, department, medical institution, or country. Publishing in SCI Indexed journals as the first or corresponding author is increasingly becoming more important in academia because of requirements for hiring and promotion. Writing papers also allows doctors and researchers to be up to date with the current literature. Therefore, paper writing is an unavoidable responsibility of being a scholar, and its pressure and demands have given risen to the saying, "publish or perish."

It was exactly 19 years ago when a second year resident asked me to teach him how to write a paper in English. I assigned him a title of paper to write, "Use of a lacrimal stent retrieval hook" asking him to finish writing the manuscript within three months for revision together. He made it and we revised it together four times at night after our daily work schedule. Fortunately, our manuscript was finally accepted by JVIR in December of 1999. We were satisfied with the accomplishment, but I felt a pang of regret for what I had done and what I had said to him. At that time, I was tired to death almost every night because of my hectic routine clinical schedule. I still vividly remember how harsh I was to him during the revision. When he entered my room for the revision, he got cold feet like a child in front of a growling dog.

I asked myself many questions, "Why is it so hard for me to teach a resident how to write a paper? Why don't I take it easy rather than lose my temper? Am I a good mentor for residents? How can I help the beginners to stand on their own two feet in writing papers? I must change my attitude, but how? I tossed and turned all night until I got the idea of a meeting. I ended up setting up the meeting together with some of my colleagues in 2001. We have had the meeting for revision of manuscripts written by residents, junior doctors, and researchers every Friday morning for an hour starting at 7 am, which is now called the Authorship conference.

For the Authorship conference, the first author emails his or her manuscript to the meeting attendees for revision at least 5 days before the meeting. And then, all the attendees read the manuscript before the Conference to see what the first author had not seen, to provide constructive criticism to improve its quality, to integrate new ideas from all of the team members, to determine the target journal of manuscripts, and to improve English communication skills.

I strongly believe that publication is critical for successful research as well as in academia. With great people, you can write papers spanning many years. In other words, the "lifespan" of writing papers can last many years, depending on how many great residents, researchers, and colleagues you have trained. At the session, I will talk about how to set up and run the Authorship Conference.

Zhonghua Hall –A

Radiologic Gastrostomy

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Radiologic gastrostomy is a well–established alternative to percutaneous endoscopic gastrostomy (PEG). PEG is the most frequently used method of inserting a feeding tube into the stomach1 and in most cases operators use a bumper retained tube, which is pulled down the esophagus after endoscopic retrieval of a percutaneous string (Pull–PEG). An alternative is a wire guided push–PEG, which is advanced over a guide wire placed through the abdominal wall. Most PEG–tubes are available in either configuration.

The commonest form non–endoscopic gastrostomy involves insertion of a tube with a deformable or collapsible retaining mechanism not from the mouth, but through the skin directly into the stomach2, commonly called radiologically inserted gastrostomy (RIG). This should involve additional sutures to fix the stomach to the abdominal wall (gastropexy)3. The purpose of gastropexy is twofold4:

1.It supports the stomach during puncture and tract dilatation to avoid intraperitoneal placement

2.It secures the stoma in case the retention device fails and allows migration of the tube

The commonest tube fixation is via a balloon at the end of a tube. Some feeding tubes are available with a logged pigtail configuration, but the retention of this has been shown to be inferior to balloon tubes.

Most operators regard the oral placement of bumper tube at the domain of the endoscopist and the percutaneous placement of a balloon tube as the turf of the radiologist. However, both types of gastrostomy can be performed radiologically as well as endoscopically and the complication rates are similar5.

Oral placement of a bumper tube can readily be performed without an endoscope after percutaneous puncture and retrograde cannulation of the oesophagus. The oral image guided gastrostomy (PIG) has a technical success rate of over 95% in cases where endoscopy cannot be performed or has failed

In cases of reflux disease or gastric dysmotility, post–pyloric feeding into the duodenum or jejunum may be required. Bumper tubes can have a jejunal extensions sited through them and trans–gastric jejunostomy tubes maybe used for RIG.

The presentation will demonstrate both methods of gastrostomy insertion and discuss the relative merits and compare with traditional PEG.

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Zhonghua Hall –A

Endoscopic Management of Leaks After Esophagectomy/Gastrectomy: Endoluminal Vacuum Therapy

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Post–surgical anastomotic leak is a life–threatening complication with a high mortality rate. Anastomotic leak after gastrectomy in gastric cancer patients have been reported to occur in 0.2—7.4% of the cases [1–5]. The reported mortality rates of anastomotic leak range from 25% to 75% [1, 6, 7]. Open surgical reintervention is associated with considerable risk, particularly for critically ill patients [8]. Due to the fragility of the tissues, many patients redevelop insufficiency at the anastomosis site after revision [9].

Over the last 2 decades endoscopic alternatives have surfaced as an exciting alternative in the management of leaks. The endoscopic approaches have the advantages of being minimally invasive, many are not affected by the condition of the leak edges and they reduce the need for prolonged parenteral nutrition and hospital stay. In treatment strategies, non–surgical treatment or even conservative management has reported better outcome compared with re–operation. As non–surgical methods, endoscopic clips, fibrin glue, and self–expanding metal stent (SEMS) have been tried to treatment for anastomotic leak. However, there is still a lack of large prospective and randomized studies.

In the case of post–esophageal surgery or bariatric surgery, many studies have reported that SEMS has a favorable success rate over 53.8–80.0% and is acceptable for standard treatment of anastomotic leak. SEMSs are probably the most studied endoscopic technique in leak management and currently have the most robust evidence of efficacy. However, some complications after SEMS can occur such as stent migration, failure of stent extraction, and stricture after stent removal.

In recent years, endoscopic vacuum assisted closure (EVAC) has been tried as a new nonsurgical treatment option for anastomotic leak. A vacuum–sealed sponge is inserted in the wound cavity and connected to a suction device. This allows the constant removal of infected fluids, promotes rapid resolution of tissue edema and improves the microcirculation in that area, leading to the rapid formation of granulation tissue. Until now, however, there are few studies about EVAC for post–gastrectomy complication. In my experience EVAC is effective endoscopic treatment option for especially large size leak, and the better option for patient to short dwell time.

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Zhonghua Hall -A

Endoscopic Full-thickness Resection with Sentinel Lymph Node Dissection in Early Gastric Cancer

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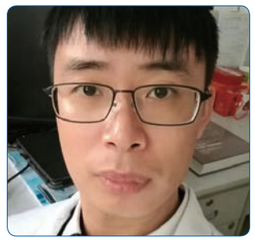
Sentinel lymph node is the hypothetical first lymph node or group of nodes draining a cancer and is considered the first site of micrometastasis along the route of lymphatic drainage. Sentinel node navigation is defined as a novel, minimally invasive surgery based on sentinel node mapping and the sentinel node–targeted diagnosis of nodal metastasis. The concept of sentinel node has evolved from the surgical staging of both breast cancer and melanoma. It avoided unnecessary prophylactic radical lymphadenectomy such as axillary lymph node dissection in breast cancer patients with negative sentinel node for cancer metastasis. Although the clinical application of sentinel node mapping for EGC has been controversial for years, sentinel node mapping, using a dual–tracer method that utilizes radioactive colloids and blue dyes, is currently considered the most reliable method for the stable detection of sentinel nodes in patients with EGC. An accumulation of radioactive colloids facilitates the identification of sentinel nodes even in resected specimens, and the blue dye is effective for intraoperative visualization of lymphatic flow, even during laparoscopic surgery. Usually, technetium–99m tin colloid, technetium–99m sulfur colloid, and technetium–99m antimony sulfur colloid are used as radioactive tracers. Isosulfan blue, patent blue, and indocyanine green (ICG) are currently the preferred dye tracers. The patients with clinical T1N0 (<4 cm) gastric cancer can undergo sentinel node mapping and biopsy without limitation of tumor location. Radioactive colloids and blue dyes are injected the day before surgery and just before the procedure into four quadrants of the submucosal layer around the primary tumor using an endoscopic puncture needle. Studies are investigating sentinel lymph node navigation using endoscopic injection of radiocolloide dye or ICG, or CT lymphography using nanoscale iodized oil emulsion to increase the accuracy of detecting LNM. A recent meta–analysis showed that the sentinel node detection rate, sensitivity, negative predictive value, and accuracy were 93.7%, 76.9%, 90.3%, and 90.2%, respectively. When considering laparoscopic procedure, sentinel node identification rate, sensitivity, false negative rate, and accuracy were 89.3%, 68.6%, 31.4%, and 92.6%, respectively. Combined ESD and sentinel node navigation surgery might be a feasible, minimally invasive procedure that allows en bloc tumor resection to be achieved while assessing the pathological status of the regional lymph nodes. A case series reported that combined ESD and sentinel node navigation was conducted for 13 patients with clinical T1N0 EGC, and was completed in 12 patients. One patient was converted to gastrectomy after sentinel node navigation surgery. En bloc resection was achieved in all other cases.

Zhonghua Hall -B



Imaging diagnosis of pancreatic cysts

Zhen Zhao

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Cystic lesions of the pancreas are increasingly being recognized due to the widespread use of cross–sectional imaging (Ultrasound, CT and MRI).

Several types of cystic lesions are encountered in the pancreas. Cystic lesions of the pancreas may range from benign to malignant and include both primary cystic lesions of the pancreas and solid neoplasms undergoing cystic degeneration. CT and MRI/MRCP are excellent modalities for both initial detection and characterization of cystic pancreatic lesions. But because of morphologic overlap at imaging, accurate characterization of these lesions can be difficult.

Imaging characteristics combined with detailed clinical information can be helpful in characterizing lesions, narrowing the differential diagnosis, and making decisions. Familiarity with the imaging features and clinical characteristics of these lesions is essential for radiologists, as collaboration with gastroenterologists and surgeons is often necessary to obtain an early and accurate diagnosis.

Zhonghua Hall –B

Molecular Analysis of Pancreatic Cyst Fluid

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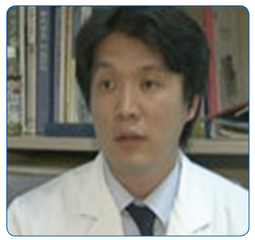
Pancreatic cystic neoplasms are a common clinical challenge given their observed frequency due to increased use of high resolution computed tomography and magnetic resonance imaging. Numerous guidelines have been developed to guide surveillance strategies and indications for an operation. Cyst fluid biomarkers, acquired during diagnostic EUS with fine needle aspiration, represent an opportunity to translate the cancer biology of pancreatic adenocarcinomas into clinical action. There are 2 goals of pancreatic cyst fluid analysis: 1) diagnose cyst type and the presence of high grade dysplasia or adenocarcinoma and 2) stratify risk of developing high grade dysplasia and/or adenocarcinoma. Several promising biomarkers have been recently described including DNA analysis. DNA analysis remains the most promising platform for diagnosing cyst type. Further development and validation for diagnosing and predicting high grade dysplasia is necessary.

Zhonghua Hall –B



Endobiliary RFA for Malignant Biliary Obstruction

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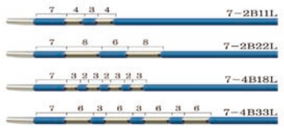
Introduction

Endobiliary radiofrequency ablation (EB–RFA) is an endoscopic local treatment modality in patients with malignant biliary tract obstruction (MBTO). Because It may provide improvement of stent patency and patient survival, EB–RFA technique is increasingly performed in many countries for palliation of an MBTOA temperature–controlled RFA catheter (ELRA® RF catheter, STARmed, Goyang, Korea) has an internal temperature sensor for monitoring tissue temperature, and the ablation can be terminated if the tissue temperature exceeds the preset target temperature, which could be helpful to control ablation depth and volume, and eventually avoid overheating and perforation.(Figure 1) However, there is only limited evidence for temperature–controlled EB–RFA, including in vivo studies[4,5] In this article, we will discuss previously reported data describing clinical safety and efficacy of temperature–controlled EB–RFA.

Figure 1. ELRA® RF catheter. (A) The tip of the catheter is pictured. There are four types of ELRA® RF catheters of 33mm, 22mm, 18mm and 11mm according to presumptive electric coagulation length. Our in vivo animal study suggested that optimal endobiliary RFA setting value was 80 ℃ target temperature and 7—10 Watts power for 120 seconds. (B) schematic overview of endobiliary RFA.

(A)



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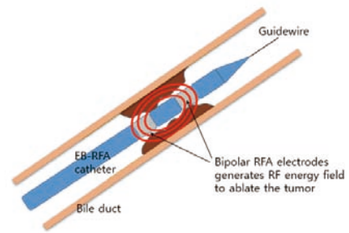

EB–RFA for extrahepatic biliary tract obstruction

In a retrospective multicenter study which was presented at the DDW 2018, total of 43 patients who underwent temperature controlled EB–RFA (7 — 10 W, target temperature 80℃, 120 seconds) from six academic medical centers were included. All patients had unresectable distal MBTOs including 28 CBD cancer, 11 pancreatic cancer and 4 GB cancer. After EB–RFA, biliary drainage was maintained by placing a covered/uncovered self–expanding metallic stent (SEMS) or plastic stent. Temperature controlled EB–RFA was safely performed in all patients without technical difficulties. The median length of MBTO was 22 mm (range: 12 – 50), and EB–RFA was followed by placement of biliary stents; 15 uncovered SEMS, 26 covered SEMS and two plastic stents. There were 18 (41.9%) patients who required reintervention during follow–up period. The median durations of stent patency were 173 days for uncovered SEMS group and 203 days for covered SEMS group (P = 0.119). The median overall survival was estimated to be 449 days. The median overall survivals

were 630 days and 191 days for biliary tract cancer and for pancreatic cancer, respectively (P < 0.001). Although this study was a retrospective single arm study, the total incidence of adverse events after procedure was 18.6% (8/43; 5 pancreatitis, 1 cholangitis with cholecystitis and 2 cholecystitis) which was comparable to previous studies which analyzed conventional palliative treatments and there was no major complication such as perforation and hemobilia. The authors concluded that EB-RFA is a safe and effective adjunctive local therapy in patients with distal MBTO. Distal MBTO caused by biliary tract cancer including GB cancer and CBD cancer might be an adequate indication for EB-RFA in terms of stent patency and overall survival.

Effective volume of EB-RFA for extrahepatic biliary tract obstruction

Although EB-RFA is increasingly performed, there is only limited evidence of ablation volume or depth for temperature-controlled EB-RFA. In a retrospective unpublished data, the authors analyzed pathologic ablation depth and volume of EB-RFA in patients with resectable distal extrahepatic cholangiocarcinoma who underwent preoperative EB-RFA. In this study, total of seven surgical specimens were evaluated for the ablation depth and volume. EB-RFA was performed with target temperature of 80°C (120 sec, 7–10 W, overlapping ablation was permitted as needed). The median fluoroscopic improvement of diameters at the biliary stricture site were 1.3 (range: 0.7–1.7) mm. No evidence of perforation, hemobilia, cholangitis, cholecystitis, or death related to EB-RFA was detected in any patient. The histology revealed that median maximal ablation depth was 4.0 mm (range, 1–6) and median effective ablation length (histological ablation length/fluorosocopic ablation length) was 72.0% (range, 42.1–95.3). Based on these results, ablating the target lesion longer than the estimated ablation length by fluoroscopy may improve the efficacy of EB-RFA.

Conclusions

Recently developed EB-RFA is still in debate for the clinical efficacy on the stent patency or survival. However, based on previously reported studies, EB-RFA with a temperature-controlled RFA catheter could result in coagulation necrosis of human cancer tissue. Because EB-RFA is a safe and effective adjunctive local therapy, further prospective randomized studies are warranted to confirm the survival benefit of EB-RFA.

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Zhonghua Hall -B

Simultaneous Gemcitabine and Irreversible Electroporation Treatment for Unresectable Pancreatic Cancer: Preliminary Experience in a Prospective Randomized Controlled Trial

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Background: IRE is a new, nonthermal local ablation method for solid tumors. There are different proportions of exposed cells in the IRE zone and the RE zone with IRE treatment. In the RE zone, the permeability of the cell membranes caused by electroporation can promote the diffusion of drugs into the cells and increase cytotoxicity, which might further increase tumor treatment efficacy.

Purpose: To evaluate the safety and effectiveness of simultaneous gemcitabine administration and IRE for treating UPC (unresectable pancreatic cancer).

Methods: A prospective, randomized controlled trial including 60 patients with UPC and no prior chemotherapy or radiotherapy was conducted between October 2016 and January 2018. Patients with locally advanced pancreatic cancer (LAPC; n = 23) and metastatic pancreatic cancer (MPC; n = 37) were divided into two groups. The GEM–IRE group received gemcitabine and IRE simultaneously; whereas, the IRE–GEM group received IRE followed by gemcitabine.

Results: Median follow-up was 8.2 months (2.7–15.4 months). Technical success rates were 90.0% and 86.6% in the GEM–IRE and IRE–GEM groups, respectively. The median progression free survival (PFS) of LAPC patients in the GEM–IRE group was significantly higher than that of LAPC patients in the IRE–GEM group (12.5 versus 10.9 months; hazard ratio [HR], 0.32; P = 0.0186). There was no statistically significant difference in the median PFS for MPC patients between the two groups (6.2 versus 5.4 months; hazard ratio [HR], 0.48; P = 0.1033). The objective response rate (ORR) was higher for the GEM–IRE group than the IRE–GEM group at 3 and 6 months (83.3% versus 65.5% and 70.0% versus 53.8%, respectively). There were no operative mortalities within 30 days.

Conclusion: The simultaneous use of gemcitabine and IRE is effective and well-tolerated. Therefore, this combination therapy may be a better choice for the treatment of LAPC.

Zhonghua Hall -B

Percutaneous intraductal radiofrequency ablation for treatment of biliary stent occlusion: A preliminary result

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Abstract

AIM:

To assess the feasibility and effectiveness of a novel application of percutaneous intraductal radiofrequency (RF) for the treatment of biliary stent obstruction.

METHODS:

We specifically report a retrospective study presenting the results of percutaneous intraductal RF in patients with biliary stent occlusion. A total of 43 cases involving biliary stent obstruction were treated by placing an EndoHPB catheter and percutaneous intraductal RF was performed to clean stents. The stent patency was evaluated by cholangiography and follow-up by contrast enhanced computed tomography or ultrasound after the removal of the drainage catheter.

RESULTS:

Following the procedures, of the 43 patients, 40 survived and 3 died with a median survival of 80.5 (range: 30–243) d. One patient was lost to follow-up. One patient had the stent patent at the time of last follow-up. Two patients with stent blockage at 35 d and 44 d after procedure underwent percutaneous transhepatic drain insertion only. The levels of bilirubin before and after the procedure were 128 ± 65 μmol/L and 63 ± 29 μmol/L, respectively. There were no related complications (haemorrhage, bile duct perforation, bile leak or pancreatitis) and all patients' stent patency was confirmed by cholangiography after the procedure, with a median patency time of 107 (range: 12–180) d.

CONCLUSION:

This preliminary clinical study demonstrated that percutaneous intraductal RF is safe and effective for the treatment of biliary stent obstruction, increasing the duration of stent patency, although randomized controlled trials are needed to confirm the effectiveness of this approach.

Zhonghua Hall -B

Palliative treatment with radiation-emitting metallic stents in unresectable Bismuth type III or IV hilar cholangiocarcinoma

Jian Lu

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Abstract

Background and aims

The emerging data for stenting in combination with brachytherapy in unresectable hilar cholangiocarcinoma are encouraging. The aim of this retrospective study was to evaluate the efficacy and safety of placement with radiation-emitting stent for unresectable bismuth type III or IV hilar cholangiocarcinoma.

Methods

Consecutive patients who underwent percutaneously unilateral placement with radiation-emitting metallic stent (REMS) or uncovered self-expandable metallic stent (SEMS) for unresectable Bismuth type III or IV hilar cholangiocarcinoma between September 2011 and April 2016 were identified into this retrospective study. Data on patient demographics and overall survival, success of function, stent patency, and complications were collected at the authors' hospital. The primary outcome was overall survival.

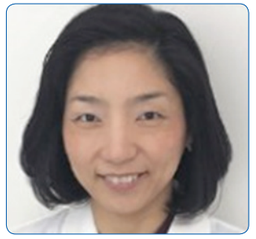
Results

A total of 59 patients were included: 33 (55.93%) in the REMS group and 26 (44.07%) in the SEMS group. The median overall survival was 338 days in the REMS group and 141 days in the SEMS group ($p < .001$). Multivariate analysis revealed that distant metastasis and stent type were independent prognostic factors for the survival. Functional success was noted in 87.9% patients in the REMS group and 84.6% patients in the SEMS group ($p = 0.722$). The median stent patency was 385 days in the REMS group and 141 days in the SEMS group ($p < .001$). There were no significant differences in the overall incidence of complications between the two groups (27.3% vs 26.9%, $p = 0.999$).

Conclusion

Placement with radiation-emitting biliary stent is safe and effective in palliation for unresectable bismuth type III or IV hilar cholangiocarcinoma, and seems to prolong survival as well as patency of stent in these patients.

Zhonghua Hall –B



EUS-guided Fiducial Marker Placement for Chemoradiation Therapy of Pancreatic Cancer

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Chemoradiation therapy is considered as a promising therapy to improve the outcome of pancreatic cancer treatment. Traditionally, parts of human anatomy such as the back bone were used as landmarks for targeting tumors during radiation therapy. However, it was difficult to account for tumor movement due to a patient's breathing or food intake especially in the case of small tumors such as resectable pancreatic cancer. Recent advancements in radiation therapy, such as Stereotactic Body Radiation Therapy (SBRT) or CyberKnife, need fiducial markers as reference points for Image-Guided Radiation Therapy (IGRT) to maximize efficacy of radiation and minimize complications. Previously, fiducial markers have been placed either intraoperatively or percutaneously under CT or ultrasound guidance. However, with these approaches it is sometimes difficult to place fiducial markers into the targeted tumor accurately. Endoscopic ultrasound (EUS) guided fiducial marker placement (EUS-FP) has become a topic of more in-depth study recently. The EUS approach offers less invasive and more accurate marker placement especially in deep organ such as pancreas. Usually, fiducial markers were back-loaded into an FNA needle tip (22 or 19-gauge needle) and sealed with bone wax. However, this process takes time and has some limitations. To improve these problems, newer devices and materials for EUS-FP have been introduced recently. The overview and current progress of EUS-FP will be discussed.

Zhonghua Hall –C

cTACE in the Treatment of Intermediate Stage HCC

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What is the intermediate stage HCC? BCLC group investigated the natural history and prognostic factors of patients with nonsurgical HCC using the untreated control arm of the two randomized controlled trials between 1992 and 1994 (1). The independent predictors for mortality in these patients were vascular invasion and extrahepatic spread. Based on these results, nonsurgical HCCs without vascular invasion and extrahepatic spread were allocated for the intermediate stage of BCLC staging classification in 1999 (2), which meant that the intermediate stage HCC was very heterogeneous. In 2002, two randomized controlled trials showed survival benefits of transarterial chemoembolization (TACE) for the patients with unresectable HCC compared to best supportive care (3-4). Currently, conventional transarterial chemoembolization (cTACE) is the standard treatment of the intermediate stage HCC (5) and the most widely used for initial treatment modality of HCC (6).

In this presentation, the following materials will be discussed; i) cTACE in the international guidelines, current evidences, and real-world practice pattern, ii) basic concept of cTACE, iii) advantage of selective TACE in the treatment of intermediate stage HCC, and v) advantage of cTACE compared to DEB-TACE and radioembolization in the selective TACE.

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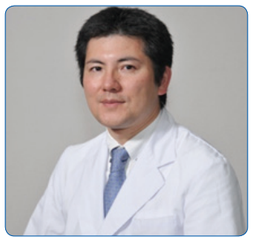
Zhonghua Hall -C



Efficacy of Balloon-occluded Transcatheter Arterial Chemoembolization (B-TACE) for Patients with Hepatocellular Carcinoma (HCC)

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We introduce the efficacy of balloon-occluded transcatheter arterial chemoembolization (B-TACE) using a microballoon catheter for patients with hepatocellular carcinoma (HCC). We use a 1.8-Fr microballoon catheter (Logos, Piolax Medical Devices, Kanagawa, Japan; or Attendant, Terumo, Tokyo, Japan). It is reported that B-TACE under the occlusion of feeding arteries by a microballoon catheter can lead to improve the dense lipiodol emulsion accumulation into the target HCC nodules, as compared with conventional TACE (C-TACE). Balloon occlusion prevents the proximal migration and leakage of embolization materials. In addition, it also causes the local changes in the hemodynamics of the surrounding occlusion artery and targeted HCC tumors. Based on these notions, B-TACE is very useful to perform TACE according to the therapeutic aim. We consider that the aims of TACE are divided into three types as followed; 1) common TACE (BCLC-B, multiple HCC), 2) TACE for local control (BCLC-0 or A, not indicated hepatic resection or RFA due to some kinds of reason), 3) TACE for reducing tumor burden (BCLC-C, or poor liver function). B-TACE is an effective and safe TACE for HCC patients with various kinds of tumor status and liver function.

Zhonghua Hall -C

Subclassification of Intermediate-stage HCC

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The Barcelona Clinic Liver Cancer (BCLC) staging system is the most widely accepted model worldwide as it integrates tumor characteristics (size, number, vascular invasion, N1, M1), liver function (Child-Pugh grade), and health status (Eastern Cooperative Oncology Group, ECOG) to provide a clinical algorithm that can help guide treatment decision making according to five stages (very early [0], early [A], intermediate [B], advanced [C], terminal [D]) (1—4). Of various HCC staging systems, only the BCLC staging system has been externally validated and now formally endorsed by liver expert groups (American Association for the Study of Liver Diseases [AASLD] and European Association for the Study of Liver Diseases) (5,6).

The intermediate-stage of HCC (BCLC stage B) consists of a highly heterogeneous population of patients with Child-Pugh class A and B liver function with four or more tumors irrespective of size, or two or three tumors >3 cm in maximal diameter, in the absence of cancer-related symptoms, macrovascular invasion, or extrahepatic metastasis (6,7). Thus, owing to the enormous heterogeneity of the population, the outcome prediction is also heterogeneous for patients with HCC of BCLC B stage after treatment (4,8,9). Thus, attempts have been made to develop a tailored subgroup stratification for the BCLC B stage (7—12), to provide prognosis and optimal treatment strategies in each substage. For the first time, Bolondi et al. (8) proposed a subclassification system of intermediate HCC (four substages) based on key parameters related to tumor burden (up-to-7 criteria) and liver function (Child-Pugh score). Moreover, they provided the first and alternative treatment options in each substage. Recently, some authors tested the usefulness of the subclassification proposed by Bolondi et al. (8) and proposed modified subclassification systems (9-12).

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Zhonghua Hall –C

Update on Transarterial Chemoembolization with DC Beads for Hepatocellular Carcinoma

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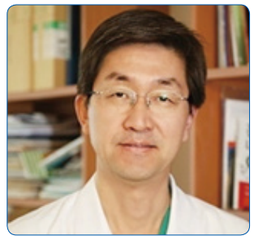
Conventional transcatheter arterial chemoembolization (c–TACE) is a widely used first–line palliative treatment for patients with unresectable hepatocellular carcinoma (HCC). Despite c–TACE being effective, the technique and scheduling of the procedure have not yet been standardized. Drug–eluting microspheres (DEM), also called drug–eluting beads (DEB), were therefore introduced to ensure more sustained and tumor–selective drug delivery and permanent embolization. These microspheres can load variety of drugs and release them in a sustained manner over a prolonged period of time. This approach results in the delivery of high concentrations of chemotherapeutic agents to tumors without increasing systemic concentrations associated with induction of ischemia and tumor necrosis. Many types of microspheres are currently commercially. The microspheres most commonly used in clinical practice are DC Beads (BTG, London, UK). This presentation summarizes recent findings on the use of DC Bead–TACE to treat HCC.

Zhonghua Hall –C



Hepasphere TACE for Intermediate HCC

Hyun - Ki Yoon

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Drug–eluting beads has been demonstrated similar efficacies for HCC treatment while with less side effects due to low serum concentrations of chemotherapeutic drugs. Hepasphere is unique in that it swells 4 times of diameter in the aqueous solution as compared with dry state beads. This characteristic is beneficiary because it can give the bead more compressibility and conformability. As compared with DC beads, hepasphere can be prepared with smaller size so that it can penetrate more distally to the tumor with less clogging of the particles inside the vessel lumen. Also chemotherapeutic drugs can be incorporated uniformly in the whole particle as compared with high surface coating of the DC beads. Because of this, hepasphere can make more uniform drug delivery into the tumors with less systemic toxicities. Hepashere has more benefit that it can absorb more drug spectrums such as oxaliplatin or irinotecan in addition to doxorubicin. These fore mentioned characteristics enhance this beads' utilities for HCC chemoembolization even though no definite clear evidence of this beads' superiority on others has been demonstrated yet.

Zhonghua Hall –C

A Shifting Paradigm in Locally Advanced Rectal Cancer Management

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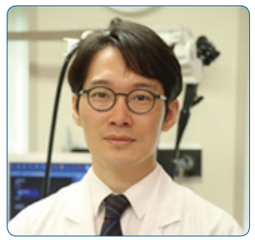
Colorectal carcinoma is the leading cause of cancer–related deaths in Asian countries, and rectal cancer accounts for about one–quarter to one–third of newly diagnosed colon cancer cases and thus represents a major socioeconomic health burden. Although minimally invasive procedures (i.e. transanal excision and laparoscopic surgery) may be appropriate for a subset of patients with relatively small, superficially invasive tumors, a more comprehensive trimodality approach with neoadjuvant chemoradiotherapy, total mesorectal excision, and systemic chemotherapy is recommended for medically operable patients with non–metastatic, locally advanced rectal cancer. This combination therapy results in a significant decrease in local recurrence rates, but is estimated to be a 5–year recurrence rate of 35%, the leading cause of death in this population. In this presentation, we assess the literature regarding neoadjuvant therapy for LARC, as well as the available evidence to support selective exclusion of individual modalities from the contemporary therapeutic paradigm, including controversies of non–operative management, selective radiation sparing, and neoadjuvant systemic therapy. Through the review of existing data and expected outcomes of ongoing clinical trials to outline practical opportunities for further investigation of efficacy, safety, and ultimate improvement issues with current status.

Zhonghua Hall –C



Dysplasia in the Ulcerative Colitis: Colectomy or Endoscopic Resection?

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Introduction

The risk of colorectal cancer (CRC) increases in the inflammatory bowel disease (IBD) patients compared with general population.(1) Dysplasia is considered as a precancerous lesion of CRC in the ulcerative colitis or Crohn's colitis. Total proctocolectomy (TPC) had been regarded as a standard treatment for dysplasia–associated lesions or mass and high grade dysplasia, until therapeutic role of polypectomy for the dysplasia was reported in 1999. (2, 3) These two studies were starting points for subsequent investigation about endoscopic treatment for dysplasia and also raised the needs to improve description and classification for endoscopic appearance of dysplasias. Consequently, recent guidelines suggest that endoscopic resection as a key modality for the treatment of visible and endoscopically resectable dysplasia in IBD.(4–6)

Endoscopic description and classification of dysplasia

1.Before SCENIC statement

The endoscopic appearance of dysplasia had been firstly described in 1981.(7) The gross appearances of the lesions were single polypoid mass, plaque–like lesions, and multiple polyps, but only 26% of dysplasias were visible under colonoscopy were visible at that time.(7) The term, "dysplasia–associated lesion or mass (DALM)" had been coined in this study to describe such heterogeneously looking dysplasia. Before late 1990s, dysplasia was simply divided by DALM and invisible or unrecognized dysplasia which were detected by random biopsy. However, with improvement in the quality of endoscopy, it became obvious that not all visible dysplasia had the appearance of DALM. In 1999, two studies suggested that polypectomy could be a feasible treatment for the "adenoma–like" polyps which were endoscopically indistinguishable from sporadic adenomas. (2,3) Subsequently, Itzkowitz categorized the dysplasia according to their endoscopic appearance and locoregional relationships between colitis segments and dysplasia.(8) This review suggested that morphological difference of dysplasia should be a hint to make therapeutic plan. However, the term DALM, that is imprecisely defined, is yet maintained and another imprecise term, "adenoma–like" dysplasia (ALD) was used to describe a discrete and ovoid or round polyp. The term, "flat dysplasia", was also confusing. It has been used mostly for invisible dysplasia detected by random biopsy, but visible dysplasia may also have "flat" gross appearance. As more dysplasia became visible and grossly characterizable, the need of new and less confusing classification system increased.

2.SCENIC statement

Recent international consensus recommendation for surveillance for colorectal endoscopic neoplasia detection and management in inflammatory bowel disease patients (SCENIC) suggested new classification for dysplasia identified at surveillance colonoscopy.(6) There are several remarkable changes in the SCENIC classification. First, dysplasia was divided into visible and invisible dysplasia. Therefore, flat dysplasia does not mean invisible dysplasia any more in SCENIC classification. Second, the other imprecise and

confusing terms, including DALM, ALM, and non–adenoma–like dysplasia were abandoned. Instead, Paris classification for sporadic colorectal neoplasia was adopted to describe visible dysplasia. Third, adopted Paris classification was modified by adding two general descriptors, ulceration and border of the lesion. Comparing with previous descriptions for dysplasia, this new classification can be a more uniformed communication tool among clinicians and researchers.

Endoscopic treatment for dysplasia

1.Polypoid dysplasia

Since early studies about the feasibility of polypectomy for dysplasia,(2,3) subsequent studies have supported the therapeutic role of colonoscopic polypectomy for polypoid dysplasia in colitic patients. The pooled incidence of CRC after endoscopic resection of polypoid dysplasia is 5.3 cases per 1000 patient–years in colitic patients,(9) which is deemed acceptably low, considering that the alternative measure for CRC prevention is total proctocolectomy. Moreover, a recent large surveillance study for colitic patients suggested that the incidence of interval CRC was 2.5 cases per 1000 patient–years,(10) which is comparable to the incidence of interval CRC in the general screening population (1.1—2.7/1000 patient–years).(11) Therefore, endoscopic resection is recently considered as the first–line treatment option for endoscopically resectable dysplasia.(4–6)

2.Non–polypoid dysplasia

Although SCENIC recommended surveillance colonoscopy rather than colectomy in case of complete endoscopic resection of non–polypoid dysplasia, the evidence was lacking.(5,6) Endoscopic mucosal resection (EMR) is a relatively simple and effective technique to resect polypoid dysplasia. However, in cases of non–polypoid dysplasia, especially if the lesion is large and contains diffuse submucosal fibrosis, EMR may result in piecemeal or incomplete resection. Endoscopic submucosal dissection (ESD) has been suggested as a trouble–shooting technique for the lesions unsuitable for EMR.(5) Until now, only three studies investigated the outcomes of ESD for UC–associated dysplasia.(12–14) According to these studies, en bloc resection rates ranged 80 to 100% and R0 resection ranged 70–76%. These results are comparable with the outcomes summarized in the recent systematic reviews of colorectal ESD for sporadic neoplasia (en bloc resection rates of 89%—92% and R0 resection rates of 76%—83%). However, the R0 resection rate of ESD for UC–associated dysplasia seems relatively lower than the pooled R0 resection rate of 85.6% in an Asian subgroup. Local recurrence rate was 20% in the earliest study by Iacopini et al.(12) All local recurrences of these studies occurred in cases of piecemeal resection. Suzuki et al. reported one local recurrence (3.8%), but information on en bloc resection of the original lesion was not provided.(13) Therefore, similar to sporadic colorectal neoplasia, piecemeal resection of UC–associated dysplasia warrants shorter endoscopic surveillance interval. Metachronous dysplasia rates vary from study to study and range 4 — 33%.(12–14) Heterogeneous level of risk for dysplasia or colitic cancer among the patients is potentially associated with the wide variation in the metachronous recurrence rates during post–ESD surveillance.

Colectomy for UC patients

According to a Korean multi–center retrospective study, 415 UC patients underwent colon surgery and most of them (92.2%) underwent TPC. Medical intractability of UC (n=270, 65.1%) was the most common indication of surgery and dysplasia or malignancy (n=52, 12.5%) was the second most common indication of surgery. The overall postoperative complication rate was 34.7%. Ileus (n=21), bleeding (n=16), and anastomotic leakage (n=15) were common early postoperative complications. Pouchitis (n=48) was the most common late complication. In another large scale (n=3707) study about TPC with ileal pouch anal anastomosis,(16) early and late postoperative complication rates were 33.5% and 29.1%, respectively. Most of the patients in this study were ulcerative colitis (79.7%) patients. They also reported 0.1% of perioperative mortality rate.(16)

Conclusions

Therapeutic outcomes of endoscopically removed polypoid dysplasia support that endoscopic resection can be a primary therapeutic option for polypoid dysplasia instead of colectomy. Relative high incidence of postoperative complication justifies selecting the endoscopic resection as primary treatment for the endoscopically resectable dysplasia. Although further investigation including long–term outcome data is required, recent studies suggest that ESD should be a feasible therapeutic option for non–polypoid dysplasia. Surveillance after endoscopic resection of dysplasia is not standardized as lack of evidences. However, short term endoscopic surveillance is required for the patients who underwent piecemeal resection or who were at high risk of dysplasia or colitic cancer.

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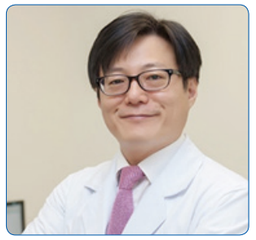
Zhonghua Hall –C



Long-Term Outcome of Colorectal ESD in Comparison with Endoscopic Piecemeal Resection and Surgery

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Endoscopic submucosal dissection (ESD) in the colorectum is a highly technical endoscopic resection method. Despite high risk of perforation, colorectal ESD is noteworthy for its high possibility of en bloc resection even in large colorectal neoplasm. In comparison, endoscopic piecemeal mucosal resection (EPMR) can resect large colorectal neoplasms relatively easily because of is technically simplicity and low risk of perforation. However, EPMR has its inherent weakness of high chance of residual tumor between the resected pieces. Surgery is much invasive although surgery can remove any large colorectal neoplasms completely. Therefore, currently, surgery is rarely indicated for benign large colorectal neoplasms.

Besides aforementioned short-term outcome features of ESD, EPMR and surgery in the colorectum, these procedures show different long-term post-procedural outcomes which can be resulted from the innate characteristics and immediate post-procedural outcomes of each procedure. For example, colorectal ESD shows negligible risk of local recurrence because of high possibility of en bloc resection and complete histological resection (R0 resection). In contrast, local recurrence rate is high, ranging 5–30% after colorectal EPMR because of the high possibility of residual tumors between resected pieces during the EPMR procedure. Fortunately, most of the recurrent tumors can be managed by repeat endoscopic interventions if the recurrent lesion is benign. Surgical colorectal segmental resection, especially resection of rectum may result in long-term complications such as bowel habit change and adhesion. There can be different cost-effectiveness between these procedures because of the different long-term clinical courses. Based on these long-term outcomes, ESD, EPMR, and surgery may be indicated for different colorectal neoplasms. For example, colorectal ESD may be the best indicated for large colorectal neoplasms suspicious of superficial submucosal cancers because complete resection with no risk of recurrence during the long-term follow-up period is the most important virtue in case of curable early cancers. In comparison, EPMR can be indicated for definitely benign, large colorectal neoplasms because of its safety, technical simplicity, and possibility of repeat endoscopic management even for the recurrent tumors. Surgery can be indicated for colorectal tumors suspicious of deep submucosal cancers which cannot be cured only by endoscopic resection.

Zhonghua Hall –C

New Techniques and Devices of Colorectal ESD

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Colorectal ESD is a still challenging procedure. Major obstacles of colorectal ESD are higher risk of perforation from thin colonic wall, paradoxical movement of the endoscope, and poor discrimination of layers from occasional submucosal fibrosis. Various new techniques and devices have been developed to overcome those difficulties. “Pocket creation method” is a useful technique especially for resection of large laterally-spreading tumors. The movement of the endoscope can be stable regardless of the patient’s heartbeat or respiration since the tip of the endoscope is splinted in the pocket. In addition, submucosal space can be easily widened by air inflation, and submucosal injection can be maintained longer without leak. Underwater ESD has beneficial effects by providing heat-sink, buoyancy, and improved visualization during dissection.

Use of injectable knives (Flushknife, Dualknife J, Hookknife J, and Splash-M knife) can save the procedure time. Use of the short single-balloon overtube with larger diameter with the pediatric colonoscope with water-jet function can be useful to deceased paradoxical movement. Various traction methods (a rubber band and clips, a silk and a clip, a spring with a nylon loop and a clip, and external forceps) have been tried for better submucosal exposure.

Nanjing Hall – B

Approaches to Clinical T1b EGC: ESD First

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Background and aims:

The current standard treatment modality for clinical submucosal invasive (cT1b) early gastric cancer (EGC) is surgery. However, there are discrepancies in T staging between pre– and post–operative findings, and in cases of overestimation, patients may lose the opportunity to preserve the stomach. The aim of this study was to analyze surgical outcomes of cT1b EGC and determine the pre–treatment factors favoring endoscopic submucosal dissection (ESD).

Methods:

From January 2010 to December 2014, patients who underwent gastrectomy for cT1b EGC with a tumor size measuring 30 mm or less in diameter and differentiated type histology were retrospectively reviewed. According to the final surgical pathologic results, two groups were classified: patients whose pathologic results qualified for current ESD indication (ESD–qualified group, n=203) and patients whose pathologic results made them ineligible for ESD (ESD–disqualified group, n=261). The preoperative clinical characteristics were compared.

Results:

Forty–three percent of the patients (203/464) who underwent gastrectomy for cT1b EGC qualified for ESD; their endoscopic lesion tended to be smaller than 20 mm in size and located in the distal part of stomach. In addition, the ESD–qualified group showed a significantly higher proportion of well–differentiated tubular adenocarcinoma on endoscopic biopsy and of the flat/depressed type in the endoscopic evaluation.

Conclusion:

Forty–three percent of the patients with cT1b EGC who underwent gastrectomy had a chance to preserve their stomach by ESD. Therefore, pre–treatment factors such as endoscopic lesion size, location, histology, and gross type should be considered when choosing the treatment modality for cT1b EGC.

Key words: Clinical submucosal invasive gastric cancer; Endoscopic submucosal dissection; Pre–treatment factors

Pathologic results according to the curative resection criteria of Japanese Gastric Cancer Association guideline

	T1a (mucosa)				T1b (submucosa)			T2 – T4	Total
	No ulceration		Ulcerated		sm1		sm2 /sm3		
	≤ 20 mm	> 20 mm	≤ 30 mm	> 30 mm	≤ 30 mm	> 30 mm	Any size		
Diff.*	94 (20.2%) 3 †	63 (13.5%) 3 †	5 (1.1%)	1 (0.2%)	30 (6.4%) 5 † 3 ‡	12 (2.6%)	135 (29.1%)	28 (6.0%)	382 (82.3%)
Undiff.	11 (2.4%) 2 ‡	16 (3.4%)	0 (0.0%)	0 (0.0%)	8 (1.7%)	1 (0.2%)	32 (6.9%)	12 (2.6%)	82 (17.7%)
Total	192 (41.4%)		6 (1.3%)		59 (12.7%)		167 (36.0%)	40 (8.6%)	464 (100%)

■absolute curative resection criteria

■expanded curative resection criteria

Diff., Differentiated; Undiff., Undifferentiated; T1a, tumor confined to the mucosa; T1b, submucosal invasive tumor; sm1, tumor invasion into the upper third of submucosal layer; sm2, middle third; and sm3, lower third.

* Well– or moderately differentiated tubular adenocarcinoma or papillary adenocarcinoma was categorized as undifferentiated type; poorly differentiated tubular adenocarcinoma or signet–ring cell carcinoma, or mucinous adenocarcinoma was classified as undifferentiated type.

† Lymphatic invasion was identified and classified as an ESD disqualified group

‡ Positive lymph node was identified and classified as an ESD disqualified group

Nanjing Hall – B

Local Excision After Preoperative Chemoradiotherapy for Rectal Cancer: Who Are the Best Candidates?

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Preoperative radiotherapy (RT) or preoperative chemoradiotherapy (CRT) for rectal cancer is one of the essential components of treatment and has a role to reduce local recurrence rates, to make unresectable lesion resectable or preserve sphincter in distal lesion by down–sizing, and to limit or avoid surgery. For locally advanced rectal cancer, the rate of good responder with pathologic complete or near complete regression after preoperative CRT is reported to be approximately 30%—40% and these patients show very good prognosis. Moreover, in early rectal cancer, the rate of good response after preoperative CRT is higher than in locally advanced cancers. However, because of the significant morbidity rates of radical surgery after preoperative CRT, alternative strategies for organ preservation approaches including limited surgery such as local excision or nonoperative management have been tried. In multi–center phase 2 trial for cT2N0 cancer, the patients with good response after preoperative CRT showed excellent local control after local excision with long term follow–up. Moreover, recently, multicenter, randomized phase 3 trial comparing local excision and radical surgery in patients with good response after CRT was published. In this study, although they failed to show the superiority of local excision in terms of complex primary end–point, the oncologic outcomes were similar between the two groups. Although we currently need further evidences for the oncologic outcomes and safety, this approach of organ preservation for highly selected patients could be very hopeful. Current issues about the role of preoperative CRT for organ preservation in early rectal cancer will be discussed in this section

Zhonghua Hall -A

Palliative Interventions in the Management of Unresectable Colorectal Cancer

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Colorectal cancer (CRC) is one of the most frequently encountered malignancies, accounting for 8.3% of all cancer deaths in the United States [1]. The 5-year survival of CRC ranges from 35–55% for stage III malignancy, and drops to below 15% in stage IV malignancy with distant metastases [2]. Among these patients, 1 in 5 percent with acute malignant bowel obstruction (MBO), which requires urgent intervention [3].

Traditionally, the intervention of choice has been surgical resection with primary anastomosis. Although one-stage surgery with primary anastomosis is desirable, in cases where urgent surgical resection is inevitable, a two-staged procedure is often carried out instead of a single-stage surgery for various reasons [4]. A two-stage procedure involves segmental bowel resection, followed by a Hartmann's closure of the distal end, and stoma creation of the proximal bowel. It is technically less demanding, has a relatively shorter procedure time, and carries a lower risk of anastomotic leakage when compared with one-stage operation. However, patients who undergo a two-stage procedure have to wait at least 2 months before colostomy reversal can be considered. Furthermore, in patients with metastatic CRC in whom a surgical resection is not curative, subjecting such patients to the inherent risks of a major surgical procedure and subsequent stoma creation, with the cost of stoma care, often brings adverse impact on the quality of life (QoL) of these patients [5,6]. Intuitively, multiple studies found emergency surgery to be associated with relatively higher post-operative mortality [7–9].

Such concerns associated with surgical resection, be it emergent or elective, curative or palliative, opened the door for endoscopic colorectal stenting. Due to the relatively less invasive nature and quick recovery time of this approach, it can be used as a bridge to future elective surgery or as an effective palliation modality. The initial literature on using a self-expandable metal stent (SEMS) as a bridge to surgery (BTS) in the setting of colonic obstruction came from Tejero et al in 1994, followed by Saida et al. in 1996 [10–11]. Following these initial triumphs, multiple studies have validated the safety and efficacy of SEMS placement as BTS, preventing a high-risk emergency surgery of a maximally distended bowel, as well as giving an opportunity to optimize the overall condition of MBO patients, and minimizing post-operative morbidity and mortality. We previously published our data on the utility of SEMS as a BTS, and found it to be a technically successful endeavor in 100% of the patients, but the clinical success rate lagged behind at 84.8% [12]. A recent meta-analysis of randomized controlled trials showed that SEMS as a BTS reduces the rate of adverse events and stoma creation compared to emergency surgery [13]. Additionally, in cases of MBO where surgical resection may cause more harm than benefit, colonic stenting has been proven to be a safe and efficacious palliative strategy, with significant QoL benefits [13–14].

However, the European Society of Gastrointestinal Endoscopy does not recommend SEMS as a BTS as a primary strategy, but reserves it for patients with an American Society of Anesthesiologist (ASA) class of 3 or higher, and patients over the age of seventy [15]. This is partly supported by the higher and longer-lasting clinical success rates of surgery when compared to those of SEMS. There are inherent risks to endoscopic colon SEMS placement. The concerns surrounding colonic SEMS placement encompass procedure-related adverse events, as well as stent-related adverse events, including stent migration and perforation due to SEMS. A meta-analysis of 4 studies found that the perforation rate was the highest with re-interventions, though the sample size was not large enough to confer adequate power to this conclusion [16].

Lastly, with the introduction of Bevacizumab to CRC treatment regimens, there is growing concern regarding a heightened risk of perforation, leading clinicians to question the safety of SEMS placement in patients who have received bevacizumab. The association between bevacizumab use and gastrointestinal perforation has been well established by meta-analyses of randomized controlled trials [17]. Whether SEMS placement has a synergistic effect with bevacizumab on the risk of perforation has not been well studied, and the literature concerning this question is sparse. A meta-analysis of 8 studies revealed the perforation rate to be higher in patients receiving chemotherapy with bevacizumab [16]. However, with a total sample size of 80 patients, these findings should be cautiously interpreted.

We analyzed our data to evaluate the safety and efficacy of SEMS as a BTS or definitive therapy in patients with MBO at a major tertiary cancer center. We additionally sought to validate the concerns surrounding the safety of SEMS placement in patients with CRC undergoing treatment with bevacizumab. In this lecture, we will review the published data as well as our own experience at MD Anderson Cancer Center.

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Zhonghua Hall -A

IRE for Locally Advanced Pancreatic Cancer

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Pancreatic adenocarcinoma is one of the most aggressive malignancies, with a 1–year survival rate less than 20%. Between 30—40% of patients are diagnosed as locally advanced pancreatic cancer (LAPC), and the overall 5–year survival rate of these patients is less than 5%. The standard therapy for these patients is systemic chemotherapy, with or without radiation. Recently, novel chemotherapy regimens, such as FOLFIRINOX (5–fluorouracil, leucovorin, irinotecan, and oxaliplatin) or nab–paclitaxel with gemcitabine, have demonstrated improved overall survival, but the prognosis for LAPC remains poor

Irreversible electroporation (IRE) is a novel technique that uses a non–thermal ablation to avoid vessel or duct injuryThis technique applies pulsatile high–voltage current through electrodes placed into or around the tumor. The current creates nanoscale pores in the lipid bilayer of the cell membrane, disrupting cellular homeostasis and leading to apoptosis.Several studies investigating the safety and efficacy of IRE for LAPC showed improved progression–free survival (PFS) and overall survival (OS) compared with conventional chemotherapy or chemoradiation therapy, and acceptable overall complication rate.

In our study, the median OS from diagnosis was 24.5 months and median OS from IRE was 13.5 months, which are comparable to those reported in previous studies (17—23.2 months from diagnosis, 7.5—18 months from IRE). In terms of PFS, the median PFS from diagnosis was 19.2 months and median PFS from IRE was 8.6 months, and these are similar to those reported in previous studies (15 months from diagnosis, 6.1—12.4 months from IRE). These results are comparable to or higher than those of conventional chemotherapy or chemoradiation therapy for LAPC (OS, 9.2—11.4 months; PFS, 5.5—6.3 months).

Several studies have investigated the outcomes of percutaneous IRE using US or CT guidance in the patients with LAPC. Narayanan et al. reported a median OS of 14.5 months with no procedure–related deaths for percutaneous IRE, which is similar to those reported for intraoperative IRE. The potential benefits of percutaneous IRE include a relatively short recovery time and fewer potential surgery–related complications. Additionally, the operator can determine position and distance of needles while performing the procedure under CT guidance. In conclusion, for LAPC patients, IRE is an effective treatment modality with an acceptable safety profile.

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The treatment shifts of pancreatic trauma: more endoscopic therapies are coming!

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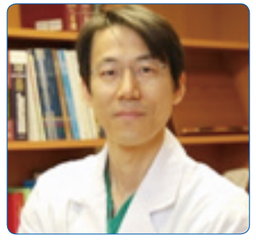
ABSTRACT

Pancreatic trauma occurs in 0.2% of patients with blunt trauma. Traumatic pancreatic injuries are characterized by high morbidity and mortality, which further increase with delayed diagnoses. The diagnosis of pancreatic trauma is challenging. Signs and symptoms can be non-specific or even absent. The management of pancreatic trauma depends on the haemodynamic stability of the patient, the degree and location of parenchymal injury, the integrity of the main pancreatic duct, and the associated injuries to other organs. The majority of pancreatic traumas are managed by medical treatment (parenteral nutrition, antibiotic therapy and somatostatin analogues), hemostasis, debridement of devitalized tissue and closed external drainage. More and more Endoscopic doctors are involved in the treatment of pancreatic trauma, which was traditionally treated by trauma surgeons. If a proximal duct injury is diagnosed, endoscopic transpapillary stent insertion can be a viable option, while surgical resection by pancreaticoduodenectomy is restricted to an extremely small number of selected cases. Injuries of the distal parenchyma or distal duct may be managed with distal pancreatectomy with spleen preservation. Overall, the management of pancreatic injuries is complex and often requires a multidisciplinary approach.



Transarterial Embolization or Stent-graft Placement: Indication, Technique, and Outcomes

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Hemorrhage following pancreatobiliary surgery occurs in 4%–16% of patients. Hemorrhage mainly is caused by pseudoaneurysm rupture in the splanchinic artery. Postoperative leakage from the pancreas or intestine from anastomotic failure or localized infection gradually causes arterial wall erosions, resulting in pseudoaneurysms. Hemorrhage usually occurs > 24 hours after surgery. After pancreaticoduodenectomy, the gastroduodenal artery (GDA) stump and the common hepatic artery (CHA) are the most frequent culprit vessels. Surgical exploration is less commonly performed because it is technically difficult owing to adhesions and surrounding tissue friability after surgery. Surgical reexploration carries high morbidity and mortality rates (range, 24–80%). Therefore, there has been a shift toward endovascular management—transcatheter arterial embolization (TAE) or stent-graft placement to reduce perioperative mortality. This lecture will provide the audience with indications, techniques, and clinical outcomes of endovascular managements. The focus will be on understanding the technical tips about endovascular management, current evidence as well as controversies regarding these approaches.

Zhonghua Hall -A

Percutaneous approach management of loop syndrome

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Afferent loop syndrome is an uncommon complication following surgical procedures such as Billroth II gastrojejunostomy, and it occurs in approximately 0.3% of all cases. It results from obstruction of the afferent loop at any site and is caused by a variety of postoperative complications, such as recurrent tumor, adhesion, and kinking. To manage afferent loop syndrome, surgical bypass procedures are considered to be the best way to resolve this condition. However, palliative surgical revisions were successfully performed in 75% of patients with afferent loop syndrome because of their poor general condition, peritoneal adhesion, or disseminated tumor. Alternatively, less-invasive nonsurgical procedures, such as percutaneous transhepatic biliary drainage (PTBD) and percutaneous enterostomy, have been used as a palliative option for poor surgical candidates. Although percutaneous drainage provides excellent symptom relief, maintaining an internal tube can pose a risk for problems, such as patient inconvenience and infection. Under these circumstances, the placement of bare or fully covered self-expandable metallic stents via various routes has been attempted, rather than the use of tube drainage. However, some complications, such as tumor ingrowth and stent migration, have been reported in conventional self-expandable metallic stents. With the introduction of newer-generation stents, such complications have dramatically decreased.

Zhonghua Hall -A

Endoscopic Management of Recurrent CBD Stones: How to Minimize the Risk of Recurrence?

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Endoscopic retrograde cholangiopancreatography (ERCP) with endoscopic sphincterotomy (EST) has been widely accepted as an effective and minimally invasive treatment for common bile duct (CBD) stones.[1,2] However, in clinical practice, recurrence of acute cholangitis due to recurrent CBD stone frequently occurs. It has been reported that symptomatic recurrent CBD stones occur in 4% to 24% of cases after successful endoscopic stone removal.[3-5].

The identification of the risk factors of this late complication is an important issue, especially for relatively young, otherwise healthy, patients with many years of future exposure time.6 Although the risk factors of recurrent CBD stones after ERCP with EST are suboptiomally defined, several studies have reported the risk factors,[7-10] and one review study has summarized the risk factors6. The risk factors are as follows: Multiple or large stones, use of lithotripsy, markedly dilatated CBD, pneumobilia, gallstones in gallbladder, obstructice bile duct lesions such as biliary stricture, periampullary diverticulum, papillary stenosis, and systemic diseases causing stone formation (e.g. hemolytic anemia). In the case of multiple or large stones, tiny stone fragments which are not visible in the cholangiogram can be produced and retained even after endoscopic stone removal. And then, these tiny stone fragments may act as a nidus for subsequent recurrent CBD stone.6 An endoscopic mechanical lithotripsy is well known to produce tiny stone fragments and increase the recurrence rate of CBD stones.[7]

While some risk factors are difficult to correct, some risk factors are correctable with an adequate endoscopic management, which might minimize the risk of recurrenct CBD stones and subsequent cholangitis. Some endoscopic methods have been attempted to reduce the possibility of residual tiny stone fragments which might develop to subsequent recurrent CBD stones. These endoscopic methods include obtaining a follow-up cholangiogram via a nasobiliary catheter[11] and using an intraductal ultrasonography (IDUS) for the detection of residual CBD stones.[12,13] Several studies have shown that IDUS can detect small residual CBD stones after endoscopic stone removal,[12,13] and that saline irrigation[13] or repeated basket extraction, [12] after the detection of residual CBD stone in IDUS could decrease the rate of residual CBD stone. However, in clinical practice, the routine application of these methods such as follow-up cholangiogram using a nasobiliary catheter or IDUS can cause extension of hospital stay and can increase costs and patients' discomfort. Furthermore, IDUS has limited availability in clinical practice. So, one recent study has attempted a simple method to decrease the residual CBD stone.14In this prospective study, routine preventive saline irrigation after ERCP without IDUS could reduce the rate of residual CBD stones (6.8% Vs. 22.7%) without increased complications or costs.[14]

Although ERCP with EST is well known to be an effective treatment for CBD stone, residual stone can be produced even after endoscopic stone removal, which often causes problems such as recurrent cholangitis in clinical practice. In case of identified correctable risk factors of recurrent CBD stones, adequate endoscopic management should be performed to minimize the risk of recurrent CBD stones and subsequent cholangitis.

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Zhonghua Hall -A

PTBD Biliary Stone Removal in 916 Patients Experience. Percutaneous GB Stone Removal as a Next Emerging Procedure Model.

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PTBD–BSR

Biliary stones may be related to various clinical manifestations, such as upper abdominal pain, high fever, and obstructive jaundice. If a patient's condition progresses to cholangitis or biliary sepsis, biliary drainage is needed as soon as possible, and stone removal is necessary to complete the treatment. We performed a study of biliary stone removal (BSR) through the percutaneous transhepatic biliary drainage (PTBD) route. From 2001 to 2015, 916 patients (479 male patients and 437 female patients; age range, 22—92 years; mean age, 67 years) with 52 recurring cases, so a total of 968 cases, were enrolled in this study and retrospectively reviewed. PTBD was done in all patients. BSR was performed using a combination of a balloon sphincteroplasty flushing technique, a pushing technique after sphincteroplasty, and classical extraction technique, decided case by case. A complete removal was achieved in 893 cases (92.3%) and the overall clinical success rate was 99.3%. Failure occurred in 7 cases (0.7%), and the causes of failure were stone impaction (n = 5) and intrahepatic bile duct stricture (n = 2). Sphincteroplasty was performed in 902 cases (93.2%), and balloon sphincteroplasty flushing technique was used in 829 (85.6%) cases. There was no major complication, and transient minor complications were seen in 86 cases (8.9%). The results of our study show that BSR through the PTBD route using a combination of techniques, including balloon sphincteroplasty flushing, is a safe and effective treatment modality to remove biliary stones. And the balloon sphincteroplasty flushing technique could be used as an effective and useful technique for BSR.

Zhonghua Hall –A

Role of Percutaneous Approach

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Acute cholecystitis is one of the most frequent causes for acute general surgical admission, with 50 – 70% of cases occurring in elderly patients and is a common condition, affecting 1 — 4% of patients with gallstones annually. The mortality of acute cholecystitis increases exponentially with age, from 2.8% in the general population to 11.4% in those over 80 years of age. The mainstay of therapy for acute cholecystitis is cholecystectomy, yet reported mortality rates are as high as 5%, increasing to 14 – 30% in high risk patients such as the elderly or critically ill. Failure of conservative management can result in complications including perforation or gangrenous cholecystitis requiring emergency surgical intervention with reported mortality rates as high as 30%.1

Percutaneous cholecystostomy was first described in 1921 as a diagnostic test. US–guided cholecystostomy for therapeutic purposes was first reported in 1979. The first report of percutaneous cholecystostomy for the management of acute cholangitis was in 1980. It has been used as a relatively safe and efficient temporizing measure in the treatment of acute cholecystitis in high risk patients with serious co–morbidity and in elderly patients, circumventing the general anesthesia required for laparoscopic or open cholecystectomy. Reported clinical response rates are in the range of 56 – 100%.2 However, as the surgically unfit and aging population is growing, percutaneous cholecystostomy is now utilized more than previously thought. Several groups have observed that percutaneous drainage may not only work as a temporizing measure but as the definitive treatment, given unexpectedly low rates of delayed surgical cholecystectomy or recurrent cholecystitis.3

After gallbladder decompression and symptom improvement in acute cholecystitis treated by percutaneous cholecystostomy, subsequent management for gallstones is needed in high–risk patients. However, although laparoscopic cholecystectomy is a minimally invasive form of surgery, it requires general anesthesia, which is a major risk factor in patients with severe cardiac or pulmonary disease. For such high–risk groups, percutaneous cholecystolithotomy using a 12–Fr sheath could be an effective alternative therapy to surgical cholecystectomy for acute calculous cholecystitis in patients at high surgical risk.4

In conclusion, various percutaneous techniques are effective not only to manage acute cholecystitis but also can decrease mortality and morbidity especially in elderly and high risk patients as a definitive treatment option.

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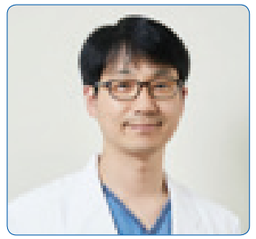
Zhonghua Hall –A



Case 2 – Percutaneous Approach

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Laparoscopic cholecystectomy is generally accepted as definite standard treatment of acute cholecystitis. However, percutaneous cholecystostomy is commonly performed in high comorbidity patients as bridge for surgery or definite therapy (1). Patients who have severe comorbidity cannot undergo surgery and often maintain external drainage for the rest of their lives due to the fear of recurrence. Those patients presenting with acute cholecystitis who were treated only by temporary percutaneous cholecystostomy, experienced a 1–year and 3–year recurrence of acute cholecystitis of 35% and 46%, respectively (2). Long–term percutaneous drainage deteriorates quality of life and tend to dislocate (2). For those patients, cholecystoduodenal or cystic duct stent provides an alternative and there were several literatures about percutaneous and endoscopic stent placement with limited numbers of patients Technical success rates were high in both percutaneous (91%) and endoscopic approach (64–100%)However, there are still some questions about details of cholecystoduodenal stent placement. Which do you prefer, transpapillary or inside papillary? All of previous reports placed transpapillary stent regardless of plastic or metal stents. Inside stent has advantages because it prevents ascending infection, distal migration, and food impaction. However, regular change by endoscopy is somewhat difficult. Second, how about use of metal stent? Brown et al. reported use of metal stents in 5 patients with good long–term patency, however it is too small cohort to establish safety and efficacy (6). Third, should lithotripsy be performed to improve stent patency? Gallbladder stone removal is time–consuming work. However, sticky sludge can impair stent patency. Fourth, what can we do to prevent pancreatitis? Those patients need cystic duct stents had severe comorbidity. Adverse events such as pancreatitis can result in serious consequences for those critically ill patients. Does pancreatic duct stent play a role for prevent pancreatitis? Fifth, should it need regular change? There may be some answers in the process of discussion.

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Zhonghua Hall -B

New Wire Material, Membrane Material, and Manufacture

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Stent Patency in Gastrointestinal Stent

Gastrointestinal malignancies have been a significant problem in the medical field and cover a wide variety of parts of the system, (i.e. esophagus, duodenum, intestines, and rectum). Usually, these malignancies are treated with palliation with the use of non–vascular nitinol stents. However, stenting is not a perfect solution for these problems. While it can enhance the quality of life of the patient, in time the device will encounter problems such as re–occlusion due to the rapid growth of the tumor. Improvement of long–term patency in gastrointestinal stent is an important issue for both clinical practitioners and stent developing company.

According to recently reported publication about long term patency in biliary self–expandable metallic stent show following data; the mean duration of the estimated primary stent patency was 114.7±15.1 days (range 0—780 days). Cumulative primary patency rates after one, three and six months were 74.2%, 41.9% and 24.9%, respectively. The mean period of secondary stent patency was 146.4±21.2 days. Cumulative secondary patency rates after one, three and six months were 81.4%, 47.3% and 30.4%, respectively. (Andrius et al. Pol J Radiol 2017;82:431)

Mechanical properties related to Gastrointestinal stent patency.

Efforts to understand the properties of self–expandable metallic stents (SEMSs) through their mechanical properties have progressed. Among them, radial force (RF) is well known as an expanding force, but axial force (AF) has not been measured before. Correlations of these properties to clinical results are not well known. It was demonstrated that a combination of RF and AF is more effective than RF or AF individually in understanding the clinical implications of SEMSs. More work is needed to correlate mechanical properties with clinical results by designing model experiments.

Functional stent for enhancing long term patency including drug eluting stents, radioactive stents, and anti–reflux stent design.

Covered stent vs Bare stent

Initial SEMS were uncovered and therefore had a risk of tumor ingrowth. The incidence of tumor ingrowth through the open mesh architecture is known to occur in 13% of uncovered SEMS cases, and covering of uncovered stents arises within 3 to 6 weeks. In response to this, partially covered SEMSs, which have a membrane for the purpose of preventing tissue ingrowth into the lumen of the stent, were developed, and ultimately allow less ingrowth than uncovered SEMSs (3% to 14% vs. 30%). Soon after, it was observed that hypertrophic granulation at the uncovered ends of the stent prevented their repositioning or removal, making them usable only for palliation of GI tract malignancies. To overcome this drawback, fully covered self–expandable metal stents (FCSEMSs) have been developed. While these stents can be effective in preventing tumor ingrowth, migration occurs frequently, compared to uncovered stents, because the cover on the outside prevents the embedding of the mesh in the tissue, thus reducing stent anchorage

Conclusion

To improve long term patency in gastrointestinal stent many new designs of the stents are under developing. By this new design, SEMS can achieve longer patency and also positive effect on patient's survival.

Zhonghua Hall -B

New Stent Design: Antireflux, Antimigration, etc.

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Introduction: There are some kinds of causes of recurrent biliary obstruction (RBO) after initial placement of self–expandable metallic stents (SEMS). RBO defined by stent occlusion and migration in Tokyo criteria which proposed standard reporting system of evaluation of biliary stents. Causes of stent occlusion were as follows; tumor ingrowth, tumor over growth, sludge/stone, food impaction, bleeding/coagula and bile duct kinking.

Covered SEMS: Covered SEMS was effective to prevent tumor ingrowth but tended to occlude by sludge and migrate, compare to uncovered SEMS. Comparing partially–covered SEMS (PCSEMS) and fully–covered SEMS (FCSEMS), FCSEMS showed higher rate of migration but lower rate of occlusion due to sludge and food scraps.

Mechanical properties: Axial force (AF) and radial force (RF) are recognized as important mechanical properties in SEMS. Those are influenced on the results of clinical trials. Low AF may obtain good conformability in the bile duct and prevent migration, pancreatitis, cholecystitis and kinking of bile duct. High RF was contributed to keep the luminal patency and prevent migration. Low AF and high RF was ideal.

Larger bore SEMS: To prolong the time to RBO due to sludge, we developed larger bore FCSEMS which has 12 mm in a diameter. From a pilot study, time to occlusion by sludge was prolonged without acceptable complication severity and rate.

Anti–reflux stent: SEMS with anti–reflux valve expected to prevent occlusion due to both food impaction and sludge formation. Prevention of reflux of duodenal contents may reduce the bacterial inflammation and sludge formation.

Anti–migration stent: Main cause of RBO in covered SEMS was migration. Covering the SEMS was trade–off between tumor ingrowth and migration, however, we should aim to catch two rabbits. Fully–covered SEMS with anti–migration systems are ideal to both prevention of migration and keep removability. There are some comparing trial but was not strong evidences.

Conclusion: There are many efforts to prolong time to RBO of SEMSs. In this lecture, we try to introduce recent works and concepts.

Zhonghua Hall -B

Drug Eluting Stent

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Gastrointestinal (GI) cancers cause obstruction of the GI tract including biliary tree.

Biliary stenting is clinically effective in relieving both malignant and non-malignant obstructions. In advanced biliary cancer, endoscopic stent insertion is the treatment of choice. However, the current stent allows only mechanical palliation of obstructed biliary tract and has no anti-tumor effect. The bile duct cancer usually shows clinical feature of loco regional invasion, so local treatment may have beneficial effects.

The primary role of a drug eluting stent (DES) in gastrointestinal malignancy is that it decreases the tumor re-growth and sustains the stent patency.

And also, metallic stent for benign esophageal and biliary stricture show high rate of stricture recurrence after stent removal. The DES may role to decrease restenosis in benign GI stricture.

Given these limitations, there have been efforts to develop drug-eluting stents (DESs) and anti-fouling membrane covered stent, which are expected to prolong stent patency by adding anti-hyperplasia or anti-tumor functions. This might not be as impressive as the effect of a vascular DES which decreases the incidence of restenosis and thus increases the survival rate of the patient.

The purpose of our study was to evaluate the efficacy and safety of a developed drug eluting membrane containing Paclitaxel, Gemcitabine or mitomycin through in vitro and animal study. Drug eluting membrane was implanted in mice in which adenocarcinoma cell line was injected and grown in their back. The local delivery of drug was found to have an anti-tumor effect on animal study.

And we developed porcine benign biliary stricture model by RFA. We inserted drug eluting stent in structured bile duct to evaluate anti-fibrosis effect.

In addition, the efficacy of anti-fouling membrane was evaluated in vitro and ex vivo.

Zhonghua Hall -B

Transjugular Biliary Stenting: Indications, Technique, and Results

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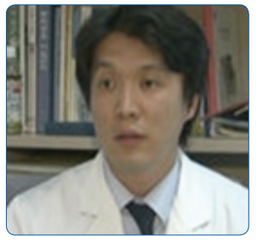
Malignant biliary obstruction is most often caused by hepatopancreaticobiliary cancers and associated with a poor prognosis. Since patients with this condition often experience debilitating symptoms, such as jaundice, pruritus, pain, nausea, and vomiting, which result in progressive deterioration of their quality of life, palliative treatment to relieve biliary obstruction is of paramount importance. Endoscopic biliary stenting is the preferred method for the treatment of malignant obstructive jaundice and if it fails, percutaneous transhepatic biliary stenting is usually performed. The technical success rate of percutaneous transhepatic biliary stenting is high (> 90%), even in endoscopically failed cases. However, bleeding complications occur in 2—5% of patients after percutaneous transhepatic biliary stenting, with ascites and coagulopathy being important risk factors. Therefore, percutaneous transhepatic biliary stenting is contraindicated in patients with ascites or coagulopathy. In 1970, Hanafee et al. described two cases of benign biliary strictures treated with balloon dilation via a transjugular approach. Later, in 1991, Ring et al. described a case of transjugular biliary stenting in a patient with malignant biliary obstruction complicated by massive ascites. Herein, the indications, technique, and results of transjugular biliary stenting are described.

Zhonghua Hall -B



Endoscopic Step-up Approach for Necrotizing Pancreatitis: When and How? Or Safe Access, Debridement & Drainage of WON

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Introduction

Acute pancreatitis is the most common gastrointestinal indication requiring hospitalization. Despite adequate early treatment, one fifth of patients will develop walled off necrosis(WON) which may be a potentially lethal complications.Interventions for infected and symptomatic WON have undergone a paradigm shift away from open necrosectomy toward minimally invasive step-up approach, and the recent multicenter randomized trial demonstrated favorable outcomes of endoscopic intervention by means of decreasing rate of pancreatic fistulas and length of hospital stay.This comprehensive review focuses on the current indications, timing, methods, therapeutic outcomes, and complications of endoscopic step-up approach for management of WON.

Indications and strategies of intervention for WON

The primary indications for intervention in WON are similar regardless of different intervention routes. The indications are as follows. (1) Clinical suspicion or documented infected WON with clinical deterioration (2) Ongoing organ failure in the several weeks after the onset of acute pancreatitis (3) Symptomatic sterile WON including intractable pain, persistent un-wellness, ongoing gastrointestinal obstruction (4) Disconnected pancreatic duct syndrome with WON.8

Among various treatment modalities, surgical debridement, either open or laparoscopic, may be associated with prolonged recovery, the need for repeat operations, external fistula, and abdominal wall hernias. Percutaneous catheter drainage (PCD) have been used as an alternative to operative management, however, these methods are not universally successful and additional combination treatment is required. Endoscopic intervention such as endoscopic transmural drainage (ETD) and endoscopic transmural necrosectomy (ETN), have also been introduced for an effort to overcome the aforementioned limitations, however, there are some problems of accessibility and complication. Therefore, combination treatments using PCD, ETD, ETN, and surgery by a step-up manner have recently been advocated. Endoscopic or percutaneous drainage is first recommended, and followed, if necessary, by endoscopic or minimally invasive surgical necrosectomy. As a targeted minimally invasive approach, ETN with mechanical debridement was demonstrated to be an efficacious and reproducible technique with an acceptable safety profile. The ideal goal of ETN is excision of all dead and devitalized pancreatic and peripancreatic tissue while preserving a viable functioning pancreas and controlling surgery related complication.

Overview of endoscopic transmural necrosectomy

The optimal time for intervention of necrotizing pancreatitis is important in order to reduce the occurrence of procedure related complications, and it should be delayed by approximately 4 weeks after the onset of pancreatitis, when vascular inflammation has decreased, organization of the process has occurred, and delineation of live from dead tissue is complete.

1.Outcomes of endoscopic intervention

Endoscopic interventions for WON carry significant additive risks, and there are a few comparative data to document increased success. Factors that predict failure of endoscopic therapy have not been well studied. A major determinant for the feasibility of ETN is the location of the target collection and other risk factors for failure of endoscopic intervention are the size of the necrotic cavity (>15cm), deep retroperitoneal extension, presence of diabetes mellitus, and comorbid conditions. ETN is usually performed via a transgastric or transduodenal approach. A puncture site is identified by EUS and cystoenterostomy is created, and direct endoscopic debridement can be performed. After mechanical removal of necrotic debris, double pigtail plastic stent or self-expandable metallic stent are placed into the cavity. However, there are several limitations of ETD; uncertainness of optimal timing, number of sessions, and completeness of endoscopic debridements, and a lack of dedicated instruments for necrosectomy.

2.Complications and limitations

A complication rate of ETN of up to approximately 30% has been reported. Bleeding is the most common complication and it may occur during the index puncture or direct debridement of the necrotic material. Perforation, another severe complication, might occur during initial cystenterostomy, repeated dilation of the access route, or disruption of the cavity wall. In addition, many complications, including infection of necrotic materials, air embolism, gallbladder puncture, stent migration, fistula, and bowel obstruction may occur. ETN is the one of the most aggressive endoscopic interventions; avoidance of all complications is impossible. Therefore, the most important thing is the early recognition of these potential life-threatening complications, and endoscopists should immediately take an appropriate action for them in collaboration with interventional radiology and surgery.

3.Korean multi-center experiences of ETN

Data for patients who underwent ETN from 2007 to 2016, in 6 tertiary hospitals in Korea, were collected retrospectively. A total of 59 consecutive patients (76.2% male, mean age 47.8 ± 28.2 years) underwent a mean of 4.9 sessions of endoscopic necrosectomy. The mean WON size at the time of drainage was 14.5 ± 5.1 cm and the route of access for the endoscopic approach was transgatric in 54, transduodenal in 5 and transjejunal in 1 case. Each necrosectomy session was performed for a mean of 51.0 ± 17.6 minutes. Clinical resolution was achieved in 86.4% of patients, and 13 cases were developed procedure-related adverse events (8 bleeding, 4 stent migration, and 1 perforation). During follow up (mean ± SD, 720.0 ± 67.9), seven patients have experienced the recurrence of peripancreatic fluid collection. During long-term follow up, 8 new onset diabetes mellitus was developed in 51 patients. The overall mortality rate in this patient group was 10.8% (n=6), of which 4 (6.8%) were pancreatitis related death. On multivariate logistic regression analysis, the only extension of WON to pelvis was associated with clinical failure.

Conclusions

In consideration of the inherent properties and the risks associated with endoscopic treatment including endoscopic drainage and transmural necrosectomy, it should be performed by expert endoscopists who are well-versed in management of necrotizing pancreatitis and supported by a special multidisciplinary team. Although there have been limited data to define the selection criteria and the techniques regarding endoscopic step approach, the first step of step-up treatment will most likely be endoscopic, if several options are available. However, given the complexity and risk associated with endoscopic intervention, specific comprehension of pathogenesis of necrotizing pancreatitis, specialized training of interventional endoscopic techniques and multidisciplinary approach to patients are essential to improving the therapeutic outcomes of complicated WON.

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Zhonghua Hall -B

Dual Modality Drainage for Pancreatic Necrosis, Are the Results Real/ Reproducible?

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Historically, open surgery has been the mainstay of pancreatic debridement for infected or symptomatic necrosis. In the past decade, a variety of minimally invasive procedures (laparoscopy, VARD, direct endoscopic necrosectomy…) have been applied with comparable outcomes and lesser mortality. Our medical center has treated necrotizing pancreatitis for > 20 years with wide bore percutaneous drains with less than 10% of patients requiring surgical necrosectomy and with mortality rate less than 10%. However, almost ½ of the patients developed an external fistula from an orphaned pancreatic tail. For the past decade, we have undertaken dual modality drainage (DMD) using small diameter transgastric stents and small diameter percutaneous drains. Originally introduced as a method to decrease pancreatic fistula rates, we also demonstrated a statistically significant decrease in need for CT scans and tube studies, hospitalization length, need for surgery, time for drain removal, and residual external fistula. In our most recent update (in press), treating 211 patients with DMD, overall mortality was 2.4%, 0.9% if sterile, and 4.1% if infected. No patient at our institution has undergone surgical necrosectomy for a decade, and no patient required surgery for a residual external fistula. There have been several patients who have developed pseudocysts after spontaneous migration of the pigtail stents, but these have been easily treated endoscopically. Our data suggests that in institutions with significant interventional radiologic and therapeutic endoscopy skill sets, DMD is effective and safe both in the short– and long–term.

Table 2. Comparison of clinical outcomes between infected and sterile WON

	Infected WON (n = 93)	Sterile WON (n = 113)	P value
Mortality with drain in place	4 (4.1)	1 (0.9)	0.19
Length of stay, days	29.83 ± 25.58	17.25 ± 16.51	<0.01
ICU stay required	37 (37.8)	17 (15.0)	<0.01
Fistula	26 (26.5)	11 (9.7)	<0.01
> 1 percutaneous drain	31 (31.8)	16 (14.2)	<0.01
Interval between drain and removal, days	101.18 ± 102.58	72.42 ± 47.74	0.02
Number of total tube checks	6.60 ± 3.86	5.21 ± 2.95	0.01
Disconnected duct syndrome	68 (69.4)	71 (62.8)	0.30
Number of total CT scans	8.90 ± 5.16	6.73 ± 3.42	<0.01

Values are n (%) or mean ± SD. ICU, intensive care unit; WON, walled–off necrosis.

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Zhonghua Hall -B

Laparoscopic necrosectomy for necrotizing pancreatitis

Hui - Min Lu

Department of Hepatobiliary and pancreatic surgery, West China Hospital, Sichuan University

Acute pancreatitis is one of the most common acute abdominal diseases. After decades of efforts, the mortality rate remains high. The current consensus is that the treatment of acute pancreatitis requires multidisciplinary collaboration. As an indispensable part of treatment, surgical intervention should be based on the concept of minimal invasive, considering the timing of surgery, surgical indications, surgical approaches, so as to maximize the benefits of patients.

This presentation will show the experiences of minimal invasive surgical treatments in acute pancreatitis in our hospital.

Zhonghua Hall -B

In Total Post-surgical Biliary Strictures. Minimally Invasive Therapy Can Also be Offered.

DongKi Lee

Department of Internal Medicine, Gangnam Severance Hospsital, Yonsei University, Korea

Endoscopic and percutaneous procedures have shown high success rates when used to treat benign biliary stricture. However, cases in which a guidewire cannot be passed through a refractory stricture or a complete obstruction are difficult to treat using conventional methods. Magnet compression anastomosis (MCA) has emerged as a non–surgical alternative avoiding operational mortality and morbidity. The feasibility and safety of MCA have been experimentally and clinically verified in cases of biliobiliary and bilioenteric anastomosis. However, no pre–MCA assessment modality capable of predicting outcomes is as yet available, and no universally effective magnet delivery method has as yet been established, rendering it difficult to identify patients for whom MCA is appropriate. Various experimental studies seeking to overcome these limitations are underway. Such work will improve our in–depth understanding of MCA, which has been tested in various fields. Upon further development, MCA may become a ground–breaking option for treatment of benign strictures that are difficult to resolve using conventional methods, and MCA may be expected to be minimally traumatic and highly effective. In this lecturer, I will discuss the current status of MCA for the treatment of total post–surgical biliary strictures.

Zhonghua Hall –C

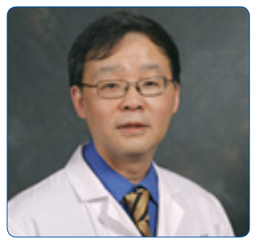
Surgical Resection or Liver Transplantation

Lu Wang

Department of Liver Surgery, Fudan University Shanghai Cancer Center, China

HCC is the fifth most common cancer worldwide, with at least 1 million new cases each year. Even if LT remains the ideal treatment, hepatic resection remains the only curative treatment for HCC. Improvements in patient selection, early diagnosis, preoperative and postoperative management, surgical technique have allowed to obtain a lower mortality morbidity. The development of MIS, associated with the application of new technologies in patient care and progress in the medical treatment optimize the management of HCC.

Zhonghua Hall –C



Dosemetry Optimization for 125I Seed–loaded Stent for Portal Vein Tumor Thrombosis Treatment

Sui Shen

Department of Radiation Oncology, University of Alabama at Birmingham, USA

125I seed–loaded stent has shown promising as an adjuvant treatment of portal vein tumor thrombosis (PVTT). In current clinic practice, seeds strengths and distribution are not planned for dose uniformity or tailor individual target volume. These dosimetry deficiencies might lead inferior clinical outcome. Our long–term goal is to optimize dose coverage for individual patients. Monte Carlo (MC) simulation were performed for seed–loaded stent system consisted of an inner self–expandable nitinol stent and outer seed—loaded thermoplastic capsules. MC calculation and treatment planning system (TPS) calculation found “cold” angular dose regions for the current 4–array seed–loaded stents. MC and TPS calculation indicated a uniform angular dose distribution if use of greater or equal to 6–array seed–loaded stents. The MC calculation including metallic stent demonstrated possible dose perturbation from the stent, and these perturbations are negligible and clinically irrelevant. Subsequently, MC simulation showed that TPS rod–source model (not point–source model) has sufficient accuracy for dosimetry calculation and planning. Planning dose coverage near edge of the stent or particular angular/radial region seems possible with optimized seeds strengths and seeds (angular/longitudinal) distribution.

Zhonghua Hall –C

Atypical Imaging Features of Hepatocellular Carcinoma

Zhi Wang

Department of Radiology, Zhongda Hospital, Southeast University, China

Hepatocellular carcinoma (HCC) is a unique malignancy which can be definitively diagnosed based on imaging without the need of histological confirmation. Having high sensitivity and specificity, CT and MRI are the most commonly used imaging modalities for detection and classification of HCC. Diagnosis of progressed HCC can be established when combining characteristic enhancement pattern with specific clinical information.

However, some HCC tumors may not demonstrate typical imaging features, posing a challenge to radiologists. These atypical patterns may be attributed to variations in anatomic or histopathologic characteristics of tumors. With the study of radiological–pathological correlation of HCC, non–classic HCC tumors are drawing more attention in clinical practice. Although these atypical appearances are uncommon, familiarity with unusual imaging findings and their potential pathological correlation is crucial for accurate diagnosis.

Zhonghua Hall –C

Embolotherapy for Neuroendocrine Liver Metastases

Jun - Hui Sun

Division of Hepatobiliary and Pancreatic Surgery, Hepatobiliary and Pancreatic Clinical Medical Center, The First Affiliated Hospital, School of Medicine, Zhejiang University, China

Neuroendocrine tumors (NETs) are rare neoplasms arising from amine precursor uptake and decarboxylating cells. Located in the gastrointestinal tract (enterochromaffin cells), the pancreas (islet cells), and lungs (Kulchitsky cells). Gastroenteropancreatic (GEP) NETs are uncommon neoplasms accounting for less than 1% of digestive cancers.

Between 50 and 95% of patients may develop liver metastases and, at the time of diagnosis, most patients present with disseminated disease and progressive liver disease.

Somatostatin analogues are well tolerated and effective at inhibiting the secretion of bioactive substances from the tumor and therefore decreasing symptoms, but some patients may not respond to treatment. Systemic chemotherapy with 5–fluorouracil, doxorubicin, or streptozocin can be effective in islet cell carcinomas, more recent studies have shown poor chemotherapy response rates, especially in midgut carcinoid tumors. Streptozocin also known as streptozotocin is a cytotoxic chemotherapy drug, classified as an alkylating agent. Hepatic transcatheter arterial embolization (TAE) can be used to treat liver metastases from endocrine tumors that have not responded to either chemotherapy or somatostatin analogues. Arterial embolization can induce tumor ischemic necrosis by occluding the arterial blood supply to the site of the tumor. This drug is approved for the treatment of islet cell cancer of the pancreas and carcinoid tumor and syndrome. TACE allows a focused administration of chemotherapy directly to the site of the tumor together with the ischemia produced by the interruption of the tumor blood supply.

Here, we report two pancreatic neuroendocrine tumors (PNEN) cases that were treated with Drug–eluting beads transarterial chemoembolization (DEB–TACE) using a new microspheres–CalliSpheres at our hospital. The recent advances in the field of embolotherapy with promising response to drug–eluting beads for HCC may lead to the investigation of beads loaded with appropriate chemotherapy drug in NETs. Drug–eluting beads may allow increased efficacy and reduced side effects in treating patients with neuroendocrine liver metastases.

Zhonghua Hall -C

A Preoperative Mathematic Model for Computed Tomographic Guided Microwave Ablation Treatment of Hepatic Dome Tumors

Fei Gao

State Key Laboratory of Oncology in South China Collaborative Innovation Centre for Cancer Medicine, Sun Yat-sen University Cancer Center, China

Purpose: This study sought to prospectively evaluate the feasibility and safety of a preoperative mathematic model for computed tomographic (CT) guided microwave (MW) ablation treatment of hepatic dome tumors.

Methods: This mathematic model was a regular cylinder quantifying appropriate puncture routes from the bottom up. A total of 103 patients with hepatic dome tumors were enrolled and randomly divided into 2 groups based on whether this model was used or not: Group A (using the model; n = 43) versus Group B (not using the model; n = 60). All tumors were treated by CT-guided MW ablation and follow-up contrast CT were reviewed.

Results: The average number of times for successful puncture, average ablation time, and incidence of right shoulder pain were less in Group A than Group B (1.4 vs. 2.5, P = 0.001; 8.8 vs. 11.1 minutes, P = 0.003; and 4.7% vs. 20%, P = 0.039). The technical success rate was higher in Group A than Group B (97.7% vs. 85.0%, P =0.032). There were no significant differences between the two groups in primary and secondary technique efficacy rates (97.7% vs. 88.3%, P = 0.081; 90.0% vs. 72.7%, P = 0.314). No major complications occurred in both groups.

Conclusion: The mathematic model of regular cylinder is feasible and safe for CT-guided MW ablation in treating hepatic dome tumors.

Zhonghua Hall -C

Application of opioids in gastrointestinal endoscope

Xiao-Ping Gu

Department of Anesthesiology, Drum Tower Hospital, Nanjing University Medical School, China

Gastrointestinal Endoscope is the most common and reliable method for GI diseases, however, it could bring varying degrees of pain and discomfort to patients. With the development of social economy, patients' requirements for medical services improve, therefore their comfort demand for GI endoscope is increasing. Opioids, the agonist of μ receptor, are the most commonly used analgesic drugs in clinic. Modern pharmacology test it provided with better function such as analgesia, sedation, reducing MAC and synergy. This presentation will show the application of opioids in gastrointestinal endoscope in our hospital.

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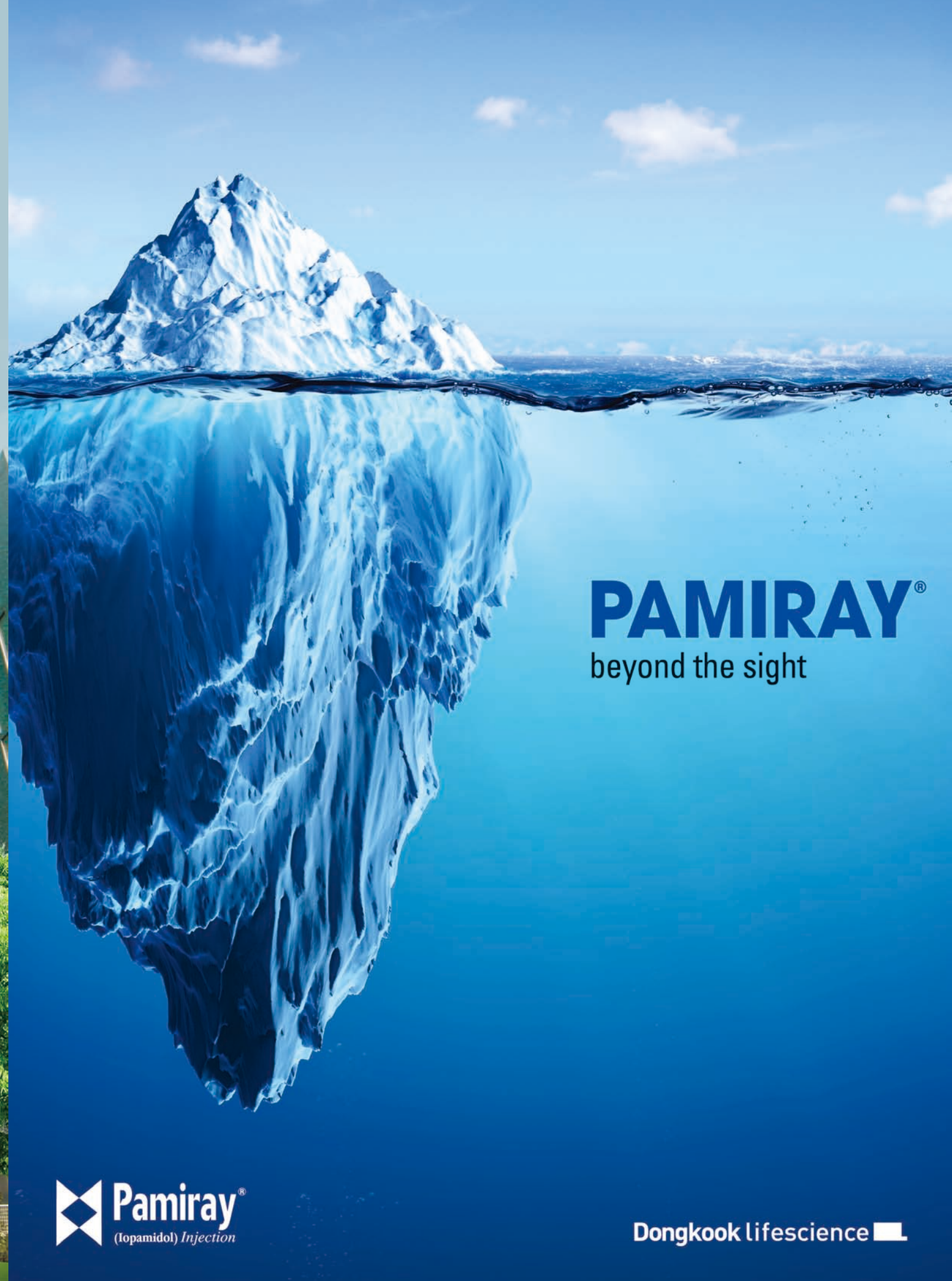

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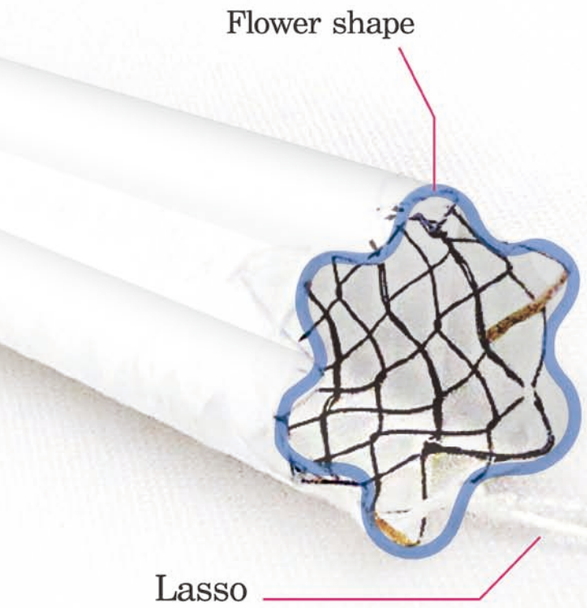

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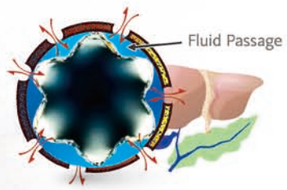

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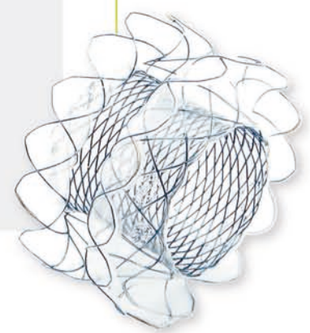

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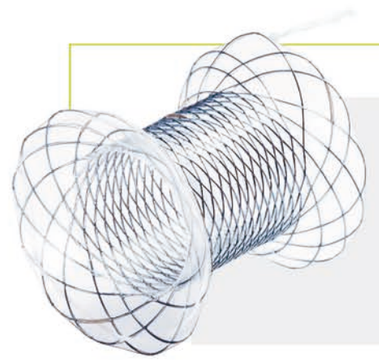

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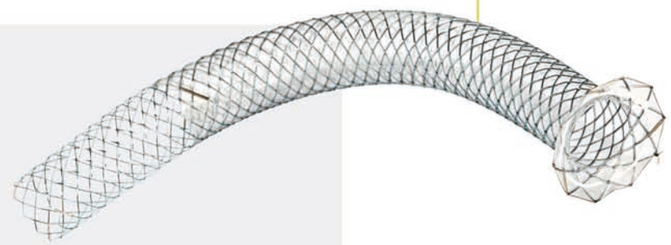

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