
KAHBPS-P-01

Transthoracic thoracoscopic metastasectomy for subdiaphragmatic metastases of HCC

Department of Surgery,
Konyang University Hospital, Korea

**Seong Uk Cheon, Jun Suk Byun,
In Seok Choi*, Ju Ik Moon, Yu Mi Ra,
Sang Eok Lee, Won Jun Choi**

(Purpose) Post-operative recurrences are major determinants of survival for patients who have undergone curative resection of hepatocellular carcinoma. If the recurrent tumors located in segment VII and VIII or extrahepatic location, such as a subdiaphragm, a transthoracic transdiaphragmatic approach via thoracoscopy is feasible. Since the technique has the advantage of better intrathoracic exposure avoiding severe adhesiolysis, liver mobilization and possible hepatic congestion. We report a case of extrahepatic metastatic hepatocellular carcinoma that was successfully resected by transthoracic thoracoscopic metastasectomy. **(Methods)** A 68-year-old male patient who has undergone posterior sectinectomy with caudate lobectomy (S1,6,7) and cholecystectomy under a diagnosis of hepatocellular carcinoma at 3 years ago, was admitted to our hospital for further evaluation of extrahepatic metastatic tumor in right subphrenic space during the routine check-up. On liver dynamic computed tomography revealed a well-defined mass of 3.5 cm in diameter, in right subphrenic space with invading diaphragm and rt. adrenal gland. The imaging findings suggested an extrahepatic hepatocellular carcinoma that metastasized to the diaphragm. LFT was normal and AFP revealed 94.14 ng/ml. **(Results)** We performed transthoracic thoracoscopic metastasectomy for subdiaphragmatic metastases of HCC and partial dia-

phragmatic resection and repair. The operation time was 3 hour 30 minutes and blood loss was 100 ml. The patient started a diet POD 1 day and discharged POD 11days due to chest tube. The post-operative course was uneventful, and the patient was discharged without any complications. **(Conclusion)** Transthoracic thoracoscopic metastasectomy can be feasible even if the recurrent tumors located in segments VII and VIII or extrahepatic location, such as a diaphragm.

KAHBPS-P-02

Influence of preoperative transcatheter arterial chemoembolization on gene expression in the HIF-1 α pathway in patients with hepatocellular carcinoma

Department of Surgery, Ajou University
College of Medicine, Korea

Weiguang Xu, Hee-Jung Wang*

(Purpose) Since TACE induces hypoxic necrosis in tumors, hypoxia-inducible factor 1 α (HIF-1 α) could critically affect biology in residual tumors after TACE treatment and subsequent prognosis. However, HIF-1 α and its prognostic relevance in TACE have rarely been examined in human specimens **(Methods)** In the current study, we investigated the prognosis and expression of genes regulated by HIF-1 α in HCC patients receiving preoperative TACE for the first time. In total, 35 patients with HCC (10 patients undergoing preoperative TACE) were retrospectively studied. The prognostic significance of TACE was analyzed using Kaplan-Meier and Cox regression models. Protein levels of HIF-1 α and mRNA levels of HIF-1 α -associated genes were examined using im-

munohistochemistry (IHC) and real-time RT-PCR, respectively. **(Results)** Preoperative TACE was significantly associated with increased 2-year recurrence rate (80 vs. 36%, $P=0.00402$) and shorter disease-free survival (DFS) time (11.9 vs. 35.7 months, $p=0.0182$). TACE was an independent prognostic factor for recurrence ($p=0.007$) and poor DFS ($p=0.010$) in a multivariate analysis. **(Conclusion)** Our findings collectively demonstrate that preoperative TACE confers poor prognosis in HCC patients through activation of HIF-1 α .

KAHBPS-P-03

MicroRNAs involved in tumorigenesis of hepatocellular carcinoma

Department of Surgery, Chonnam National University Medical School, Korea

Hee Joon Kim, Choong Young Kim, Eun Kyu Park, Young Hoe Hur, Yang Seok Koh, Hyun Jong Kim, Chol Kyoon Cho*

(Purpose) microRNAs (miRNAs) are endogenous non-coding 21-23 nucleotide RNAs that are involved in post-transcriptional regulation and they control various cellular processes, one of which is tumorigenesis. miRNAs were reported to be implicated in the pathogenesis of hepatocellular carcinoma (HCC) and the aim of this study is to evaluate the role of miRNAs in the development of HCC. **(Methods)** To find yet-to-be-identified miRNAs associated with HCC tumorigenesis, we carried out miRNA microarray analysis with miRNAs extracted from normal and HCC liver tissues resected from the same patients. Of the miRNAs showing significantly different expression levels between normal and HCC liver tissues, we focused on miR-128. The difference in expression

levels of miR-128 was verified by real-time PCR. In addition, the target gene of miR-128, axin1, was determined by bioinformatics study, luciferase assay and Western blotting **(Results)** Four pairs of liver tissues were selected for RNA extraction. miRNA microarray and FDR calculation were performed and four genes were selected due to the previous report on their correlation with HCC. The results of luciferase assay and transfection of HepG2 cells indicated that miRNA-128 indeed binds to the 3' UTR of Axin1. In Western blotting study miR-128 indeed decreased Axin1 protein levels, demonstrating that Axin1 is indeed a target of miR-128 in HepG2 cells. **(Conclusion)** In this study we report that miR-128 is up-regulated in clinical HCC tissues and that miR-128 binds to 3' UTR of Axin1. The identification of miR-128 as oncomir and determination of its target gene Axin 1 will shed light on the pathogenesis of HCC.

KAHBPS-P-04

Astrocyte elevated gene-1 (AEG-1) overexpression in hepatocellular carcinoma : An independent prognostic factor

Department of ¹Surgery, ²Pathology, Soonchunhyang University Cheonan Hospital, Department of ³Surgery, ⁴Pathology, Soonchunhyang University Bucheon Hospital, Korea

Hae Il Jung¹, Sang Ho Bae¹, Jun Chul Chung³, Susie Chin⁴, Hyon Doek Cho², Moon Soo Lee¹, Hyung Chul Kim³, Chang Ho Kim¹, Moo-Jun Baek^{1*}

(Purpose) Astrocyte elevated gene-1 (AEG-1) plays important roles in tumorigenesis such as proliferation, invasion, metastasis, angiogenesis, and chemoresistance. We examined the expression of

AEG-1 in patients with hepatocellular carcinoma (HCC). **(Methods)** Eighty-five samples were collected from patients with HCC who underwent surgery and were histopathologically confirmed to have HCC. Two independent pathologists, experienced in evaluating immunohistochemistry and blinded to the clinical outcomes of the patients, reviewed all samples. They determined AEG-1 expression semiquantitatively by assessing the percentage of positively stained immunoreactive cells and staining intensity. Clinicopathological data were analyzed in association with prognosis. **(Results)** The association was estimated by univariate and multivariate analyses with Cox regression. Tumor size [hazard ratio (HR), 2.285; 95% confidence interval (CI), 1.175-4.447; $p=0.0149$], microvascular invasion (HR, 6.754; 95% CI, 1.631-27.965; $p=0.0084$), and AEG-1 expression (HR, 4.756; 95% CI, 1.697-13.329; $p=0.0030$) were independent prognostic factors for overall survival. Those for disease free survival rate were tumor size (HR, 2.245; 95% CI, 1.282-3.933; $p=0.0046$) and AEG-1 expression (HR, 1.916; 95% CI, 1.035-3.545; $p=0.038$). The cumulative 5-year survival and recurrence rates were 89.2% and 50.0% in the low-expressing group and 24.5% and 82.4% in the high-expressing group, respectively. **(Conclusion)** The results suggest that AEG-1 overexpression could serve as a valuable prognostic marker in patients with HCC.

KAHBPS-P-05

How to treat liver metastases from breast cancer in surgical aspect

Division of Hepatobiliary and Pancreatic Surgery,
Department of Surgery, Asan Medical Center, Korea

**Hyoung Eun Kim, Kwang-Min Park*,
Young-Joo Lee, Song Cheol Kim,
Dae Wook Hwang, Jae Hoon Lee,
Ki Byung Song, Jung-Woo Lee,
Dong-Joo Lee, Sang Hyun Shin,
Eun Sung Jun**

(Purpose) Liver resection offers the only chance of cure in metastatic liver tumors. However, Breast cancer liver metastases (BCLM) are generally considered as systemic disease. So, the role of liver resection was limited and controversial for liver metastases of breast cancer. The aim of this study was to evaluate the effectiveness resection of liver metastases from breast cancer and to identify prognostic factors for overall survival. **(Methods)** We retrospectively reviewed 21 consecutive patients who underwent hepatectomy for BCLM between January 1998 and August 2014 at Asan Medical Center, Seoul. Kaplan Meier curves were used for the survival analysis and the logrank method used for univariate survival analysis. **(Results)** The mean age was 50 years. The liver resection was R0 in 17 patients. The disease free survival and overall survivals were 19.4 and 42.2 months. Most recurred event occurred between 6 and 12 months. Only R0 resection ($p=0.021$) was associated with better survival outcomes on univariate analysis. **(Conclusion)** Liver metastases from breast cancer are not an absolute contraindication of hepatectomy. With R0 resection of breast cancer liver metastasis, in a few patients the chance of cure can be obtained. Also, recent advances of surgical technique enabled R0 resection of liver metastased from breast cancer. Optimal timing of metastectomy during the whole treatment process of

BRLM is still controversial and needs further evaluation (Neo-adjuvant, adjuvant, concurrent hormonal therapy).

KAHBPS-P-06

Short-term outcome of laparoscopic radiofrequency ablation for hepatocellular carcinoma in liver cirrhosis : The safety and efficacy

Department of Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea

Byung Gon Na, Gyu Sung Choi, Jong Man Kim*, Choon Hyuck David Kwon, Jae-Won Joh, Jae Berm Park, Sung Joo Kim

(Purpose) Radiofrequency ablation (RFA) has been a legitimate treatment for primary and metastatic hepatocellular carcinoma (HCC) with liver cirrhosis. The laparoscopic RFA has replaced percutaneous RFA for HCCs because of poor sonic window, adjacent organ and major vessels. The aims of this study is to assess the clinical data and short-term outcome to evaluate efficacy and safety of laparoscopic RFA for HCCs with cirrhosis. **(Methods)** Between September 2009 to August 2014, 45 consecutive HCC patients with cirrhosis were treated by laparoscopic RFA. Most patients had hepatitis B (60%) and Child-Pugh class B status (90%). Median age was 60 years (range, 49-84). The short-term outcome was evaluated by radiologic images in 3-, 6-, and 9 months. **(Results)** Laparoscopic RFA was done in all patients and 49 HCC nodules was completely ablated. There was no procedure related morbidity and mortality. The HCC nodules consisted of primary (n=22), recurred (n=19) and metastatic lesions (n=8). Median nodule diameter was 17 mm (range, 8-40). The 19 (45%) nodules were located in segment 8. Median time of RFA was 14

minutes (range, 7-28), while total operative time was 130 minutes (range, 63-303). The combined procedure were adhesiolysis (n=17), cholecystectomy (n=2), colorectal surgery (n=1). The hospital stay was 5 days (range, 3-22). The 3-, 6-, and 9-months disease-free survival rate was 97.2%, 83.2%, and 78.6% respectively. **(Conclusion)** Laparoscopic RFA is a safe and effective therapeutic option for HCCs infeasible to percutaneous RFA in patients with cirrhosis. It is suggested that the laparoscopic RFA has the advantage of clinical outcomes comparable to those percutaneous RFA.

KAHBPS-P-07

An initial experience of the upper midline incision for various liver resections in a low volume center

Department of Surgery, Jeju National University Hospital, Korea

Young-Kyu Kim*, Kyu Hee Her

(Purpose) The upper midline incision (UMI) for various liver resections has been recently introduced. This study is to report an initial experience of the UMI in a low volume center (annual number of a total liver resection in an institution \leq 10) above the umbilicus for various liver resections using a conventional open-surgery technique. **(Methods)** A retrospective study based on a prospectively collected database of 6 liver resections performed by a single surgeon was conducted to report initial clinical outcomes of the UMI. **(Results)** From March to July 2014, this incision was used successfully in 6 liver resections (60%) in 10 patients who underwent liver resection irrespective of their previous history of abdominal operations. 3 cases were major resection (2 right hemihepatectomies and 1 left hemihepatectomy). The median operating time was 174 min (range:

91-244 min). The median postoperative hospital stay was 9.5 days (range: 8-10 days). All 6 patients fully recovered and returned to their previous level of activity. Over a median follow-up of 4.3 months (range: 1.8-6.1months), 3 complications (50%) developed; 1 seroma, 1 bile leak and 1 wound infection. **(Conclusion)** The UMI can be used in conventional open surgery in various liver resections with acceptable complications in a low volume center.

KAHBPS-P-08

A rare case report of liver metastasis of the colon with high serum alpha-fetoprotein and PIVKA-II

Department of Surgery, Chonbuk National University Medical School and Hospital, Korea

Jae Do Yang, Sang In Bae, Baik Hwan Cho, Hee Chul Yu*

(Purpose) Liver is a common metastatic site of colon cancer. Serum carcinoembryonic antigen (CEA) was useful tool in diagnosis of colon cancer. We report a case of 63-year-old man in whom liver metastasis of sigmoid colon cancer was presented with a marked elevation of serum alpha-fetoprotein (AFP) and PIVKA-II. **(Methods)** He was transferred to our hospital for sigmoid colon cancer with multiple liver masses. Abdominal computed tomogram revealed two low-density masses in the liver. Preoperative CEA and AFP level were normal range. **(Results)** We performed combined operation of colon and liver. The biopsies revealed moderately differentiated adenocarcinoma. After six cycle FOLFOX chemotherapy during 4 months, multiple liver metastasis by abdominal CT and high serum AFP (3599 ng/ml) and PIVKA-II (1570mAU/ml) level were detected. However, the possibility of combined hepatocellular carcinoma could not be ruled out due to serum AFP

and PIVKA-II elevation. The liver biopsies revealed adenocarcinoma with neuroendocrine differentiation using an immunohistochemical staining. **(Conclusion)** This case represents a very rare case of colon cancer with a marked elevation of serum AFP and PIVKA-II.

KAHBPS-P-09

Surgical treatment of liver metastasis with uveal melanoma

Department of Surgery, Division of Hepatobiliary Surgery and Liver Transplantation, Chosun University Hospital, Korea

Kyung Jin Cho, Nam Kyu Choi*

(Purpose) Uveal melanoma in the most common primary intraocular malignant tumor of the eye in adults. Nearly half of primary uveal melanoma tumors metastasize, but there are currently no effective therapies for metastatic uveal melanoma. We reported the case of the surgical treatment for uveal melanoma with liver metastasis. **(Methods)** A 53-year old female diagnosed dysplastic nevus on the left eyelid in January 2011. As the lesion growing gradually, she underwent mass excision and eyelid reconstruction in May 2011. In June 2014, she finished chemotherapy. Follow-up CT performed and revealed two metastatic nodules on right lobe of liver, 2.5cm (Segment #7) and 2.3cm (segment #5) respectively. PET-CT confirmed no other metastases. She underwent partial hepatectomy with removal of segment #5 and #7 of the liver. **(Results)** The result was satisfactory that metastatic lesion was removed with clear resection margins and no lymphovascular invasions. According to several clinical studies, it is important to remove liver metastasis of patients with malignant melanoma. **(Conclusion)** Though we removed metastatic lesion in the liver and yet there are no sign of recurrence, regular follow-ups and evalua-

tions of patient with malignancies should be performed in order to gain the best possible survival outcome for the patient.

KAHBPS-P-10

A case of leiomyosarcoma of the inferior vena cava

Department of Surgery, Kosin University College of Medicine, Korea

**Alvin Lyle Kim, Young Il Choi,
Myung Hee Yoon*, Dong Hoon Shin**

(Purpose) Leiomyosarcoma of primary cascular origin is a rare primary soft tissue tumor, which arises mainly from the inferior vena cava (IVC). **(Methods)** Clinical symptoms depend on the size and location of the tumor. Complete surgical resection with clear margin plays a central therapeutic role of leiomyosarcoma of the IVC. **(Results)** Herein, we report a 49-year-old female who began to have abdominal pain, discomfort and 10kg weight loss over the past six months. A careful study of the abdomen showed retroperitoneal tumor covering the IVC. The patient underwent en-bloc excision of the tumor and circumferential replacement of the IVC with Polytetrafluoroethylene (PTFE) graft. She made a full recovery from the operation. **(Conclusion)** Abdominal CT was taken after 3 months of surgery. It shows remarkable changes and no evidence of tumor recurrence.

KAHBPS-P-11

A solitary giant hepatic lymphangioma

Department of Surgery, ¹Radiology,
Gimpowoori Hospital, Korea

Hwanhyo Lee*, Seonyoul Lee¹

(Purpose) A hepatic lymphangioma is a rare benign neoplasm that is usually associated with a part of systemic lymphangiomatosis. A solitary hepatic lymphangioma is extremely rare. The prognosis of hepatic lymphangioma is good and patients have no need for further treatment after surgical resection. Therefore, we present a rare case of a female patient who underwent right hepatectomy of a solitary giant hepatic lymphangioma. **(Methods)** A 42-year-old female presented to the emergency department complaining of severe abdominal pain of the right upper quadrant for 1 day. She had no history of abdominal surgery or other medical history. A physical examination revealed a huge, palpable mass occupying the right region of the abdomen. Abdominal computed tomography and sonography showed a 23×30 cm sized, giant, relatively well-defined, homogenous cystic mass with few septa occupying the right liver (Couninaud segments VII, VIII) and extending from the diaphragm to the right iliac crest. Serum CA19-9 was 0.6 U/ml. ICG15 was 25.6%. The preoperative diagnosis was a giant hepatic cystadenoma or cystadenocarcinoma. **(Results)** At laparotomy, a giant, cystic and tense mass was found at the right bisgments of the liver (Cauinaud VII, VIII), accompanied with minimal spillage of old bloody fluid through the small tearing of a thinned cystic wall. We aspirated about 3,500 ml volume of cystic fluid and performed right hepatectomy and cholecystectomy. The cystic fluid level of CA 19-9 was 0.6 U/ml. Gross pathology revealed a 23×30 cm sized mass with an unilocular cyst and a pink-

ish white smooth inner surface, which was filled with coffeelike fluid and sludge. Histopathologically, the cystic wall was composed of endothelial cells, that were positive for CD34 on immunohistochemical staining. These findings confirmed the diagnosis of a solitary hepatic lymphangioma. Postoperatively, the patient had an uneventful recovery. She was discharged on post-operative day 10. **(Conclusion)** Although the prognosis of solitary hepatic lymphangioma is good after surgical resection, the recurrence was reported. Therefore, I consider the patient should be follow-up after operation.

KAHBPS-P-12

Endovascular stenting of the inferior vena cava in budd-chiari syndrome with main hepatic vein obstruction - A case report

Department of Surgery, Asan Medical Center,
University of Ulsan College of Medicine, Korea

**Sung-Min Kim, Shin Hwang*, Tae-Yong Ha,
Gi-Won Song, Dong-Hwan Jung, Ki-Hun Kim,
Gil-Chun Park, Chul-Soo Ahn,
Deok-Bog Moon, Sung-Gyu Lee**

(Purpose) Endovascular stenting of the inferior vena cava (IVC) is accepted as an effective treatment for Budd-Chiari syndrome (BCS) when liver transplantation is not available. **(Methods)** A 46-year-old female patient was followed up for 10 years after diagnosis of BCS. With progression of liver cirrhosis and deterioration of liver function, she underwent endovascular stenting of the IVC for palliation. **(Results)** Abdominal computed tomography showed hepatomegaly and ascites, and gastrointestinal endoscopy showed esophageal varices. Three main hepatic veins were occluded with complete occlusion of the suprahepatic IVC, thus hep-

atic venous blood flow was drained into the inferior hepatic veins through the intrahepatic collaterals and passed through the cutaneous venous collaterals. With progression of liver cirrhosis and deterioration of liver function, she was enrolled for liver transplantation, but there was no living donor and very low possibility of deceased organ allocation. Instead of liver transplantation, she underwent endovascular stenting of the IVC for palliation. Septoplasty needle was passed the occluded IVC through internal jugular vein access and then captures from the femoral vein access using a snare wire. After balloon dilatation, severe elastic recoling (>90%) was observed, thus 28x80 mm stenting was done across the occlusion and repeat double ballooning was performed. Final venogram shows restored IVC inflow. Since one day after stenting, she has begun to lose body weight and edematous figure disappeared within 1 week. Her liver function also recovered slowly over several weeks. At 3 months after stenting, she is doing well with nearly normal liver function and marked resolution of cutaneous venous engorgement. **(Conclusion)** Endovascular IVC stenting appears to be an effective treatment for prevent BCS-associated complications, thus IVC stenting would be performed before marked stenosis or complete occlusion of the IVC.

KAHBPS-P-13

**Efficacy of improved hand hygiene,
contact precaution and
environmental management for
reducing MDROs
(Multidrug-resistant Organisms)**

¹Department of Nursing, Asan Medical Center,

²Division of Hepatobiliary & Pancreatic Surgery,
Department of Surgery, Asan Medical Center, ³Office
of Infection Control, Asan Medical Center, Korea

**Seung Yoon Oh¹, Jae Hoon Lee^{2*},
So Yeon Park³, Ji Hye Kim¹**

(Purpose) Infection with MDROs (Multidrug-resistant Organisms) is currently a common problem in hospital. It can prolong hospital stay, promote antibiotics use and aggravate disease severity. Most of hepatobiliary and pancreas patients are relatively susceptible to infection with MDROs due to percutaneous bile drains during perioperative period and wide operative wound. For these patients, we decided several activities and monitored key indicators to reduce following 5 MDROs; Carbapenem-resistant *Acinetobacter baumannii* (CRAB), Carbapenem-resistant *Pseudomonas aeruginosa* (CRPA), Methicillin-resistant *Staphylococcus aureus* (MRSA), Carbapenem-resistant *Enterobacteriaceae* (CRE), and Vancomycin-resistant enterococcus (VRE). **(Methods)** By literature review, we developed several activities and selected 5 monitoring indicators such as performance rate and appropriateness of hand washing, performance rate of contact precaution, acquisition rate and CP (Colonization Pressure) of MDROs in 50-patients general ward setting for 7 months (APR. 2013~OCT. 2013). We educated reducing infection of MDROs, proper hand washing and contact precaution for medical staffs, patients and their families. For environmental management, we regularly changed and cleansed drain cups and bags, also checked disinfection of MDROs patients' environ-

ment by using checklists. To monitor 5 indicators, we implemented blind monitoring of medical staffs and calculated acquisition rate and CP of MDROs every month with office of infection control. **(Results)** We monitored 100 cases of hand washing, 58 cases of contact precaution, 788 patients for acquisition rate and 10,203 days for CP of MDROs. Performance rate of hand washing was 100% that had increased compared to that of 2012, 91.9%. Performance of hand washing in case of "After contact with patient's environment" was 100% of index to rise and appropriateness of hand washing in 2013 was 20.9% that was increased from 2012. The performance rate of contact precaution went beyond 70% in most of items and the performance of "pre-contact hand washing" and "post-contact hand washing" of medical department was up 16.7% to 66.7%. The acquisition rate of MDROs was remarkably decreased compared to 2012 (CRAB 2.54% → 1.78%, CRPA 1.55% → 0.76%, MRSA 3.44% → 1.27%, CRE 0.82% → 0.25%, VRE 0.48% → 0.25%). The CP of MDROs was also declined to 2012 (MRSA 4.52% → 3.74%, VRE 0.71% → 0.38%). **(Conclusion)** By improving hand washing, contact precaution and environmental management, the acquisition rate and CP of MDROs were effectively controlled. We will revise these activities with continuous evaluation and develop blueprints of patients and their families who make an extended stay in hospital infected with MDROs.

KAHBPS-P-14

Long-term outcome of ischemia-type biliary stricture after endoscopic treatment in liver living donors

Division of Hepatobiliary Surgery and Liver Transplantation, Department of Surgery, Asan Medical Center, University of Ulsan College of Medicine, Korea

Seok-Hwan Kim, Shin Hwang*, Tae-Yong Ha, Gi-Won Song, Dong-Hwan Jung, Ki-Hun Kim, Gil-Chun Park, Chul-Soo Ahn, Deok-Bog Moon, Bo-Hyun Jung, Sung-Hwa Kwang, Young-In Yoon, Min-Ho Shin, Wan-Jun Kim, Kang Woo-Hyoung, Lim Tae-Wan, Sung-Gyu Lee

(Purpose) The wall of normal proximal bile duct is often thin with close approximation of the right hepatic artery (RHA), thus isolation of RHA can result in excessive thinning of the remnant proximal bile duct wall during right liver graft harvest. This injury can induce delayed stricture of the donor common bile duct. This study intended to review the clinical course of such ischemia-type donor bile duct injuries which were primarily managed with endoscopic treatment. **(Methods)** A retrospective review of medical records was performed with 4 donors who suffered from ischemia-type donor bile duct injury and followed up for more than 5 years. **(Results)** A right liver graft was harvested from these 4 donors (incidence of 0.1%), whose mean age was 29.5±3.1 years and all were male. Bile duct anatomy was normal bifurcation in 2 and anomalous branching in 2. All of them recovered from donor surgery and discharged uneventfully, but liver function abnormality and/or subclinical left hepatic duct dilatation was identified 1-2 months after surgery. After imaging study including magnetic resonance cholangiography, they underwent endo-

scopic balloon dilatation and temporary stent (endoscopic retrograde biliary drainage [ERBD]) insertion. With ERBD tube change per 2 months, ERBD tubes were successfully removed after 4 to 6 month. On yearly follow-up for 5 years, none of these patients showed any evidence of recurrence of biliary stricture. **(Conclusion)** Based on our experience, endoscopic treatment and subsequent long-term follow-up appears to be an effective and reasonable treatment for ischemia-type biliary stricture in liver living donors.

KAHBPS-P-15

Acute kidney injury after liver transplantation

Department of Surgery, Ulsan University Hospital, Korea

Hyung Woo Park, Yang Won Nah*

(Purpose) Acute kidney injury (AKI) after liver transplantation is not uncommon. Several literatures show greater number of complications and high mortality rates with AKI after liver transplantation. The goal of this study was to determine the incidence of AKI during the early posttransplant period and mortality in patients undergoing liver transplantation in our hospital. **(Methods)** We retrospectively reviewed the medical records of all patients aged >30 years undergoing liver transplantation from March 2002 to September 2013. AKI was defined as an elevation of serum creatinine 1.5 times above baseline or an absolute serum creatinine level >2mg/dL. The exclusion criteria were hepatorenal syndrome at the time of transplantation and chronic renal failure with hemodialysis before liver transplantation. **(Results)** Of 70 selected patients, 20 patients (28.6%) developed AKI after liver transplantation, with 7 patients (35%) requiring renal replacement therapy. All the

patients with AKI requiring renal replacement therapy could wean from hemodialysis. 1-year survival rates were 90% without AKI and 80% with AKI, respectively. But, there were no statistical significance ($p=0.265$; odds ratio, 2.25). **(Conclusion)** There was a high incidence of AKI in patients undergoing liver transplantation but there were no increased risk of 1 year mortality.

KAHBPS-P-16

Kaposi sarcoma after liver transplantation : Case report

Department of Surgery, Pusan National University
Yangsan Hospital, Korea

**Youngmok Park, Hyunyong Lee,
Kwangho Yang, Jeho Ryu, Chongwoo Chu***

(Purpose) Kaposi sarcoma is a rare disease in usual circumstance, but in transplantation patient, it is relatively common as a consequence of prolonged immunosuppression. Kaposi sarcoma after transplantation can lead to multifocal, progressive lesion with frequent involvement of the oral mucosa and dissemination to the viscera. It's prevalence depends on the human herpesvirus type 8 (HHV8) infection. Most of posttransplant Kaposi sarcoma occur as a result of viral reactivation. **(Methods)** report a case of Kaposi sarcoma occurred after liver transplantation in our institute. **(Results)** A 50-year-woman underwent deceased donor liver transplantation for Hepatitis B related liver cirrhosis. He was immunosuppressed with tacrolimus and mycophenolate, steroid. Her posttransplant course was uneventful, but she was readmitted on 8th posttransplant month with pancytopenia, elevation of serum creatinin. Multiple lymph node enlargement was seen in neck, chest, abdominal computed tomography (CT) and palpable at physical examination on neck and both in-

guinal area. Excisional biopsy on inguinal lymph node was done, revealed Kaposi sarcoma without cutaneous lesion. She treated by mTOR inhibitor use, discontinuation of calcineurin inhibitor and conventional medical care. But her progression is poor, after two month, progressive renal and pulmonary insufficiency was occurred. Despite of intensive care, she expired at 11th posttransplant month with multiorgan failure. **(Conclusion)** After organ transplantation, there are greater risk of Kaposi sarcoma compared with the general population. Visceral Kaposi sarcoma usually appears between 6 and 12 months posttransplant. For patients without cutaneous involvement the diagnosis is difficult. Early diagnosis is important for prognosis, whereas patients who present without treatment show a high mortality.

KAHBPS-P-17

Living donor liver transplantation for diffuse biliary papillomatosis

Department of Surgery, Ulsan University Hospital,
Korea

Hyung Woo Park, Yang Won Nah*

(Purpose) Diffuse involvement of the biliary system with intraductal papillomatosis carries a high risk of malignant transformation. This condition is very difficult to manage because complete surgical resection is very demanding. We herein present a case of intraductal papillomatosis treated by living donor liver transplantation and extrahepatic bile duct resection, avoiding pancreatoduodenectomy with the aid of intraoperative choledochoscope to secure the distal bile duct margin. **(Methods)** The patient was a 67-year-old male showing diffuse involvement of the whole biliary system with papillomatosis. Preoperatively, multiple biopsies under endoscopic retrograde cholangioscopic examination revealed dif-

diffuse involvement of the biliary system with villotubular adenoma with focal high grade dysplasia. Although there was no evidence of overt adenocarcinoma on endoscopic biopsy, we couldn't be sure that there is no malignant tumor. Because there was diffuse involvement of both the intrahepatic as well as extrahepatic bile ducts with papillomatosis, we decided to perform resection of extrahepatic bile duct in addition to liver transplantation. **(Results)** We used modified right lobe graft from his son and graft-recipient-weight-ratio was 1.07. Fortunately, intraoperative choledochoscope confirmed the terminal segment of intrapancreatic CBD being free of tumor, so we could avoid pancreaticoduodenectomy. Final biopsy diagnosis was the same as preoperative biopsy result, and distal bile duct margin was tumor negative. After liver transplantation, the patient recovered without any complication and he is doing well without any evidence of recurrence 3 months after the surgery. **(Conclusion)** We suggest that living donor liver transplantation can be a good therapeutic option for diffuse intraductal papillomatosis. Intraoperative choledochoscope was very helpful in securing the distal margin of the extrahepatic bile duct in papillomatosis.

KAHBPS-P-18

Comparison of open versus laparoscopic operation for T2 gallbladder cancer

Department of Surgery, Seoul National University
College of Medicine Department of Surgery, Seoul
National University Bundang Hospital, Korea

**Jae Yool Jang, Ho Seong Han*,
Yoo Seok Yoon, Jai Young Cho,
Youngrok Choi, Woo Hyung Lee,
Hong Kyung Shin, Han Lim Choi**

(Purpose) The objective of this retrospective study

is to determine the efficacy and safety of laparoscopic operation for T2 gallbladder cancer. **(Methods)** Of 188 gallbladder cancer patients who underwent an operation at our institution between Oct 2003 and Jun 2014, 100 patients whose T stage was diagnosed to be T2 were retrospectively reviewed. Patients were divided into 2 groups, open surgery group and laparoscopic surgery group. Electronic medical recordings (EMR) were reviewed to check types of surgery, operation time, postoperative complications, duration of postoperative hospital stay, and disease free survival. Each patient's overall survival was confirmed by mortality record from the EMR or by telephone survey performed on Oct 2nd, 2014. **(Results)** Fourteen patients who had another primary malignancy at the time of surgery or who did not visit outpatient ward after operation were excluded. There were 48 patients in group A and 38 patients in group B. There were 3 cases of surgical wound dehiscence, 1 case of incisional hernia and 1 case of bile leakage in open surgery group, and 3 cases of complicated fluid collection which were successfully treated by percutaneous drainage, 1 case of bile leakage and 1 case of paralytic ileus in laparoscopic surgery group. Average postoperative hospital stay of group A and group B was 10.77 days and 6.24 days, respectively. Disease free survival at year 1, 3, 5 of T2N0 patients in group A versus group B was 95.0 vs 93.8%, 82.3 vs 93.8% and 82.3 vs 85.9% respectively (p=0.871). Disease free survival at year 1, 3, 5 of T2N1 patients in group A versus group B was 47.8 vs 83.3%, 43.0 vs 33.3% and 43.0 vs 33.3% (p=0.940). Overall survival at year 1, 3, 5 of T2N0 patients in group A versus group B was 74.7%. Overall survival at year 1, 3, 5 of T2N1 patients in group A versus group B was **(Conclusion)** As a result of our institution's experience, laparoscopic approach for treatment of T2 gallbladder cancer was clinically feasible and safe compared to open approach. Further prospective study with higher number of patients should be done to confirm this result in the future.

KAHBPS-P-19**Comparison of two classifications for the severity of gallbladder disease in emergency room**

Department of Surgery, Seoul National University
Bundang Hospital, Korea

**Hong Kyung Shin, Ho-Seong Han*,
Yoo-Seok Yoon, Jai Young Cho,
Youngrok Choi, Woohyung Lee,
Jae Yool Jang, Hanlim Choi**

(Purpose) A uniform validated severity scoring system for emergency general surgery (EGS) does not exist. AAST (American Association for the Surgery of Trauma) and Mayo clinic group developed two scoring system for the gallbladder. One based on anatomic criteria only, and the Surgical Acuity Score-Gallbladder (SAS-G) which adds measures of physiology and comorbidities to the anatomic criteria. Our aim was to evaluate and compare the performance of these two models in predicting complication, length of stay (LOS) **(Methods)** Patients who visited Emergency room and underwent cholecystectomy at our institution between March 2014 and September 2014 were identified. Anatomic, physiologic, and Comorbidity score were determined, squared, and added together to create the SAS-G. The outcomes of extended LOS, complication were recorded. Area under the receiver operating characteristic curve (AUROC) analysis was performed. **(Results)** There were 79 patients with a mean age of 55 years. All of the cohort underwent laparoscopic cholecystectomy during the index hospital admission. There was an 1.2% complication rate, and an extended LOS (>4 days) rate of 13.9%. There was no mortality. The median anatomic score was 2, physiologic score 0, and comorbidity score 1 for a median SAS-G of 9. AUROC analysis demonstrated that two scoring system have no significant differences in prediction of extended LOS (0.727 vs 0.750) **(Conclusion)** In our

study, complication and mortality rate is much low compare with US group, and we cannot show the superiority of severity score between Anatomic score and SAS-G in prediction of LOS.

KAHBPS-P-20**Survival analysis of resection for stage III gallbladder carcinoma according to different combinations of T and N stages**

Department of Surgery, Asan Medical Center,
University of Ulsan College of Medicine, Korea

**Kyoung-Yeon Hwang, Shin Hwang*,
Tae-Yong Ha, Chul-Soo Ahn,
Deok-Bog Moon, Gi-Won Song,
Dong-Hwan Jung, Young-Joo Lee,
Kwang-Min Park, Ki-Hun Kim, Sung-Gyu Lee**

(Purpose) In 7th edition, Lymph node of Gall bladder cancer are divided into the hilar lymph node, and other regional lymph nodes. This has been reclassified in terms of the possibility of surgical resection and patient outcome. In the 7th edition of TNM staging, N differentiation is probably the most notable point. According to the 7th edition of AJCC TNM staging for GBC, presence of lymph node metastasis makes the stage IIIB (N1) or IVB (N2), which implicates poor prognosis, N1 status becomes the most important prognostic factor with wide coverage of T1-3. However, in practice, we experienced that a considerable proportion of patients with hilar lymph node metastasis showed unusually poor outcomes after curative resection, especially in patients with stage pT3N1M0 **(Methods)** 103 patients who underwent R0 resection from July 1996 to June 2009 and whose GBC pathology was confined to T3N0, T1-3N1 or T1-3N2 according to the 7th edition of AJCC staging system. They were simply stratified into 5 groups as T3N0 (n=26),

T1N1 (n=13), T2N1 (n=35), T3N1 (n=20) and TxN2 (n=9). **(Results)** 5 year survival rates of cancer associated death measured at each overall stage were as follows :60.6% (T3N0), 15.4% (T1N1), 28.6% (T2N1),5.7% (T3N1),22.2% (TxN2). Among the 5 groups, the survival of T3N1 group appeared lowest (5.7%). A greatest survival difference was observed between T3N0 and T3N1 group (P=0.0002). A noticeable survival difference was observed between T2N1 and T3N1 group (P=0.031) and between T1N1 and T3N1 group (P=0.079). In contrast, there was no significant survival difference between TxN2 and T3N1 group (P=0.534). **(Conclusion)** the prognosis of T3N1 GBC is poor and comparable to that of N2 lesions. Therefore, we suggest that T3N1 GBC be included in stage IV category

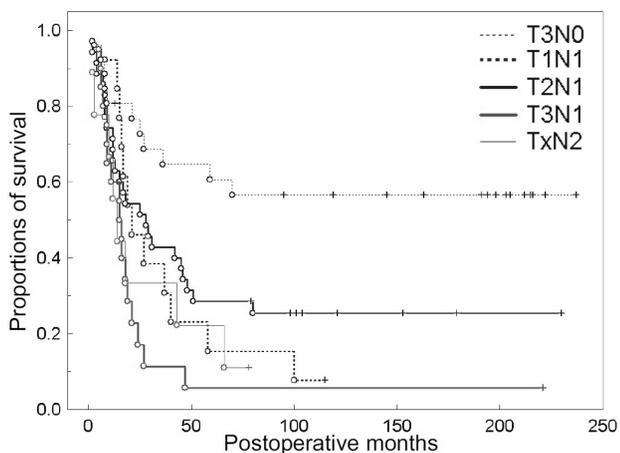


Fig. The overall patient survival curves with cancer-related death

Table 1. Clinicopathological profiles of 103 patients with gallbladder cancer

Variables/Group	T3N0(n=26)	T1N1(n=13)	T2N1(n=35)	T3N1(n=20)	TxN2(n=9)
Sex(n): Male:Female	9:17	2:11	13:22	9:11	3:6
Mean age: Mean ± SD (years)	63.4±7.6	60.9±15.7	59.7±9.2	63.8±9.2	59.7±10.9
CA19-9 (U/mL)	97.0±79.2	190.7±460.5	263.5±748.1	383.4±709.4	114.9±50.2
Tumor pathology (n)					
WD	10	1	3	2	-
MD	9	9	24	14	7
PD	3	3	6	4	1
Fapillary	2	-	1	-	-
Adenoquamous	2	-	1	-	1
Operation					
ERC	8	9	13	3	2
ERC+BDR	1	4	11	2	-
S4a5	5	-	4	3	-
S4a5+BDR	1	-	3	1	-
CBS	-	-	-	-	1
ERL	6	-	1	4	1
ERL+BDR	-	-	1	3	-
HPD	6	-	2	4	-
Overall 5-year survival rate					
All-cause death	57.7%	15.4%	28.6%	5.0%	22.2%
Tumor recurrence-associated death	60.0%	15.4%	28.6%	5.7%	22.2%

WD: Well differentiated, MD: Moderately differentiated, PD: Poorly differentiated
ERC: extended radical cholecystectomy; BDR: bile duct resection; S4a5: resection of segment IVa and V; CBD: central bisectionectomy; ERL: extended right lobectomy; HPD: hepatoportaloduodenectomy

KAHBPS-P-21

The timing of cholecystectomy after percutaneous transhepatic gallbladder drainage

Department of Surgery, Wonkwang University
School of Medicine, Korea

Kyung Yun Kim, Dong Eun Park*

(Purpose) Laparoscopic cholecystectomy is the standard treatment for acute cholecystitis. A percutaneous transhepatic gallbladder drainage is an alternative treatment option to resolve acute cholecystitis in patients with severe comorbidities. However, time for cholecystectomy after PTGBD is still controversial. The purpose of this study is to determine optimal timing for laparoscopic cholecystectomy after PTGBD for acute cholecystitis. **(Methods)** This retrospective study was conducted on patients who underwent cholecystectomy after PTGBD from January 2012 through June 2014. Forty-five patients were included in this study. And patients were divided into two groups. Group I patients underwent cholecystectomy within 10 days after PTGBD (n=23), whereas group II patients underwent cholecystectomy at more than 10 days after PTGBD (n=22). **(Results)** There were no significant differences between groups in conversion rate to open surgery, operation time, perioperative complications, and hospital stay after cholecystectomy. But complications related with PTGBD was significantly higher in group II than that in group I (Group I : Group II=0 : 14.6%; p=0.032) **(Conclusion)** In this study, the timing of laparoscopic cholecystectomy after PTGBD does not influence the rate of conversion to open surgery, operation time, perioperative complications, and hospital stay after cholecystectomy. So the best timing of laparoscopic cholecystectomy after PTGBD be made after considering patient condition, and surgeon's experience. And further prospective studies are required to support these findings.

KAHBPS-P-22**Role of PTGBD for elderly patient with acute cholecystitis visiting emergency room**

Department of Surgery, Division of Hepatobiliary Surgery and Liver Transplantation, Chosun University Hospital, Korea

Nam Kyu Choi*, **Byung-Gon Na**

(Purpose) Laparoscopic cholecystectomy (LC) has been to the standard management for acute cholecystitis (AC). In the elderly patient with comorbidities, serious complications and mortality can occur after surgical treatment for AC. Percutaneous transhepatic gall bladder drainage (PTGBD) may be an alternative interim treatment before LC. The purpose of this study was designed to evaluate the feasibility of PTGBD for critically ill elderly patient visiting to emergency room (ER) before LC as definite treatment for AC. **(Methods)** We reviewed retrospectively all consecutive patients aged 60 years or over admitted with a diagnosis of AC via ER between January 2009 and July 2013. Patients were divided into group 1, patients undergoing PTGBD before LC; group 2, not undergoing PTGBD before LC. Patient's datas, operative details and hospital stay (HS) in 2 groups were analyzed. **(Results)** All 105 patients (73.1±7.4 years) were included. Both group 1 (n=42) and group 2 (n=63) had similar preoperative details when visited to ER. There is no significant differences of 2 groups in operative running time (min) (102.7±46.0 vs 138.7±76.6, p=.007) and intraoperative blood loss (mL) (193.1±277.0 vs 217.4±249.5, p=.650). Conversion rate to open surgery in group 1 (21.1%) was significantly lower than group 2 (78.9%) (p=.004). Postoperative morbidity was 38.7% in group 1 and 61.3% in group 2 (p=.861). HS (day) from admission to operation in group 1 was significantly longer than group 2 (12.6±5.8 vs 5.7±3.0, p<.001).

There is statistically no significant difference in total HS of 2 groups (14.8±6.5 vs 14.25±5.5, p=.614). **(Conclusion)** It is suggested that PTGBD could prolong the preoperative conservation period prior to LC, decrease conversion rate to open surgery. And It might save the operative time consequently. PTGBD before LC might be alternatively feasible management for elderly patients with comorbidities when they visit the ER.

KAHBPS-P-23**Xanthogranulomatous cholecystitis: A retrospective analysis of 16 cases**

Department of Surgery, Daejeon St. Mary's Hospital, The Catholic University of Korea, Korea

Jae Woo Park, **Say-June Kim**, **Sang Kuon Lee***

(Purpose) Xanthogranulomatous cholecystitis (XGC) is a rare inflammatory disease of the gallbladder characterized by accumulation of lipid laden macrophages, fibrous tissue, and acute and chronic inflammatory cells. XGC often involves adjacent organs and mimicking a gallbladder cancer. The purpose of this study was to review the clinical and radiologic finding of XGC and to investigate an appropriate treatment plan for patients with XGC. **(Methods)** We retrospectively analyzed the clinical data of 16 patients with a pathologic diagnosis of XGC operated between January 2009 and September 2014. **(Results)** XGC was found in 1.6% (16/1006) of cholecystectomy patients in our hospital during 5 years. The most frequent clinical symptom was RUQ pain (11 patients, 68.8%). Preoperative radiologic studies revealed cholelithiasis in 8 patients (50.0%), thickening of gallbladder wall in 13 patients (81.3%), suspicious cancer in 2 patients (12.5%) but there was no gallbladder cancer accompanied with XGC in this series. Laparoscopic cholecystectomy was planned

in all patients but converted to open surgery in 2 patients. In 2 patients additional laparoscopic trocar was inserted, including 1 cases of T-tube choledocholithotomy. Mean operation time was 183.1 min and estimated blood loss was 316.8 mL. There were 2 patients with complications more than Clavien-Dindo Classification III. (CBD injury, plural effusion). **(Conclusion)** Classically, open cholecystectomy was the preferred surgical technique in most patients due to dense fibrosis, extensive local inflammation, and concerns of possible coexistent malignancy. However in our result, laparoscopic cholecystectomy was feasible for XGC though it is difficult and time consuming in several cases with acceptable conversion rate and complications.

KAHBPS-P-24

Predictors and patterns of recurrence after resection of intrahepatic cholangiocarcinoma

Department of Critical Care Medicine, ¹Surgery, Samsung Medical Center, Sungkyunkwan University of Medicine, Korea

Eunmi Gil*, **Jong-Man Kim¹**, **Jae-Won Cho¹**

(Purpose) The majority of patients with intrahepatic cholangiocarcinoma (IHCC) who undergo complete tumor resection subsequently develop tumor recurrence. The objectives of this study were to determine the risk factors for recurrence of IHCC after hepatectomy and to examine the outcomes once tumor recurrence occurs. **(Methods)** From April 1995 to December 2012 a total of 198 patients underwent liver resection for IHCC at our institution and were retrospectively followed. Time to recurrence and survival after recurrence were determined by Kaplan-Meier analysis. Patient, tumor, and treatment characteristics were tested for

their prognostic significance by univariate and multivariate analysis using the log-rank test and the Cox proportional hazards model, respectively. **(Results)** The median patient age was 60 years (range 37 to 80 years) and 107 patients (62.6%) were male. After a median follow up of 18 months, 115 patients (67.3%) have developed recurrent cancer. Among them, 74 patients (43.3%) had tumor detectable in the liver, which was the only site of disease in 42 (24.6%). In all, 42 patients (24.6%) had extrahepatic disease (17 lung, 16 peritoneum, 1 pancreas, 1 brain, 1 pleura, 1 chest wall and 1 abdominal wall). The median time to recurrence was 14.0 months (range 0 to 204 months). Predictors of recurrence on univariate analysis were tumor subtype, tumor size greater than 5.0 cm, more than one tumor or tumor satellites, lymph node metastasis, vascular invasion (microscopic or macroscopic), perinural invasion, and R1 resection. On multivariate analysis tumor size greater than 5.0 cm ($p < 0.001$) and lymph node metastasis ($p < 0.001$) predicted recurrence. The median survival after recurrence was 7 months (range 0 to 106 months). Of the 115 patients who developed tumor recurrence 18 (15.7%) were able to undergo additional ablative or surgical therapy (6 radiofrequency ablation, and 12 re-resection). **(Conclusion)** The liver is the predominant site of first recurrence after resection of IHCC, and once recurrence occurs survival is limited. The current study underscores the need for effective adjuvant therapy for patients with IHCC treated with partial hepatectomy.

KAHBPS-P-25

Common bile duct obstruction due to migrated gallbladder stone during laparoscopic cholecystectomy

Department of Surgery, Division of Hepatobiliary and Pancreas Surgery, Korea University Medical Center, Korea

**Sung Won Jung, Dong-Sik Kim*,
Young Dong Yu, Sung Ock Suh**

(Purpose) Occasionally, common bile duct (CBD) obstruction is occurred after laparoscopic cholecystectomy (LC) and migrated gallbladder stone during LC is one of the reasons. The aim of this study is to identify risk factors of gallbladder stone migration during LC. **(Methods)** Between May of 2000 and December of 2013, 3054 patients were underwent LC for gallbladder stone and these patients are revealed without CBD stone before LC. Among of these patients, 95 patients experienced CBD obstruction due to migrated gallbladder stone during LC. Baseline characteristics of patients, operation-related parameters and pathologic findings were compared in the two groups (Obstruction, n=95; No obstruction, n=2959) and univariate and multivariate analysis were performed to find risk factors for gallbladder stone migration. **(Results)** The baseline characteristics of patients such as sex, age and underlying disease were similar in the two groups. Preoperative dilatation of cystic duct or CBD, number of stones, combined GB polyp and gallbladder wall thickening were not related to gallbladder stone migration. In univariate analysis, largest size of stone (lesser than 3mm; 42% vs 11%, p=0.03) and operation time (over than 70 min; 61% vs 19%, p=0.04) were identified for risk factors to gallbladder stone migration. But, in the multivariate analysis, only largest size of stone (lesser than 3mm; odds ratio 2.4, 95% confidence interval

1.51-4.73, p=0.04) was related to stone migration. **(Conclusion)** Our data suggest that better effort is essential to avoid migration of gallbladder stone to CBD during LC for small size gallbladder stone.

KAHBPS-P-26

Risk of development of biliary malignancy after cyst excision for choledochal cyst

Department of Surgery, Chung-Ang University College of Medicine, Korea

**Han Byul Lee, Seung Eun Lee*,
Yoo Shin Choi**

(Purpose) The aim of this study was to elucidate the risk of subsequent biliary malignancy in patients undergoing cyst excision for congenital choledochal cysts. **(Methods)** Electronic searches of the MEDLINE (PubMed) database between 1970 and 2011 were performed to identify to identify relevant articles. searched both English and Japanese language literature. **(Results)** 58 cases were identified and among them, data of site of malignancy can be available in 54 cases. According to Todani's classification, 24 of 41 patients (59%) were classified into type IVa and 17 (42%) were into type I. The most common site of involvement in 54 cases was the hepatic duct, at or near the choledocho-enteric anastomosis (43%) followed by the intrahepatic duct (41%) and distal choledochus (17%). The time between cyst excision and cancer detection ranged from 1 to 32 years (mean, 10.4 years). 20 patients (37.4%) gave a medical history of cholangitis or hepatolithiasis after choledochal cyst excision. It seems that post-operative or pre-existed stenosis of bile duct, bile stasis caused by stenosis, and repeated chronic inflammation of the epithelium might induce carcinogenesis. **(Conclusion)** Initially, complete excision of the dilated bile duct at the

level of confluence with the pancreatic duct and wide anastomosis with free drainage of bile should be performed. Thereafter, life-long regular follow-up through tumor marker such as serum level of CA19-9 and imaging modalities such as computed tomography or ultrasonography for early detection of subsequent biliary malignancy after cyst excision should be done.

KAHBPS-P-27

Clinical features of the gallbladder adenoma

Department of Surgery, Daegu Fatima Hospital,
Korea

Junho Sohn, Jung Ahn Rhee,
Jong Hoon Park*

(Purpose) GB adenoma is an unusual benign disease of the gallbladder which account for about 5% of all gallbladder polyps. The other gallbladder polyps include cholesterol polyps, adenomyomas, inflammatory polyps, fibromas, leiomyomas and lipomas. Unlike the colon polyps, not the adenoma-carcinoma sequence but the dysplasia-carcinoma pathway appear to be the predominant mechanism of gallbladder cancer. But, recently some studies showed GB adenoma may be precancerous lesion of gallbladder cancer. We investigated our cases of GB adenoma who underwent cholecystectomy for various reasons and analyzed clinical features of the gallbladder adenoma. **(Methods)** Among the 3793 patients who underwent cholecystectomy in Daegu Fatima hospital during January 2006 to August 2014, there were 38 patients who were diagnosed with gallbladder adenoma by postoperative pathologic findings. We performed abdominal ultrasound and abdominal CT scan for preoperative evaluation of gallbladder. We reviewed medical records and radiologic im-

ages of all patients and histological findings were reviewed by one pathologist. **(Results)** There were 16 males and 22 females among 38 patients, and the average age of patients was 57.5 years old (30-89yr). 24 patients were diagnosed with GB polyps, 9 patients were diagnosed with GB stones and 4 patients were diagnosed with GB cancer preoperatively. No cases were diagnosed gallbladder adenoma preoperatively. In histological findings, the average size of GB adenomas was 9.0mm (2-35mm), there were 29 cases of tubular adenoma and 7 cases of papillary adenoma and 2 cases of mixed tubular and papillary adenoma. There were 16 cases of GB adenoma accompanied with gallstones and among them, 5 cases were combined acute cholecystitis. There were 3 cases of combined pathology of GB adenoma and cholesterol polyps of gallbladder. We didn't add the cholesterosis and chronic cholecystitis to combined pathology. **(Conclusion)** GB adenoma is a rare disease of the gallbladder and it is very difficult to diagnose preoperatively. In our cases there were no cases diagnosed as GB adenoma preoperatively and many cases were diagnosed as GB polyps. The average size of GB adenoma was 9.0mm and minimal size of GB adenoma was only 2mm which didn't meet the indication of cholecystectomy for GB polyps. There was only one case of combined pathology of GB cancer and GB adenoma. Because of lack of prospective studies of GB adenoma, it is necessary to investigate more about these rare diseases.

KAHBPS-P-28**Bilateral ovarian metastasis from common bile duct carcinoma with choledochal cyst masquerading as a Pprimary ovarian neoplasm**

Department of Surgery, Chung-Ang University
College of Medicine, Korea

**Han Byul Lee, Seung Eun Lee*,
Yoo Shin Choi**

(Purpose) We present an unusual case of metastatic carcinoma of the common bile duct (CBD) cancer originated from choledochal cyst. 60-year-old woman was admitted for the investigation of abdominal distension which had lasted for 1 week. **(Methods)** One and half year ago, the patient had undergone operations for choledochal cyst that included choledochal cyst excision, Roux-en Y hepaticojejunostomy and cholecystectomy. CT scans of the abdomen revealed papillary mass in the remnant distal CBD and enlargement of both ovaries with huge amount of ascites. **(Results)** An explorative laparotomy disclosed no peritoneal seeding with resectable cholangiocarcinoma and bilateral ovarian mass. Pylorus-preserving pancreatoduodenectomy and bilateral salphingo-oophorectomy with hysterectomy were performed. Histologically, it was a well-differentiated adenocarcinoma, which extended to the pancreas with perineural invasion and regional lymph node metastasis while all surgical margins were free of tumor. Both ovarian masses were consistent with metastatic adenocarcinoma from CBD. The patient received six cycles of postoperative adjuvant systemic chemotherapy, dying after 10 month due to progression of tumor and pulmonary embolism. **(Conclusion)** Ovarian metastases represent 10% of all ovarian malignancies. Most of these tumors originate in the digestive tract and cholangiocarcinoma is rare neoplasm that rarely involves the ovary.

KAHBPS-P-29**Intrahepatic cholangiocarcinoma arising from intraductal papillary mucinous neoplasm**

¹Department of Surgery, Division of Hepatobiliary and Pancreas Surgery, Korea University College of Medicine, ²Division of Transplant and Vascular Surgery, ³Department of Surgery, Korea University College of Medicine, Korea

**Neul Ha¹, Pyoung-Jae Park^{2*},
Sae Byeol Choi³, Wan Bae Kim³,
Sang Yong Choi³**

(Purpose) Intraductal papillary mucinous neoplasm of the pancreas (IPMN-P) is widely recognized as a distinct clinical entity and intraductal papillary mucinous neoplasm of the bile duct (IPMN-B) is frequently used that micin-producing intraductal papillary neoplasms are the biliary counterpart of IPMN-P. Malignant IPMN-B is categorized as an intraductal growth type of intrahepatic cholangiocarcinoma (ICC). Malignant IPMN-B is a rare disease, which accounts for 2.9% to 8.9% of cholangiocarcinoma. In comparison to other types of ICC such as the mass forming type and periductal-infiltrating type, malignant IPMN-B can be successfully resected and demonstrates a more favorable prognosis. We experienced and reported a case of intrahepatic cholangiocarcinoma arising from intraductal papillary mucinous neoplasm. **(Case Reports)** A 32 year-old male patient was admitted due to right flank pain. Any specific past histories or familial histories were not checked. AST and ALT level were 76IU/L and 70 IU/L. Bilirubin level was normal. Any evidence of infection was not found. On CT, about 17.3-cm multilocular cystic mass in the right liver was identified and it had enhancing solid portion or wall thickening suspicious of the cystic tumor. Right hemihepatectomy was performed. On pathology, moderate differentiated adenocarcinoma was confirmed in

the background of IPMN with high grade dysplasia. The length of resection margin from IPMN was 0.5cm. He recovered and was discharged at postoperative 13 days. **(Results)** A patient was followed up on outpatient department for 6 months and any evidence of recurrence was not checked. **(Conclusion)** In selected patients, complete surgical resection can be performed safely without diminishing QOL, and is associated with long-term survival, and when cystic tumor arising from IPMN-B were suspicious, a complete and aggressive surgical treatment should be planned.

KAHBPS-P-30

Lymphoid hyperplasia arising from bile duct and gallbladder simultaneously mimicking cholangiocarcinoma and gallbladder cancer

Department of Surgery, Chonnam National University Medical School, Korea, Korea

**Choong Young Kim, Eun Kyu Park,
Hee Joon Kim, Yang Seok Koh,
Hyun Jong Kim, Chol Kyoon Cho,
Young Hoe Hur***

(Purpose) Lymphoid hyperplasia is a rare benign lymphoproliferative disorder. It can occur in various organs. However, lymphoid hyperplasia arising from extrahepatic bile duct and gallbladder simultaneously is extremely rare. **(Methods)** A 72-year-old woman visited hospital with general weakness, dyspepsia and weight loss for 3 months. She had medical history of diabetes mellitus and depressive mood disorder and had been treated for liver abscess ten years ago. On physical examination, there was no icteric sclera and no tenderness in the upper abdomen. Viral hepatitis markers and all tumor markers were within normal limits. Magnetic reso-

nance cholangiopancreatography (MRCP) showed 3cm length wall thickening and enhancement of suprapancreatic and intrapancreatic CBD, causing mild luminal narrowing and dilatation of upper biliary tract and also showed irregular wall thickening and enhancement of gallbladder body and fundus. **(Results)** Under diagnosis of distal CBD cancer and gallbladder cancer, she underwent pylorus-preserving pancreaticoduodenectomy with routine lymph node dissection and s4b and S5 liver wedge resection. In operation finding, there were diffuse nodular sclerosing change from mid CBD to distal CBD and there were diffuse wall thickening of gallbladder body at liver bed side. Based on pathologic finding and immunohistochemical staining, lesion was diagnosed histologically as lymphoid hyperplasia **(Conclusion)** Lymphoid hyperplasia is a rare disease, and preoperative diagnosis is difficult. Although it is benign condition, we should consider surgical excision for this lesion that cannot be excluded for malignancy.

KAHBPS-P-31

Synchronous double primary squamous cell carcinoma and adenocarcinoma of extrahepatic bile duct: Report of a case

Department of Surgery, Chosun University, School of Medicine, Korea

Seong Pyo Mun, Nam Kyu Choi*

(Purpose) We report a case of synchronous squamous cell carcinoma and adenocarcinoma of extrahepatic bile duct. Sixty seven year old male complaining of jaundice and dark urine showed indirect hyperbilirubinemia and elevation of CA 19-9. **(Methods)** Preoperative abdominal computed tomography and positron emission tomography showed double masses at the bifurcation of com-

mon hepatic duct and at distal common bile duct. Pylorus preserving pancreaticoduodenectomy was done without involvement of resection margin. **(Results)** Pathologic findings showed squamous cell carcinoma at proximal lesion and adenocarcinoma at distal lesion. **(Conclusion)** Three months later, multiple metastatic conglomerated tumors were detected in the liver and the patient died eight months after diagnosis.

KAHBPS-P-32

Tuberculous cholecystitis with cholecysto-colonic fistula : A case report

Department of Surgery, Chonnam National
University Medical School, Korea

**Do Sung Park, Choong Young Kim,
Eun Kyu Park, Hee Joon Kim,
Young Hoe Hur, Yang Seok Koh,
Chol Kyoony Cho, Hyun Jong Kim***

(Purpose) Gallbladder tuberculosis is an extremely rare disease. It can mimic other gallbladder disease, because accurate preoperative diagnosis is difficult and diagnosis is made by histopathologic examination after cholecystectomy **(Methods)** A 54 year old man was visited our hospital presenting abdominal discomfort. He had medical history of hypertension and diabetes mellitus. He was treated with endoscopic retrograde cholangiopancreatogram for common bile duct stone removal by 6 months ago. He was afebrile, there were tenderness in right upper quadrant area and no Murphy's sign on physical examination. In laboratory findings, complete blood count showed only leukocytosis and other blood chemistries and viral serologic markers were normal. Serum CA 19-9 was elevated. (115.2 U/ml) Abdominal computed tomography (CT) revealed diffuse wall thickening of gallbladder and

several gallstones. Based on these findings, preoperative diagnosis was thought be xanthogranulomatous cholecystitis or gallbladder cancer. **(Results)** In operative findings, sever adhesion between gallbladder, omentum, common bile duct, and transverse colon was observed and gallbladder was thickened, distended and inflamed. We performed cholecystectomy and transverse colon segmental resection, because there were cholecysto-colonic fistula. There were bloody and necrotic material and several stones in gallbladder. Histopathologic examination revealed epithelioid granulomatous with caseating necrosis and presence of Langerhan's giant cells. Therefore, postoperative diagnosis was revealed tuberculosis of cholecystitis. The patient tolerated the procedure well and was discharge 1 week following surgery without any problems. The patient was started on anti tubercular treatment. **(Conclusion)** Herein, we present a case of tuberculous cholecystitis with cholecysto-colonic fistula.

KAHBPS-P-33

A case of large cell neuroendocrine carcinoma of intrahepatic bile duct

Department of Surgery, Chonnam National
University Medical School, Korea

**Eun Kyu Park, Choong Young Kim,
Hee Joon Kim, Young Hoe Hur,
Hyun Jong Kim, Chol Kyoony Cho,
Yang Seok Koh***

(Purpose) Large cell neuroendocrine carcinoma is a high grade type of neuroendocrine tumor. Neuroendocrine carcinoma of biliary system are extremely rare. Here in, we present a case of large cell neuroendocrine carcinoma of intrahepatic bile duct. **(Methods)** A 53-year-old man visited our hospital presenting right upper quadrant pain and

jaundice. Abdomen CT and Cholangiogram MRI showed diffuse heterogenous enhancing mass including from common hepatic duct and left distal branch and dilatation of both intrahepatic bile duct. Endoscopic retrograde cholangiopancreatography showed abruptly narrowing in common hepatic duct and irregular narrowing in left intrahepatic bile duct. Biopsy from left intrahepatic bile duct showed reactive atypia. Preoperative diagnosis was thought to be intrahepatic cholangiocarcinoma or klat-skin tumor. **(Results)** We performed Left hepatectomy, caudate lobectomy, common bile duct resection and routine lymph node dissection. At laparotomy, there were 8x2.5 cm size friable polypoid mass from first order branch of left intrahepatic bile duct and distal left intrahepatic bile duct. Microscopic finding revealed large cell neuroendocrine carcinoma type cholangiocarcinoma. The patient discharged 23 days following surgery without any complications. **(Conclusion)** Here in, we report a case of large cell neuroendocrine carcinoma of intrahepatic bile duct.

KAHBPS-P-34

A case of malignant pheochromocytoma which is diagnosed as biliary cyst adenoma or carcinoma

Department of Surgical, Presbyterian Medical Center, Korea

Woo-Young Kim*, Yu Ni Lee

(Purpose) Malignant pheochromocytoma is rare and may be sporadic or have a genetic basis. Pheochromocytoma (PC) and paraganglioma (PG) are rare tumors of neural crest origin that arise in the distribution of the sympathetic nervous system. According to the World Health Organization, all extraadrenal tumors arising from paraganglia are

classified as PGs, whereas intraadrenal tumors are designated PCs. Recent data suggest that at least 30% of PC/PG cases are associated with inherited disease. We experienced a case of biliary cyst adenoma or carcinoma mimicking malignant pheochromocytoma **(Methods)** A 69-year-old female with a past medical history of intracranial hemorrhage of the right basal ganglia 2 month ago. Abdominal Computed Tomogram (CT) showed a 15x14cm cystic mass which contained multiple wall calcification with small cyst, significant wall thickness the largest measuring 2.5cm and vague mural nodule in whole right hemiliver, and gallbladder stones. **(Results)** She underwent right hemihepatectomy including adrenal gland and cholecystectomy. Pathologic report showed malignant pheochromocytoma with capsular invasion, presence of large nests or diffuse growth (in >10% of tumor volume), central tumor necrosis (in the middle of large nests) or confluent necrosis, high cellularity, tumor cell spindling even when focal and profound nuclear pleomorphism. Immunostain) A3: S-100 (+), Synaptophysin (+), ChromograninA (+), CD31 (no vascular invasion), Ki-67 (<5%). **(Conclusion)** So we report a case of malignant pheochromocytoma according to Pheochromocytoma of the Adrenal Gland Scaled Score (PASS) and cell cycle/apoptosis markers can predict patients at risk for recurrence and short literature review.

KAHBPS-P-35

Limited resection for branch duct intraductal papillary mucinous neoplasm

Department of Surgery, Yeouido St. Mary's Hospital, The Catholic University of Korea, Korea

Kwang Yeol Paik*

(Purpose) The treatment of branch duct type intra-

ductal papillary mucinous neoplasm (BD-IPMN) of the pancreas is still controversial. In this report we describe minimal resection of the pancreas head, which is a method for the removal of BD-IPMN of the head of the pancreas. **(Methods)** A multi-lobular cystic lesion (30mm×30mm) in the head of the pancreas was detected in an symptomatic 71-year-old man who underwent a computed tomography examination. He also had distal common bile duct (CBD) stones. His pancreas did not show dilatation of the main pancreatic duct or mural nodule within the tumor. The tumor marker was ranged within normal level. We decided the operation due to his symptom and tumor size. **(Results)** The tumor was carefully removed along the border of the cyst and the normal parenchyma, with complete preservation of the main pancreatic duct. For protection of pancreatic duct, we tried to perform pancreatic duct stent through the ampulla during surgery which was not successful. We transected the junction of branch duct from main pancreatic duct, the malignancy was not detected in frozen biopsy of ductal margin. His CBD stones also removed via choledochotomy during operation. A pancreatic fistula was not developed during the postoperative period, but duodenal leakage from the duodenostomy site was developed which was well-controlled by conservative treatment. The final pathologic report revealed the high grade dysplasia with negative margin status. **(Conclusion)** Minimal resection of BD-IPMN is a technically feasible procedure and this operation represents a minimally invasive alternative to pancreas head resection in benign BD-IPMN.

KAHBPS-P-36

Clinical outcome for parenchyma-sparing pancreatectomy (PSP) in pancreatic benign neoplasm

Division of Hepatobiliary and Pancreatic Surgery,
Department of General Surgery,
Sungkyunkwan University, Korea

**Jin Young Park, Seong Ho Choi*,
Sang Min Youn, Heui Sung Lee,
Wooil Kwon, Jin Seok Heo, Dong Wook Choi**

(Purpose) As an alternative surgical procedure, parenchyma-sparing pancreatectomy (PSP) can preserve normal pancreatic parenchyma. Pancreatic benign neoplasm do not necessarily require extensive pancreatic resections to achieve surgical cure. This study aimed to evaluate clinical outcome after PSP. **(Methods)** Patients who underwent PSP (enucleation and central pancreatectomy (CP)) for pancreatic neoplasm included cystic lesions, IPMN and neuroendocrine tumors of low and moderate grade between 2000 and 2013. We retrospectively collected data on clinical records. **(Results)** A total of 75 patients underwent PSP. A clinically significant complication was reported 25 patient (33.3%, enucleation 13 patients, CP 12 patients). Of those, pancreatic fistula was reported in 11 patients (14.7%, enucleation 6 patients, CP 5 patients). Four elderly patients developed non insulin dependent diabetes mellitus. At a median follow up of 26 months no patient developed recurrent tumor and no mortality. **(Conclusion)** PSP is effective for select pancreatic benign neoplasm. It can be carried out with good results and no mortality. It should be considered the procedure. It is to preserve pancreatic parenchyma and oncologically feasible for pancreatic neoplasm.

KAHBPS-P-37

Isolated complete traumatic rupture of the neck of pancreas

Department of Surgery, Ulsan University
College of Medicine, Korea

Hyuk Jai Jang*, Chun Soo Park,
Kun Moo Choi

(Purpose) Pancreatic trauma without injuries to other organs is uncommon. Also, complete pancreatic rupture is a rare injury. The typical mechanism by which this occurs is overstretching of the pancreas across the vertebral column during blunt abdominal trauma. The integrity of the main pancreatic duct is the crucial point in the management and outcome of patients with pancreatic trauma. The management of this injury depends on the location and extent of the injury. **(Methods)** We presented a child with isolated complete pancreas neck rupture due to blunt trauma. **(Results)** An 11-year-old male child presented with blunt abdominal trauma after he fell onto the end of a handlebar during a bicycle accident. He arrived in the emergency room with stable vital signs. A computed tomography revealed a complete rupture of the pancreas, just ventral to her superior mesenteric vein, and an accompanying hematoma but no additional injuries. An emergency laparotomy was performed; the head of the pancreas was oversewn with interrupted sutures and this was followed by a diversion of the distal stump with a two-layer pancreaticojejunostomy with the body of the pancreas. The recovery after surgery was completely uneventful. **(Conclusion)** Pancreatic trauma is a diagnostic and therapeutic challenge for the surgeon. Isolated complete pancreatic rupture is a rare injury that can be managed with complete organ preservation. The integrity of the main pancreatic duct is the most important determinant of outcome after injury to the pancreas and early surgery may

improve it. The combination of suturing the pancreatic head and two-layer pancreaticojejunostomy with the pancreatic body is a feasible technique to manage this condition.

KAHBPS-P-38

Superior mesenteric vein thrombosis accompanied with severe appendicitis

Department of Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine; ¹Department of Surgery, Kosin University Gospel Hospital, Kosin University College of Medicine, Korea

Kyo Won Lee, Young Il Choi^{1*}

(Purpose) Superior mesenteric vein thrombosis (SMVT) caused by acute appendicitis nowadays is very rare. **(Methods)** We reported a successful treatment case in a 21-year-old man with SMVT accompanied with severe acute appendicitis. **(Results)** IV heparin was started and later substituted with warfarin. Systemic antibiotic therapy was continued for 1 week and substituted with oral antibiotics (cefactor 250mg thrice daily) which was administered for 3 weeks. On the 45th postoperative day, follow-up CT scan revealed dissolution of SMV thrombosis. Anticoagulation therapy was maintained for 3 months. **(Conclusion)** He was discharged without any complications. It can be treated successfully with emergency appendectomy, broad-spectrum antibiotics and anticoagulation therapy.

KAHBPS-P-39

A case of benign mesenteric schwannoma

Department of Surgery, Kosin University
College of Medicine, Korea

**Alvin Lyle Kim, Young Il Choi,
Dong Hoon Shin***

(Purpose) Mesenteric schwannoma is very rare. **(Methods)** We reported a successful treatment case with jejunal mesenteric schwannoma in a 30-year-old female who present with several months history of abdominal discomfort. **(Results)** Ultrasonography of the abdomen revealed a 3×2 cm sized solid mass in small bowel mesentery. Contrast enhanced CT showed a 2×2 cm, solid, well-defined, heterogenous mass in small bowel mesentery. The patient underwent surgery. The mass was completely excised. Histopathologic and immunohistochemical examination revealed a mesenteric schwannoma. **(Conclusion)** She remains well 5 months after her operation, without any signs of recurrence.

KAHBPS-P-40

The usefulness of transduodenal ampullectomy (TDA) in tumor arising from the ampulla of Vater

Department of Surgery, Chungnam National
University Hospital, Korea

**Yong Woo Yune, In Sang Song,
Se Heon Kim, Hyun Su Choi,
Kwang Sik Chun***

(Purpose) The aim of this study was to investigate the usefulness of transduodenal ampullectomy (TDA) in tumor arising from the ampulla of Vater.

(Methods) From January 2001 to November 2013, nineteen patients diagnosed with Tis, T1 cancer and benign tumor arising from the ampulla of Vater in CNUH. Twelve patients were performed TDA and 7 patients were pylorus-preserving pancreaticoduodenectomy (PPPD). We compared the result of two groups retrospectively. **(Results)** According to pathologic result, there were 7 benign tumors, one Tis, 3 cases T1 carcinoma and one neuroendocrine tumor in TDA group, 2 benign tumor, 3 Tis, one chronic pancreatitis, one benign stricture in PPPD group. Among TDA group, one patient was performed PPPD. Mean operative time of TDA and PPPD were 220 minutes and 354.4 minutes respectively. Mean time to soft meal and length of stay were 5.9 days and 11.8 days in TDA, 5.3, and 18.7 days in PPPD. There was only one patient with postoperative complication of wound seroma in TDA. One case of marginal ulcer, postoperative bleeding and ISGPF grade 1 pancreatic fistula were happened in PPPD. Mean follow-up time was 21 month in TDA group and 24.6 month in PPPD group. There was recurrence in one patient who underwent PPPD after TDA. **(Conclusion)** TDA is less invasive, safer operation method than PPPD and can be alternative treatment in case of benign tumors and selective patients of T1 cancer arising from the ampulla of Vater. But more large number of prospective studies was needed.

KAHBPS-P-41

2 year experience of peng's binding pancreaticogastrostomy after PPPD

Department of Surgery, Chungnam National
University Hospital, Korea

**Se Heon Kim, Yong Woo Yune, Hyun Su Choi,
In Sang Song, Kwang Sik Chun***

(Purpose) The aim of this study was to assess the our 2 years operative results of a new technique,

Peng's binding pancreaticogastrostomy, in which the stump of pancreas (pancreatic remnant) is inserted into the posterior gastric wall with only two purse-string sutures. (which do not penetrate the pancreas). **(Methods)** From October 2011 to October 2013 consecutive 43 cases of PPPD were performed using binding pancreaticogastrostomy in Chungnam National University Hospital. All clinical data was collected prospectively. We analysis the short term outcomes of binding pancreaticogastrostomy by postoperative morbidity, postoperative mortality and pancreatic fistula complications. **(Results)** 43 patients were performed pancreaticoduodenectomy and all of them were performed using binding pancreaticogastrostomy. 37 cases were malignant neoplasm and 6 cases were benign tumor (4 case of IPNM, 2 case of benign ampullary tumor). Median operation time was 6.75 hours. And all cases were diet start at POD 2. Median drain remove date was POD 8 and median discharge date was POD 14. The overall morbidity was 53% as 23 cases in 17 patients including 3 case of pancreatic fistula, 5 cases of DGE grade A, 2 case of wound hematoma, 1 case of wound infection, 2 case of ascites, 2 case of Abdominal abscess, 1 case of UGI bleeding, 1 case of not removal of drain, 2 case of diarrhea, 1 case of BST uncontrolled, 1 case of fall out of pancreatic stump, 2 case of chyle drainage. There was 3 case of POPF according to definition by ISGPS grading system (2 cases were grade A, 1 case was grade C). Grade C POPF case was related to fall out of pancreatic stump and it had the result of death. Postoperative mortality was 1 case due to multiple organ failure by complications of fall out of pancreatic stump from pancreaticogastrostomy site. **(Conclusion)** By early term observation after PPPD, Peng's binding PG might be another option of operation techniques in order to minimize POPF. However, binding PG should be performed carefully because of this operation can be cause serious complications.

KAHBPS-P-42

Laparoscopic RAMPS (Radical antegrade modular panreatosplenectomy) in a patient with pancreatic metastasis from primary lung cancer

Department of Surgery, Konyang University Hospital, Korea

**Chul Woong Kim, Min Kyu Kim,
In Seok Choi*, Ju Ik Moon, Sang Eok Lee,
Yu Mi Ra, Ki Won Chun, Won Jun Choi**

(Purpose) Unlike primary pancreatic carcinoma, metastatic cancers of pancreas are uncommon and approximately 2% of pancreatic malignancies. Especially, it is extremely rare to be pancreatic metastatic carcinoma which was originated from the lung. Therefore, we hereby reported a case of which metastatic pancreatic carcinoma was successfully resected by a surgical intervention so called, laparoscopic RAMPS (Radical antegrade modular panreatosplenectomy). **(Methods)** A 55-year-old female with a past medical history of hypertension, diabetes mellitus, and dyslipidemia who has been diagnosed with a lung cancer and undergone left pneumonectomy in Konyang university hospital in December 4th, 2013. During the routine follow-up, chest computed tomography (CT) scan showed a 4.4cm sized malignant mass at the tail of the pancreas was identified, and the mass was also seen in magnetic resonance imaging of the pancreas (MR pancreas). **(Results)** On admission, she complained nonspecific symptoms. No particular sign was detected on the physical examinations. Only unusual laboratory test result was an elevated level of carcinoembryonic antigen (CEA) (6.84 ng per milliliter). She has undergone laparoscopic RAMPS (Radical antegrade modular panreatosplenectomy) along with left adrenalectomy. After the surgery, the patient was recovered gradually. On 3rd post-

operative day, she started the soft diet and stayed in the ward. During the recovery, the patient was consistently complaining about the sharp and stabbed left upper quadrant pain and the pain was aggravated by the diet. On 9th postoperative day, the abdomen computed tomography scan revealed 8.1cm sized fluid collection adjacent to the surgical site. On 22nd postoperative day, the patient complained no other symptoms, and the abdominal pain was subsided completely. In follow up CT, fluid collection size increased to 9.6cm. In order to continuation of her chemotherapy, the patient was transferred out to the department of the oncology. **(Conclusion)** Laparoscopic RAMPS operation can be feasible and is one of the surgical treatment options for the cancer or mass at the tail of the pancreas despite the minor postoperative complications, such as the abdominal pain or fluid collections.

KAHBPS-P-43

Migration of pancreatico-jejunostomy stent into intrahepatic duct through choledocho-jejunostomy site after Whipple's operation

Department of Surgery, Konyang University Hospital, Korea

Min Kyu Kim, Chul Woong Kim, Ju Ik Moon, In Seok Choi*, Sang Eok Lee, Yu Mi Ra, Ki Won Chun, Won Jun Choi

(Purpose) Migration of pancreatico-jejunostomy (PJ) stent rarely occurred as post-operative complication after Whipple's procedure. In most cases, migrated stent is located in jejunal lumen and then removed through efferent jejunal loop. But, in this case, we found migrated stent into intra-heptic duct (IHD) through choledocho-jejunostomy (CJ) site with IHD stone. We successfully treated with radiological in-

tervention, so we review these series of process. **(Methods)** A 64-years-old male who was diagnosed with ampulla of vater cancer has undergone Whipple's operation (pylorus preserving pancreaticoduodenectomy, PPPD) with short stent inserted at PJ site. The follow up CT scan was done in every 6 month. After 3 years, it is found that PJ stent migrates to IHD (segment 2) and IHD stone is formed. The patient complained no specific symptoms and no abnormal laboratory findings. **(Results)** Once we tried to remove stone & stent with radiologic intervention; percutaneous trans-hepatic biliary drainage (PTBD) insertion and capturing stent & stone by snare, but this procedure was failed. So, these migrated stent and stone were planned to push out into the bowel from biliary tract with Forgaty balloon insertion. After intervention, migrated stent and IHD stone were successfully removed. The patient was discharged without any complications. **(Conclusion)** A migration of pancreatico-jejunostomy (PJ) stent is uncommon post-operative complication. In this case, migrated stent triggered IHD stone. The radiological intervention is considered one of the useful methods

KAHBPS-P-44

Ampulla of vater adenosquamous carcinoma

¹Division of Transplant and Vascular Surgery, Department of Surgery, ²Division of Hepatobiliary and Pancreas Surgery, Department of Surgery, Korea University College of Medicine, Korea

Pyoung-Jae Park¹, Wan Bae Kim^{2*}, Sae Byeol Choi², Sang Yong Choi²

(Purpose) Adenosquamous carcinoma is defined as a tumor in which both glandular and squamous elements are malignant. Adenosquamous carcinoma of ampulla of Vater is extremely rare and only 5

cases were reported in the literatures (In Korea, only 1 case was reported previously). Generally, adenocarcinoma of ampulla of Vater has better prognosis than other periampullary carcinoma, but oncologic aggressiveness and outcomes are not known. We experienced and reported a case of adenosquamous carcinoma of ampulla of Vater in our institute. **(Case Reports)** A 71 year old female was admitted because of general weakness, and fatigue. AST and ALT levels were 265 IU/L and 362IU/L. Total bilirubin and ALP levels were 2.62 mg/dL and 725 IU/L. It suggested of obstructive jaundice. On preoperative CT, diffuse dilatation of biliary tree and abrupt luminal narrowing at distal CBD were identified and other metastatic lesions were not found. Moderate differentiated adenocarcinoma of ampulla of Vater was diagnosed at endoscopic biopsy and endoscopic retrograde cholangiopancreatography (ERCP). Endoscopic nasal biliary drainage (ENBD) was inserted during ERCP. Pylorus preserving pancreatoduodenectomy was performed. During operation, any lymphadenopathy or cancerous lesions were not found. Lymph node dissection of peripancreatic, No 8, No 12, and 13 was done. Liquid diet started at postoperative 6 days but delayed because of abdominal pain. Diet was restarted at postoperative 12 days and she recovered successfully. She was discharged at postoperative 14 days. **(Results)** On final pathology, adenosquamous carcinoma of ampulla of Vater was confirmed. Tumor invaded to pancreas (T3) and lymphatic invasion was not found (N0). Her stage was 2A on AJCC 7th edition. **(Conclusion)** Adenosquamous carcinoma of ampulla of Vater was an extremely rare disease and its prognosis was not confirmed. In future, this disease should be investigated and understood.

KAHBPS-P-45

Pancreas carcinosarcoma : A case report

Department of Surgery, Korea University
College of Medicine, Korea

Hyung Joon Han*, Tae-Jin Song,
Sam-Youl Yoon, Jin-Suk Lee, Sae Byeol Choi,
Wan-Bae Kim, Young-Dong Yu,
Dong-Sik Kim, Sung-Ock Suh,
Sang-Yong Choi

(Purpose) Carcinosarcoma is a rare type of neoplasm, characterized by concurrence of both epithelial and mesenchymal elements, which correlate to carcinoma and sarcoma respectively. Most common sites of occurrence are uterus, ovaries, urinary system, oral cavity, and esophagus. Few cases of carcinosarcoma occurring in other sites, including lung, breast, and gastrointestinal tract have been reported. **(Methods)** A 25-year-old female, without known past disease history, had a history of back pain that began 3 years ago and was controlled with NSAIDs prescribed from local orthopedic surgery clinics. Epigastric pain radiating to the back started 6 months ago, and two days before her visit, she was evaluated at a secondary clinic, and was found with a mass located in the pancreas tail on the CT scan, and elevated level of amylase, and lipase. Upon referral to our center, she showed general weakness, weight loss, constipation, diarrhea, epigastric pain, and dyspepsia. Her amylase and lipase were 208 U/L and 261 U/L, respectively. Other laboratory results, including tumor markers, fell within the normal range. **(Results)** Abdomen CT scan and MRCP showed a 4.8cm sized mass lesion in the pancreas tail with internal hemorrhage and necrosis. Obstructed splenic vein, due to tumor invasion, was seen, causing a gastric fundal varix. PET-CT showed an intense hypermetabolic mass lesion in pancreatic tail portion

with relative photon defect area, and a focal hypermetabolism in the right adnexa. With an impression of pancreatic solid pseudopapillary tumor, a benign tumor occurring frequently in young-aged women, she underwent explorative laparotomy. On the table, surgeons performed a single port distal pancreatectomy with splenectomy. **(Conclusion)** The pathologic report was carcinosarcoma, which had extensive necrosis and extension to the peripancreatic soft tissue and lymph node.

KAHBPS-P-46

Hybrid minimal invasive surgery for early gallbladder cancer

Department of Surgery, Yonsei University College of Medicine, Pancreaticobiliary Cancer Clinic, Yonsei Cancer Center, Severance Hospital, Korea

**Seok Jeong Yang, Sung Hwan Lee,
Chang Moo Kang, Woo Jung Lee***

(Purpose) When it comes to gallbladder cancer, appropriate surgery is required for best outcome according to its stage and location. Especially for early gallbladder cancer, there are many minimal invasive attempts to accomplish radical surgery. But, it demands delicate and complicate laparoscopic skill. The characteristics of robot make this procedure easy, but the cost and indication are points in

dispute. So, we tried hybrid minimal invasive technique, laparoscopic cholecystectomy at first and following robotic lymph node dissections, when frozen biopsy revealed the tumor invaded lamina propria for clinically suspicious early gallbladder cancer patients. **(Methods)** From October 2007 to September 2014, thirteen patients who received hybrid minimal invasive technique for early gallbladder cancer were reviewed retrospectively. Perioperative clinicopathological outcomes were analyzed. **(Results)** Hybrid minimal invasive radical gallbladder surgery was successful in twelve patients, except one who converted to open surgery due to renal vein injury. T stage was T2 in four cases, T1b in five case and 4 cases was T1a. The mean number of excised lymph nodes was 10.9 (range=5-19) but there was no positive lymph node. Two cases postoperative bile leakage occurred but managed well conservatively. Mean postoperative follow-up was 44.4 months (range=3-69 months) and there is no recurrence. **(Conclusion)** With advance in radiologic technique, there is increasing needs to minimal invasive surgery for suspicious early gallbladder cancer. Laparoscopic radical cholecystectomy is demanding procedure because operation field is somewhat deep and narrow. Free articulation of robot is advantageous for clear removal of lymph nodes around the hepaticoduodenal ligament, hepatic artery and aortocaval area. Hybrid minimal invasive radical cholecystectomy by help of frozen pathology can be reasonable option to selected case.