

## Oral Presentation I

## I-1

# Could We Perform Single Port Laparoscopic Cholecystectomy Easily and Safely Using Conventional Laparoscopic Instruments?

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**Introduction:** Single Port Laparoscopic Cholecystectomy displays substantial progresses in minimally invasive surgery and recent randomized controlled studies of this novel technique have challenged the conventional laparoscopic cholecystectomy as the gold standard treatment in benign gallbladder disease. Herein, we analyze the perioperative variables of single port laparoscopic cholecystectomy performed by a single surgeon.

**Method:** We analyzed the 115 patients who underwent single port laparoscopic cholecystectomy or conversion to conventional laparoscopic cholecystectomy. We also compared the clinical variables according to the operation type.

**Results:** Of 115 patients, 97 patients underwent single port laparoscopic cholecystectomy. Ten patients (8.70%) underwent conventional laparoscopic cholecystectomy. We used 4th instrument of single port in eight cases (6.96%). We found that higher body mass index, bile leak, easily obtaining of critical view of safety, percutaneous sutures, and gallbladder distention were significantly observed in the higher operation time group. Complications occurred in 6 patients (5.2%): superficial surgical site infections (n=4) and wound pain (n=2), which prolonged the length of hospital stay.

**Conclusions:** Single port laparoscopic cholecystectomy could be tried easily and accomplished successfully if you avoid or overcome the factors, which prolonged operation time.

## I-2

# Single Incision Laparoscopic Cholecystectomy with New Optimal Retraction Method in Gallbladder Disease

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**Purpose:** Laparoscopic cholecystectomy is the gold-standard procedure for gallbladder removal. The advantages of this procedure over the open approach include better cosmetic result, less postoperative pain, and shorter recovery time. Recently, in order to reduce operative trauma and improve cosmetic result following laparoscopic cholecystectomy, new operative techniques have been developed. Single-incision laparoscopic surgery (SILS) was developed with the aim of reducing the invasiveness of traditional laparoscopy. But, Limited retraction has been an obstacle in the advancement of pure single incision cholecystectomy. Adequate retraction is necessary to perform a safe cholecystectomy. We reviewed the results of a single institution with respect of single incision cholecystectomy with a single 2mm needlescopic instrument and snake retractor to aid in obtaining a critical view of safety to identify the ideal surgical strategy of single incision laparoscopic cholecystectomy in disease of biliary tree.

**Methods:** Between October 2010 and March 2012, 170 patients underwent single incision laparoscopic cholecystectomy with needle scopic infundibular retraction for gallbladder disease in single institute by one surgeon, Uijeongbu St. Mary's hospital. 170 patients with a mean age  $49.3 \pm 14.7$  years (range 12 to 82) were identified. We used a hand-made Glove port or SILSTM (Covidien, Tyco health Medical) single-port device for operation. Single port device was placed through umbilicus. A (2 mm) needlescopic retractor (Stryker, San Jose, CA) was placed in the right flank region directly through the abdominal wall for retraction of the gallbladder infundibulum in an anterior and cephalad direction. And snake retractor was used for liver retraction. We grouped two group: group A (without flexible videoscope),

group B (with flexible videoscope).

**Results:** Patient all had a pathologic diagnosis of acute and chronic cholecystitis. ASA class averaged 1.62 (range 1 to 2). Operative times(skin to skin) averaged 70.1±49.6 minutes (range 25 to 313 minutes): in simple cholecystectomy averaged 57.0±22.3 minutes (range 25 to 110 minutes) and in difficult cholecystectomy 102.2±58.9 minutes (range 28 to 313 minutes) Postoperative hospital stays averaged 2.6 days. There were three open conversion cases:one bile duct injury, one uncontrolled bleeding and one difficult dissection. No major morbidity and mortality cases. postoperative stay were similar in two group, the operative time was significantly shorter in group B and the incidences of overall postoperative complications and biliary complications were statistically and insignificantly lower in group B.

**Conclusions:** Single incision cholecystectomy with a single needlescopic instrument is safe for acute and chronic cholecystitis even in gallbladder empyema. Liver retraction using a snake retractor is very useful in easy and difficult gallbladder disease.

### I-3

## Laparoscopic Common Bile Duct Exploration as Primary Treatment Modality of Common Bile Duct Stones

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**Purpose:** The aim of this study is to evaluate the exact long-term clinical outcomes and effectiveness as primary treatment modality of laparoscopic Common bile duct exploration (CBDE) for CBD stone disease through analysis of a large number of cases in a single institution.

**Method:** A retrospective review of the records of all patients who underwent laparoscopic CBDE in Ewha Womans University Mokdong Hospital from 1997 to 2011 was conducted. Clinical features, laboratory data, operative findings and post operative follow-up evaluations were analyzed. Besides the overview, we compared the clinical outcome between the cases with T-tube and the cases without it, and, also compared the results of influence of preoperative Endoscopic

Retrograde Cholangiopancreatography (ERCP).

**Results:** A total of 156 patients were included with the median age of 67.4 (Ranges from 25 to 92). We excluded the cases that combined intrahepatic duct stone or other disease except gallbladder stones in this study. A median follow up period was 42.3 months (max 153). A total of 101 (64.7%) patients underwent LCBDE as their primary procedure while the remaining 55 (35.3%) were performed preoperative ERCP initially. There were only 5 (3.1%) conversions to laparotomy regardless previous operational history. The mean duration of operation time was 189 minutes (range 85 to 480). In 3 (4.5%) cases, we recognized remnant stones, 2 cases of which required post-operative choledochoscopy to clear residual stones through the T-tube and 1 case underwent ERCP. 17 (10.9%) patients developed recurrent CBD stones. The morbidity rate was 12.2% including bile leakage. The mortality rate was 2.6% (4 cases). However, the relationship between these mortalities and the operation was uncertain. 3 patients with old age had died due to pneumonia. A patient who had toxic hepatitis before operation had died of the same disease. A T-tube was only placed in 62 (39.7%) patients. There was no significant statistical difference of main outcomes as recurrence and complication rate except operation time and hospital stay postoperatively. And there was also no significant statistical difference of main outcomes whether preoperative ERCP or not.

**Conclusion:** Laparoscopic CBDE have relatively satisfactory clinical outcomes in managing choledocholithiasis according to long term follow up results, as well as short term satisfaction. So, this method seems to be the primary treatment modality with safety and effectiveness.

### I-4

## Preliminary Result of Enucleation for Cystic Lesion with Maximal Function Preserving in Pancreas: Laparoscopic vs. Open

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**Background:** Pancreatic enucleation has been adopted in selected patients with pancreatic disease because of risk of long term functional impairment after major pancreatic resection. However, there is a lack of published comparison studies between open and laparoscopic enucleation. The purpose of this study was to evaluate postoperative clinicopathologic results between open enucleation(OE) and laparoscopic enucleation (LE).

**Methods:** We used the clinical database registry system of the Gangnam Severance Hospital, Yonsei University Health System for these analyses from Jan 2006 to Dec 2011. A total of 20 patients underwent enucleation due to pancreatic cystic lesion. We used the clinical database registry system of the Gangnam Severance Hospital, Yonsei University Health System to establish a retrospective cohort with clinicopathologic data.

**Results:** Of 20 patients, 11(55%) were treated with OE and 9 (45%) were treated with LE. Among 20 patients with pancreas cystic lesion, 10patients were pathologically confirmed intraductal papillary mucinous neoplasm and 3 patients were mucinous cystic neoplasm. The mean operative time was 183 minutes for OE and 312 minutes for LE ( $p<0.001$ ). There was one conversion from LE to open. Mean estimated blood loss was 128 mL for OE and 264 mL for LE ( $p=0.084$ ). Mean hospital stay was 13.7 days for OE and 9.7 days for LE ( $p=0.193$ ). Mean maximal tumor size was 35.1mm for OE and 26.2mm for LE ( $p=0.055$ ). There were no recurrences after enucleation of pancreas during follow up.

**Conclusions:** Enucleation of pancreatic cystic lesion is a feasible treatment option for preserving maximal function in selected patients. LE is as safe as OE and decreases in hospital stay even LE takes longer operation time than OE.

## I-5

## Portal Venous Stent Placement in Patients with Surgical Treatment for Hepatobiliary Pancreatic Malignant Tumor: Short-term Outcomes

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**Purpose:** The purpose of this study was to investigate the efficacy and safety of portal vein stent placement in patients with portal vein occlusion or stenosis after radical operation of Hepatobiliary pancreatic malignant tumor.

**Materials and Methods:** From February 2008 to February 2012, 60 patients underwent portal venous stent placement because of portal vein stenosis or occlusion in Asan Medical Center during postoperative period. We were retrospectively reviewed the clinical data of these patients.

**Results:** Twenty-six patients had pancreatic cancer, 7 patients had common bile duct cancer, 17patients had hilar cholangiocarcinoma, 4 patients had hepatocellular carcinoma (2 patients had ruptured HCC with portal vein thrombus), 3 patients had intrahepatic cholangiocarcinoma, 3 patients had Ampulla of Vater cancer. Stents were placed in the portal venous system across stenotic ( $n=48$ ) or occlusion ( $n=12$ ) lesions after percutaneous transhepatic portography. Etiology of the PV stenosis or occlusion was tumor recurrence ( $n=29$ ), portal vein resection and anastomosis ( $n=16$ ), inflammatory changes ( $n=5$ ), portal vein thrombectomy ( $n=2$ ) and postoperation unknown( $n=8$ ). Liver function was classified with Child- Pugh class A ( $n=19$ ), B ( $n=37$ ), C ( $n=5$ ). Pressure gradient (SMV, MPV) decreased significantly immediately after stent placement, from  $10.5 \text{ mmHg} \pm 4.4 \text{ (SD)}$  to  $2.5 \text{ mmHg} \pm 2.6$  ( $p<0.0001$ ). There were not significant differences of Liver function after stenting compared to laboratory findings before stenting ( $p>0.05$ ). Liver function did not deteriorate because of stenting. Only bilirubin val-

ues transient elevated post-stenting, but no significant difference after 1 week. And liver function improved significantly after 1 week [1week-AST, ALT, Albumin, PT%. VS. pre-AST, ALT, Albumin, PT%, ( $p < 0.05$ )]. One patient dead after 1 week because of liver function deteriorated, but there is no clear evidence that this treatment-related.

**Conclusions:** PV stent placement is a safe choice, which with an acceptable success rate, and remarkable relief from portal hypertension with portal vein occlusion or stenosis. Liver function was improved significantly after portal venous stent placement. To improve patient's survival and maintain liver function, portal venous stent placement is one of effective therapeutic options for patients with portal vein occlusion or stenosis in hepatobiliary pancreatic surgery.

## I-6

### Clinicopathologic Analysis of Undifferentiated Carcinoma in Gallbladder

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**Purpose:** Undifferentiated carcinoma is rarely seen in the gallbladder, there are very little case reports. We reported the 8 cases of patients with undifferentiated carcinoma in gallbladder that also have a character-

istic feature.

**Materials and Methods:** We retrospectively reviewed the charts of all patients operated to the Samsung medical center between October 1994 and March 2009 with cancer of gallbladder. Eight cases of pathologically proven undifferentiated carcinoma were found among 404 cases of gallbladder cancer. We examined the characteristics of undifferentiated carcinoma and compared survival rates in adenocarcinoma patients by log-rank test after 1:5 fixed matching with age and sex.

**Results:** The 8 cases included 7 women and 1 man of median age 57.5 years (range 45-69 years). Follow up periods ranged from 4.3 to 47.2 months (median, 7.3 months). The five patients underwent radical cholecystectomy and 2 patients underwent right trisectionectomy. One patient was operated palliatively cholecystectomy and segmental resection of transverse colon. The eight patients were classified by pathology stage and the results were: stage Ib in two, stage IIa in two, stage IIb in three and stage III in one. Patients in undifferentiated carcinoma showed significantly poor overall survival than patients in adenocarcinoma of gallbladder (1-years survival rate 42.9% vs 76.8%,  $p=0.036$ ).

**Conclusions:** In our study, we examined the characteristics of undifferentiated carcinoma and concluded the survival of undifferentiated carcinoma in gallbladder was significantly lower in patients than in those with adenocarcinoma in gallbladder. But further research with a larger sample size is needed to understand the characteristic of this tumor.