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## 간담췌 O-I-1

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### Perineural invasion and lymphovascular invasion in distal cholangiocarcinoma; Are they uncontrollable prognostic factors with surgery?

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**(Purpose)** Some authors have reported that perineural invasion (PNI) and lymphovascular invasion (LVI) are prognostic factors of cholangiocarcinoma. There are no way to detect PNI and LVI preoperatively. The purpose of this study was to elucidate the significance of PNI and LVI as prognostic factors of distal cholangiocarcinoma after curative resection. **(Methods)** A retrospective analysis of 91 patients who underwent radical surgery for distal cholangiocarcinoma between March 2004 and October 2011 was performed. We analyzed survival rate and prognostic factors affecting the survival focusing on PNI and LVI. **(Results)** Overall survival rates for 1, 3, and 5 years were 84.1%, 49.7%, and 38.9%. In univariate analysis, the prognostic factors influencing survival were histologic differentiation, lymph node (LN) involvement, and TNM stage. In multivariate analysis, LN metastasis was the only independent prognostic factor. Although patients with PNI tended to show poorer survival, it was not statistically significant (3, and 5-year OS; 62.0%, 54.6% vs. 42.8%, 30.9%,  $P=0.166$ ). In the patients with total lymph node count (TLNC) with 11 or less, PNI was a significant prognostic factor; however, it was not in the group of TLNC over 11. Overall, LVI had no influence on the survival. **(Conclusion)** LN metastasis was the only significant prognostic factor after

curative resection of distal cholangiocarcinoma. In case where adequate dissection was performed, it appeared that PNI and LVI had no influence on the survival.

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## 간담췌 O-I-2

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### Anterior transection approach for left hepatectomy in patients with perihilar cholangiocarcinoma

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**(Purpose)** Liver hanging maneuver (LHM) is a useful technique enabling a safe anterior approach, but it has several technical limitations for resection of the hepatic paracaval portion. We had presented a modified LHM that facilitates concurrent resection of the paracaval portion, a technique applicable to left liver resection for perihilar cholangiocarcinoma. However, after accumulation of experience, straightforward anterior resection appeared more feasible without using any type of LHM. Furthermore, there was no essential need to dissect the hilar structures completely before parenchymal transection. This study was intended to shorten the operation time and to minimize tumor manipulation through initial limited hilar dissection and sequential completion dissection after hepatic parenchymal transection. **(Methods)** This study include 3 groups as follows: anterior approach group (n=14) undergone straightforward anterior transection to the caudal paracaval portion only after limited hilar dissection without application of LHM. There were 2 control groups as classical dissection group (n=10) and modified hanging group (n=10). **(Results)** In the anterior transection group, liver transection was totally ap-

proached from the right side, with no touch to the left side. After parenchymal transection, the left liver was mobilized and removed. This modification resulted in shortening of operation time by 30 minutes and omission of painstaking retrohepatic tunneling. The final parenchymal transection plane was the same as that following conventional surgical technique for perihilar cholangiocarcinoma. Mean operation time, R0 resection rate and complication rate were  $5.8 \pm 1.5$  hours, 85.7% and 21.4% in anterior approach group;  $7.5 \pm 1.4$  hours, 90% and 20% in modified hanging group; and  $7.9 \pm 1.2$  hours, 80% and 20% in classical dissection group. **(Conclusion)** Anterior transection approach with initial limited hilar dissection shortened the operation time and theoretically enhanced the oncological radicality for left liver resection in patients with perihilar cholangiocarcinoma. However, it seems to be more demanding, thus requiring extensive experience for anatomy-oriented liver resection.

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### 간담체 O-I-3

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#### Impact of preoperative ERCP on laparoscopic cholecystectomy

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**(Purpose)** The aim of this study was to evaluate effects of ERCP on laparoscopic cholecystectomy (LC) in gallstone patients. **(Methods)** From September 1, 2011 to May 30, 2013, among 722 patients who underwent LC for benign gallbladder disease, 448 patients who had not shown acute cholecystitis or cholangitis preoperatively. These patients were divided into 2 groups ; patients with preoperative ERCP prior

to LC (ERCP group, n=81) and patients who underwent LC without preoperative ERCP (Non-ERCP group, n=367). Preoperative demographic factor, intraoperative finding for degree of inflammation and technical difficulty, and postoperative outcome were analyzed retrospectively. **(Results)** There were no difference degree of preoperative inflammation between 2 groups. However, in ERCP, degree of intraoperative inflammation was severe and score of technical difficulty was higher than those of Non-ERCP group. Operative time was longer and rates of open conversion was higher in ERCP group. However, rate of bile duct injury and postoperative complication were not different between 2 groups. On multivariate analysis, male sex and preoperative ERCP were significant factors for difficult operation. On sub-analysis in ERCP group, degree of inflammation was more severe in patients who underwent LC within 72 hours after ERCP than patients who underwent LC between 3-7 days and 7-14 days after ERCP. However, operation difficulty was not different each other. **(Conclusion)** Preoperative ERCP is a significant factor for difficult LC. Therefore, experienced surgeon should perform LC after preoperative ERCP.

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### 간담체 O-I-4

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#### Transduodenal ampullectomy versus pancreatoduodenectomy in the patients with carcinoma in situ or T1 ampulla of vater cancer

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**(Purpose)** There are two ways of surgical treatment for ampulla of Vater tumor defined in the ampulla of Vater. There is concern that transduodenal ampul-

lectomy is associated high local recurrence rate although pancreatoduodenectomy is associated with high morbidity and mortality. The aim of this study is to validate the effectiveness of transduodenal ampullectomy in carcinoma in situ or T1 ampulla of Vater cancer. **(Methods)** From September 1994 to July 2013, total 475 patients underwent surgery for ampulla of Vater tumor. Among them, 137 patients who diagnosed with carcinoma in situ or T1 invasive ampulla of Vater cancer were identified and retrospectively reviewed. The patients were divided into two groups according to the method of surgery: transduodenal ampullectomy (group 1) and pancreatoduodenectomy (group 2). **(Results)** The 18 patients underwent transduodenal ampullectomy and 119 patients underwent pancreatoduodenectomy. After a median follow-up of 50 months, 2 patients (11%) of group 1 and 16 patients of group 2 (13%) experienced recurrence ( $P=0.993$ ). In T1 ampulla of Vater cancer patients, lymph node metastases rate was significantly high when the cell differentiation is moderately or poorly differentiated type ( $P=0.015$ ). **(Conclusion)** Transduodenal ampullectomy might be a substitution for the treatment of ampulla of Vater cancer in selected patients.

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## 간담췌 O-I-5

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### The clinical significance of preoperative diagnosis of T3 gallbladder cancer

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**(Purpose)** Surgical treatments for gallbladder cancers

are variable according to the depot of invasion. Although the diagnostic accuracy of the gallbladder cancer has been increased, we encountered gallbladder cancer diagnosed incidentally following surgical resection for benign gallbladder disease. We investigated clinical characteristics of T3 gallbladder (GB) cancer, and compared the clinicopathological characteristics of the patients according to preoperative diagnosis (GB cancer vs. cholecystitis). We studied the prognostic factors for survival after surgical resection of T3 GB cancer. **(Methods)** From 2000 to 2012, 72 patients were performed surgical resection for T3 gallbladder cancers in Korea University Medical Center. Clinicopathological data were reviewed retrospectively. We divided the patients according to the preoperative diagnosis; 23 patients who were diagnosed as benign GB disease, cholecystitis at preoperative evaluation, and confirmed GB cancer from pathological result after operation (groups 1) and 48 patients who were diagnosed as GB cancer at preoperative evaluation (group 2). We performed univariate and multivariate analyses of the prognostic factors for survival. **(Results)** Of the 71 patients, there were 35 men and 36 women. Significantly lower proportion of the group 1 received liver resection, lymph node dissection than group 2. Significant higher proportion of the group 1 demonstrated presence of inflammation, gallbladder stone than group 2. The pathologic stage was more advanced in group 2 than group 1. R0 resection was performed in 21.7% of the group 1 and 62.5% of the group 2. In the univariate analysis for survival, lymph node dissection and R0 resection were statistically significant prognostic factors. In the multivariate analysis, R0 resection was an independent prognostic factors for survival (Hazard ratio; 3.404,  $P=0.013$ ). **(Conclusion)** Group 1 patients tended to perform less R0 resection than group 2 patients. In the T3 gallbladder cancer, curative resection was the only factor to offer survival benefit. Therefore exact preoperative diagnosis might be important. If GB cancer was diagnosed during or after operation, additional resection to achieve R0 resection should be performed to enhance the survival.