

for IL-6 by ELISA. Gene expressions of IL-6, SphK1 and S1PR1 (S1P receptor 1) were determined using real-time RT-PCR and Western blot for Stat3 was performed. **Results:** Cholesterol gallstone formation was significantly decreased in myriocin treatment group (11% vs. 85%, $p < 0.05$). IL-6 concentrations of both serum and GB were decreased by myriocin ($p < 0.05$). Phosphorylation of Stat3 in GB with gallstone significantly increased. Myriocin downregulated IL-6, SphK1 and S1PR1 gene expressions in GB and inhibited Stat3 activation. **Conclusion:** SphK/S1PR1 gene expression in GB was associated with cholesterol gallstone formation in mice. Inhibition of sphingolipid pathway affected the formation of cholesterol gallstone by the modulation of IL-6/Stat3 pathway in mice model.

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Direct peroral cholangioscopy using an ultra-slim upper endoscope in patients with altered gastrointestinal anatomy

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Backgrounds: Direct peroral cholangioscopy (POC) allows direct visual examination of the bile duct and therapeutic interventions in patients with biliary disease. Endoscopic retrograde cholangiopancreatography (ERCP) is often technically difficult to gain transpapillary access to the biliary system in patients with prior intestinal bypass surgery, such as Roux-en-Y or Billroth II reconstruction and choledochoduodenostomy. The aim of our study is to evaluate the usefulness of direct POC using an ultra-slim upper endoscope in patient with altered gastrointestinal (GI) anatomy. **Methods:** 15 patients with altered GI anatomy were included in this study between May 2008 and Aug. 2011. In 15 patients with choledochoduodenostomy ($n = 8$), Billroth II gastrectomy ($n = 6$) and pancreaticoduodenectomy ($n = 1$), direct POC was performed with ultra-slim upper endoscope. Successful direct POC was defined as the advancement of the endoscope into the bifurcation of the biliary tree or the biliary lesion. **Results:** Direct POC was successfully performed in all patients. In 8 patients with choledochoduodenostomy, we found 3 CBD stone, 1 IHD stone, 1 IHD stone with benign IHD stricture, 1 bile duct cancer, 1 benign IHD stricture and 1 biliary sludge. In 6 patients with Billroth II gastrectomy, 4 CBD stone and 2 CBD stone with IHD stone were found. We performed intraductal balloon dilatation in benign IHD stricture, CBD stone removal, narrow band imaging study and target biopsy. There are no procedure-related complications. **Conclusions:** Direct POC with an ultra-slim upper endoscope was feasible and safe in patient with altered GI anatomy, and allowed direct visual examination and therapeutic interventions.

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Biliary drainage with a modified fully covered self-expandable metallic stent for potentially resectable distal malignant biliary obstruction

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Backgrounds: Early biliary decompression is indicated for cholangitis in patients with malignant biliary obstruction (MBO). However, preoperative biliary drainage using plastic stents may increase the need of reintervention and perioperative complications. We evaluated the usefulness of a removable fully covered self-expandable metallic stent (FCSEMS) modified to minimize stent-induced complications for potentially resectable distal MBO. **Methods:** From January 2009 to August 2011, total 34 patients were performed early biliary drainage using a modified FCSEMS (BONASTENT M-Intraductal, Standard Sci Tech Inc, Seoul, Korea) for suspicious distal MBO that was potentially resectable or on stage work-up. Further treatment was decided according to the final assessment; (1) curative intent surgery, (2) neoadjuvant chemoradiation, (3) palliative treatment with/without chemoradiation, or (4) removal of stent for finally proved benign biliary stricture. **Results:** The overall technical and clinical success rates of the biliary drainage using a modified FCSEMS were 100% (34/34). Complication related with stenting was developed in 3 patients (1 mild pancreatitis and 2 stent migrations). Final diagnosis was 29 MBS (16 pancreatic head cancers, 9 CBD cancers, 3 gallbladder cancers and 1 ampullay cancer) and 5 benign biliary strictures (3 chronic pancreatitis and 2 autoimmune pancreatitis). 15 patients had undergone curative intent pancreaticoduodenectomy. No stent-induced postoperative complication was occurred. Removal of the stent was successful in all patients confirmed finally benign biliary strictures. **Conclusion:** The modified FCSEMS may be effective for early biliary drainage in patients with potentially resectable distal MBO without interfere for further intervention.

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Branching patterns of intrahepatic biliary ducts, cystic duct insertion and pancreas divisum – prevalence and relevance: magnetic resonance cholangiopancreatography based study

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Background: Anatomic variations in intrahepatic biliary ducts (IHD) are relevant for endoscopic and percutaneous biliary drainage, post cholecystectomy bile duct injuries and bile duct anastomosis during liver transplantation. Low insertion of cystic duct (LICD) is a common cystic duct variant. Pancreas divisum (PD) is the commonest congenital anomaly of pancreas. **Methods:** We reviewed 500 consecutive Magnetic Resonance Cholangiopancreatographies (MRCPs) done at our centre, to find the frequency of variants of IHD, LICD and PD. **Results:** IHD could be evaluated in 458 MRCP's, the 'typical' anatomy was found in 65.72% ($n = 301$), 'triple confluence' in 12.23% ($n = 56$), 'right posterior sectorial duct (RPSD) draining to left hepatic duct (LHD)' in 13.97% ($n = 64$), type 3B 'RPSD to common hepatic duct (CHD)' in 4.37% ($n = 20$), type 3C 'RPSD to cystic duct' in 0.44% ($n = 2$), 'accessory duct to CHD' in 0.66%