Purpose: Needle knife sphincterotomy (NKS) is a representative alternating technique when standard biliary cannulation has failed, but there were little methods after NKS. In this situation, repeated interval endoscopic retrograde cholangiopancreatography (ERCP) is usually considered as an attractive method, but there were limited reports about it. The aim of this study was to show the results of repeat ERCPs after initially failed biliary cannulation despite NKS.

Methods: From Jan. 2007 to Apr. 2010, 302 patients underwent NKS for difficult biliary cannulation. Among them, 48 experienced failed biliary cannulation with NKS. Their medical records with endoscopic and radiologic findings were retrospectively reviewed.

Results: Forty two experienced second ERCP and 6 did third ERCP, respectively. Male were 28 (58.3%) and median age was 68 years old. Twenty three (47.9%) had malignancy and 15 (31.3%) underwent ERCP due to choledocholithiasis. There were following conditions as difficult cannulation like subtotal gastrectomy with Billroth II reconstruction (1), diverticulum (7), impacted stone (3) and initial pancreatic duct caunulation with difficult biliary cannulation (11). Technically, 62.5% (30/48) were successful with second ERCP and 72.9% (35/48) were successful with second or third ERCPs. Clinically, 45.8% (22/48) and 54.2% (26/48) were successful, respectively. Median interval from first to second ERCP was 2 (1~21) days and that from second to third was 7 (2~11) days. There were 6 complications in 5 patients (10.4% /5/48) after initial ERCP (3 mild pancreatitis, 2 mild cholangitis, 1 mild perforation), 8 complications (16.7%, 8/48, p=0.51) after second (1 mild pancreatitis, 2/1 mild/severe cholangitis, 2 mild perforation, 1/1 mild/moderate bleeding) and none after third.

Conclusion: In case of initially failed cannulation despite NKS, repeat interval ERCP is worthy to be considered and it shows similar complication rates compared to initial ERCP.

Key Words: Endoscopic retrograde cholangiopancreatography, Needle knife, Sphincterotomy, Common bile duct, Cannulation