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ABSTRACTS PRESENTATIONS

1564—AMAZING TECHNOLOGIES

ENDOSCOPIC DUODENO-CHOLEDOCHOSTOMY

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Introduction: The obstruction of the distal part of the common bile duct in most cases is eliminated by endoscopic transpapillary interventions. However, in up to 10% of cases transpapillary drainage of biliary tree is unsuccessful for various reasons. Percutaneous transhepatic drainage of biliary ducts and open surgical interventions in biliary tract obstruction have their own disadvantages.
Aim: Creation of bile offtake into the duodenum with minimally invasive methods in case of common bile duct distal part obstruction and failure of endoscopic transpapillary drainage.
Materials and Methods: The anatomical relationships between the duodenum and the common bile duct in its distal parts, ranging from the retroduodenal part to the Oddi sphincter, have been studied. Also, the possibility of passing light through the walls of the common bile duct and duodenum by a light source introduced into the lumen of the common bile duct is also experimentally determined.
Results: The gap between the wall of the duodenum and the common bile duct has no free spaces ranging from 6.1 ± 0.2 mm from the sphincter of Oddi. The length of the conditional line between the lumens is from 7.1 ± 0.2 mm at a distance of 60 mm from the Odd sphincter to 4.7 ± 0.1 mm at a distance of 30 mm from the sphincter of Oddi. On a site up to 40 mm from the sphincter of Oddi, the common bile duct and duodenum are in immediate proximity to each other without voids, which is predispose for the formation of a connection between the lumen of the duodenum and the common bile duct. The light source from the common bile duct is visualized from the lumen of the duodenum with varying intensity up to 50 mm from the sphincter of Oddi. To connect the duodenal lumens and the common bile duct, endoscopic retroduodenal light-oriented duodenocholeoodogostomy was developed and introduced.
Conclusions: The results of the endoscopic light-oriented duodenocholedochostomy statistically do not differ from the endoscopic transpapillary drainage of common bile duct. Statistically significant better results were found in comparison with open bilioenteric anastomosis in all investigated parameters.
Key statement: Endoscopic light-oriented duodeno-choledochostomy can be successfully applied in cases of obstruction the distal part of the common bile duct.

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1008—UPPER GI—Gastroduodenal diseases

OPTIMIZATION OF INSUFFLATION AND PRESSURE CONTROL IN THIRD-SPACE ENDOSCOPY

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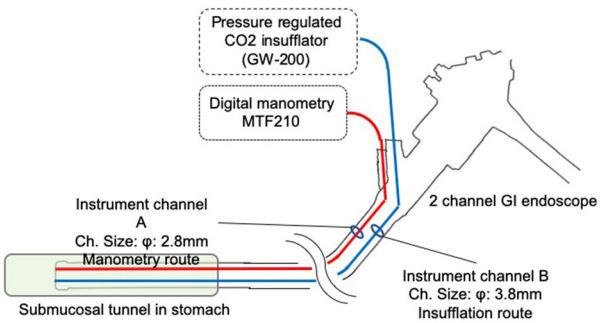
Background: Third-space endoscopy requires a delicate and accurate insufflation technique to secure the endoscopic visualization and maintain the working space. However, optimal endoscopic insufflation parameters for third-space endoscopy have yet to be determined. The aim of this study was to assess: (1) the diversity of endoluminal third-space pressure achieved by the endoscopists' manual insufflation, and (2) the performance of the insufflation settings for third-space endoscopy.
Methods: This was a non-survival animal study using a porcine model (n = 7). A submucosal tunnel was created in the upper posterior wall of the stomach. Using two-channel esophagogastroduodenoscopy (EGD), one channel was used for insufflation and the other was used for pressure measurement (Fig). < Experiment 1 > Endoluminal submucosal tunnel pressure was measured during EGD at 0.25-second intervals for 2 min in a 10-cm submucosal tunnel of a single pig. Seven board-certified endoscopists, in turn, maintained what they considered sufficient exposure for investigation under manual insufflation. < Experiment 2 > The endoluminal submucosal tunnel pressure and the number of insufflations were measured using the pressure-regulated insufflation device; the differences in the submucosal tunnel length (long: 10 cm, short: 4 cm, n = 3) and the insufflation route diameter (large: 3.8 mm, small: 2.2 mm, n = 3) were compared.

Fig. A schema of experimental setting for experiments



Results: < Experiment 1 > Variations in pressure data among the seven endoscopists were observed; additionally, the values fluctuated over time for each individual endoscopist. < Experiment 2 > Longer submucosal tunnels and larger insufflation route diameters lead to stable endoluminal submucosal tunnel pressure. The gap with the preset pressure of the insufflator and endoluminal pressure narrowed (tunnel length: $p < 0.01$, insufflation route diameter: $p < 0.01$), and the required number of insufflations decreased with longer tunnel length and larger route diameter (tunnel length: $p < 0.01$, insufflation route diameter: $p = 0.032$).
Conclusions: The pressure dynamics in third-space endoscopy differed among endoscopists. Longer submucosal tunnels and larger insufflation route diameters lead to stable endoluminal submucosal tunnel pressure and stabilized the submucosal tunnel.

947—UPPER GI—Gastroduodenal diseases

EXPERIMENTAL EVALUATION OF CHANGES IN MUCOSAL NADPH OXIDASE AFTER LOCAL PRP INJECTION IN RATS WITH GASTRIC ULCERS AND HEMORRHAGIC SHOCK

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The aim of the study was to evaluate changes in mucosal NADPH oxidase after local PRP injection in rats with gastric ulcers and hemorrhagic shock in experiment.
Methods: The study was performed on 91 Wistar rats (average weight of animals was 183 ± 16 grams) according to local and international rules for working with experimental animals. We randomly divide all animals in 5 groups: Control Group (n = 7)—intact animals; Comparison Group (n = 21)—gastric ulcer; Group 1 (n = 21)—gastric ulcer + hemorrhagic shock; Group 2 (n = 21)—gastric ulcer + hemorrhagic shock + local injection of 0.1 ml of 0,9% sodium chloride; Group 3 (n = 21)—gastric ulcer + hemorrhagic shock + local injection of 0.1 ml platelet-rich plasma (PRP). Gastric ulcers were modeled using our modification of type 2 acetic acid ulcer model (Susumu Okabe, 2005). Hemorrhagic shock was modeled by 3–3.5 ml blood sampling. On 1st, 7th and 14th day measurement of mucosal NADPH oxidase levels were performed.
Results: In all groups and on all control days of the study, the levels of NADPH oxidase activity were higher than in the control group.
On day 1, NADPH oxidase activity in Groups 1, 2, 3 were significantly higher ($p < 0.05$) than in the Comparison Group. Moreover, the indices in the Groups 1, 2, 3 didn't significantly differ from each other ($p > 0.05$).
On day 7 of the study, we didn't reveal a significant difference in the level of the studied indicator between the Comparison Group and Group 3 ($p < 0.05$), as well as between Groups 1 and 2 ($p > 0.05$). Moreover, in pairwise statistical comparison, the indicators in the Comparison Group and Group 3 were statistically significantly lower than the similar levels in Groups 1 and 2 ($p < 0.05$).
On the day 14, levels of the enzyme activity in Group 3 were significantly lower than levels in all other groups ($p < 0.05$) and approached the indices of the control group.
Conclusions: Local PRP injection in rats with gastric ulcers and hemorrhagic shock allows to reduce oxidative stress in the periulcellular zone.