**SUPPLEMENT 2**

**Supplementary Table 1.** Baseline characteristics and clinical outcome between CDS and HGSa

|  |  |  |  |
| --- | --- | --- | --- |
| Variables | CDS (n = 32) | HGS (n = 32) | *P* Value |
| Age, mean (range), years | 67.63 (40, 90) | 62.03 (43, 88) | .06 |
| Male sex, no. (%) | 19 (59.4) | 22 (68.8) | .43 |
| Duodenal invasion, no. (%) | 9 (28.1) | 9 (28.1) | >.99 |
| Surgically altered anatomy, no. (%) |  |  |  |
| Billroth-II | 0 (0) | 1 (25) |
| Roux-en-Y | 0 (0) | 3 (75) |
| Technical success, no. (%) | 29 (90.6) | 31 (96.9) | .61 |
| Clinical success, no. (%) | 28 (87.5) | 26 (81.3) | .49 |
| Procedure time, median (IQR), min | 5.8 (3.1, 19.2) | 4.8 (3.5, 7.2) | .13 |
| Transmural fistula dilation, no. (%) |  |  | .89d |
| 1-step | 22 (75.9) | 24 (77.4) |
| 2-step | 7 (24.1)b | 7 (22.6)c |
| Stent length (mm) | 6.2±0.6 | 8.9±0.8 | <.001 |
| Adverse events, no. (%) |  |  |  |
| Early (procedure-related) | 2 (6.3) | 2 (6.3) | >.99 |
| Late | 3 (9.4) | 0 (0) | .24 |
| Procedure severity, no. (%) |  |  |  |
| Early Mild | 1 (50) | 1 (50) |  |
| Moderate | 1 (50) | 1 (50) |  |
| Late Mild | 2 (66.7) | 0 (0) |  |
| Moderate | 1 (33.3) | 0 (0) |  |
| Reintervention rate, no. (%) | 6 (18.8) | 4 (12.5) | .49 |
| Reintervention method, no. |  |  | >.99 |
| ERCP | 5 (83.3) | 4 (100) |
| PTBD | 1 (16.7) | 0 (0) |
| Hospital stay, median (range), days | 5 (2, 28) | 4 (3, 12) | .05 |

aPlus-minus values are means±SD. CDS denotes choledochoduodenostomy, HGS hepaticogastrostomy, IQR interquartile range, ERCP endoscopic retrograde cholangiopancreatography, and PTBD percutaneous transhepatic biliary drainage.

bAdditional transmural fistula dilations were done with needle knife (n = 2), 4-mm balloon catheter without balloon dilation (n = 4), or bougie catheter (n = 1) in CDS group.

cAdditional transmural fistula dilations were done with needle knife (N=1) or 4-mm balloon catheter without balloon dilation (n = 6) in HGS group.

dThe rates of one-step transmural fistula dilation were calculated according to an intention-to-treat analysis.

**Supplementary Table 2.** Predictive factors of reintervention

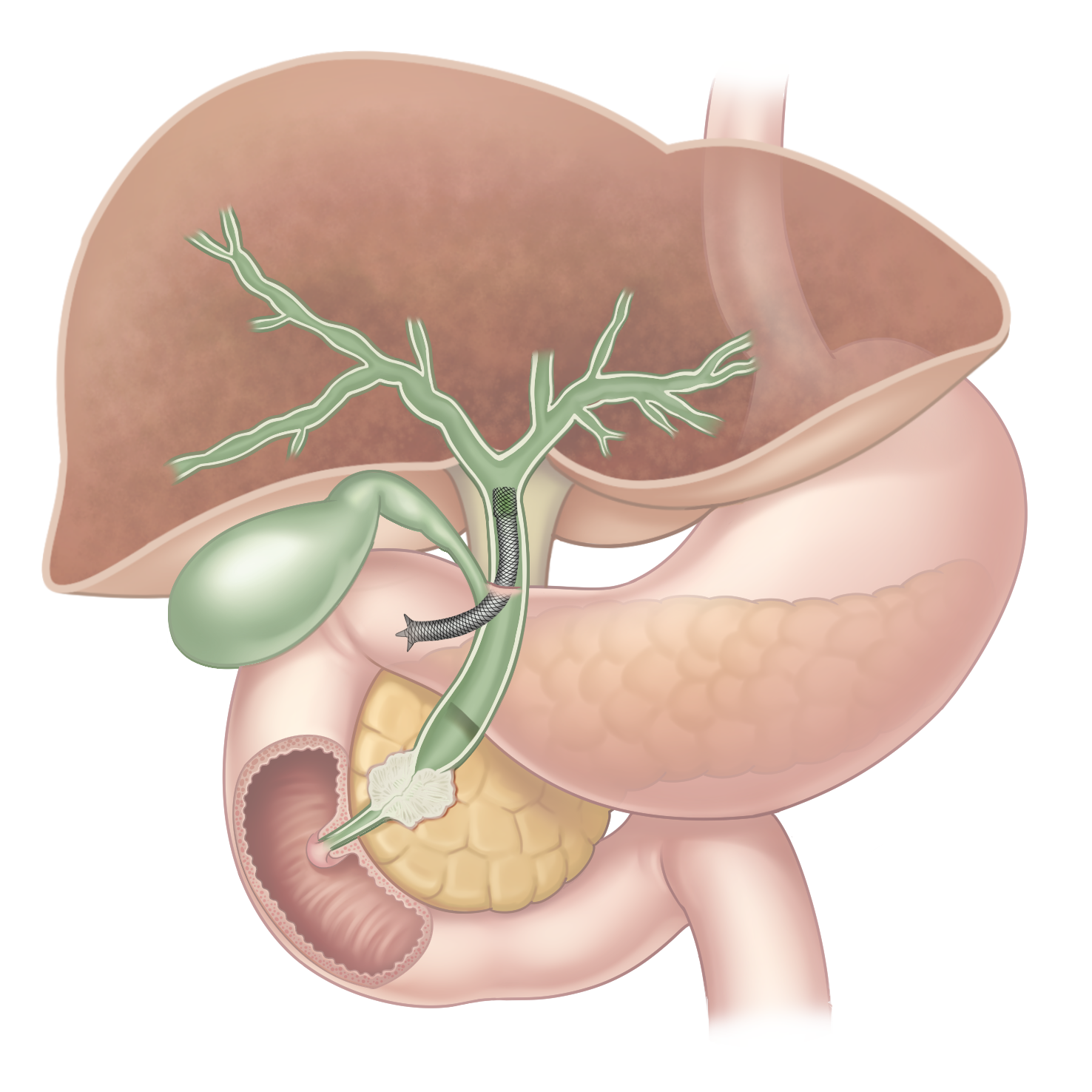
|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variables | No. | Reintervention (%) | Crude HR | 95% CI | | *P* Value | Adjusted HRa | 95% CI | | *P* Value |
| Age (years) |  |  |  |  |  |  |  |  |  |  |
| ≤ 65 | 57 | 15 (26.3) | 1 |  |  |  |  |  |  |  |
| > 65 | 68 | 21 (30.9) | 1.465 | 0.750 | 2.860 | .26 |  |  |  |  |
| Sex |  |  |  |  |  |  |  |  |  |  |
| Male | 67 | 17 (25.4) | 0.658 | 0.340 | 1.273 | .21 |  |  |  |  |
| Female | 58 | 19 (32.8) | 1 |  |  |  |  |  |  |  |
| ASA class |  |  | 0.794 | 0.347 | 1.821 | .59 |  |  |  |  |
| I | 10 | 4 (40.0) |  |  |  |  |  |  |  |  |
| II | 106 | 30 (28.3) |  |  |  |  |  |  |  |  |
| III | 9 | 2 (22.2) |  |  |  |  |  |  |  |  |
| Primary cancer |  |  |  |  |  |  |  |  |  |  |
| Pancreatic cancer | 78 | 23 (29.5) | 1.108 | 0.560 | 2.192 | .77 |  |  |  |  |
| Other cancer | 47 | 13 (27.7) | 1 |  |  |  |  |  |  |  |
| Initial total bilirubin level |  |  | 0.940 | 0.881 | 1.002 | .06 | 0.946 | 0.886 | 1.011 | .10 |
| Common bile duct diameter (mm) |  |  | 0.927 | 0.844 | 1.017 | .11 | 0.951 | 0.864 | 1.048 | .31 |
| Biliary drainage method |  |  |  |  |  |  |  |  |  |  |
| ERCP | 61 | 26 (42.6) | 3.339 | 1.607 | 6.940 | .001 | 3.142 | 1.511 | 6.534 | .002 |
| EUS-BD | 64 | 10 (15.6) | 1 |  |  |  | 1 |  |  |  |
| Duodenal invasion |  |  |  |  |  |  |  |  |  |  |
| Yes | 31 | 9 (29.0) | 1.460 | 0.685 | 3.111 | .33 |  |  |  |  |
| No | 94 | 27 (28.7) | 1 |  |  |  |  |  |  |  |
| Surgically altered anatomy |  |  |  |  |  |  |  |  |  |  |
| Yes | 5 | 2 (40.0) | 0.820 | 0.196 | 3.436 | .79 |  |  |  |  |
| No | 120 | 34 (28.3) | 1 |  |  |  |  |  |  |  |
| Systemic chemotherapy |  |  |  |  |  |  |  |  |  |  |
| Yes | 63 | 20 (31.8) | 0.863 | 0.444 | 1.680 | .67 |  |  |  |  |
| No | 62 | 16 (25.8) | 1 |  |  |  |  |  |  |  |

aAdjusted variables with P<0.2 on univariate analysis.

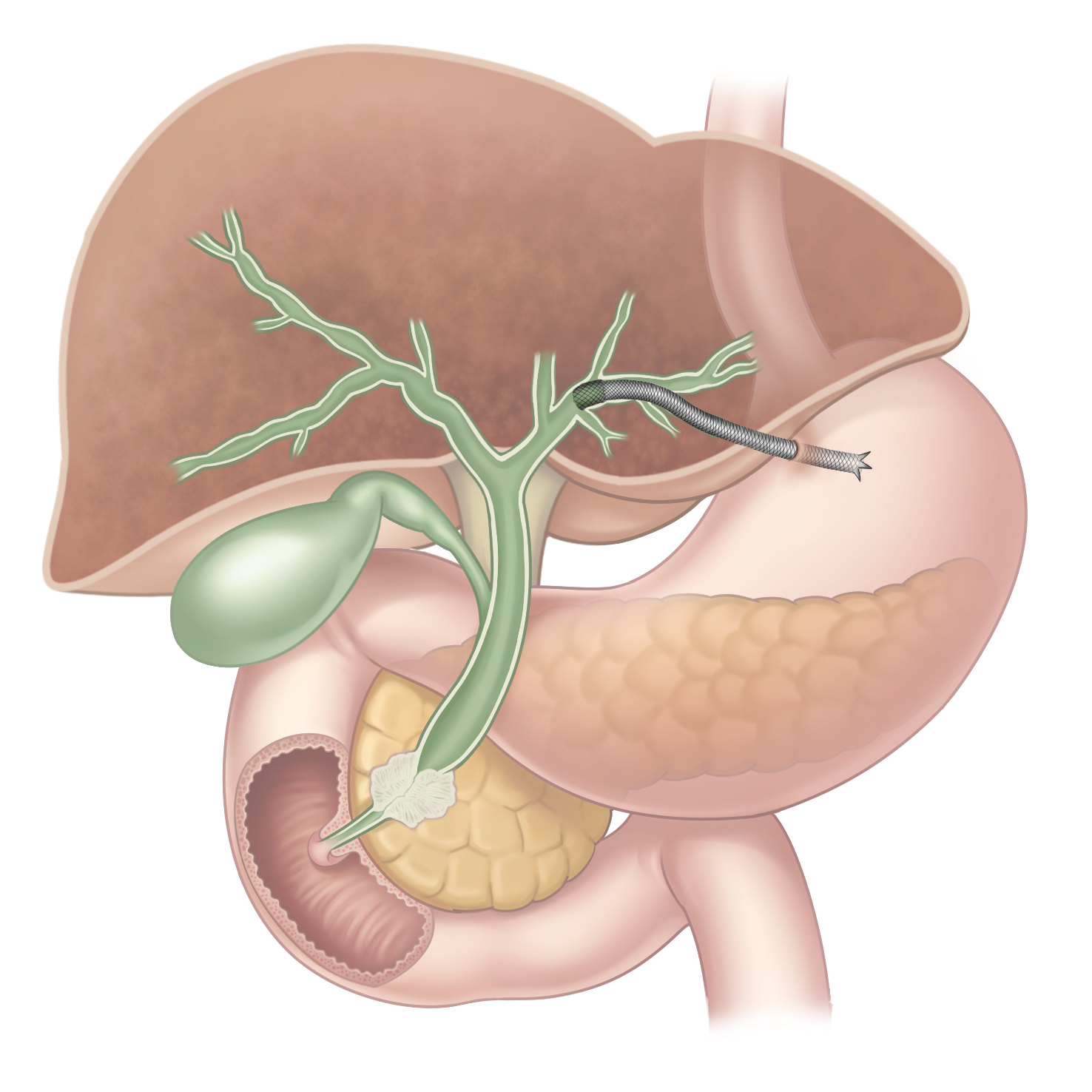
**Supplementary Figures**

**Supplementary Figure 1.** Schematics of EUS-guided transmural biliary drainage.

(A) Choledochoduodenostomy and (B) hepaticogastrostomy. (C) A preloaded partially covered metal stent and one-step dedicated stent introducer with tapered metal tip which functions as a push-type dilator.

(A)

(B)



(C)

C:\Users\SNUH\Desktop\EUSBD 3세부과제\논문작성 제3과제\S Fig. 1C.tif