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## Validation Of Difficulty Scoring System Of Laparoscopic Liver Resection For Hepatolithiasis

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**Background** : We previously developed a modified difficulty scoring system (DSS-IHD) of laparoscopic liver resection (LLR) for patients with intrahepatic duct (IHD) stone. We validated DSS-IHD in patients who underwent LLR for hepatolithiasis.

**Methods** : DSS-IHD was based on the extent of liver resection (2 ~ 4), stone location (1 ~ 5), atrophy of liver parenchyma (0 ~ 1), ductal stricture < 1 cm from the bifurcation (0 ~ 1), and combined choledochoscopic examination for remnant IHD (0 ~ 1).

**Results** : The DSS-IHD ranged from 3 to 12 and divided to 3-level groups of low group (score 3 ~ 5; n = 26), intermediate group (6 ~ 8; n = 72), and high group (9 ~ 12; n = 23). The mean operation time ( $187.4 \pm 80.2$  vs.  $348.8 \pm 147.6$  vs.  $367.8 \pm 141.1$ ;  $P < 0.001$ ) and the mean blood loss ( $354.2 \pm 301.3$  vs.  $849.4 \pm 968.4$  vs.  $1083.0 \pm 955.2$ ;  $P = 0.004$ ) were significantly different among groups. The mean hospital stay was also marginally different among groups ( $7.6 \pm 3.5$  vs.  $13.4 \pm 11.6$  vs.  $13.2 \pm 11.2$ ;  $P = 0.054$ ). When we simply divided patients by right and left LLR, there were significant differences in DSS-IHD ( $8.9 \pm 2.0$  vs.  $6.5 \pm 1.6$ ;  $P < 0.001$ ), operation time ( $472.4 \pm 185.3$  vs.  $289.7 \pm 124.5$ ;  $P < 0.001$ ) and blood loss ( $1810.5 \pm 1269.7$  vs.  $596.8 \pm 656.1$ ;  $P = 0.001$ ) between right and left LLR group.

**Conclusions** : The surgical difficulty varies among patients undergoing LLR for IHD stones. The DSS-IHD predicts well the surgical difficulties of LLR for patients with IHD stones.

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