

Supplementary Table 1 Clinicopathological characteristics and perioperative outcomes according to diagnosis

Variables	CRLM, <i>n</i> = 37	HCC, <i>n</i> = 35	<i>P</i>
Age in years	66 (37-77)	74 (55-86)	< 0.001
Male sex	24 (68.6)	30 (85.7)	0.169
History of open liver resection	13 (37.1)	7 (19.4)	0.119
History of anatomical resection	10 (28.6)	9 (24.3)	0.791
History of multiple liver resection	14 (40.0)	8 (22.9)	0.126
Previous liver resection involved S1/4/5/6	27 (77.1)	23 (62.2)	0.206
Number of histories of liver resection $\geq 2^1$	7 (20.0)	9 (24.3)	0.779
Anti-adhesion barrier use in prior liver resection	31 (88.6)	23 (62.2)	0.014
Recurrent tumor diameter in mm	20 (6-70)	15 (5-40)	0.101
Approaches of MISRLR			
Laparoscopic	31 (88.6)	32 (86.5)	1.000
Robotic	4 (11.4)	5 (13.5)	
Types of MISRLR			
Partial hepatectomy	26 (74.3)	31 (83.8)	0.122
Sectionectomy	0 (0)	2 (5.4)	
Left lateral sectionectomy	3 (8.6)	0 (0)	
Segmentectomy	6 (17.1)	4 (10.8)	
LSEH technique	28 (80.0)	29 (78.4)	1.000
Pringle maneuver	29 (82.9)	29 (78.4)	0.768
Open conversion	2 (5.7)	0 (0)	0.233
Blood loss in mL	100 (0-3200)	30 (0-1680)	0.179
Operative time in minutes	379 (178-719)	293 (170-644)	0.083
Morbidity: $\geq$ Clavien-Dindo III	4 (11.4)	0 (0)	0.051
Postoperative hospital stay in days	8 (5-43)	8 (5-21)	0.936
30-day mortality	0	0	NA
In-hospital mortality	0	0	NA

¹This repeat liver resection was three or more. Data are presented as median (range) or *n* (%). CRLM: Colorectal liver metastasis; HCC: Hepatocellular carcinoma; LSEH: Liver surface-guided encirclement of hepatoduodenal ligament; MISRLR: Minimally invasive repeat liver resection; NA: Not available.

Supplementary Table 2 Clinicopathological characteristics and perioperative outcomes according to approaches of minimally invasive repeat liver resection

Variables	Laparoscopic, <i>n</i> = 63	Robotic, <i>n</i> = 9	<i>P</i>
Age in years	68.86	67.22	0.64
Male sex	47 (74.6)	8 (88.9)	0.676
HCC	30 (47.6)	5 (55.6)	0.732
Number of histories of liver resection ≥ 2 ¹	15 (23.8)	1 (11.1)	0.673
History of open liver resection	19 (30.2)	1 (12.5)	0.427
History of anatomical resection	17 (27.0)	2 (22.2)	1.000
History of multiple liver resection	19 (30.2)	3 (33.3)	1.000
Previous liver resection involved S1/4/5/6	44 (69.8)	6 (66.7)	1.000
Anti-adhesion barrier use in prior liver resection	47 (74.6)	7 (77.8)	1.000
Tumor diameter	20.51	17.56	0.485
Types of MISRLR			
Partial hepatectomy	50 (79.4)	7 (77.8)	0.806
Sectionectomy	2 (3.2)	0 (0)	
Left lateral segmentectomy	3 (4.8)	0 (0)	
Segmentectomy	8 (12.7)	2 (22.2)	
LSEH technique	48 (76.2)	9 (100)	0.189
Pringle maneuver	50 (79.4)	8 (88.9)	0.679
Open conversion	2 (3.2)	0 (0)	1.000
Operative time in minutes	293 (170-719)	402 (32.8-644)	0.025
Blood loss in mL	68 (0-3200)	72 (0-1005)	0.738
Postoperative hospital stay in days	8 (5-43)	6 (6- 13)	0.229

Morbidity: $\geq$ Clavien-Dindo III	4 (6.3)	0 (0)	1.000
30-day mortality	0 (0)	0 (0)	1.000
In-hospital mortality	0 (0)	0 (0)	1.000

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Supplementary Table 3 Clinicopathological characteristics and perioperative outcomes according to Pringle taping success

Variables	Failure, <i>n</i> = 14	Success, <i>n</i> = 58	<i>P</i>
Age in years	69 (57-86)	70.00 (37-86)	0.401
Male sex	12 (85.7)	43 (74.1)	1.000
HCC	7 (50.0)	28 (48.3)	0.440
History of open liver resection	9 (64.3)	11 (19.3)	0.002
History of anatomical resection	3 (21.4)	16 (27.6)	0.747
History of multiple liver resection	3 (33.3)	5 (45.5)	0.670
Previous liver resection involved S1/4/5/6	11 (78.6)	39 (67.2)	0.528
Number of histories of liver resection $\geq 2^1$	5 (35.7)	11 (19.0)	0.280
Anti-adhesion barrier use in prior liver resection	10 (71.4)	44 (75.9)	0.739
Recurrent tumor diameter in mm	15 (5-50)	19 (6-70)	0.270
Approaches of MISRLR			
Laparoscopic	13 (92.9)	50 (86.2)	0.679
Robotic	1 (7.1)	8 (13.8)	
Types of MISRLR			
Partial hepatectomy	14 (100)	43 (74.1)	0.287
Sectionectomy	0 (0)	2 (3.4)	
Left lateral sectionectomy	0 (0)	3 (5.2)	
Segmentectomy	0 (0)	10 (17.2)	
LSEH technique	5 (35.7)	52 (89.7)	< 0.001
Open conversion	0 (0)	2 (3.4)	1.000
Blood loss in mL	35 (0-1680)	81 (0-3200)	0.195
Operative time in minutes	248.5 (170-532)	362.0 (178-719)	0.023

Morbidity: $\geq$ Clavien-Dindo III	0 (0)	4 (6.9)	0.580
Postoperative hospital stay in days	8 (6-21)	8 (5-43)	0.213
30-day mortality	0	0	NA
In-hospital mortality	0	0	NA

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