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Feasibility of solo single-incision laparoscopic surgery in non-anatomical minor liver resection for favorable located single hepatocellular carcinoma

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Purpose:

We introduced solo surgery using a laparoscopic scope holder to wide an operator's activity range and reduce instrument crowding and clashing in single incisional surgery. This study aimed to compare the surgical outcomes of solo single incision laparoscopic surgery (SILS) and conventional multiport laparoscopic surgery (MULS) for hepatocellular carcinoma (HCC).

Methods:

A retrospective analysis for solo SILS (n=20) compared to accumulated data of conventional MULS (n=152) in non-anatomical minor liver resection for patients with a single HCC in the favorable location at a single center was performed between 2003-2017. Baseline characteristics, operative outcomes, and postoperative complications were compared.

Results:

No significant differences in baseline characteristics and pathologic stage were found between the two groups. Open conversion, postoperative complication (Clavien-Dindo I/II/IIIa/IIIb) and recurrence rate were not different (0 vs. 12 (7.9%), P=0.364, 1(5%)/0/0/0 vs. 3(2%)/4 (2.6%)/8(5.3%)/1 (0.7%), P=0.650, 6 (30%) vs. 55 (36.2%), P=0.587, respectively in SILS and MULS). However, operative time and hospital stay were significantly shorter in SILS (110.2 ± 57.1 vs 204.5 ± 108.4 mins, 2.5 ± 1.9 vs 6.8 ± 3.7 days, both P <0.001,) compared to MULS.

Conclusion:

Solo SILS had comparable postoperative complications and feasibility in the aspect of operation time and hospital stay compared with conventional MULS for a favorable located single HCC.