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Comparison Of Laparoscopic Liver Resection And Open Liver Resection In Patients Having HCC With Portal Vein Tumor Thrombosis

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Background : Portal vein tumor thrombosis (PVTT) in hepatocellular carcinoma (HCC) is considered an advanced stage, and systemic therapy is recommended as the only treatment in several guidelines. However, surgical treatment is being performed in advanced liver cancer due to the development of surgical techniques, and minimally invasive liver resection is also being performed. This study aimed to compare clinical outcomes between open liver resection and laparoscopic liver resection in HCC patients with PVTT.

Methods : From March 2014 to August 2018, 86(56 open liver resection and 30 laparoscopic liver resection) patients with PVTT confirmed in the pathological report were enrolled. Short-term operative and postoperative outcomes as well as long-term outcomes, including recurrence-free survival and overall survival rates, were evaluated.

Results : There was no difference between the two groups except age and Aspartate Aminotransferase. The mean age in laparoscopic group was significantly older than open group (54.7±8.9 vs. 61.4±11.7 years, p=0.008). In comparison of pathological features the maximal tumor size was significantly larger in the open group (mean 4.5±3.2 vs. 7.7±4.7 cm, p < 0.001), other pathological factors were not different. Kaplan–Meier survival analysis was performed to assess the overall survival and recurrence-free survival of OLR and LLR group. The 1-, 3-, and 5-year overall survivals for the were 83.6, 67.8, and 49.7% versus 84.6, 75.2, and 75.2% (p=0.34), respectively. The 1- and 3-year recurrence-free survival for open and laparoscopic were 47.7, and 39.5% versus 45.6, and 40.5% (p=0.875), respectively. Preoperative TACE (HR=5.01, 95 % CI 2.01–12.3, p = 0.001), Edmondson-Steiner grade Ⅳ (HR=5.5, 95 % CI 1.78–16.9, P=0.003), bile duct invasion (HR=3.61, 95 % CI 1.5-6.4, P=0.003), and intrahepatic metastasis (HR=7.6, 95 % CI 3.7–15.8, P<0.001) remained as the unique independent predictor of recurrence-free survival by multivariate Cox proportional hazard regression analysis.

Conclusions : LLR for the management of HCC with PVTT seems to provide the same short-term and long-term results as compared to the open approach.

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