

**E18**

**Intrahepatic recurrence of single nodular hepatocellular carcinoma after surgical resection: an analysis by segmental distribution**

**Keon-Young Lee, Woo Young Shin, and Seung-Ik Ahn**

*Department of Surgery, Inha University School of Medicine, Incheon, Republic of Korea*

*\*Mail to: KY Lee, MD, PhD. 27 Inhang-Ro, Jung-Gu, Incheon 400-711, Republic of Korea*

*E-mail: 196087@inha.ac.kr*

**Purpose:** Intrahepatic recurrence is the major cause of management failure after surgical resection of hepatocellular carcinoma (HCC). In the present study, we analyzed intrahepatic recurrence pattern by HCC distribution using Couinaud's liver segments.

**Methods:** Recurrence proximity levels were defined with respect to primary tumor locations from Level LR (locoregional) to Level IV. Initial and recurrent tumors were compared regarding segmental distribution of their locations, and recurrence proximity levels were compared regarding initial tumor locations and disease-free survival (DFS).

**Results:** Eighty-five (58.2%) of 146 patients with single nodular HCC experienced intrahepatic recurrence after surgical resection with a mean DFS of  $18.0 \pm 18.5$  months. Segmental distributions of initial and recurrent tumor locations were not significantly different ( $P > 0.05$ ), and both were similar to the normal segmental volume distribution except segments 5 (S5), S6, and S8. Recurrences in proximity levels LR to IV were 11.1%, 34.9%, 25.4%, 21.4%, and 7.1%, respectively, and this distribution agreed well with theoretical proximity level distribution ( $P > 0.05$ ). DFSs for different recurrence levels were no different ( $P = 0.530$ ). Microscopic portal vein invasion was the only independent risk factor of Level II/III/IV recurrences identified.

**Conclusion:** Intrahepatic recurrences after surgical resection of single nodular HCC occurred at random in the remnant liver, and the timing was independent of the proximity between initial and recurrent tumors. Prevention was found to be proportional to the amount of liver parenchyma removed. Surgical plans should take this into consideration.