



## Systematic Segmentectomy by Dye Injection Method for the Hepatocellular Carcinoma in Segment 8

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Systematic segmentectomy, limited anatomical resection, is useful in treating small hepatocellular carcinoma (HCC) in the cirrhotic liver. However, anatomical segmentectomy of posterosuperior segment (segment VII, VIII) is technically demanding. It is possible either with Glissonian approach or systematic approach by dye injection into the portal vein to overcome deep location of vascular pedicles, absence of anatomical landmark and variable anatomy of portal branches. We evaluated efficiency of systematic segmentectomy with ultrasonogram guided dye injection into the portal branches that feed tumor bearing segments including posterosuperior segments in 68 patients. The type of tumor-feeding portal vein (PV) branch, perioperative outcome and survival rates were analysed retrospectively. For the variation of portal venous branches, of 71 masses in 68 patients, 38 masses (55.9%) were fed by single magistral PV (Type 1) and in 17 masses (25.0%) by a couple of PV branches (Type 2), 11 masses (16.2%) were supplied partially by only one portal venous branch (Type 3). In 5 patients (7.4%), masses were supplied by several small distributed PV. For the type 1 & 2, the tumor bearing segment was resected anatomically by stain, for the type 3 was partially stained and the opposite side was demarcated with counter stain, and dye injection was not possible. In 32 patients, masses were located on anterior and inferior segments of the right lobe (Seg V, VI) and in remaining 36 patients, masses were located on posterior and superior segments of the right lobe (Seg VII, VIII). In both group, preoperative liver function, tumor characteristics, perioperative and long term results were not significantly different. In conclusion, systematic segmentectomy by dye injection method is safe and effective for performing anatomical segmentectomy in particularly for the segment 7 or 8. Although it is not feasible in a few patients (Type 4), this method makes overcome variation of portal venous tributaries of segments and can do according to the natural segment instead of artificial division.