Treatments for the Early-Stage Hepatocellular Carcinoma: Laparoscopic Liver Resection or Percutaneous Radiofrequency: How to Make a Decision?

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Dear Editor,

Recently, we read the paper “Laparoscopic Liver Resection versus Percutaneous Radiofrequency Ablation for Small Single Nodular Hepatocellular Carcinoma: Comparison of Treatment Outcomes” by Lee et al. [1], published in *Liver Cancer*, with more interest. Two treatments for the early-stage HCC (251 patients in laparoscopic liver resection [LLR] group and 315 patients in Percutaneous Radiofrequency Ablation [p-RFA] group) were compared, and found the different location of the tumor may affect the tumor recurrence, providing the optimal method to the surgeon to treat with early-stage hepatocellular carcinoma (HCC). Although their findings were convinced, a few questions may deserve further discussion.

Different locations of the tumor could affect the recurrence of HCC in p-RFA group, especially for the small single-nodular HCCs located at subcapsular, perivascular, and anterolateral portions [1], and several studies have reported that the treatment of p-RFA may exist insufficient ablative margin [2–4], which may be the main reason for tumor recurrence. In this study, the recurrence-free survival rate was lower in p-RFA group, but it did not describe the accurate location of tumor recur-

rence. The tumor recurrence in the original location may be related to the insufficient ablative margin which were mentioned above. Considering this scenario, the accurate location of tumor recurrence should be given as an essential element to estimate possible reason of tumor recurrence, especially in the RFA group. The study did not analyze the tumor located nearby the bile duct, which would cause bile leakage, leading to hepatic necrosis or sepsis; hence, we would take a hepatectomy for these patients, not the RFA.

On the other hand, the microvascular invasion (MVI) was an important risk factor for the tumor recurrence in the patients with HCC [5–7]. This study did not introduce the MVI status into study design. Certainly, patients underwent p-RFA treatment could not estimate the MVI by naked-eye; however, with the techniques and radiology skills development, the radiologist could predict the MVI based on radiomics [7, 8]. Therefore, combining with radiomics to estimate the MVI status and to make a decision on p-RFA for patients with the early-stage HCC might reduce the rate of tumor recurrence. In this study, the radiomics of the tumor was not mentioned, with which the MVI status could be estimated as regular tumor margin or irregular tumor margin. The patients within

early-stage HCC received the treatment of RFA with high risk of MVI were at higher risk to recurrence than those who had undergone hepatectomy [8]. Thus, presurgical evaluation of the MVI status for the patients undergone RFA could reduce the tumor recurrence, and in needed to combine with a variety of ways in evaluation before make a decision on RFA, not just based on the tumor location. In summary, though the location of the tumor might result a high risk of recurrence in RFA, we could not ignore other risk factors, especially MVI status. And hepatectomy is still as the first-line treatment for the early stage HCC; however, the complication rate is higher than p-RFA and the overall survival rate is comparable compared to p-RFA. Thus, if we could predict the MVI accurately and ensure the sufficient margin for the patients with small single nodular HCCs, the patients would get more benefit from p-RFA. Therefore, we should combine with several methods to make a decision on RFA for the early-stage HCC, not just based on tumor location, especially to evaluate the MVI status before RFA.

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Conflict of Interest Statement

The authors have no conflicts of interest to declare.

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Author Contribution

L.J. contributed to study conception and design; J.Z., W.X., and Y.Z. performed the research; J.Z. and W.X. drafted the manuscript; and L.J. critically revised the manuscript. All authors have read and approved the manuscript.