Response to reviewer's comments

Editor's comments

1. For manuscripts submitted by non-native speakers of English, please provided language certificate by professional English language editing companies.

   ➔ We got an English editing service and provided the certificate.

2. The title should be no more than 12 words.

   ➔ We have shortened the title as you suggested.

3. A short running title should be no more than 6 words.

   ➔ We have shortened the short running title as you suggested.

4. This section should clearly describe the rationale for the study. It should end with a statement of the specific study hypothesis.

   ➔ We added Background as you suggested.

5. In order to attract readers to read your full-text article, we request that the first author make an audio file describing your final core tip. This audio file will be published online, along with your article. Please submit audio files according to the following specifications.

   ➔ We provided audio file describing our final core tip.

6. Similar sentences with other articles, please rephrase.

   ➔ We rephrased them.

7. Similar sentences with other articles, please rephrase.

   ➔ We rephrased them.

8. Similar sentences with other articles, please rephrase.

➔ We rephrased them.

9. Similar sentences with other articles, please rephrase.

➔ We rephrased them.

10. Article highlights

➔ We added article highlights.

11. Please add the full name into the foot note.

➔ We added the full name of RF.

12. Please provide an editable figure.

➔ We provided the original PPT file.

Reviewer 1.

The manuscript entitled " Hepatic Resection versus Percutaneous Radiofrequency Ablation of Small Hepatocellular Carcinoma Abutting Diaphragm: Comparison of Long-term Outcomes and Prognostic Factors" provides interesting information about the use of hepatic resection or percutaneous radiofrequency ablation for the treatment of small hepatocellular carcinoma. The general principle of this study is accepted. Some minor concerns need to be addressed.

1. No defination was found for intrahepatic distant recurrence.

➔ We defined the intrahepatic distant recurrence in Materials and Methods.

2. Too many abbreviations were shown in this manuscript. Authors should check the definition for all of those abbreviations.

➔ We checked the definition for all abbreviations.

3. Please check the English throughout the paper. For example, in abstract, the

conclusion could be written as two sentences.

➔ We got an English editing service and provided the English edition certificate.

Reviewer 2.

The authors report retrospectively on 5 year tumor progression (TP), disease free interval (DFI), and overall survival (OS) of patients with right-sided subcapsular and sub-diaphragmatic hepatocellular carcinomas (HCC) treated by radio frequency ablation (RF) or by surgical resection. They found that DFI is better in resection, but OS is similar between both modalities. The study should be published because it is reporting on a specific HCC location suggesting that hepatic resection is preferred over RF.

1. The title should include that only right-sided subcapsular and subdiaphragmatic tumors were included in the study.

   ➔ We added the term, "right" in the title as you suggested.

2. All nodular lesions on CT should be diagnosed with a targeted core needle biopsy to histologically confirm HCC even though clinical suspicion is warranted per criteria. The advantage of surgical resection over RF is that HCC can be histologically confirmed in the resection specimen, but its difficult to do on RF material. Especially in HepB and HepC patients, nodular appearances on CT may represent regenerative nodules and not HCC. Please add a paragraph outlining this issue.

   ➔ We agree with your opinion and we mentioned this issue on Limitation.

3. I did not really agree that subdiaphragmatic RF is so much different in the left compared to the right side. Both harbor the risk to induce diaphragmatic transient or permanent thermal injury to the diaphragm causing paraplegia

and breathing difficulties. In both cases, artificial ascites can be placed between diaphragm and liver capsule. Please discuss this a little more with reference to previous reports dealing with this issue.

➔ We also think that it is difficult to treat both right and left subdiaphragmatic HCC with percutaneous RF ablation. However, many tumors abutting the left diaphragm also abut the heart (subcardiac location). In addition, the use of artificial ascites or pleural effusion is usually ineffective for tumors abutting the left diaphragm based on our experience. For these reasons, tumors abutting the left diaphragm are considered more technically difficult to treat compared to those close to the right diaphragm. On the other hand, hepatic resection of tumors abutting the left diaphragm (especially in the left lateral segment) is easily performed either after laparotomy or with a laparoscopic approach than tumors abutting the right diaphragm. Based on these differences in treatment, we separated the tumors abutting the right diaphragm from the tumors abutting the left diaphragm.

Reviewer 3.

In the current study, the authors performed a retrospective cohort study to compare the long-term therapeutic outcomes between hepatic resection versus percutaneous radiofrequency (RF) ablation for HCCs abutting the diaphragm. They found DFS was better in the hepatic resection group. Overall, the study is meaningful and useful. Thus, several flaws should be addressed.

1. Pay attention to the spellings, such as "estimated.Prognostic factors for DFSand OSwere analyzed. Complicationswere evaluated." should be "estimated. Prognostic factors for DFS and OS were analyzed. Complications were evaluated.", lots of similar errors exist.

   ➔ We checked the spellings and spacing.

2. What about the response rate for these 5,981 patients?

   ➔ Unfortunately, we did not investigate the outcomes of patients other than those included in our study.

3. Why not also include the patients between November 2010 and October 2013? If possible, include them.

   ➔ We have just begun to investigate patients who underwent RF ablation and hepatic resection for HCCs after 2010. Therefore, we cannot include these results at this time.

Reviewer 4.

This retrospective cohort study is about a comparison of long-term outcomes and prognostic factors between patients who underwent hepatic resection and those who undervent RF ablation for small HCC abutting diaphragm. The title and key words are adequate. The authors benefited from 27 references and it seems that this manuscript is a follow-up article of their previously published reference #17 in Radiology journal (2015 Jun;275(3):908-19) which contains propensity score matching analysis to minimise bias. Figures #1 from both articles are showing cohorts from total 5981 patients.

1. I suggest that this detail should be mentioned in this manuscript as well.

   ➔ We mentioned this issue in Patients.

2. This is a clinically important study and worth to publish. I want to point out some issues; In the Results section of the Abstract, the first sentence should be "The cumulative IDR rates, DFS rates and OS rates for the hepatic resection group and RF ablation group at 5 years were "35.9% vs 65.8%", "64.1% vs 18.3%" and "88.4% vs 68.7%", respectively." to be more understandable!

   ➔ We revised that as you suggested.

3. In the Discussion, although they were not any significant difference between two groups in terms of OS, how the authors conclude that the proportion of patients with hepatitis B virus and higher platelet count in the hepatic resection group make an OS difference? This should be clarified and possible mechanisms should be explained.

   ➔ We agreed your point. It is difficult to such a conclusion based solely on our results. Therefore, we revised it.

4. In their previous study mentioned above, DFS rate is 31.7% for the RF ablation group and 18.3% in this manuscript for same group, but they explain that "however, the DFS for the RF ablation group was longer than our previous result". This is the opposite and should be corrected.

   ➔ We corrected it.

Thank you for giving us the opportunity to revise our manuscript.