

## Letter to Editor

# Prevention and Treatment of Vascular Injury Triggered by Hepatic Tumor Radiofrequency

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## Introduction

Radio Frequency (RF) has been confirmed to be one of effective treatments for malignant tumor of liver. But occasional diathermy burnt to adjacent vessels still remain non-provisional, which sometimes may lead to undesired bleeding to liver capsula, even result in lethal consequence if nonsurgical management is useless to control continue bleeding. Hence, bleeding from capsula is becoming an occult killer. Scientific assessment of diathermy burn of vessels becomes core key to save patients' lives [1]. Obviously, the optimized timing for surgery may be prioritized concern. To the best of our knowledge, there are two major aspects should be focused on. First and foremost, the temperature of RF, the time of RF procedure and the length between vessels and RF zone may be the most deciding role to influence what definitive time of involved vessel rupture. On the other side, the other detrimental risk factors, including diabetes, cirrhotic liver and hypertension, etc. may induce increasing fragility of vessels or prone to hemorrhage. However, physicians are difficult to know the outcome of diathermy burn to vessels simply based on the potential factors mentioned above. Strictly supervision is essential measure to early diagnosis of diathermy burn to hepatic vessels. In practice, the first 8 hours after RF, Post-RF day 1 and post-RF day 3 are needing to make a reassessment for RF zone and adjacent vessels. No study reveals how many lengths to tumor margin is safe. In authors' opinion, the length of vessel to the RF needle top should not be less than 5.0 cm. Secondly, anytime prevention of diathermy burn is more important than cure it. because diathermy burn is in fact mixed injury. That means unease to recovery. So, it's necessary to make accurate assessment peri-RF, particularly for high-risk patients. "wait-to-see" or excessive earlier surgical intervention may lead to life threatening consequence. For high-risk patients, 3-D Compeer Tomography of Liver Vessels (CTV) should be conducted pre-RF procedure. Once post-RF diathermy burn of vessels is suspected, not hesitate to perform re-CTV

evaluation so as to early address the burned vessel and its severity as well. The type of liver trauma and to judge its severity as well, according liver trauma classification.

## Conclusion

Radiofrequency therapy has become an effective method of the treatment of liver cancer. We need to pay attention to the complications after the RF treatment of the liver, especially blood vessel damage, how to assess the severity of bleed just based on clinical presentations? Right upper quadrant abdominal distended-like pain, declined hemoglobin, instability of hemodynamic etc. [2] are all key signals to orange-alert. If shock occurs, it may be too late. What time for surgery remains controversial according to different expertise. In general, Child-Pugh score ( $>7$ ) or Model of End Liver Disease (MELD) score ( $>11$ ) for the patient with liver trauma, therapy with Transcatheter Arterial Embolization (TAE) may be safer compared to surgery. But if you have no way to stop bleeding, mesh-wrapping or gauze-packing is an effective option [3]. Basis on authors' experience, raising awareness of adverse effect is of most important rather than only prevention or therapy.

## Ethic Statement

The imaging article was approved by institutional review board at our hospital (Ethic Committee of Hangzhou First People's Hospital, China).

## Consent Statement

The patient has given his written informed consent for his data to be submitted or published.

## Conflicts of Interest

All authors declare that they have no conflicts of interest concerning on this manuscript.

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