## ABSTRACT

Surgical resection was considered to be the only curative treatment option for colorectal liver metastasis. However, only minority (10-25%) of all patients with liver metastasis are suitable candidates to undergo surgery, which result in increasing demand for minimally invasive treatment achieving effective and reproducible tumor ablation while simultaneously lowering both morbidity and costs.

Since 1990, many image-guided tumor ablation using thermal or chemical energy have been introduced in the oncologic field. Among them, radiofrequency ablation is the most popular technique worldwide. Although the evidence of clinical benefit compared to surgical resection is not sufficient, the role of image guided tumor ablation is continuously revealed through our daily clinical practice.

Currently accepted indication of RFA for colorectal metastasis is the tumor smaller than 3-5 cm in diameter and less than 4 in number, especially for non-surgical candidate and post-op recurrence. A0 (sufficient ablative margin) ablation strategy may be effective and safer than surgery for the selected cases. Concurrent resection with intraoperative ablation is an attractive approach for bi-lobar multiple hepatic metastasis. In addition, "test of time" concept is getting accepted to possibly decrease unnecessary surgery. Post-ablation recurrence can be also treated with repeat ablation or curative surgery.

Image-guide tumor ablation is widely, but not universally, accepted as part of the management of patients with unresectable colorectal liver metastasis. Not all patients who are suitable for ablation has access to good quality ablation expertise. Currently, many technical advances in the field of interventional oncology including Fusion and CE-US guidance, Artificial fluid assistance, contribute to improving the results of tumor ablation for the difficult case due to poor conspicuity and risk for thermal injury to the adjacent organ. Furthermore, microwave ablation has more potential to provide better local tumor control by more powerful ablation in a shorter time. However, ablation has not yet reached its full potentials; more can be done. Image-guided ablation will be remained a good armament in the era of multidisciplinary management for colorectal liver metastasis.

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Hyunchul Rhim studied Medicine at Hanyang University, Seoul, Korea from 1979 and graduated in 1985. He completed a residency in the Department of Radiology in Hanyang University Hospital. After clinical fellowship in Asan Medical Center, he served as an instructor upto an associate professor in Hanyang University hospital.

For two years from 1997, he studied abroad as a research fellow and clinical assistant professor in Department of Radiology, University of Texas at San Antonio, USA. During that period, he had an opportunity to involve a clinical study on RF ablation of hepatic tumors. He introduced RF ablation in Korea when he came back in 1999. In 2005, he moved to Samsung Medical Center and is currently a Professor of abdominal imaging section of radiology.

He has published 185 International scientific papers in SCI journals. Among them, more than 130 papers are articles regarding RF ablation of hepatic tumors. He contributed to publish a textbook entitled "Malignant Liver Tumors: Current and Emerging Therapy" from Blackwell Science in 1999. He has given 20 invited lectures in the area of his expertise in international conferences including CIRSE, ECIO, WCIO, and ACTA. He is currently serving as a journal reviewer of major peer-review journals including Radiology. Until 2013, he served as the president of the Korean Society of image-guided Tumor Ablation (KSITA) for 4 years. His research interest is "Image-guided Tumor Ablation". For 18 years from 1997, he performed more than 3,000 hepatic RFA procedures by himself. Since 2012, he has been in charge of Samsung Medical Center Image-guided Tumor Ablation Training (SITAT) program to share their experience with foreign young doctors. He was one of founding member of Asian Conference on Tumor Ablation (ACTA) and Hosting Chair of 3<sup>rd</sup> ACTA which was held in 2016 Oct. 28-29, Seoul, Korea.

