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Journal of the Medical Association of Thailand, Vol 96, No 1

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Efficacy of Percutaneous Radiofrequency Ablation of Hepatic Malignant Tumors Using a Perfused-Cooled Electrode

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Abstract

Objective: Evaluate the efficacy of percutaneous radiofrequency ablation of hepatic malignant tumors.

Material and Method: An ultrasound-guided percutaneous radiofrequency ablation using a 17-gauge single needle perfusedcooled electrode (Cool-tip™) RF ablation system was performed on 30 hepatic tumors in 26 patients between January 2009 and September 2010. The medical records, CT scan, and MRI results were assessed at one and three months after the procedure was completed. Primary technical success, local tumor progression, and complication were also evaluated.

Results: Twenty-six hepatic lesions in 23 patients were primarily hepatocellular carcinoma. Only four lesions in three patients were metastasized. Three of them were from colorectal cancer whilst another one was from malignant melanoma. At 1-month follow-up imaging post percutaneous radiofrequency ablation, complete ablation rate was 86.7%. Local tumor progression at 3-month follow-up imaging was 4.2%. The rate for minor complication was 3.8%. No major complication was found. Complete ablation rate was found to increase significantly in tumors size of less than 2 cm compared to those diameter larger than 2 cm ($p < 0.05$).

Conclusion: Percutaneous radiofrequency ablation is one of the most effective and invulnerable therapeutic modality in treatment of hepatic malignant tumor. Size is the key factor of technical success as the smaller the size of tumor, the better the outcome achieved.

Keywords: Radiofrequency ablation, RFA, Hepatic tumor

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