

Publication

Radiofrequency ablation of liver tumors : actual limitations and potential solutions in the future

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Over the past decade, radiofrequency ablation (RFA) has evolved into an important therapeutical tool for the treatment of non resectable primary and secondary liver tumors. The clinical benefit of RFA is represented in several clinical studies. They underline the safety and feasibility of this new and modern concept in treating liver tumors. RFA has proven its clinical impact not only in hepatocellular carcinoma (HCC) but also in metastatic disease such as colorectal cancer (CRC). Due to the increasing number of HCC and CRC, RFA might play an even more important role in the future. Therefore, the refinement of RFA technology is as important as the evaluation of data of prospective randomized trials that will help define guidelines for good clinical practice in RFA application in the future. The combination of hepatic resection and RFA extends the feasibility of open surgical procedures in patients with extensive tumors. Adverse effects of RFA such as biliary tract damage, liver failure and local recurrence remain an important task today but overall the long term results of RFA application in treating liver tumors are promising. Incomplete ablation of liver tumors due to insufficient technology of ablation needles, tissue cooling by the neighbouring blood vessels, large tumor masses and ablation of tumors in close vicinity to heat sensitive organs remain difficult tasks for RFA. Future solutions to overcome these limitations of RFA will include refinement of ultrasonographic guidance (accuracy of probe placement), improvements in needle technology (e.g. needles preventing charring) and intraductal cooling techniques.

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