Radio Frequency Probes for Tissue Treatment and Methods of Use

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Technology description

Summary

The invention is a device and method for radio frequency (RF) treatment of tissue that is designed to destroy or damage selected tissue areas without damaging surrounding material. Improvements upon currently available techniques include: easier percutaneous deployment and placement, easier imaging visualization, less bleeding complications, and one-handed deployment. Applications include the treatment of metastatic cancer lesions in the liver, kidney or other solid internal organ. The invention can be used for minimally invasive procedures. For example, RF electrodes may be placed percutaneously to treat a cancer lesion in the liver. Standard medical imaging techniques such as ultrasound can be used to guide the RF electrode into the proper position, and surface markings made on the electrode improve the ultrasound visibility of the instrument. This invention is easily operated using only one hand, allowing the operator's other hand to be free to operate a medical imaging device or manage the delivery of the RF energy. The RF probe has an introducer that carries it to the desired site where a number of RF electrodes are deployed from the introducer into the subject's tissue. The RF electrodes may be deployed by a spring mechanism. The introducer has a biodegradable occluder that reduces tissue injury as the device is inserted into the subject. The occluder is displaced from the distal end of the introducer as the device transitions to a deployed state.

Institution

NIH - National Institutes of Health

联系我们

叶先生

电 话：021-65679356

手 机：13414935137

邮 箱：yeyingsheng@zf-ym.com