Radio Frequency Ablation System Using Multiple Electrodes

INVENTORS • Fred Lee, Dieter Haemmerich, John Webster, Andrew Wright, Chris Johnson, David Mahvi

WARF: P01339US
View U.S. Patent No. 8,486,065 in PDF format.

The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing an efficient method of RF ablation using multiple electrodes.

OVERVIEW

Radio frequency (RF) ablation is an important method of treating non-resectable primary and metastatic liver tumors. The technique uses an electric current to destroy tumor cells with heat, resulting in lesions in the tumor. RF ablation is currently performed by inserting and removing a single probe at a series of locations along a tumor; however, this process is long and time-consuming for all but the smallest of tumors because it requires multiple overlapping treatment zones.

THE INVENTION

UW-Madison researchers have developed an efficient method of RF ablation using multiple electrodes. The technique involves simultaneous operation of multiple monopolar probes. An electric circuit switches power rapidly between individual probes so that on an instantaneous basis, each probe is operating in isolation. At the same time, each probe can be considered to be operating simultaneously for the purpose of heating.

APPLICATIONS

• RF ablation for the treatment of liver tumors

KEY BENEFITS

• Uses multiple probes simultaneously, which increases the size of lesions created
• Promotes large and uniform lesions
• Allows individual temperature, impedance, and timing control of each probe
• Reduced electrical shielding between probes avoids cool spots
• Speeds treatment process
• Avoids complex inter-electrode current flows

Since its founding in 1925 as the patenting and licensing organization for the University of Wisconsin-Madison, WARF has been working with business and industry to transform university research into products that benefit society. WARF intellectual property managers and licensing staff members are leaders in the field of university-based technology transfer. They are familiar with the intricacies of patenting, have worked with researchers in relevant disciplines, understand industries and markets, and have negotiated innovative licensing strategies to meet the individual needs of business clients.
ADDITIONAL INFORMATION

Tech Fields
Radiation Therapy - Ablation

CONTACT INFORMATION

For current licensing status, please contact Jeanine Burmania at jeanine@warf.org or 608-960-9846.