Abstracts

Manipulation of Central Axis Heating Patterns with a Prototype, Three-Electrode Capacitive Device for Deep-Tumor Hyperthermia

G.H. Nussbaum, J. Sidi, N. Rouhanizadeh, P. Morel, C. Jasmin, G. Convert, J.P. Mabire and G. Azam. "Manipulation of Central Axis Heating Patterns with a Prototype, Three-Electrode Capacitive Device for Deep-Tumor Hyperthermia." 1986 Transactions on Microwave Theory and Techniques 34.5 (May 1986 [T-MTT] (Special Issue on Phased Arrays for Hyperthermia Treatment of Cancer)): 620-625.

Measurements of initial temperature elevations produced by a prototype, three-electrode capacitive heating device operating at 13.56 MHz were made at selected points along vertical and horizontal axes in beef phantoms. Adjustment of the net power supplied by the three generators driving the upper and lower two electrodes of the device permitted significant manipulation of the distribution of initial temperature elevations along the vertical "central" axis of the beef phantoms. For example, in a 17 cm thick phantom, the ratio of initial temperature elevations at central axis depths of 1 and 8 cm below the upper surface was reduced from 3.2 to 0.5, through appropriate redistribution of power to the three electrodes.

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