Abstracts

Energy Deposition Patterns within Limb Models Heated with a Mini Annular Phased Array (MAPA) Applicator

J.L. Guerquin-Kern, M.J. Hagmann, C.K. Charny and R.L. Levin. "Energy Deposition Patterns within Limb Models Heated with a Mini Annular Phased Array (MAPA) Applicator." 1986 MTT-S International Microwave Symposium Digest 86.1 (1986 [MWSYM]): 775-778.

A series of experiments has been carried out in order to characterize a MAPA applicator prior to possible clinical implementation. The energy deposition patterns were determined in several human limb models of different complexities. The maximum energy deposition observed in a homogeneous cylindrical phantom was found to be at the middle of the applicator. For more realistically shaped, homogeneous limb models, the point of maximum energy deposition was shifted towards a smaller cross-sectional region; this was also the case for isolated human legs. Furthermore, significant heating was observed in the bone of the isolated legs. Such phenomena illustrate the limitation of using classical 2-D numerical models for predicting the energy deposition patterns in heterogeneous bodies.

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