

Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Monitoring stiffness contrast in elastography MIKLOS KISS, University of Wisconsin, Department of Medical Physics, Madison, Wisconsin, SHYAM BHARAT, University of Wisconsin, Departments of Medical Physics and Electrical and Computer Engineering, Madison, Wisconsin, TOMY VARGHESE, University of Wisconsin, Departments of Medical Physics and Biomedical Engineering, Madison, Wisconsin, UDOMCHAI TECHAVIPOO, University of Wisconsin, Departments of Medical Physics and Electrical and Computer Engineering, Madison, Wisconsin, WU LIU, University of Wisconsin, Department of Medical Physics, Madison, Wisconsin — Elastography is an imaging modality used to image tissue strains resulting from external quasi-static compression of tissue. Therefore, elastograms can be used to study variations in the stiffness of thermally coagulated regions of tissue. In this study, the variations in stiffness contrast of lesions formed by radio frequency (RF) ablation of canine liver tissue have been investigated. RF ablation was performed on in vitro canine liver tissue over a range of temperatures from 70 - 100 degrees C, and over a range of ablation times from 1 – 8 minutes. Elastography was then performed on these samples and on normal tissue. It was expected that stiffness contrast would increase with increasing lesion temperature and ablation duration, on the basis that higher temperature and greater ablation durations lead to increased protein denaturation. This increase was seen with ablation duration, but is not obvious with ablation temperature. These and other results will be discussed.

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Date submitted: 30 Nov 2004

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