Ultrasound Diagnostic Mode for Kidney Stone and Soft Tissue Calculi Detection

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Abstract

The article describes a novel ultrasound diagnostic mode for the detection of physical density anomalies. The mode is developed at the Research and Practical Medical Radiology Center. Its function is based on a raw radiofrequency data analysis. The data is received from the Doppler channel of an ultrasound machine. It is shown that a screening for small kidney stones and soft tissue microcalcifications could benefit from our novel diagnostic mode. We also provide recommendations on adjusting any ultrasound machine for improved calculi detection.

Key words: Color Doppler Mapping, Ultrasound Imaging, Twinkling Artifact, Microcalcifications, Kidney Stones, Cavitation, Acoustic Radiation Force, Forced Oscillation, Tissue Mimicking Phantom.

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