MAGNETIC RESONANCE ELASTOGRAPHY SYSTEM FOR THE PROSTATE

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Overview

There is a critical need for significant improvements in image-based assessment of the prostate in men with lower urinary tract symptoms (LUTS). MRE has been used to image the prostate using a both abdominal and transperineal drivers to apply rapidly varying pressure to the perineum in order to produce the necessary compression waves. The transperineal driver provides a cylinder attached to a patient table with an internal movable piston driven pneumatically by a remote pressure source operating at about 45 Hz. Resulting MRE images produced using this driver suffer from poor quality due in part to patient motion.

The Invention

UW-Madison researchers have developed a lightweight, disposable, trans-perineal passive diver for magnetic resonance elastography. The device includes an anchoring mechanism that allows the passive driver to be secured firmly in place. The transperineal approach brings the passive driver much closer to the prostate and removes the intervening structures that interfere with wave propagation from the abdominal/pelvic wall approach. Active driver frequency can be increased (from ~60Hz to 100-110Hz) which significantly improves image resolution. The anchoring mechanism firmly fixes the passive driver to the perineum thereby mitigating patient-related motion. This approach improves image quality and reproducibility (which is a critical need for image-based biomarkers).

Additional Information

For More Information About the Inventors

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Tech Fields

- Medical Imaging : MRI

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