

CEUS and Elastography of the Liver, Thyroid and the Testis

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The introduction of elastography into clinical ultrasound has added another dimension to the practice of ultrasound in the diagnosis and management of disease. The use of elastography in the assessment of chronic fibrotic liver disease has had a major impact in evaluating the stage of liver fibrosis, allowing an accurate non-invasive method of stratification of severity of disease, and as a consequence avoiding a liver biopsy with the associated morbidity. The various methods, transient elastography, strain elastography, point shear wave elastography, 2-D shear wave elastography have all been employed in the assessment of liver fibrosis with varying degrees of success. This has also resulted in enormous cost savings in relation to avoidance of more expensive investigations. Outside the liver, most frequently, elastography has been used in the assessment of nodules in thyroid disease, with the added benefit of an assessment of 'stiffness' allowing for better evaluation of malignancy. This allows for better and more accurate triaging of nodules, with intervention in those that require further evaluation; essentially reducing morbidity and cost. The use of elastography in clinical testicular work is less assured, with many focal lesions in the testis requiring multi-parametric assessment, with stand-alone ultrasound techniques less robust. Elastography, particularly strain elastography techniques are an important addition to an ultrasound assessment of a focal intra-testicular lesion, often used as a 'problem-solving' tool.