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7 September 2018

Simple ultrasound scan can eliminate unnecessary biopsies and surgeries

CHICAGO -- (Business Wire) -- A simple enhanced ultrasound scan of the kidney is more accurate than computed tomography (CT) and magnetic resonance (MR) imaging in predicting whether suspicious masses are cancerous -- and can eliminate the need for unnecessary biopsies and surgeries, according to a 10-year study presented today at an international medical conference in Chicago.

"Contrast enhanced ultrasound is a very robust technique with an extremely high predictive value," according to Dr. Richard Barr, who presented the findings Wednesday to members of the International Contrast Ultrasound Society. Barr is a professor of radiology at Northeast Ohio Medical University and is a member of the board of directors of the organization.

Barr said that the study followed 721 patients with approximately 1,000 kidney masses for up to 10 years. Following contrast enhanced ultrasound (CEUS) exams, 367 of the patients were spared biopsy, surgery, or close follow-up, while 5 patients thought to have benign lesions actually had cancerous tumors.

In a subgroup of patients initially believed to have a high probability of malignancy, CEUS found that 78% of the tumors were actually not malignant at all, according to Barr -- and those patients were spared invasive biopsies or surgery to remove the tumor. In addition, in another subgroup of patients believed to have a 100% chance of malignancy, 38.7% of the kidney masses were found to be nonmalignant -- and those patients also avoided surgery.

According to Barr, the initial CEUS exams were so reliable that they also eliminated the need for monitoring and follow up imaging of some patients.

CEUS uses liquid suspensions of biocompatible microbubbles that are injected into a patient's arm vein during an ultrasound scan. The microbubbles reflect ultrasound waves as they flow through the body's microvasculature with red blood cells, and are expelled from the body within minutes.

Barr said that CEUS does not expose patients to ionizing radiation and the microbubbles present no risk of kidney or liver damage. He also noted that CEUS offers real time imaging and the opportunity for an immediate assessment of a tumor's blood flow - which in turn indicates whether the tumor is malignant.

Ultrasound contrast agents are FDA-approved for enhancing ultrasound images of the heart and liver, but they are used safely and effectively around the world for imaging other organs including the kidneys, according to Dr. Stephanie Wilson, a professor of radiology at the University of Calgary and co-president of the organization.

"CEUS is an excellent imaging technique that is extremely reliable, and it is also the easiest to perform," Wilson said.

ABOUT ICUS:

ICUS is an international medical society that is dedicated to advancing the appropriate use of contrast enhanced ultrasound to improve patient care. ICUS members include physicians, scientists, and other ultrasound imaging professionals in approximately 60 countries. For more information about ICUS, please visit www.icus-society.org.

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