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PO Box 527
Burlington, VT USA 05402
www.ascension-tech.com
802.893.6657

Media Contact:
Anna W. Januszczyk
ajanuszczyk@ascension-tech.com
802.893.6657 x10

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Study Backs Benefits of Magnetic Sensors in Ultrasound-Guided Liver Biopsy

Burlington, VT (January 9, 2012) – Results of a study recently published in CardioVascular and Interventional Radiology found Ascension’s electromagnetic sensors to be highly accurate and reliable in ultrasound-guided liver biopsies. The research, conducted by scientists at the Gustave Roussy Institute near Paris, France, looked at the accuracy and safety of electromagnetic needle tracking for percutaneous liver biopsies done with ultrasound guidance.

Researchers performed 23 consecutive ultrasound-guided liver biopsies using magnetic needle tracking, with the sensor located at the tip of the needle. The technical success rate was 100 percent; with a single needle puncture used for all the patients.

In liver biopsy ultrasounds, the accuracy of needle placement is critical to a successful procedure, the study reported. One difficulty has been visualizing the needle tip inside the tissue as the needle is advancing toward the target. It is also a challenge to define the needle’s path in advance.

Using Ascension’s electromagnetic sensor embedded in the needle tip gives an excellent virtual representation of the tip – along with excellent accuracy of less than 2 mm from the needle tip’s real position, the authors wrote. In addition, electromagnetic guidance enables an electronic display of the future needle path to be superimposed over the real-time ultrasound image.

“Our study shows the advantage of this new guidance modality during needle interventions with a high technical success, high accuracy, short procedure time, low complications rate, and easy operability,” the article in CardioVascular and Interventional Radiology stated. The study also reported no difference in procedure time for residents versus staff radiologists – indicating a short learning curve for this type of ultrasound guidance. Authors of the paper included: Antoine Hakime, Frederic Deschamps, Enio Gracia Marques De Carvalho, Ali Barah, Anne Auperin and Thierry De Baere.

About Ascension

Ascension makes 3D tracking devices for medical uses such as instrument navigation in image-guided surgery, minimally invasive procedures and ultrasound-guided procedures; biomechanics and motion capture; simulation and training; real-time visualization and computer animation. Ascension’s 3D trackers – featuring miniature five and six-degrees-of-freedom sensors -- are used in everything from 3D ultrasound systems to engineering research to virtual reality displays. Its newest generation of 3D tracking tools includes: driveBAY, trakSTAR and medSAFE.

About the Gustave Roussy Institute

The Gustave Roussy Institute, located in the southern suburbs of Paris, France, is a European center for cancer research, with a mission of treating cancer, developing new therapies to fight cancer, educating about cancer and disseminating knowledge to medical and scientific communities throughout the world.

About CardioVascular and Interventional Radiology

CardioVascular and Interventional Radiology publishes peer-reviewed original research work including laboratory and clinical investigations, review articles and many other types of communications in the field of cardiac, vascular, and interventional radiology. It is the official journal of the Cardiovascular and Interventional Radiological Society of Europe, the Japanese Society of Interventional Radiology, and the British Society of Interventional Radiology.