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AT A GLANCE

- ? Robots can perform biopsies on tumors, making the procedure more accurate, faster and safer, according to researchers at Johns Hopkins Medical Institutions.
- ? Robots also are being used to place tubes, zap tumors with radiofrequency energy and hold and move instruments around during interventional radiology procedures.

ROBOTS DESIGNED TO PERFORM

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April 6-11 in the press room at

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BIOPSIES

BALTIMORE – Robots, which have been emerging in medical treatment for a number of years, are now making inroads in diagnostics. At Johns Hopkins Medical Institutions, a robot has been designed to perform minimally invasive lung, liver and kidney biopsies, hopefully making it faster, more accurate and safer – for patients and the interventional radiologists who perform these

procedures under imaging guidance, according to information being presented here today at the 27th Annual Scientific Meeting of the Society of Cardiovascular & Interventional Radiology (SCVIR).

"We are using robots to help perform biopsies, direct application of radiofrequency energy to cancerous tumors and place drainage tubes," said Stephen B. Solomon, M.D., assistant professor of radiology and urology at Johns Hopkins Medical Institutions, Baltimore. Dr. Solomon doesn't see robots completely revolutionizing medicine, but notes there are definitely some advantages to using them. In his study, a special robot was programmed to perform computed tomography (CT)-guided percutaneous (through the skin) needle biopsies on 10 patients with tumors in the lung, liver and kidney. All biopsies were accurate.

During a typical biopsy, the physician may need to adjust the angle of the needle and enter the body several times to assure an accurate sample. Programmed robots can calculate the angle and make one entry, which makes the procedure faster, and reduces the number of needle sticks, said Dr. Solomon. Robots also can be more pinpoint accurate.

The robot was developed by engineers at Johns Hopkins, led by Dan Stoianovici, Ph.D. It looks like a large metal arm attached to the CT machine. Researchers at a few other institutions also are developing their own versions of medical robots. Currently the Johns Hopkins robot has to be set up for each procedure, but Dr. Solomon said he envisions a day when robots will be attached permanently to CT equipment and other procedure tables. "Robots could really help make procedures more accurate and streamlined," said Dr. Solomon.

Co-authors of a paper on the topic being presented at SCVIR by Dr. Solomon are A. Patriciu, M.E. Bohlman, L.R. Kavoussi and D. Stoianovici.

An estimated 5,200 people are attending the SCVIR Annual Scientific Meeting in Baltimore. SCVIR is the professional society of interventional radiologists – physicians who specialize in minimally invasive, targeted treatments performed using imaging guidance. Interventional radiology procedures are an advance in medicine that replace open surgical procedures. They are generally easier for the patient because they involve no large incisions, less risk, less pain and shorter recovery times. To find out more information about interventional radiology procedures or to find an interventional radiologist, visit the SCVIR Web site, www.scvir.org.

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