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NEWS

RSNA Press Release

Microcoils Help Locate Small Lung Nodules

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At A Glance

- CT-guided microcoil placement allows for successful biopsy of small lung nodules and minimally invasive removal using video-assisted thoracoscopic surgery.
- Lung function is not impaired with this technique, and recovery time is significantly less than that required by open surgery.
- In the study, 97 percent of small lung nodules were successfully removed.

OAK BROOK, Ill. — A new technique combining computed tomography (CT) with fiber-coated surgical microcoils allows physicians to successfully locate and remove small lung nodules without the need for a more invasive procedure, according to a new study published in the February issue of *Radiology*.

"Small lung nodules are much more difficult to successfully locate and remove than larger nodules," said the study's lead author, John Mayo, M.D., professor of radiology and cardiology at the University of British Columbia in Vancouver. "Using CT guidance, we can accurately place the microcoils at the precise location of the small nodules and guide video-assisted thoracoscopic surgery (VATS) removal."

A lung nodule is a relatively round lesion, or area of abnormal tissue located within the lung. Lung nodules do not typically cause pain or other symptoms and are most often detected by imaging exams. However, it is not always possible to tell from imaging tests whether a nodule is benign or cancerous.

"When a patient has a very small nodule identified, we can use the microcoil technique to definitively discover whether or not the nodule is malignant and remove the entire nodule in one procedure," Dr. Mayo said.

VATS is a minimally invasive technique in which one or more small incisions are made in the patient's chest and a small fiber optic camera and surgical instruments are inserted through the incisions. Images transmitted by the camera guide the physician through the procedure.

VATS can replace a traditional thoracotomy, a surgical procedure that uses one larger incision to gain access to the chest. VATS typically results in less pain and faster recovery time for the patient compared to open surgery.

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Because small, peripheral lung nodules can be difficult to locate, physicians often have to resort to the more invasive thoracotomy procedure, removing larger amounts of lung tissue to successfully locate small nodules.

For the study, Dr. Mayo and colleagues used CT-guided microcoil placement to assist in VATS removal of 75 small, peripheral lung nodules in 69 patients ranging in age from 31 to 81 years. Four patients had two nodules treated, and two of the patients had second nodules removed at a later date. In all, 75 procedures were performed. The microcoil technique allowed the researchers to locate 100 percent of small nodules, and 97 percent of the lung nodules were successfully and completely removed with VATS.

The results show that with precise microcoil localization, even small nodules can be removed with VATS.

"The real beauty of this procedure is that we are able to remove the entire nodule and very little surrounding tissue, so there is no decrease in lung function," Dr. Mayo said. "Recovery time is significantly reduced in these patients as a result. Instead of the three- to six-week recovery period that follows a thoracotomy, these patients can return to work within two to three days."

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"Lung Nodules: CT-guided Placement of Microcoils to Direct Video-assisted Thoracoscopic Surgical Resection." Collaborating with Dr. Mayo were Joanne C. Clifton, M.Sc., Tom I. Powell, M.D., John C. English, M.D., Ken G. Evans, M.D., John Yee, M.D., Annette M. McWilliams, M.D., Stephen C. Lam, M.D., and Richard J. Finley, M.D. Journal attribution requested. Journal attribution requested.

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