

Less invasive method for determining stage of lung cancer shows benefits

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A comparison of two strategies to determine the stage of suspected non-small cell lung cancer (NSCLC) finds that the less invasive method is more effective at identifying a type of lung cancer that has spread, and may result in a reduction of unnecessary surgical procedures and associated adverse effects for certain patients, according to a study in the November 24 issue of *JAMA*.

Lung cancer is the most commonly diagnosed cancer worldwide (1.35 million/year) and also the most frequent cause of [cancer death](#) (1.2 million/year). Determining the stage of cancer is an important part of patient care because staging directs therapy and has prognostic value, according to background information in the article. But determining the stage via surgery has limitations and may result in unnecessary thoracotomies (incision into the chest cavity), which may result in significantly impaired health following the surgery, and a higher risk of death.

Current lung cancer staging guidelines acknowledge endosonography (ultrasound of internal organs with the use of a fiberoptic endoscope) as a minimally invasive alternative to surgical staging to detect nodal (collection of tissue) disease, followed by surgical staging (if no nodal metastases are found by endosonography). Mediastinal (space in the thoracic cavity near the lungs) tissue staging is usually performed by mediastinoscopy, a surgical [diagnostic procedure](#). "At present it is not known whether initial mediastinal tissue staging of [lung cancer](#) by endosonography improves the detection of nodal metastases and reduces

the rate of unnecessary thoracotomies," the authors write.

Jouke T. Annema, M.D., Ph.D., of the Leiden University Medical Center, Leiden, the Netherlands, and colleagues compared surgical staging alone vs. endosonography (combined transesophageal and endobronchial ultrasound) followed by surgical staging. The randomized controlled multicenter trial, conducted between February 2007 and April 2009, included 241 patients with resectable (suspected) NSCLC in whom mediastinal staging was indicated based on computed or positron emission tomography (imaging techniques). Patients received either surgical staging or endosonography followed by surgical staging in case no nodal metastases were found at endosonography. Thoracotomy with lymph node dissection was performed when there was no evidence of mediastinal tumor spread.

Of the 241 patients who were randomized, 118 received surgical staging and 123 endosonography, of whom 65 also underwent surgical staging. "Nodal metastases were found in 41 patients (35 percent) by surgical staging vs. 56 patients (46 percent) by endosonography and in 62 patients (50 percent) by endosonography followed by surgical staging. This corresponded to sensitivities of 79 percent (41/52) vs. 85 percent (56/66) and 94 percent (62/66)," the authors write.

The number of unnecessary thoracotomies was 21 of 118 (18 percent) in the surgical staging vs. 9 of 123 (7 percent) in the endosonography group. There was no difference in the complication rate between the 2 groups, with complications occurring in 7 of 118 (6 percent) in the surgical staging vs. 6 of 123 (5 percent) in the endosonography group.

"We have shown that commencing mediastinal nodal staging with endosonography significantly improves the detection of nodal metastases and reduces the rate of unnecessary thoracotomies by more than half compared with surgical staging alone, in patients with resectable

NSCLC," the authors write. "Furthermore, endosonography does not require general anesthesia, is preferred by patients, and is considered cost-effective compared with surgical staging."

The researchers add that given that the sensitivity of endosonography is similar to that of mediastinoscopy (85 percent vs. 79 percent, respectively), and that endosonography is associated with a lower complication rate (1 percent vs. 6 percent for mediastinoscopy), endosonography should be the first step for mediastinal nodal staging.

More information: *JAMA*. 2010;304[20]:2245-2252.

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