

Molecular breast imaging protocol unmask more cancer

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Patients with advanced breast cancer that may have spread to their lymph nodes could benefit from a more robust dose of a molecular imaging agent called Tc-99m filtered sulfur colloid when undergoing lymphoscintigraphy, a functional imaging technique that scouts new cancer as it begins to metastasize. Best results also indicate that imaging could be improved by injecting the agent the day prior to surgical resection, according to research unveiled at the Society of Nuclear Medicine and Molecular Imaging's 2014 Annual Meeting.

"The innovative aspect of this study was our recent introduction of day-before-surgery injections for [breast cancer](#) patients," said Donald Neumann, MD, research scientist and practicing physician from the department of [nuclear medicine](#) at Cleveland Clinic in Cleveland, Ohio. "Prior to this, we routinely injected patients on the day of surgery. There were several motivating factors for us to do this. Typically, surgeries begin very early in the morning, and it is very difficult to arrange all the necessary equipment, personnel and radiotracers early enough in the morning for patients to be injected, scanned, have their images interpreted and travel (or be transported) to surgical check-in."

The researchers also enhanced the activity of the agent as imaged by lymphoscintigraphy by increasing the standard patient dose to 3.0 millicuries of Tc-99m filtered sulfur colloid up from 0.4 millicuries.

The change in injection timing from the morning of surgery to the day prior to surgery was based on study data. Of a group of 51 patients who

were imaged the day prior, 39 had cancer that had spread to their lymph nodes and 12 patients' scans showed multiple lymph node malignancy. A separate group of 49 patients were injected with the agent the morning of their surgery. Of these, 24 patients had cancer that had metastasized to their [lymph nodes](#). Imaging the morning prior ended up being more sensitive for the detection of [advanced breast cancer](#) than the day of, 76 percent sensitive versus 49 percent, respectively.

An estimated 232,670 new cases of invasive breast cancer will be diagnosed in women this year, according to 2014 data from the American Cancer Society. Approximately 40,000 women will die from breast cancer this year.

More information: Scientific Paper 2524: Tessa Ocampo, Donald Neumann, Frank DiFilippo, Nuclear Medicine, Cleveland Clinic, North Olmsted, OH, "Impact of activity on sentinel node detection in Tc99m filtered sulfur colloid breast lymphoscintigraphy," SNMMI's 61th Annual Meeting, June 7, 2014, St. Louis, Missouri

Provided by Society of Nuclear Medicine

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