New AI can help detect breast cancer that is spreading to other parts of the body, without the need for biopsies, a new study finds.

The AI analyzes MRI scans to detect the presence of cancer cells in the lymph nodes under the arms, researchers said.

In clinical practice, the AI could help avoid 51% of unnecessary surgical biopsies to test lymph nodes for cancer, while correctly identifying 95% of patients whose breast cancer had spread, results showed.

Most breast cancer deaths are due to cancer that's spread elsewhere, and the cancer typically first spreads to an armpit lymph node, explained lead researcher Dr. Basak Dogan, director of breast imaging research at UT Southwestern Medical Center.

Finding cancer that's spread to a lymph node "is critical in guiding treatment decisions, but traditional imaging techniques alone do not have enough sensitivity" to effectively detect it, Dogan said in a medical center news release.

Patients with benign findings from MRI exams or needle biopsies often must undergo surgical lymph node biopsy anyway, because those tests can miss a good number of cancer cells that have spread past the breast, Dogan said.

Researchers trained the AI by feeding the program MRI scans from 350
newly diagnosed breast cancer patients known to have cancer in their lymph nodes.

Testing showed that the newly developed AI was significantly better at identifying these patients than human doctors using MRI or ultrasound, researchers reported in the journal Radiology: Imaging Cancer.

"That's an important advancement because surgical biopsies have side effects and risks, despite having a low probability of a positive result confirming the presence of cancer cells," Dogan explained. "Improving our ability to rule out [cancer cells in lymph nodes] during a routine MRI—using this model—can reduce that risk while enhancing clinical outcomes."


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