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NEWS

RSNA Press Release

MRI Shows Liver Tumors Freezing in Real Time

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At A Glance

- MRI allows cryotherapy treatment of liver tumors to be viewed in real time.
- Real-time imaging lets doctors target the optimum site, monitor treatment as it happens, and avoid damage to surrounding tissue.
- Among 39 tumors treated with cryotherapy, 19 were successfully destroyed (17 with only one treatment).

CHICAGO - Cryotherapy combined with magnetic resonance imaging (MRI) is giving doctors unprecedented control during liver cancer treatment by allowing them to observe the tumors freezing in real time, according to a study presented today at the annual meeting of the Radiological Society of North America (RSNA).

"We can actually watch the iceball grow," said Kemal Tuncali, M.D. "We have better control over the means of killing the tumor with MR guidance and cryotherapy. We can also watch out for critical structures around the area that we don't want to damage, like the bowel, stomach or gall bladder." Dr. Tuncali is director of genitourinary radiology services in the department of radiology at Brigham and Women's Hospital in Boston.

Liver cancer is notoriously difficult to treat with standard methods such as chemotherapy and open surgery. Physicians are turning to alternative ways of destroying tumors, including cryotherapy. Interventional radiologists perform cryotherapy by inserting a needle called a cryoprobe directly into the cancerous tissue and using argon gas to freeze the tumor. Using MRI, the radiologist can target the best site for placing the probe and monitor treatment as it happens to avoid damaging surrounding tissue.

"We are improving imaging methods to monitor the ablation and closely observe the area that's being treated," Dr. Tuncali said. "That part - the monitoring - is critical here and is missing with other minimally invasive techniques where we can't see the exact area being treated because there's no direct visualization."

Dr. Tuncali and colleagues treated 31 patients (ages 29 to 87) for liver tumors using MR-guided cryotherapy. Nineteen of 39 tumors (49 percent) were successfully ablated, with 17 requiring only one treatment. The non-invasive nature of cryotherapy also resulted in less scarring, quicker recovery times and shorter hospital stays.

"The results of a study like this show that treating liver tumors and potentially other tumors with a combination of MR guidance and cryotherapy has very promising results," Dr.

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Tuncali said. "Not only does it show local success rates and survival numbers that are encouraging, but it also demonstrates the usefulness of monitoring with MRI."

Co-authors of the study are Stuart George Silverman, M.D., Eric van Sonnenberg, M.D., Nikhil H. Ramaiya, M.D., and Paul Richard Morrison, M.S.

Abstract:	• MRI-guided Percutaneous Cryotherapy of Liver Tumors

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RSNA is an association of more than 37,000 radiologists, radiation oncologists and related scientists committed to promoting excellence in radiology through education and by fostering research, with the ultimate goal of improving patient care. The Society is based in Oak Brook, Ill.

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