Cryoablation proves its palliative power in soft tissue, bone tumors

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Percutaneous CT- and ultrasound-guided radiofrequency ablation is widely used for the treatment of tumors in several organ systems. But both CT and sonography present some accuracy shortcomings. And RFA can be dangerous for the treatment of tumors located too close to critical structures such as bowel, bladder, urethra, blood vessels, and nerves.

MR-guided cryotherapy, on the other hand, combines thermal ablative power, the low morbidity of a percutaneous approach, and the accurate depiction of the ablation volume in real-time, according to the investigative team led by Dr. Kemal Tuncali, director of genitourinary radiology at Brigham and Women's Hospital in Boston.

Tuncali and colleagues treated 27 metastases from soft tissue and bone tumors in 22 patients who underwent MR-guided percutaneous cryotherapy in a 0.5T open magnet. All lesions were adjacent to or covering one or more delicate anatomic structures. Most patients underwent postprocedural CT or MR for tumor control evaluation. Nineteen patients also underwent clinical assessment of pain relief. Average follow-up was about five months (range: 1.5 to 18 months).

The investigators found the technique safe and effective for tumor growth control and pain palliation without significant complications. They published their findings in the July issue of the American Journal of Roentgenology.

Physicians treated 22 of 27 tumors (81%) without damaging adjacent organs. Thirteen tumors (62%) remained the same size or went into remission, while eight progressed during follow-up. Of the 19 patients evaluated for pain palliation, six and 11 achieved complete and partial relief, respectively. Four patients suffered from temporary lower extremity paresthesia, two of whom also had problems with urinary retention. One patient experienced a chronic serous vaginal discharge, and one sustained a femoral neck fracture at the ablation site six weeks after treatment.

According to Dr. J. Louis Hinshaw, an interventionalist and assistant professor of abdominal imaging at the University of Wisconsin, Madison, the study represents the first successful use of MR-guided percutaneous cryotherapy for pain relief and control of soft tissue and bony metastases in a relatively large series.

The main option in the past for this patient population has been narcotic pain control. MR-guided percutaneous cryotherapy offers the possibility to control pain and tumor growth, and also provide a significant improvement in quality of life, compared with pain killers alone, Hinshaw said.

"It offers hope to some of these patients where there was none before," he said

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