

Medscape Medical News

Radiofrequency Ablation Effective in Small Breast Cancers

Laurie Barclay, MD

Dec. 12, 2002 — Two studies presented on Dec. 12 at the 25th Annual San Antonio Breast Cancer Symposium suggest that radiofrequency ablation (RFA) can successfully treat localized breast cancers 2 cm or smaller. Complete ablation occurred in 28 of 30 patients in one study and in 8 of 9 patients in the other study.

"Provided that patients are carefully selected, RFA can successfully treat small invasive breast cancers, and may have the potential to replace surgical resection for the local treatment of these tumors," write A.N. Mirza, from M.D. Anderson Cancer Center, in Houston, Texas, and colleagues.

Enrollment criteria for this study, which took place at the M.D. Anderson Cancer Center, Weill-Cornell Medical Center in New York, and John Wayne Cancer Institute in Santa Monica, California, were invasive breast cancer 2 cm or smaller; tumor clearly identifiable by ultrasound; no direct tumor involvement of the overlying skin; and tumor not within 1 cm of the skin or chest wall.

Each patient was evaluated by ultrasound for determination of tumor size and tumor distance from the skin and the chest wall. Of the 33 enrolled patients, 30 received RFA of the primary tumor with ultrasound guidance, and all had subsequent surgical excision of the ablation site.

Ablation was complete in 28 cases (93%), but in two of these cases, pathology revealed sonographically occult invasive carcinoma beyond the ablated lesion. Ablation was incomplete in two other tumors that were not accurately localized by ultrasound. Although one patient had a minor skin burn that was removed in the subsequent lumpectomy, no other adverse events were reported.

In the second study, by W.E. Burak, Jr., and colleagues from Ohio State University in Columbus, 10 patients with core needle biopsy-proven invasive carcinoma less than 2 cm had outpatient RFA using a 2-cm array probe under ultrasound guidance. All patients had breast magnetic resonance imaging (MRI) before ablation and again within 24 hours before surgical excision, which was performed one to three weeks after ablation.

Mean tumor size was 1.2 cm (range, 0.8 - 1.6 cm), and mean time of RFA application was 13.8 minutes (range, 7 - 21 min). There was minimal or no discomfort, and no treatment-related complications other than minimal breast ecchymosis.

Of nine patients (90%) with enhancing tumors on MRI before ablation, eight (89%) had no residual lesion enhancement on follow-up MRI, and one had enhancement at the anterior edge of the treated tissue suggesting residual tumor outside of the ablation zone. In the eight patients, histology ranged from no residual tumor to coagulation necrosis with recognizable malignant cells. However, immunostains for cytokeratin 8/18 were negative in these malignant cells but intensely positive in epithelial cells outside the ablated area, suggesting nonviability in the RFA-treated cells.

"Radiofrequency ablation of small breast malignancies can be performed under local anesthesia in an office-based setting," the authors write. "Post-ablation MRI appears to predict histologic findings, although tumor viability needs to be assessed in a long-term study."

25th Annual SABCS: Abstracts 450, 451. Presented Dec. 12, 2002.

Reviewed by Gary D. Vogin, MD

Related Links

Conference Coverage

[25th Annual San Antonio Breast Cancer Symposium](#)