

Mammographic Findings Following Use of a Radiofrequency (RF) Access Device During Breast Biopsy

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PURPOSE

To identify any changes seen on follow up mammography after use of a radiofrequency access device to facilitate vacuum-assisted breast biopsy.

MATERIALS/METHODS

Twenty-seven patients were randomized to undergo an ultrasound-guided, vacuum-assisted biopsy procedure (Mammotome, Ethicon Endo-Surgery) using the Mammotome (MT) device alone or in combination with an RF access device (Easy Guide, SenoRx). The RF access device consists of a plastic obturator and cannula with a stainless steel RF cutting tip electrode designed to facilitate penetration of breast tissue and subsequent positioning/repositioning of the Mammotome probe. During the biopsy procedure, a mean of 8 tissue specimens (range: 3 – 14) were obtained from each lesion, yielding a mean aggregate specimen weight per sampled lesion of 645 mg (range: 300 – 1100 mg). Twenty-two of the 27 randomized patients were diagnosed with benign lesions and eligible for follow up. Of these 22 patients, 15 (5 having their biopsy performed with the MT alone and 10 with the MT + RF device) had their follow up mammograms reviewed and compared to their pre-biopsy mammograms (CC and MLO views). A single reader, blinded to the randomization assignment, noted any of the following changes: architectural distortion, skin changes, increased focal density, calcifications, fat necrosis, or mass. Follow up mammograms were obtained after a mean of 9 months (range: 3 – 18 months) following the biopsy procedure.

RESULTS

Residual masses, corresponding to the biopsied lesion, were observed in 1 MT patient and 3 MT + RF device patients; however, no new masses were observed in either group. The only mammographic change noted was an insignificant finding of increased focal density in 1 MT patient and in 2 MT + RF device patients. The MT patient had this change present on a 3-month post-biopsy mammogram and resolved at 12 months. The MT + RF device patients had these changes noted on 6 and 12 month post-biopsy mammograms, respectively. None of these changes adversely affected interpretation of the follow up mammogram.

CONCLUSIONS

Use of radiofrequency energy for penetration and cutting of breast tissue did not result in any clinically significant, long-term mammographic changes or adversely affect follow up mammogram interpretation.