BACKGROUND: The objective of this study was to determine the accuracy, reproducibility, and clinical value of magnetic resonance (MR)-guided, vacuum-assisted breast biopsy (MR-VAB) in a prospective, multicenter study. METHODS: In 5 European centers, MR-VAB was performed or attempted on 538 suspicious lesions that were visible or could targeted only by MR imaging (MRI). Verification of malignant or borderline lesions included reexcision of the biopsy cavity. Benign biopsy results were verified by retrospective correlation of histology with preinterventional and postinterventional MRI studies. Follow-up of 24-48 months (median, 32 months) was available for 491 of 538 patients. RESULTS: MR-VAB was unsuccessful or was not completed in 21 of 538 patients, for which an immediate repeat biopsy was recommended. Five hundred seventeen of 538 performed VAB procedures (96%) were successful. Histology yielded 138 (27%) malignancies, 17 (3%) atypical ductal hyperplasias, and 362 (70%) benign entities. No false-negative diagnoses occurred among the 517 successful MR-VAB procedures. The positive predictive value of VAB depended on patient preselection, which differed according to the indication for the initial MRI study. CONCLUSIONS: The results of this study indicated that MR-VAB offers excellent accuracy.
Small lesion size did not prove to be a limitation. Cancer 2006. (c) 2006 American Cancer Society.