

# Manipulation of the Primary Breast Tumor and the Incidence of Sentinel Node Metastases From Invasive Breast Cancer

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**Hypothesis** The incidence of sentinel node (SN) metastases from invasive breast cancer might be affected by the technique used to obtain biopsy specimens from the primary tumor before sentinel lymph node dissection.

**Design** Prospective database study.

**Setting** The John Wayne Cancer Institute.

**Patients and Methods** We identified 663 patients with biopsy-proven invasive breast cancer who underwent sentinel lymph node dissection between January 1, 1995, and April 30, 1999. Patients were divided into 3 groups based on type of biopsy: fine-needle aspiration (FNA), large-gauge needle core, and excisional. A logistic regression model was used to correlate tumor size, tumor grade, and type of biopsy with the incidence of SN metastases.

**Results** Of the 676 cancers, 126 were biopsied by FNA, 227 by large-gauge needle core biopsy, and 323 by excisional biopsy before sentinel lymph node dissection. Mean patient age was 58 years (range, 28-96 years), and mean tumor size was 1.85 cm (range, 0.1-9.0 cm). In multivariate analysis based on known prognostic factors, the incidence of SN metastases was higher in patients whose cancer was diagnosed by FNA (odds ratio, 1.531; 95% confidence interval, 0.973-2.406;  $P = .07$ , Wald test) or large-gauge needle core biopsy (odds ratio, 1.484; 95% confidence interval, 1.018-2.164;  $P = .04$ , Wald test) than by excision. Tumor size ( $P < .001$ ) and grade ( $P = .06$ ) also were significant prognostic factors.

**Conclusions** Manipulation of an intact tumor by FNA or large-gauge needle core biopsy is associated with an increase in the incidence of SN metastases, perhaps due in part to the mechanical disruption of the tumor by the needle. The clinical significance of this phenomenon is unclear.

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