Spectrum of Abnormal Mammographic Findings and Their Predictive Value for Malignancy in Singaporean Women from a Population Screening Trial

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Abstract

Introduction: The ability to categorise mammographic features according to their likelihood of malignancy would be valuable in the management of women with abnormal mammograms. The aim of our study was to correlate abnormal mammographic features in a screened population with their histology to identify those features which are predictive of malignancy. The study also examined the spectrum of mammographic features in an Asian population. Materials and Method: This prospective study involved 28,231 women who were randomly selected from a population registry and underwent two-view screening mammography without physical examination. Women with suspicious lesions were recalled for further mammographic views or to a joint assessment clinic prior to biopsy. Mammographic abnormalities and their corresponding histology were assessed. Results: The spectrum of mammographic abnormalities was similar to that in Caucasian populations. The positive predictive value for malignancy was 44.1% of all biopsied cases. Mammographic features could be broadly classified into low-, moderate- and high-risk categories for malignancy. Those features which correspond to high malignancy rates (9.8% to 16.0%) include multiple abnormalities or parenchymal lesions with microcalcifications. The presence of microcalcifications was a good predictor of ductal carcinoma-in-situ (DCIS): 46% of lesions in which the microcalcifications were the sole abnormality were DCIS only. Further, 71% of cancers with any microcalcification on the mammogram had a focus of DCIS on histology. Conclusion: Mammographic abnormalities can be segregated into three risk groups for malignancy, and this in turn can improve the selection criteria for breast biopsy, hence reducing unnecessary intervention. Furthermore, the presence of microcalcifications denotes the presence of DCIS, and would be an important determinant of the extent of surgical excision.

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