

Exposing the Dilemma of Too Many Biopsied Benign BI-RADS 4 Breast Lesions.

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Introduction

Since the release of the initial BI-RADS report in 1993, the American College of Radiology has been updating many versions, with the latest update in 2013.

The new BI-RADS provides specific PPV cut-off points for BI-RADS subcategories 4A/4B/4C, which align with certain specific radiographic findings. The use of these cut-off points remains optional in the new edition but is strongly encouraged. The controversy here is that tissue diagnosis is still recommended for all BIRADS 4 lesions. In the United States, it is well-documented that too many breast biopsies turn out to be benign.

Methodology

This study reviews the pathology results of all screening mammograms that were classified as BI-RADS 4 in a six-month period of 01/01/2021 to 06/31/2021. Mammograms without reported pathology results were excluded from the study. Women who had at least one mammographic finding classified as BIRADS 5 or higher were also excluded from this evaluation.

Results

The pathology results are divided into three categories: benign, high-risk, and malignant. Of the 346 breast lesions biopsied, 52 lesions were malignant (15%), 280 lesions were benign (81%) and 13 lesions were high risk (4%). The PPV for malignancy was 15%. Invasive ductal carcinoma was the most common malignant pathology. Fibroadenoma was the most common benign pathology, followed by fibrocystic changes.

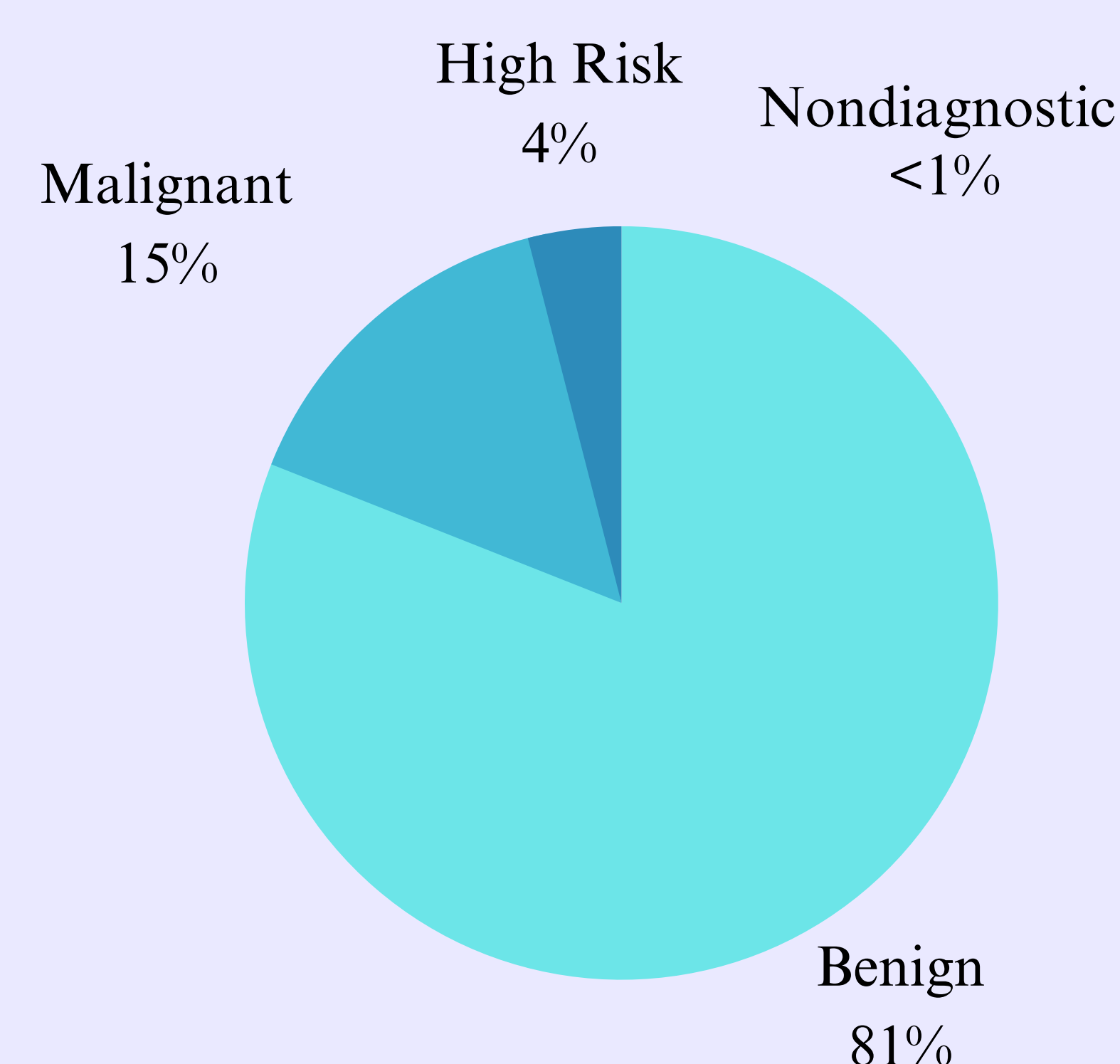


Figure 1: BIRADS 4 Pathology Results

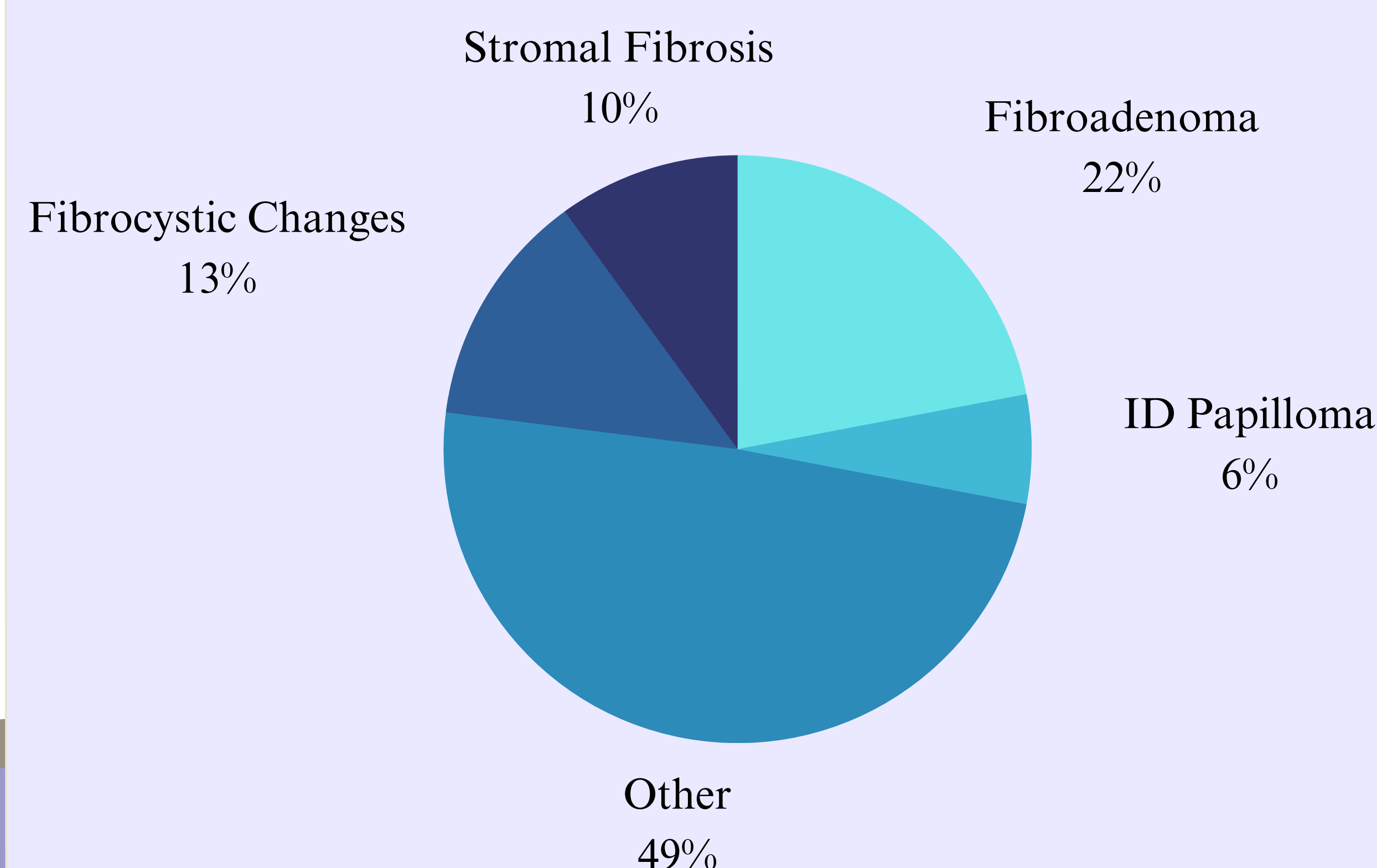


Figure 2: Biopsied BIRADS 4 Benign Lesions

Discussion

No one can deny the great impact of breast cancer screening, early disease detection and improved therapies throughout the years. Several studies, however, have shown that BI-RADS 4 includes too many patients who do not have malignant lesions. Our study results align with many previous studies in that BI-RADS 4 biopsy rate is high for benign breast tissue, with PPV for malignancy of 15%.

Conclusion

While tissue biopsy is required in most cases because BI-RADS criteria are not sufficient for discriminating between malignant and benign lesions, the utilization of subcategories 4A, 4B, and 4C can be useful in predicting the likelihood of malignancy.

Future studies will be conducted to assess the implementation of the BIRADS 4 subcategories on biopsy rate and pathology results.