
Architectural distortion on DBT less likely to represent malignancy



Architectural distortion, which refers to distortion of the breast parenchyma with no definite mass visible, can have a malignant or benign cause. A new study compares the risk of malignancy associated with architectural distortion detected on 2D digital mammography (DM) versus digital breast tomosynthesis (DBT). The findings show that architectural distortion is more commonly detected on DBT than DM and is less likely to represent malignancy on DBT.

"Architectural distortion on DBT is less likely to represent malignancy if there is no sonographic correlate; however, biopsy is warranted even in the absence of a sonographic correlate, given the nearly 30 percent risk of malignancy in this setting," the study says. The information from this study can be used to guide clinical decision making and counsel patients about expected pathologic results.

Researchers at Massachusetts General Hospital in Boston performed a retrospective review of architectural distortion cases recommended for biopsy from September 2007 to February 2011, the period before DBT integration (hereafter known as the DM group), and from January 2013 to June 2016, the period after DBT integration (hereafter known as the DBT group). Medical records were reviewed for imaging findings and pathology results.

The research team reported these key findings:

- Architectural distortion was more commonly detected in the DBT group than the DM group (0.14% [274/202,438 examinations] vs. 0.07% [121/166,661 examinations]; $p < 0.001$).
- The positive predictive value of architectural distortion for malignancy was significantly lower in the DBT group than the DM group (50.7% [139/274 cases] vs. 73.6% [89/121 cases]; $p < 0.001$).
- Radial scar was the most common nonmalignant finding in both groups, but it was more common in the DBT group (33.2% [91/274] vs. 11.6% [14/121]; $p < 0.001$).
- In the DBT group, architectural distortion without correlative findings on ultrasound was less likely to represent malignancy than was architectural distortion with correlative findings on ultrasound (29.2% [31/106] vs. 66.5% [105/158]; $p < 0.001$).

Although architectural distortion is a relatively rare finding overall, the results also show that architectural distortion is more commonly detected on DBT than on DM, the researchers note.

"Most malignancies presenting as architectural distortion on mammography are invasive rather than in situ carcinomas. In the present study, 93.3% (83/89) and 90.6% (126/139) of malignancies detected on DM and DBT, respectively, were invasive carcinomas. These results are similar to those of other studies, which have found that more than 80% of malignancies manifesting as architectural distortion are invasive carcinomas," the researchers say.

Source: [American Journal of Roentgenology](#)

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