

Synthesized 2D Mammography+Tomosynthesis: Can We See Clearly?

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Objective

The goal of this study was to compare synthesized 2D mammography using Hologic's C-View™ software plus tomosynthesis (C-View+DBT) to traditional 2D digital mammography plus tomosynthesis (DM+DBT) in a clinical setting.

Materials and Methods

Two hundred and one screening mammograms were obtained with C-View+DBT and DM+DBT. Readers reviewed the C-View+DBT images first, followed by the DM+DBT images. Findings (calcifications, asymmetries, masses, architectural distortions) on C-View+Tomo were prospectively assessed as either better, equally, or less well seen compared to DM+DBT. Separate BIRADS final assessments were recorded and Kappa statistics assessed agreement between the techniques. Fisher's exact test was used to compare recall and cancer detection rates using each technique.

Findings

The average age of women examined was 56 years. 53.7% of the mammograms were classified as not dense and 46.3% were classified as dense. Overall, 82.1% (165/201) of the findings were equally/better seen with C-View+DBT when compared to DM+DBT. The results demonstrated that neither density nor age had a significant effect on the visibility of findings ($p=0.8358$ density; $p=0.3336$ age). Recall rates for C-View+DBT (10.9%) and DM+DBT (9.45%) were not significantly different ($p=0.7421$). Six biopsies were performed and 2 malignancies found (PPV3: 33.3%). The cancer detection rate was the same as both cancers were identified on both modalities.

	Number of Findings	Number of Findings see equally/better C-View+DBT (%)	Kappa (C-View+DBT vs DM+DBT)
Calcifications	102	98 (96.1%)	0.7850
Asymmetries	58	37 (63.8%)	0.9695
Masses	29	18 (62.1%)	0.9247
Architectural Distortions	12	12 (100%)	1.0
Total	201	165	

Conclusion

The authors conclude that C-View+DBT showed the majority of mammographic findings equally well or better than 2D+Tomo, regardless of breast density or age, with no significant difference in recall rates and cancer detection.

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