

Addition of tomosynthesis to conventional digital mammography: effect on image interpretation time of screening examinations

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Objective

To compare the interpretation times between conventional screening mammography and screening combined tomosynthesis and conventional 2D mammography in a large academic center with multiple participating radiologists with a wide range of experience for determining the effect of implementing a screening tomosynthesis program.

Materials and Methods

Images from 3665 examinations (1502 combined and 2163 digital mammography) from July 2012 to January 2013 were prospectively read by 10 radiologists from screening mammography or screening combined tomosynthesis conventional 2D mammography in at least five sessions per radiologist per modality (each session was 1-hour-long uninterrupted time). The number of cases reported for each reader during each session was recorded and the experience level for each radiologist was also correlated to the average number of cases reported per hour. Statistical analysis was used to assess the number of studies interpreted per hour and to evaluate correlation between breast imaging experience and time taken to interpret images from both modalities.

Results

Approximately 24 studies were interpreted per hour for combined tomosynthesis and mammography and 34 for digital mammography alone. The mean interpretation time for combined tomosynthesis and mammography was 47% longer than that for digital mammography. The overall interpretation time for combined tomosynthesis and mammography examinations decreased with the increase in years of breast imaging experience.

Conclusion

The mean interpretation time for combined tomosynthesis and mammography was longer than that for digital mammography by 47% and the overall interpretation time decreased with increase in years of breast imaging experience. This increase in interpretation time may be within acceptable limits, given the technology has other associated benefits, such as increased cancer detection, reduced false-positive rates, and streamlined diagnostic workflow.

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