



Tomosynthesis and Breast Lesion Detection

- Dr. Bijal Jankharia

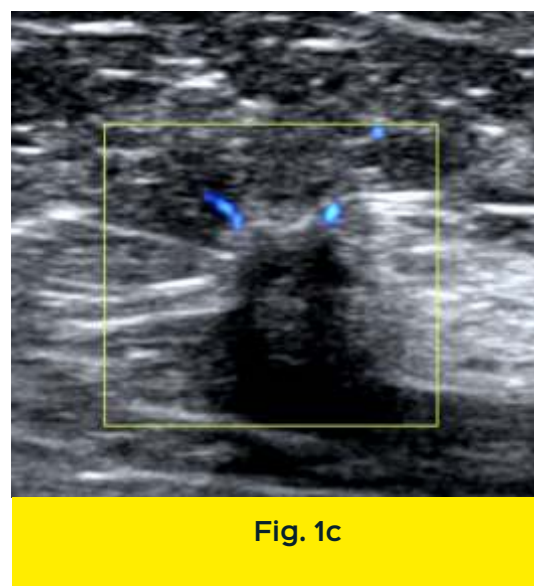
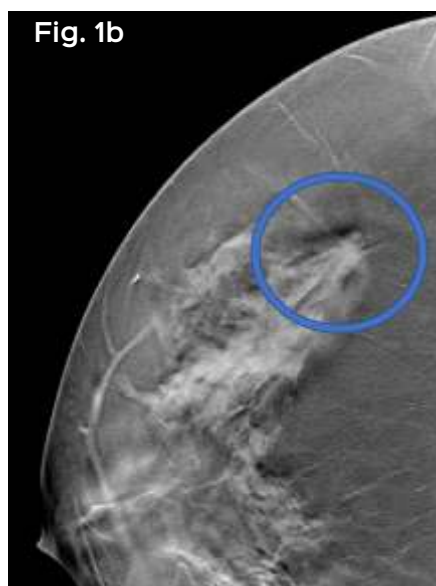
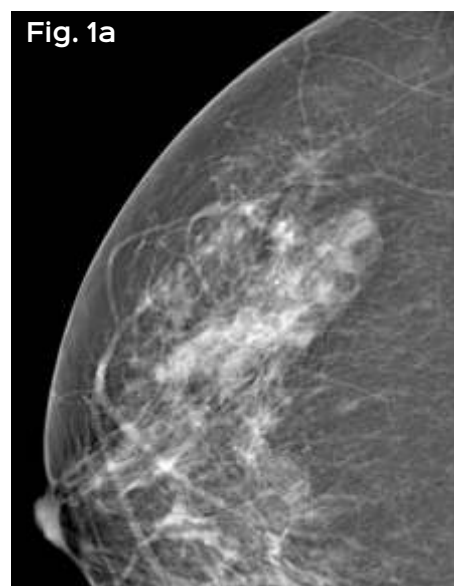
Breast tomosynthesis is a method of viewing 1mm slices of the breast, after reconstruction of low dose X-Rays of the breast by movement of the mammography machine tube in an arc. This reduces superimposition of breast structures and improves characterization of lesion margins, with a significant increase in cancer detection rate.

Case 1 (Fig. 1):

A 58-years old lady came for routine screening.

Digital mammography CC (cranio-caudal) view (Fig. 1a) was normal. However, a subtle spiculated lesion was seen on the Tomosynthesis CC view (circled in Fig. 1b). USG (Fig. 1c) showed a tiny 5 X 3 X 5mm irregular hypoechoic lesion in the right upper outer quadrant.

USG-guided core biopsy revealed invasive duct carcinoma in a desmoplastic stroma, which was ER +ve, PR +ve and HER2 -ve.



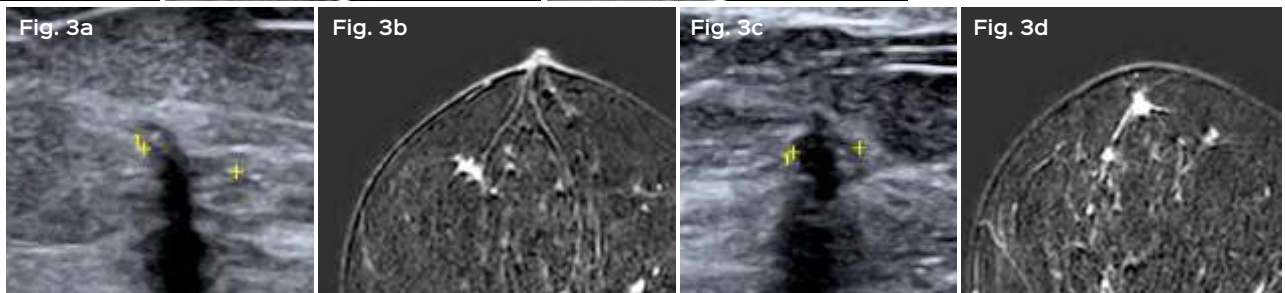
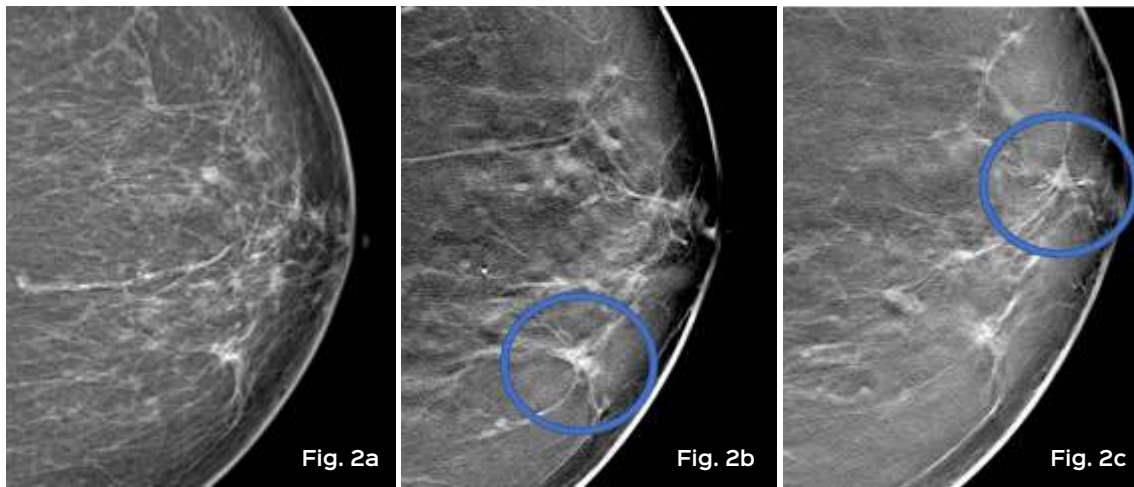


Case 2 (Figs. 2 & 3):

A 65-years old lady came every 2 years for mammography for follow-up of small cysts.

2-D Digital Mammography CC view (Fig. 2a) showed subtle developing areas of architectural distortion, which were much better visualized on the Tomosynthesis views in the right breast medially (Fig. 2b) as well as in the left retroareolar region (Fig. 2c). Small circumscribed lesions which were cysts on ultrasound were also noted in the left breast.

USG and MRI were performed. On USG, the lesion in the left breast medially at the 9 o'clock position (Fig. 3a) was very subtle and showed some posterior shadowing. On MRI, it was irregular and showed enhancement (Fig. 3b). The other lesion in the left retroareolar region at the 1 o'clock position also showed posterior shadowing on USG (Fig. 3c) with spiculations and enhancement on MRI (Fig. 3d). A guided wide excision was performed and the histopathology was Invasive lobular carcinoma with a tiny focus of invasive carcinoma in the superior margin. A mastectomy was done. The specimen was ER +ve, PR +ve and HER2 -ve with Ki 67 of 5% and loss of E-cadherin expression.



In conclusion, tomosynthesis or 3-D mammography shows us greater sensitivity to pick up early breast cancer which can be missed on 2-D mammography and is a very important tool as seen in both the above patients who were asymptomatic for breast cancer.

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