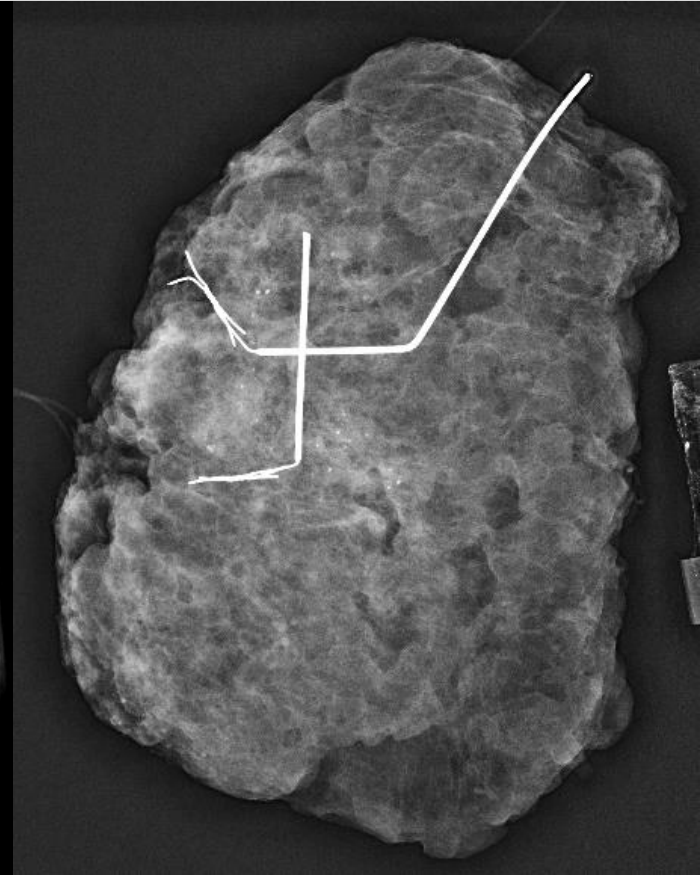
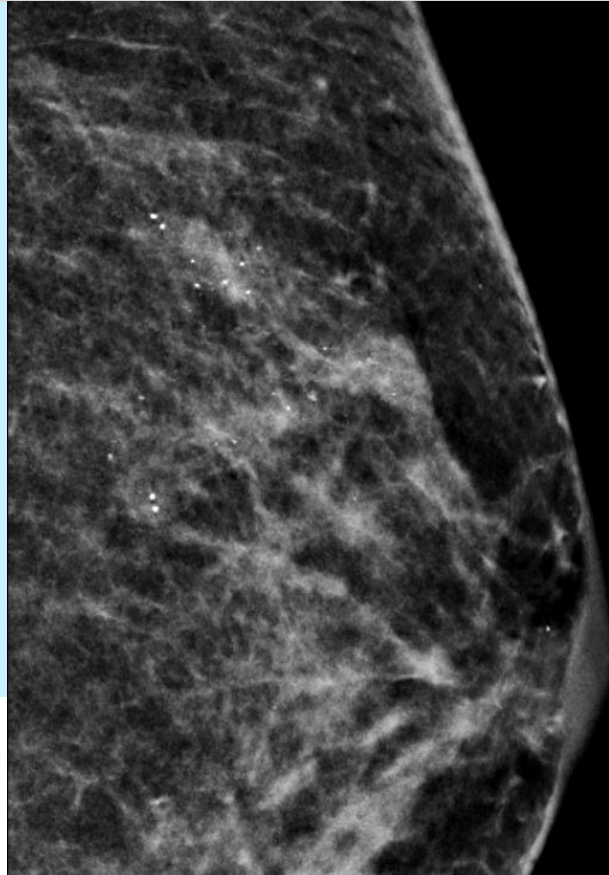


# Pre-operative Tomosynthesis-Guided Hookwire Needle Localisation of Occult Breast Lesions – A Preliminary Experience

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# Tomosynthesis: A Proven Technique

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**FULL PAPER**

**Imaging features of breast cancers on digital breast tomosynthesis according to molecular subtype: association with breast cancer detection**

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Radiology

**Digital Breast Tomosynthesis:  
State of the Art<sup>1</sup>**

*Radiol Clin North Am.* 2014 May;52(3):489-97. doi: 10.1016/j.rcl.2014.01.003.

## Digital tomosynthesis: technique.

Yaffe MJ<sup>1</sup>, Mainprize JG<sup>2</sup>.

[Author information](#)

### Abstract

Digital breast tomosynthesis is an extension of digital mammography that produces quasi three-dimensional reconstructed images from a set of low-dose x-ray projections acquired over a limited angular range. The quality of the reconstructed image and the dose to the breast are dependent on the angular range and number of projections, the dose used per projection, and detector resolution and noise characteristics. This article discusses various aspects of tomosynthesis optimization.

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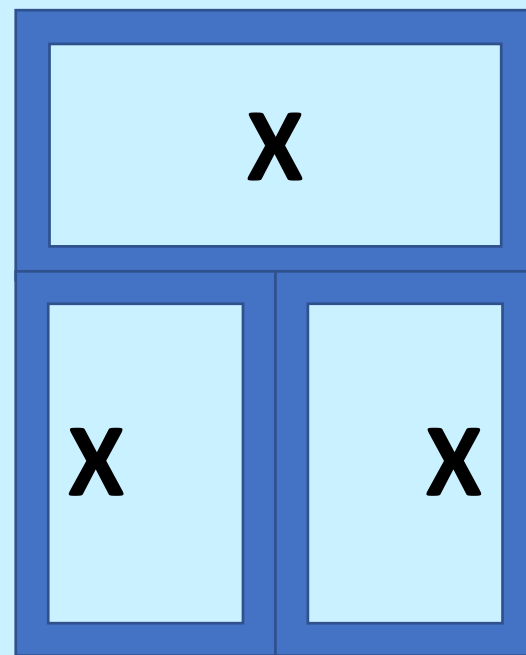
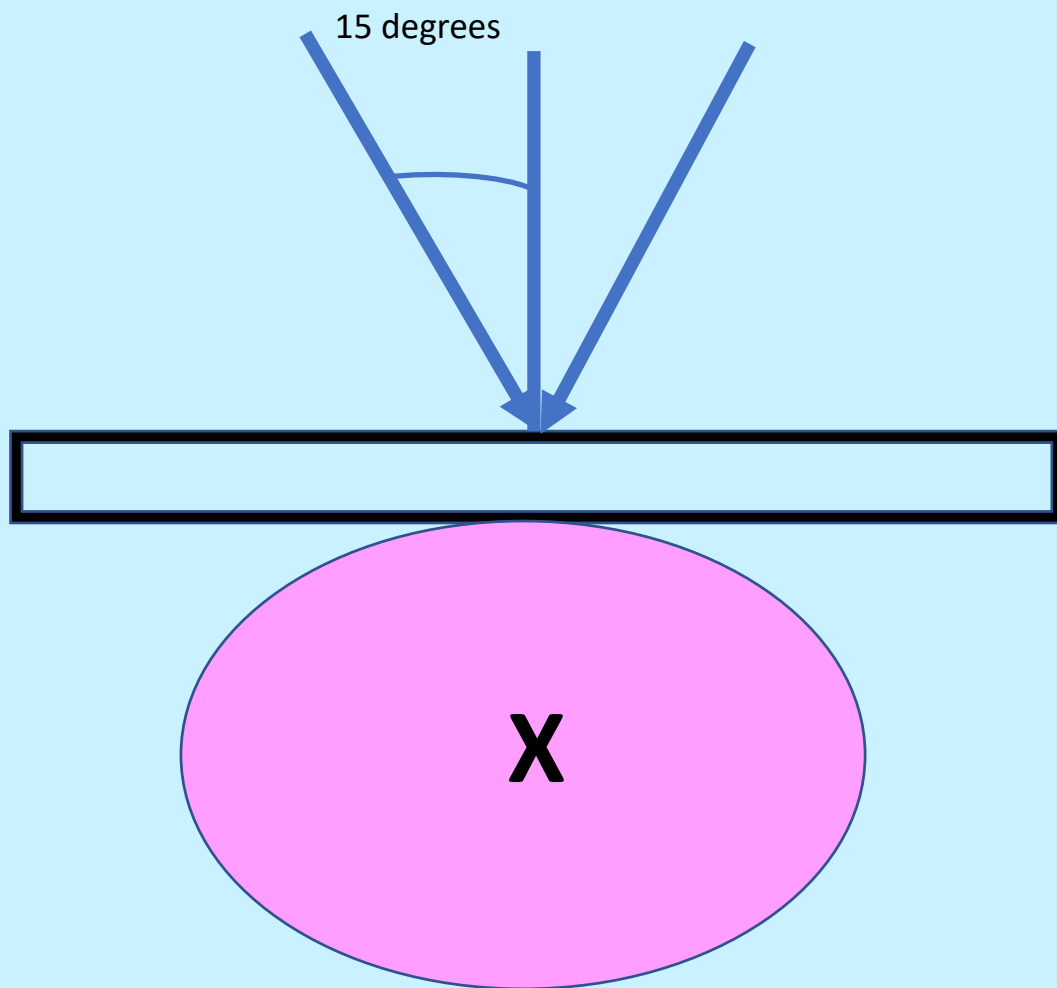
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Radiology

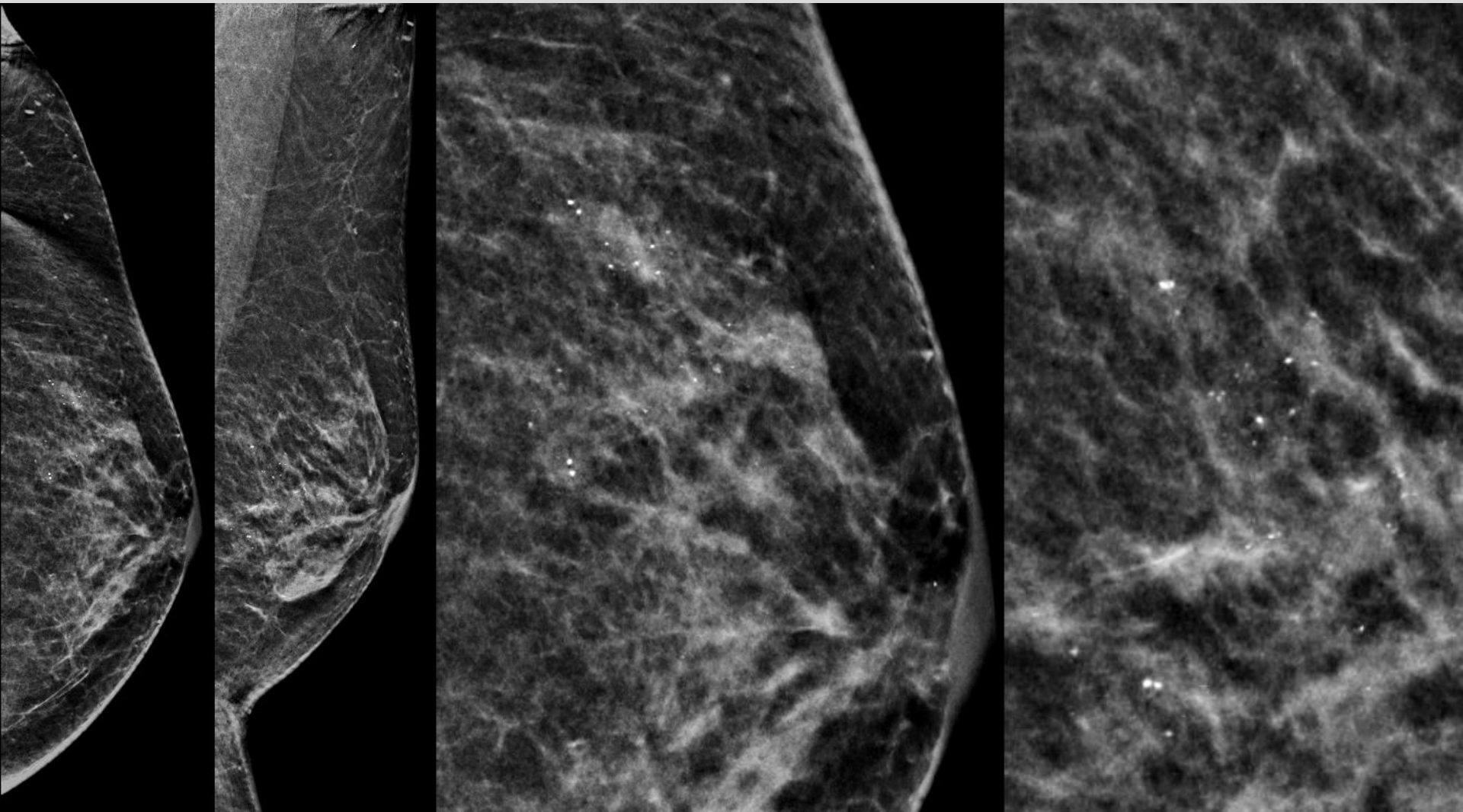
**Preoperative Tomosynthesis-guided Needle Localization of Mammographically and Sonographically Occult Breast Lesions<sup>1</sup>**

ORIGINAL RESEARCH ■ BREAST IMAGING

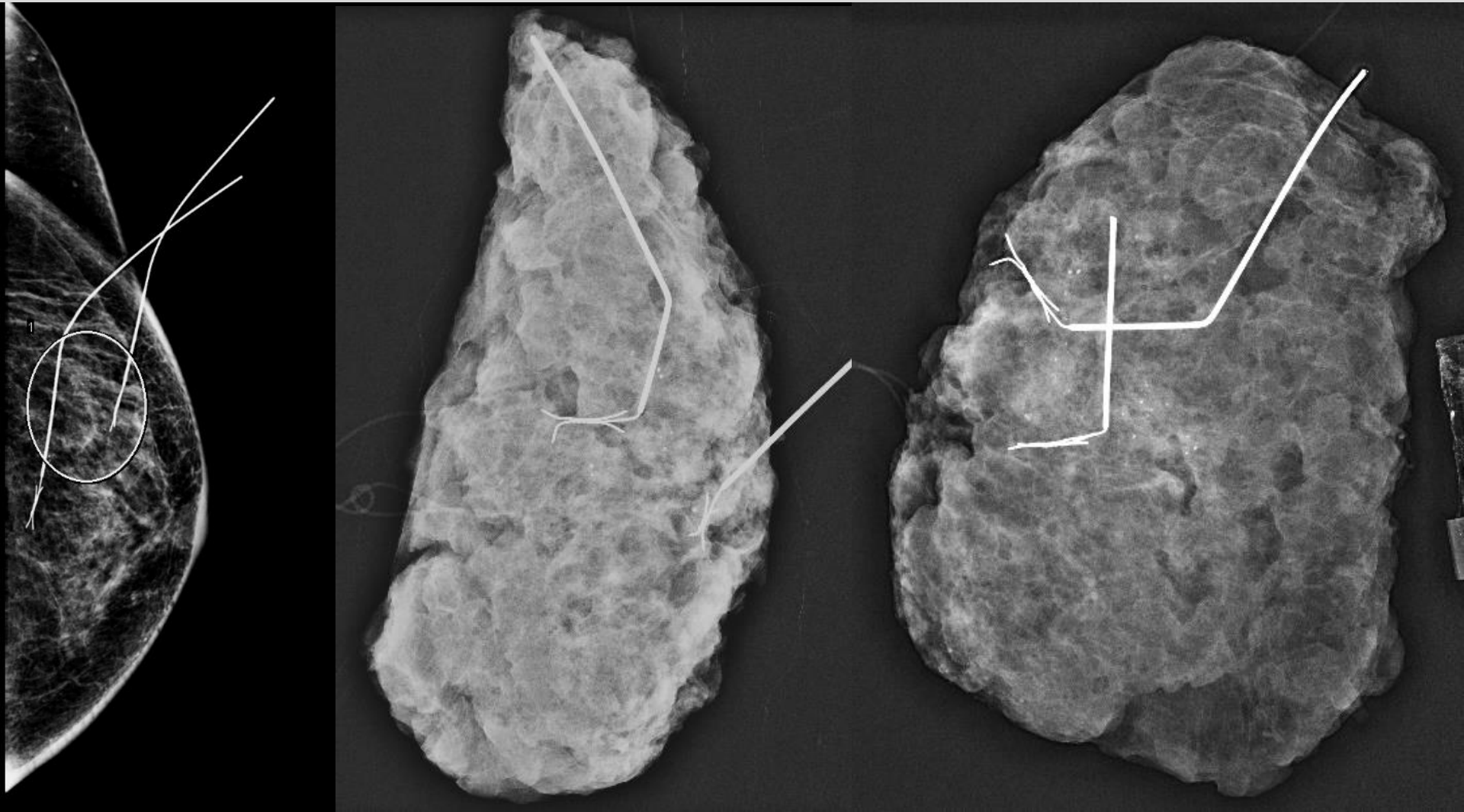
# Conventional Stereotactic-Guided Procedure



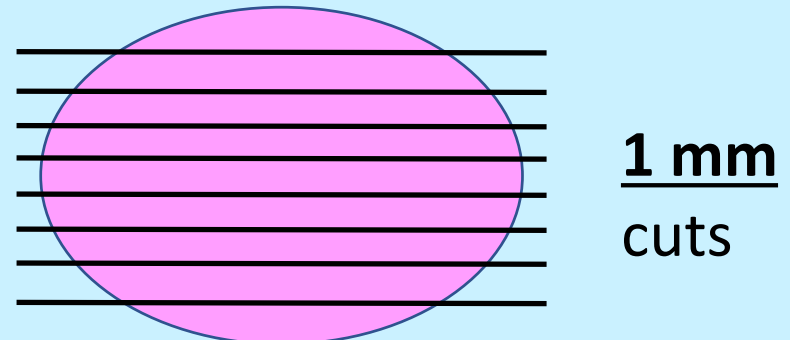
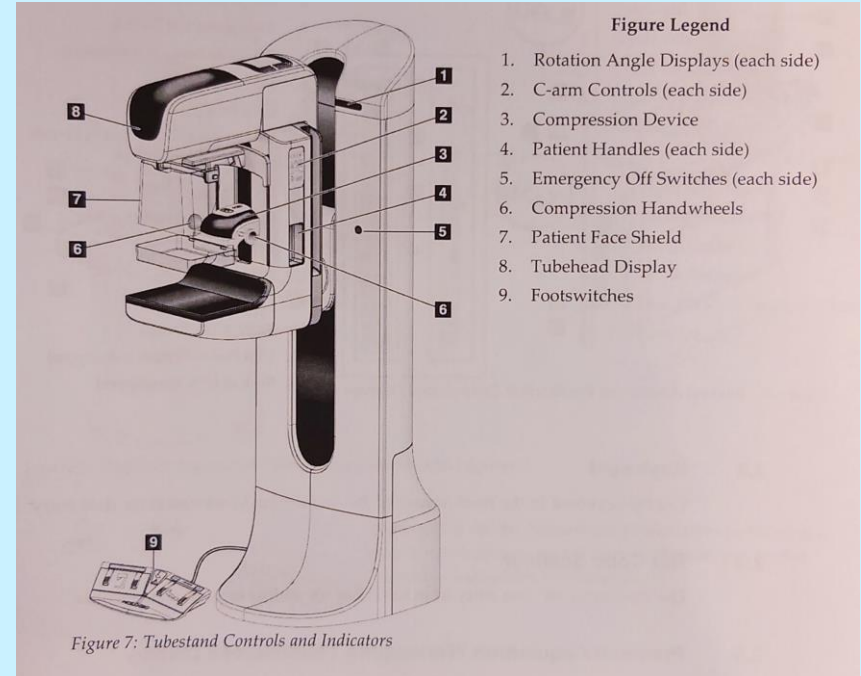
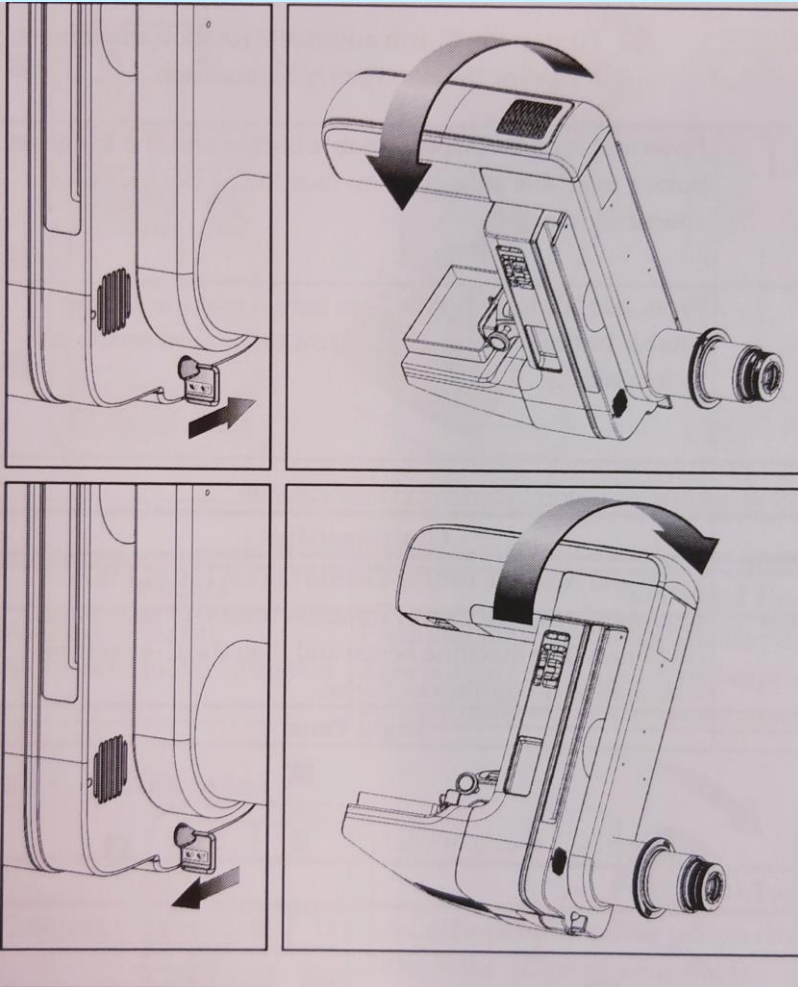
# Conventional HW method



# Conventional Technique



# Tomosynthesis-Guided Procedure



# Advantages of Tomosynthesis

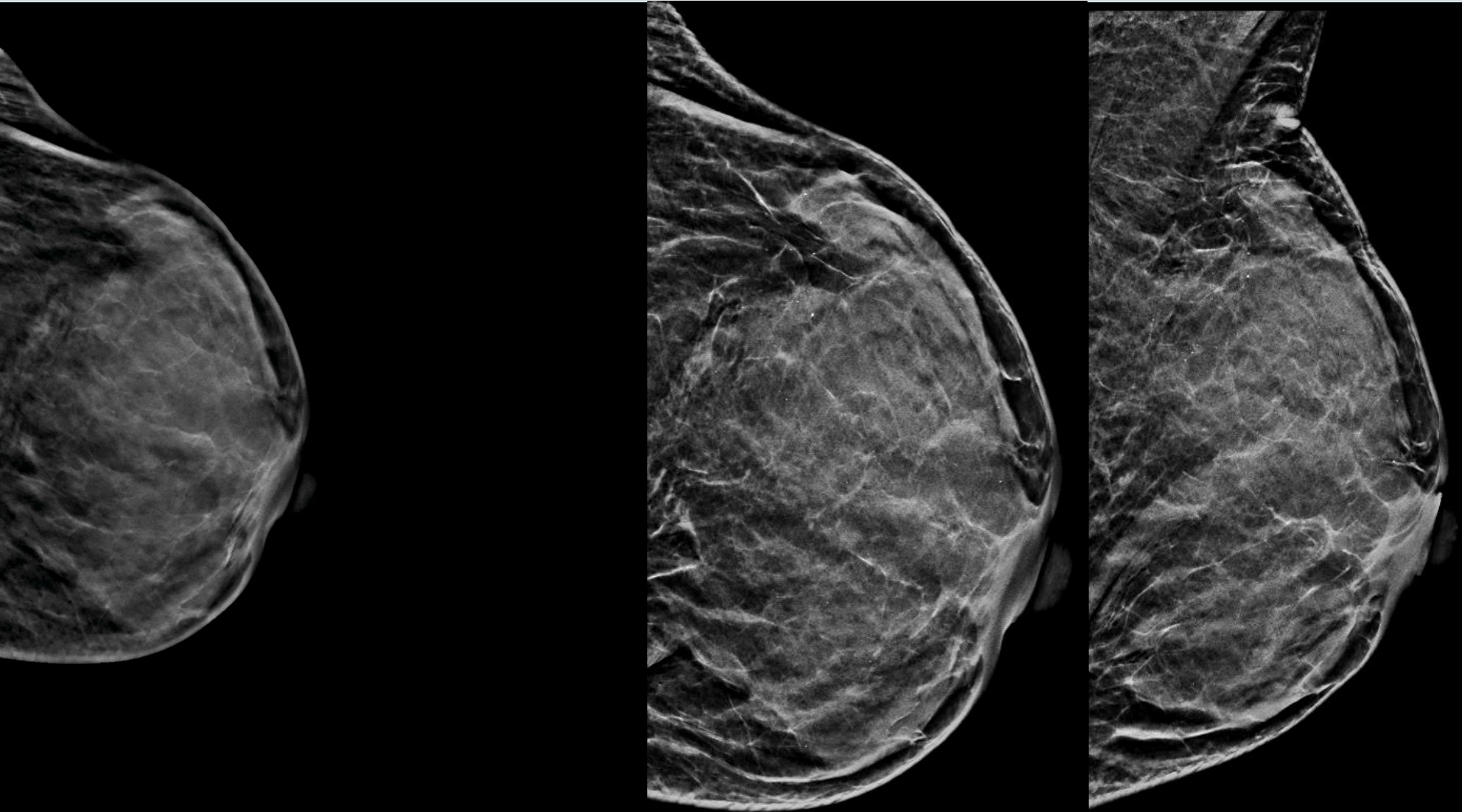
- 🎀 Radiation Dose
- 🎀 Visualization and detection of architectural distortion
- 🎀 Identifying clusters of faint micro-calcification
- 🎀 Ruling out non-genuine lesions
- 🎀 Reduces rate of false positive readings
- 🎀 Fewer women come back for repeat mammogram
- 🎀 Reduces need for biopsy
- 🎀 Accuracy – Estimation of lesion depth in procedures
- 🎀 May be particularly beneficial in the dense breast
- 🎀 Our practice in Queen Mary Hospital

# Our Experience in Tomo-Guided HW

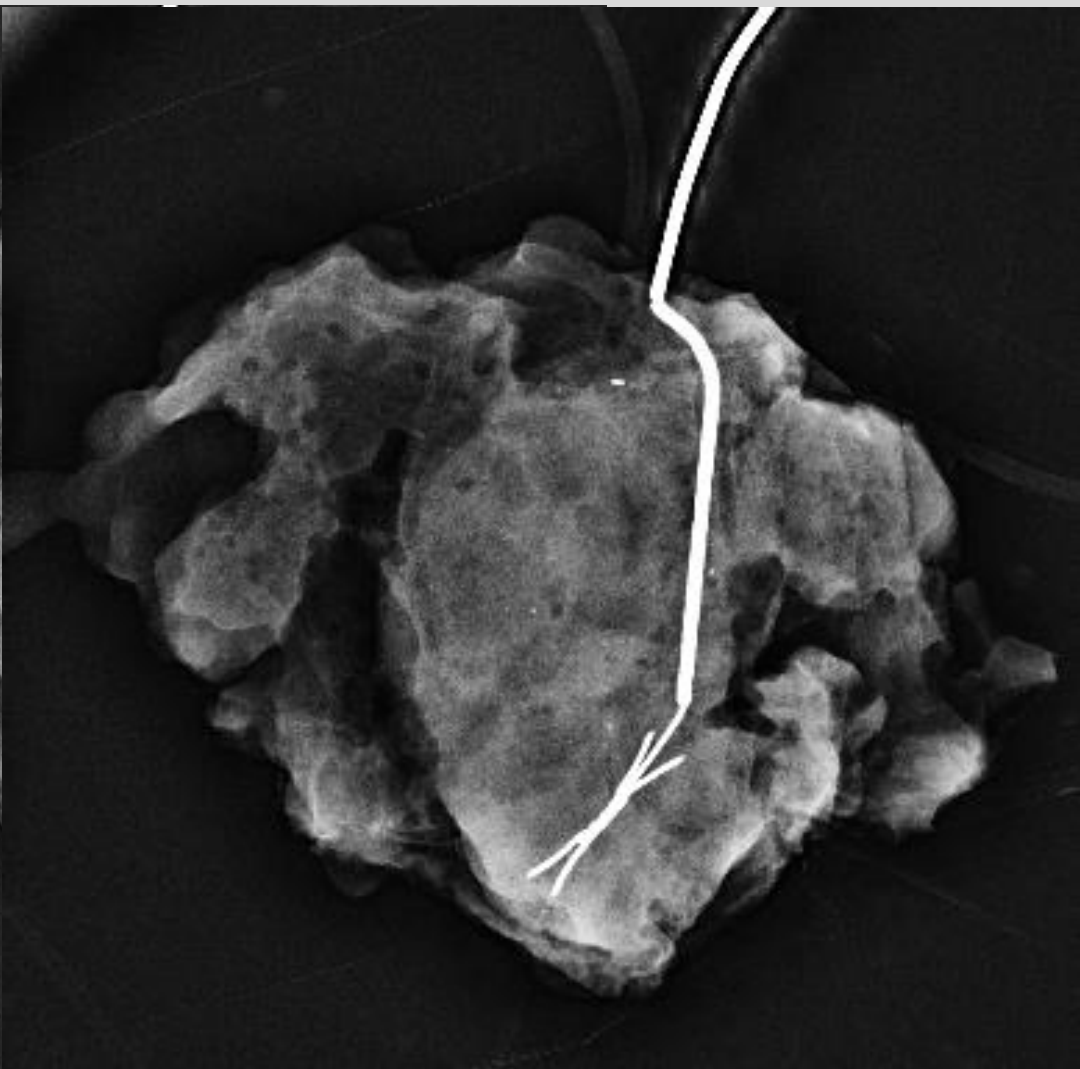
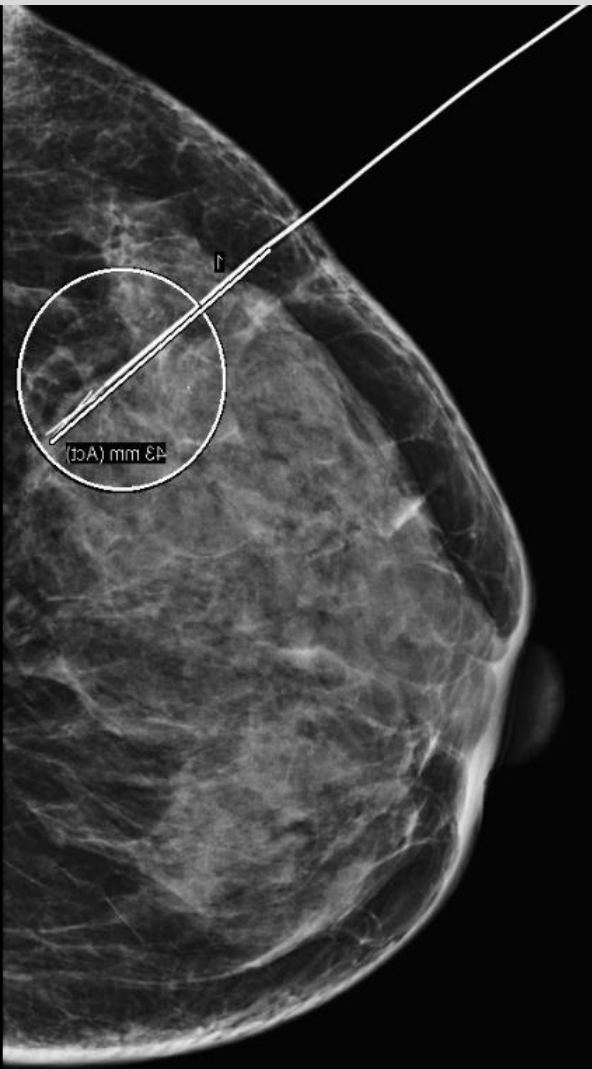
- 🎀 First-year experience from April 2018 – March 2019
- 🎀 Sample size = 16 patients
- 🎀 Mean age = 54 years old
- 🎀 Age range = 41 – 70 years
- 🎀 Micro-calcification cluster in 100% (mostly faintly detected)
- 🎀 Ultrasound 100% occult
- 🎀 Malignancy detected in 3 out of 16 patients (19% with DCIS)
- 🎀 Technical success = 100%, no issues with yield or histopathological accuracy
- 🎀 Safety profile = Excellent



# Tomo-guided HW Localisation



# Examples



# Summary

- Depth localization is more accurate
- Effectiveness of procedure is improved
- Change of clinical practice for best patient care
- Procedure is encouraged
- No adverse events
- Good feedback from our surgical colleagues

# Conclusions

Tomosynthesis Hookwire Localisation Technique  
for Occult Lesions is:

**Effective, Accurate & Safe**

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## **Dr. Tina Lam**

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Department of Radiology, Queen Mary Hospital, Hong Kong

## **Dr. Christine Lo**

Associate Consultant  
Department of Radiology, Queen Mary Hospital, Hong Kong

## **Ms. Wong Wai Chee**

Senior Radiographer  
Department of Radiology, Queen Mary Hospital, Hong Kong

## **Breast Imaging Team**

Radiologists and Radiographers



