33rd Annual Scientific Meeting of Hong Kong College of Radiologists

Insights and Challenges in Novel CEM-Guided Breast Biopsy –A Safer, Faster Alternative to MRI guidance from a Single- Center Experience

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Objective

Contrast-enhanced mammography (CEM)-guided biopsy is rapidly emerging as a cost-effective, patient-friendly alternative to MRI-guided biopsy. This study aims to share preliminary insights, including key advantages and challenges encountered during our initial experience with CEM-guided biopsies.

Methods

- Retrospective analysis of 5 cases between April to October 2025.
- Evaluation of procedural efficacy, including technical success, duration, and complications are performed.
- Further case-specific details were examined to inform better practices.

Results

Technical success
In all five cases

Procedural time
Ranges from 11-24 min

Complication
Post procedural hematoma in 2 cases

Patient Selection

- Single target
- MRI detected enhancing lesion that warrants tissue sampling
- No correlating findings on ultrasound or conventional mammography
- Correlating findings on contrast-enhancing mammography

CEM vs MRI VABB

- ☑ Economical
- ☑ Less time consuming
- ☑ More comfortable

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Biopsy Procedure

PREP

PREPARATION

Patient assessment
Equipment set up
Positioning and planning

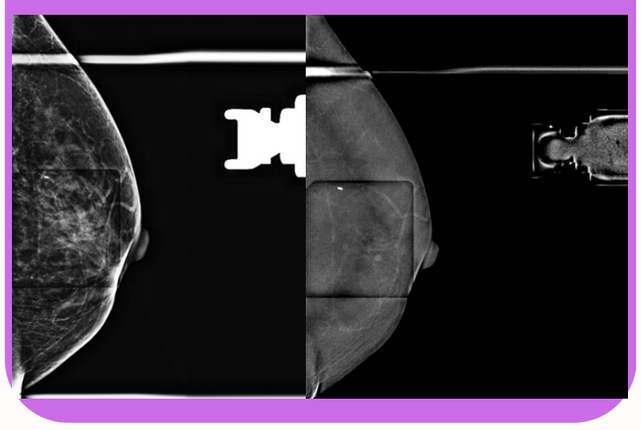
0 min

CONTRAST INJECTION

Ultravist-370 1.5ml/kg, max 120ml
2-3ml/s

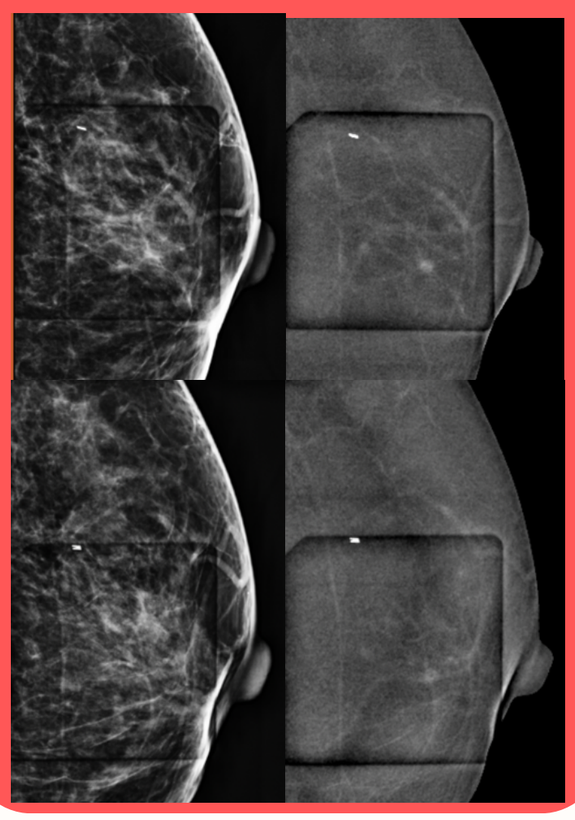
2 min

SCOUT CEM



4 min

CEM STEREO PAIRS (-15, +15)

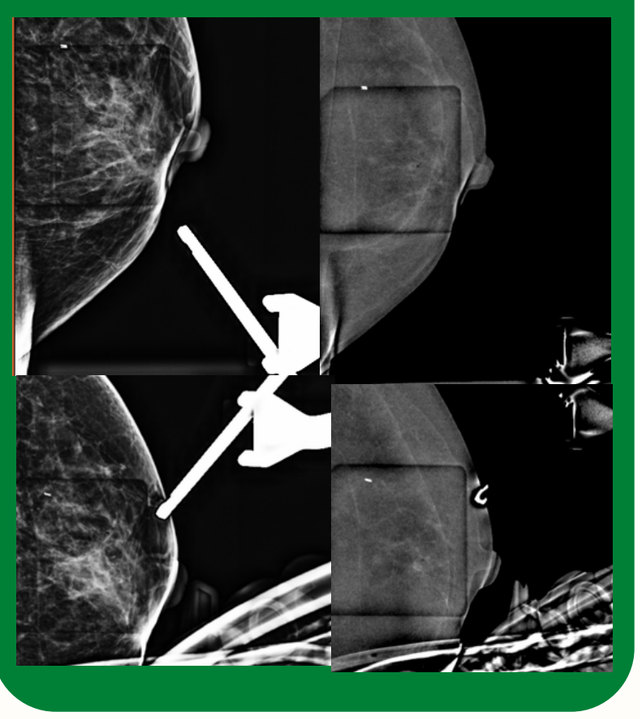


7 min

ANTI-SEPSIS & LOCAL ANAESTHESIA

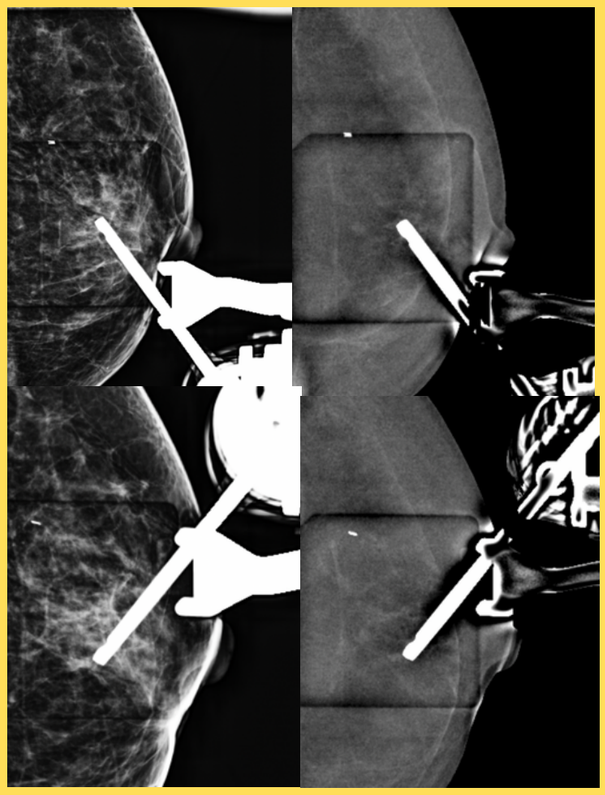
9 min

PRE-FIRE CEM



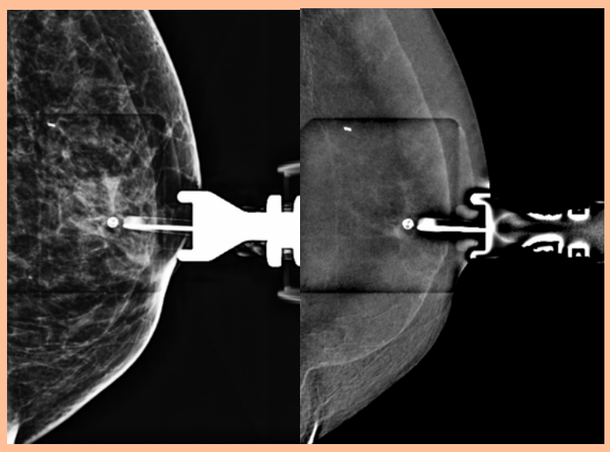
10 min

POST-FIRE CEM



14 min

POST-MARKER CEM



END

*9G Eviva needle is used for all cases

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放射科 Radiology

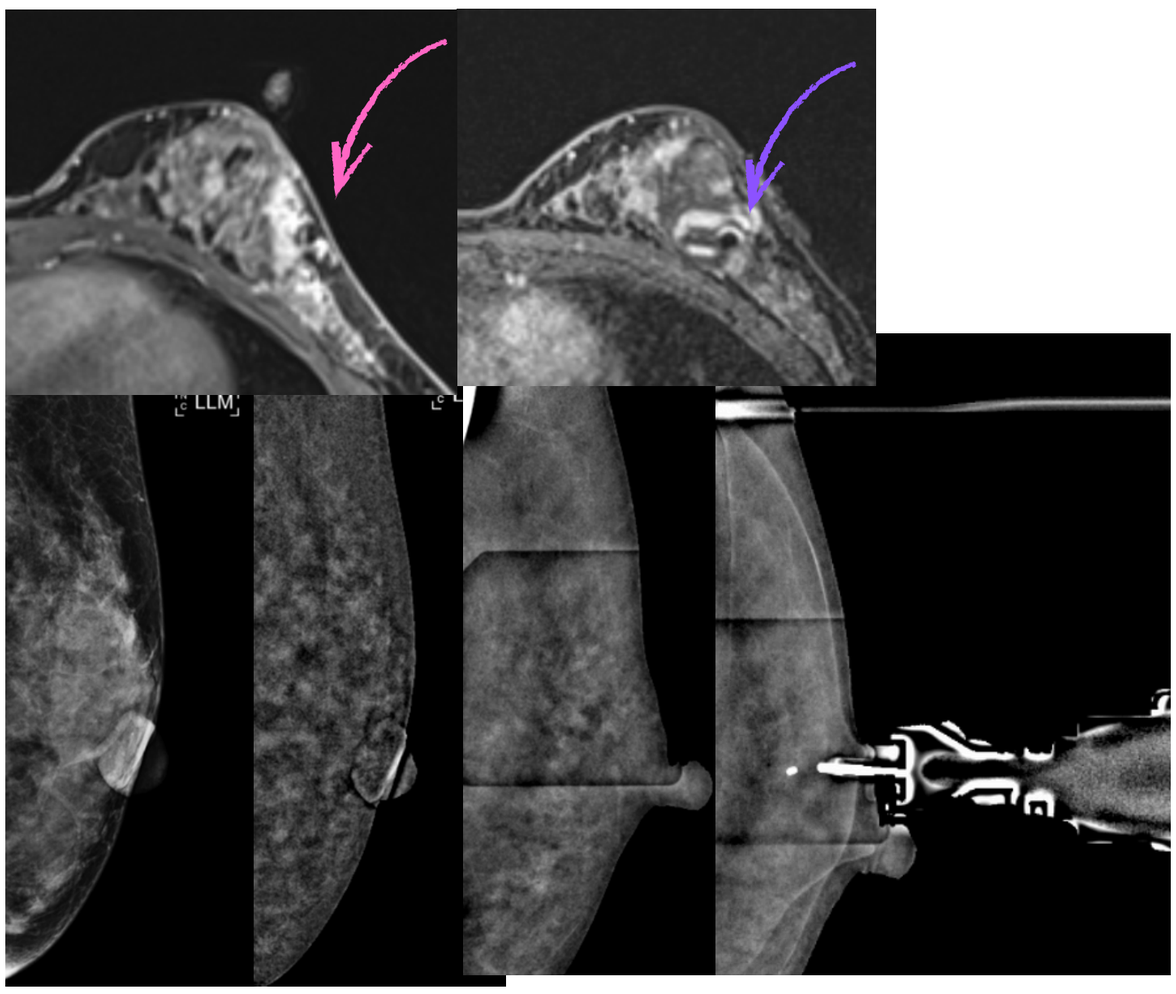
Case 1

Time: 24 mins

Path: intraductal papilloma

F/49

MRI detected L breast 3 o'clock non-mass enhancement (NME, *pink arrow*)



Visualisation and localisation of lesion is challenging in this case:

- Equipment prepared after contrast injection resulted in declined enhancement of lesion
- Dense breast tissue and marked background parenchymal enhancement
- Faint enhancing lesion that is less visible upon compression

Post procedural MRI confirmed successful targeting of lesion *(marker indicated by purple arrow)*

Learning points

- ☑ Breast density and BPE affects lesion visibility
- ☑ Avoid targeting faint enhancing lesion
- ☑ Prepare equipment and verify coordinates BEFORE contast injection

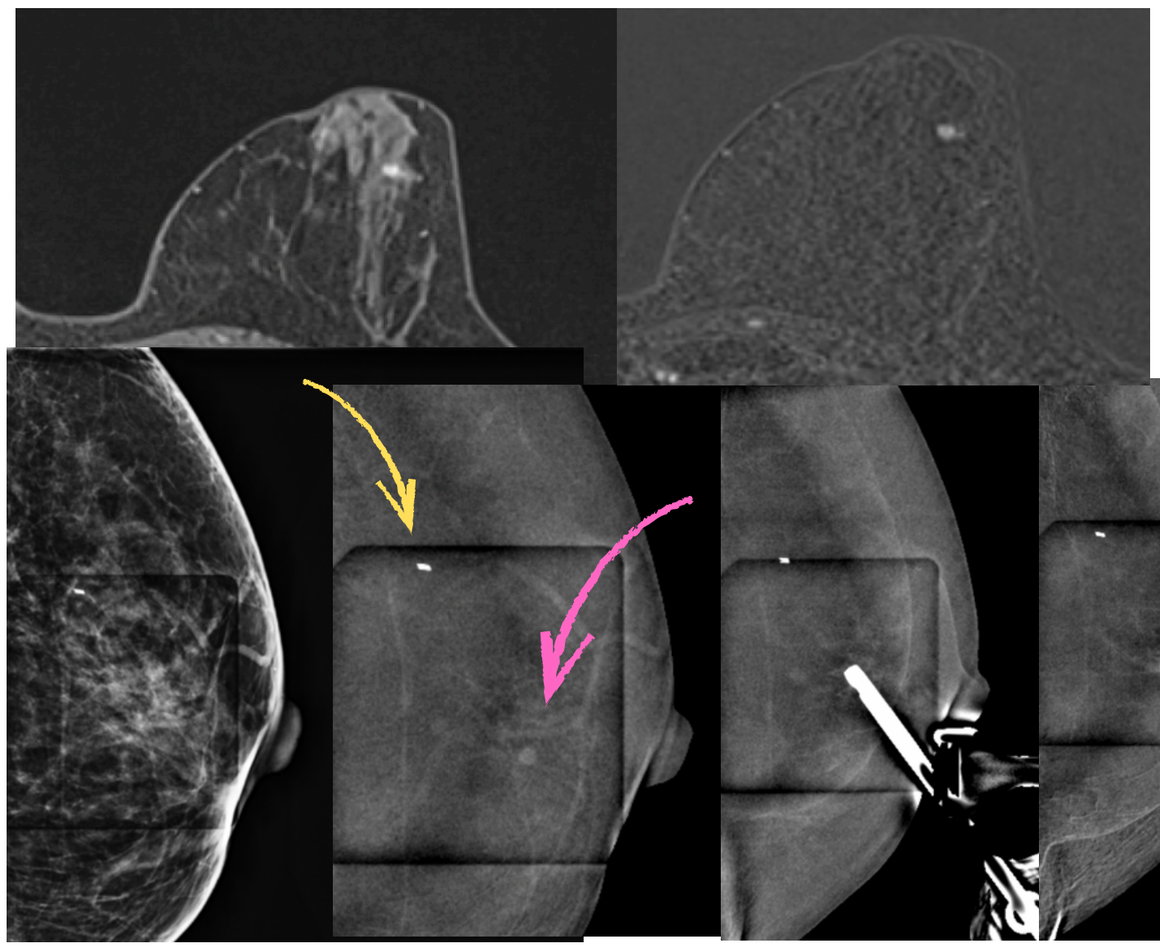
Case 2

Time: 11 mins

Path: intraductal papilloma

F/53

MRI detected L breast 5 o'clock 3mm type 3 enhancing focus



CEM shows correlating *LOQ enhancing lesion (pink arrow)*
Note the presence of a *benign coarse calcification (yellow arrow)* which serves as a landmark for lesion localisation in subsequent biopsy.
Minimal background parenchymal enhancement also makes lesion easily identifiable.

Learning points

- ☑ Enhancing mass/focus are usually more visible than NME
- ☑ Anatomical landmarks such as adjacent breast calcification are helpful for lesion localisation

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放射科 Radiology

Case 3

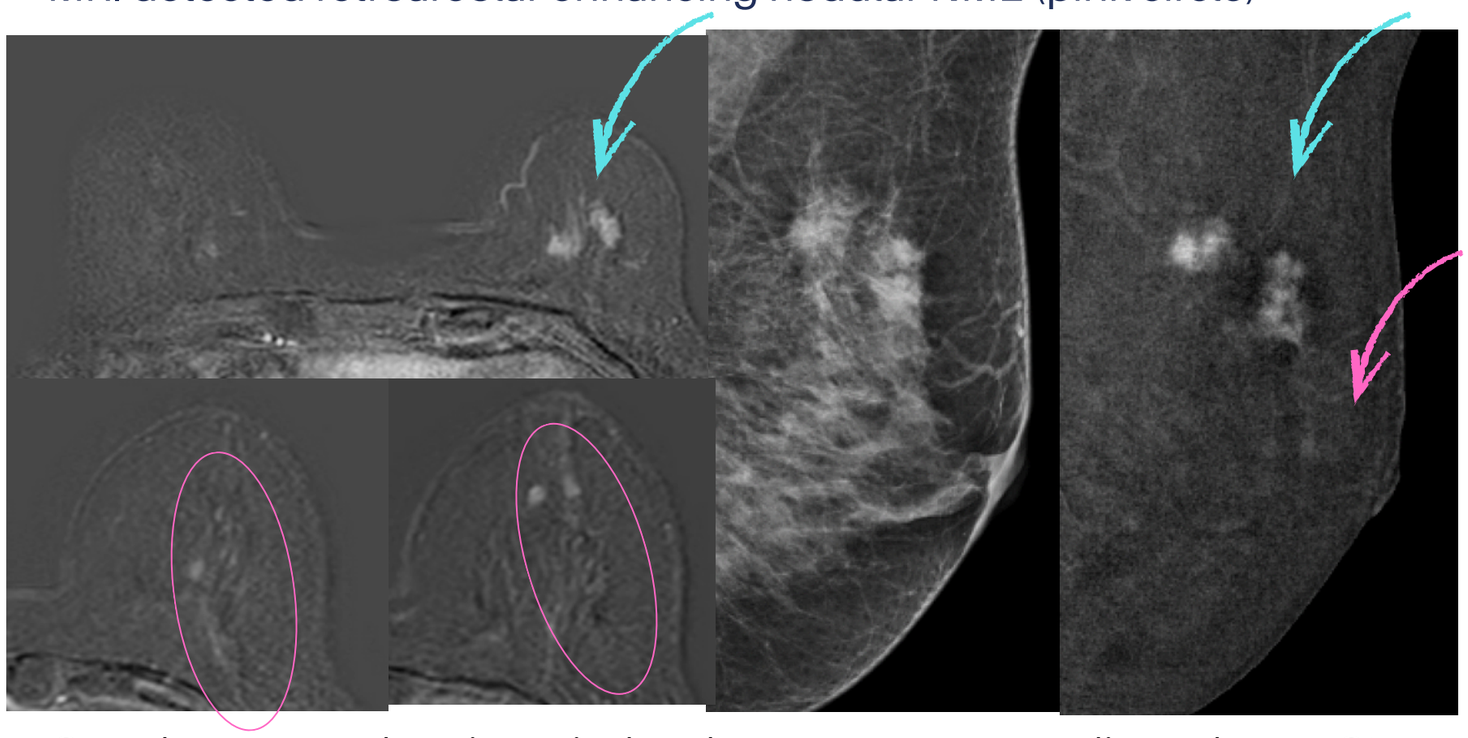
Time: 14 mins

Path: Lobular Carcinoma In-situ

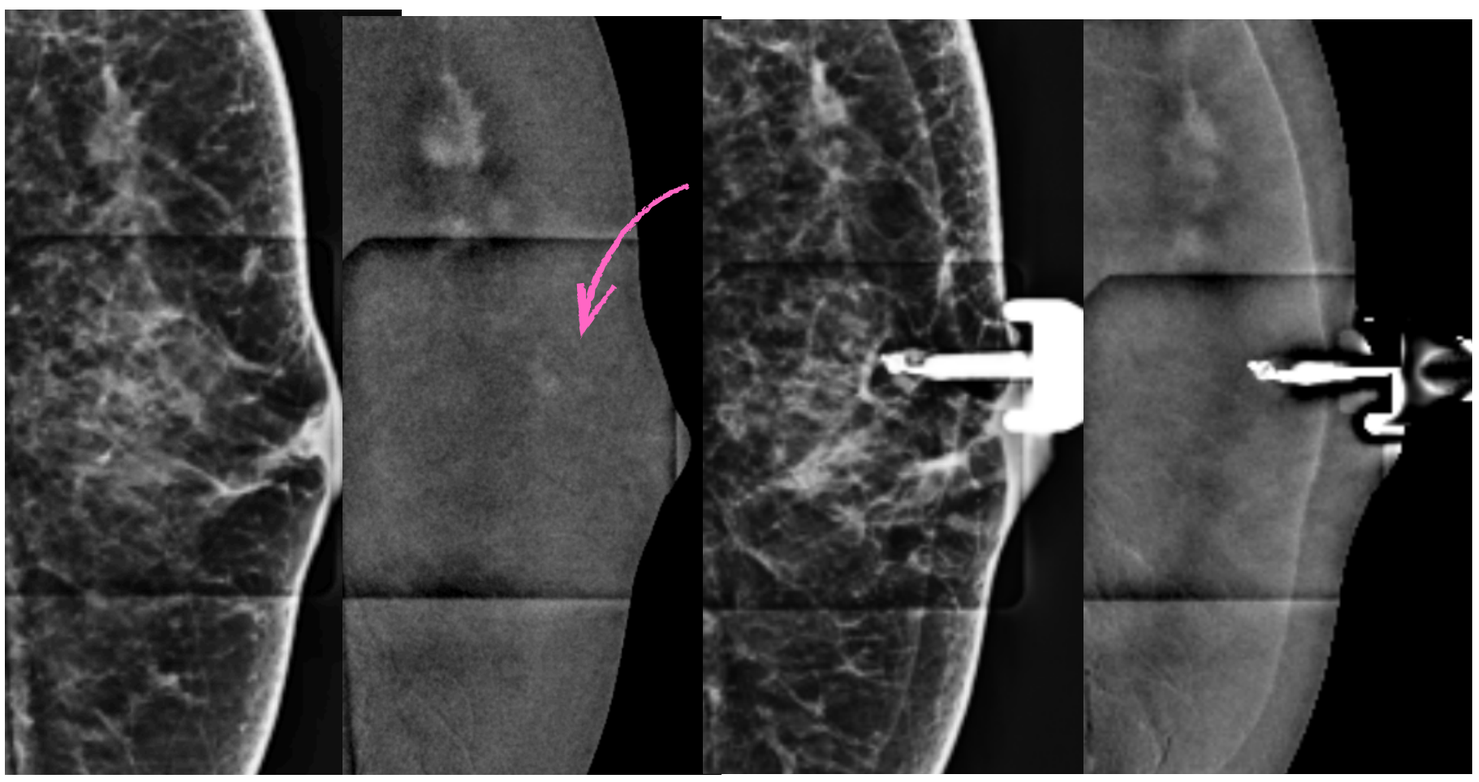
F/64

Index L12H and L1H CA breast (blue arrow)

MRI detected retroareolar enhancing nodular NME (pink circle)



CEM shows two enhancing spiculated masses comrresponding to known CA breasts(*blue arrow)*. Another enhancing lesion is seen at central retroareolar region *(pink arrow)*.



Note the there is minimal background parenchymal enhancement. The nipple is served as a landmark to localise the retroareolar lesion

Learning points

- Nipple serves as a landmark for retroareolar lesion localisation

Conclusion

Meticulous case selection combined with thorough procedural preparation and workflow familiarity are critical to ensuring efficiency and success in CEM-guided breast biopsy.