

# Breast Ultrasound in Post-surgical and therapy patients

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# Aims and Objectives

- Discuss common indications of breast imaging in the post-operative and post-therapy breast
- Look at common breast findings in these patients
- Recognising implant abnormalities
- Recognise and discuss findings in other areas needing ultrasound
- Discuss strengths and limitations of ultrasound in the post-operative breast

# Indications of imaging in the post-operative breast

- Swelling
- Water sloshing around
- Enlargement/not able to fit into bra
- Tightness
- Pain/feeling of discomfort
- Redness, swelling and feeling unwell
- Lump
- Implant abnormality



# Indications of imaging in the post-operative breast - sites affected

- Breast
- Axilla
- Contralateral breast
- Donor site (e.g. Abdomen)
- Implant\*\*

# Post-operative - Early

- Edema
- Skin thickening
- Abscess
- Seroma
- Haematoma

# Post-operative - Intermediate/Delayed

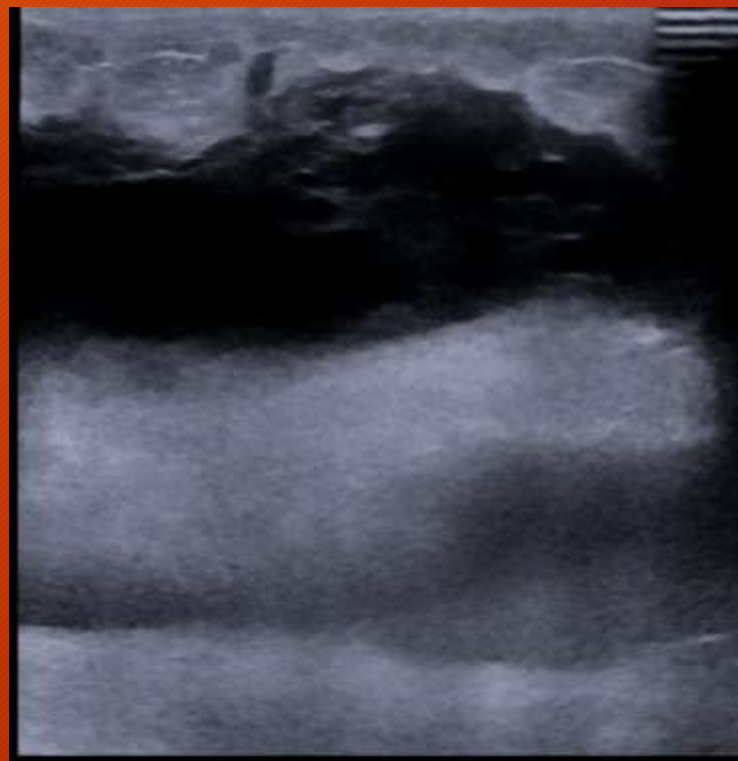
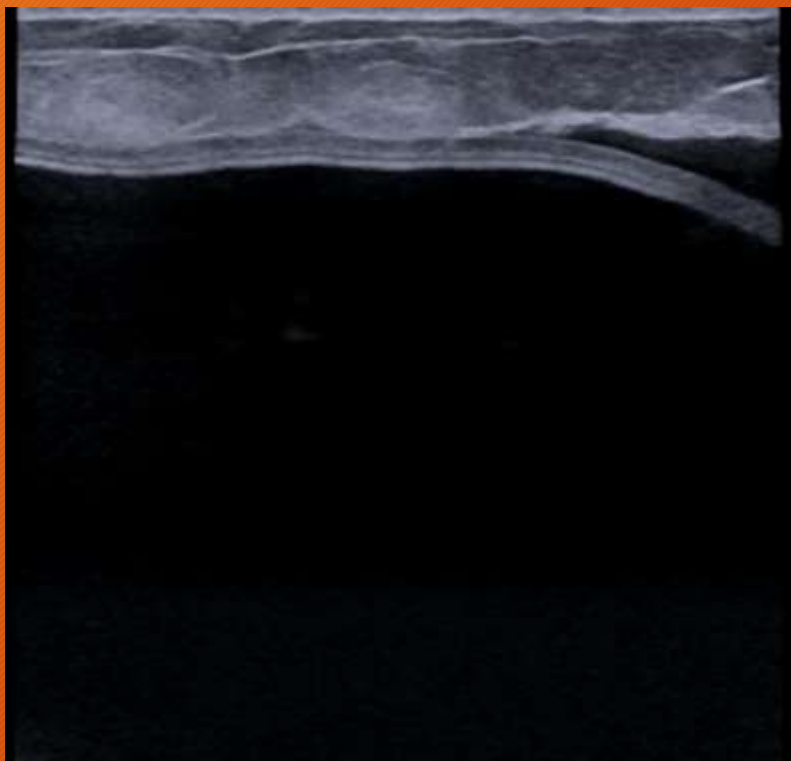
- All the early changes
- Fat necrosis



# Post-operative - Delayed

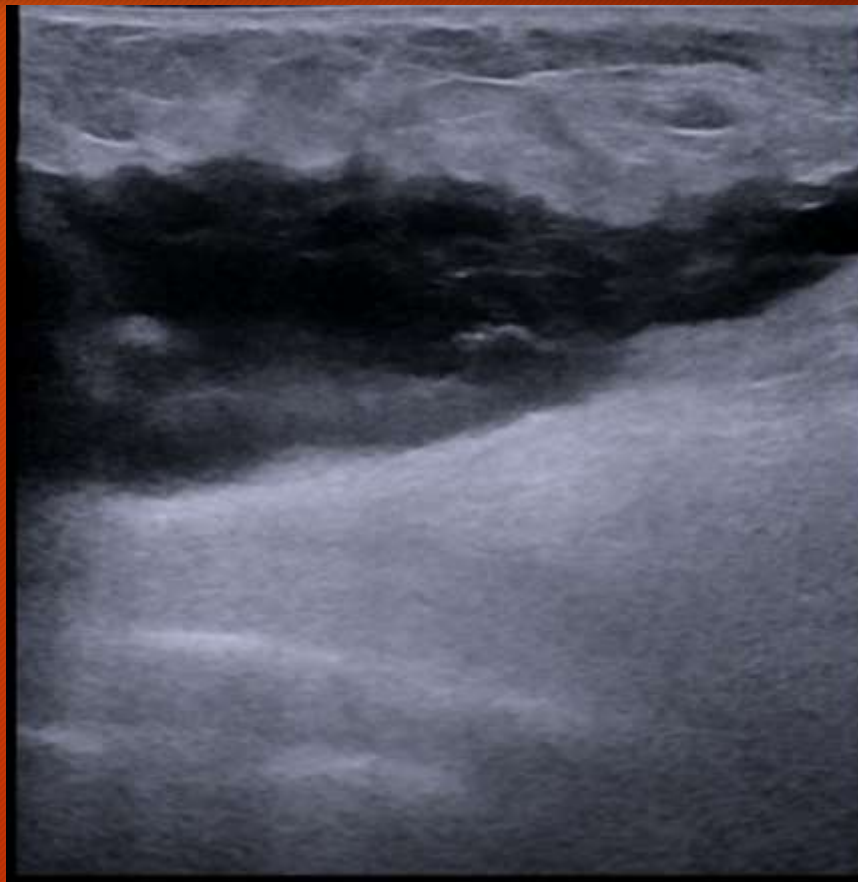
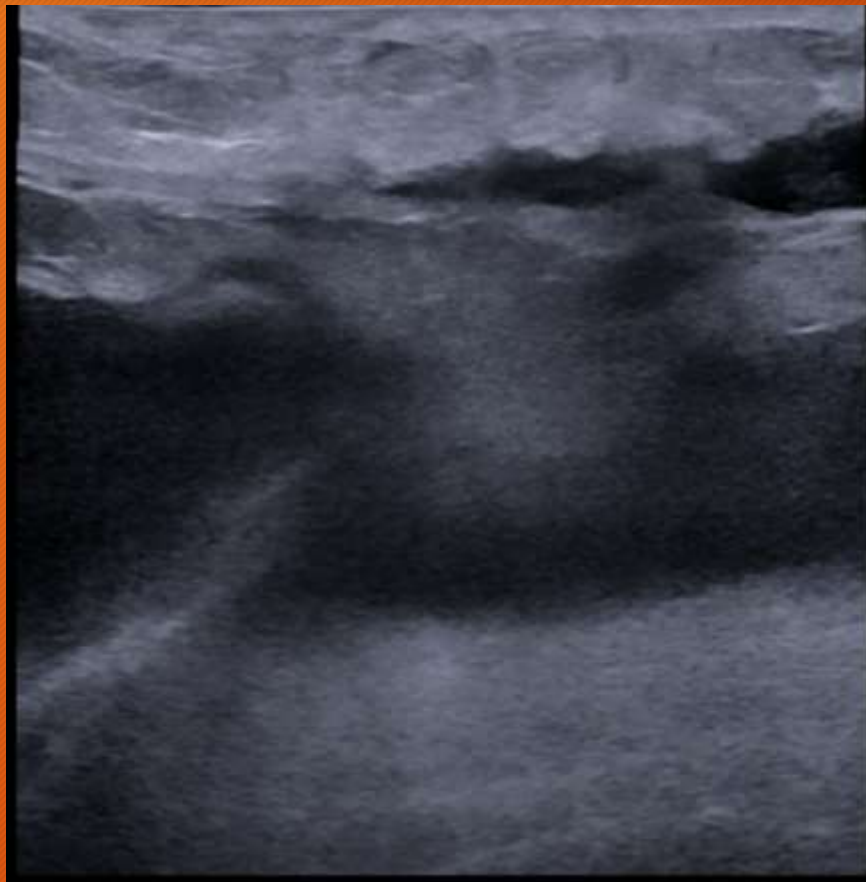
- Recurrence
- Haematoma
- Residual seroma
- Dystrophic calcification
- Angiosarcoma

# Post-operative Haematoma

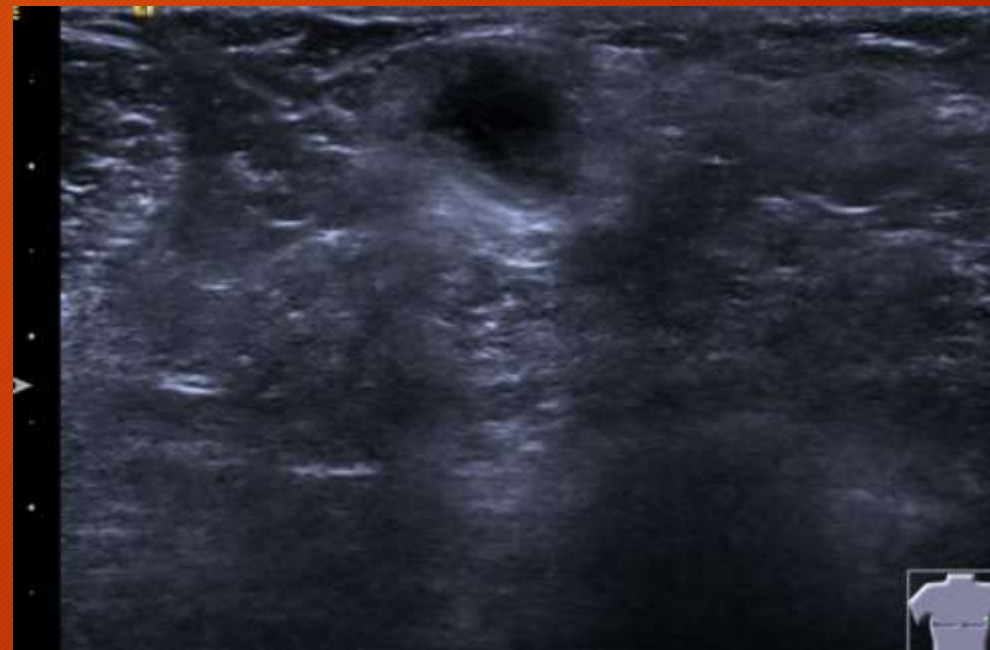




# Post-operative Haematoma



# Post-operative collection

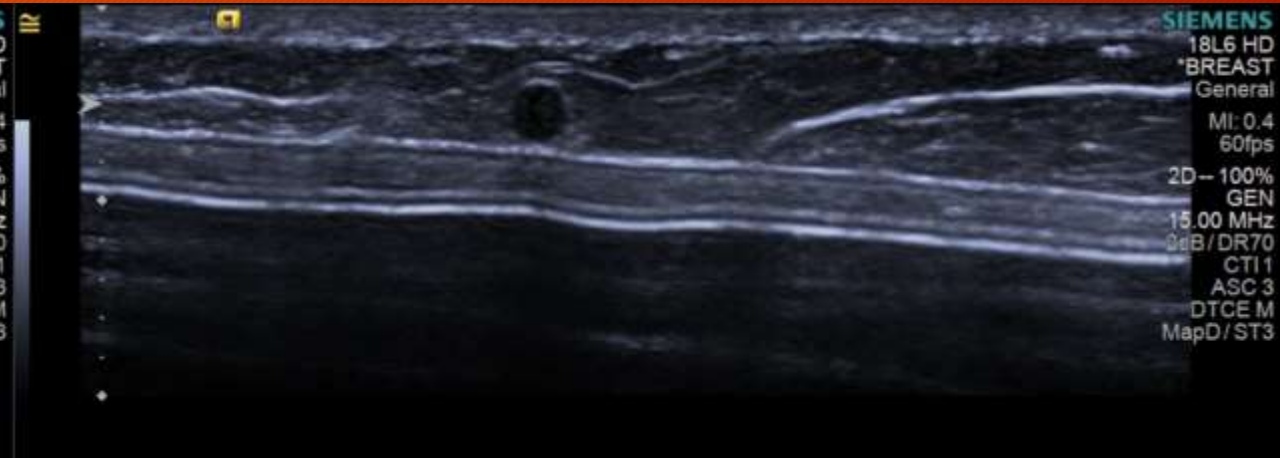
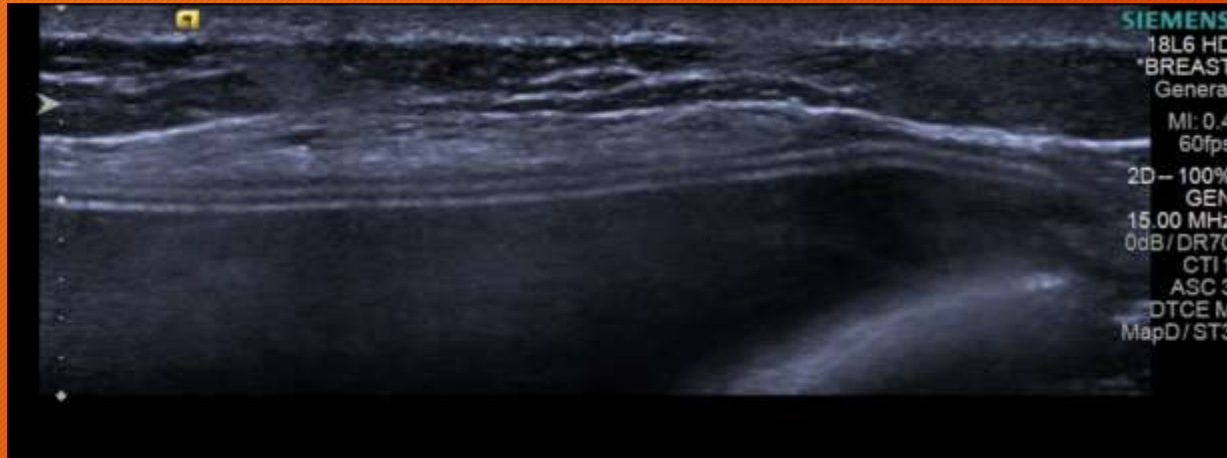


# Post-operative collection at donor site

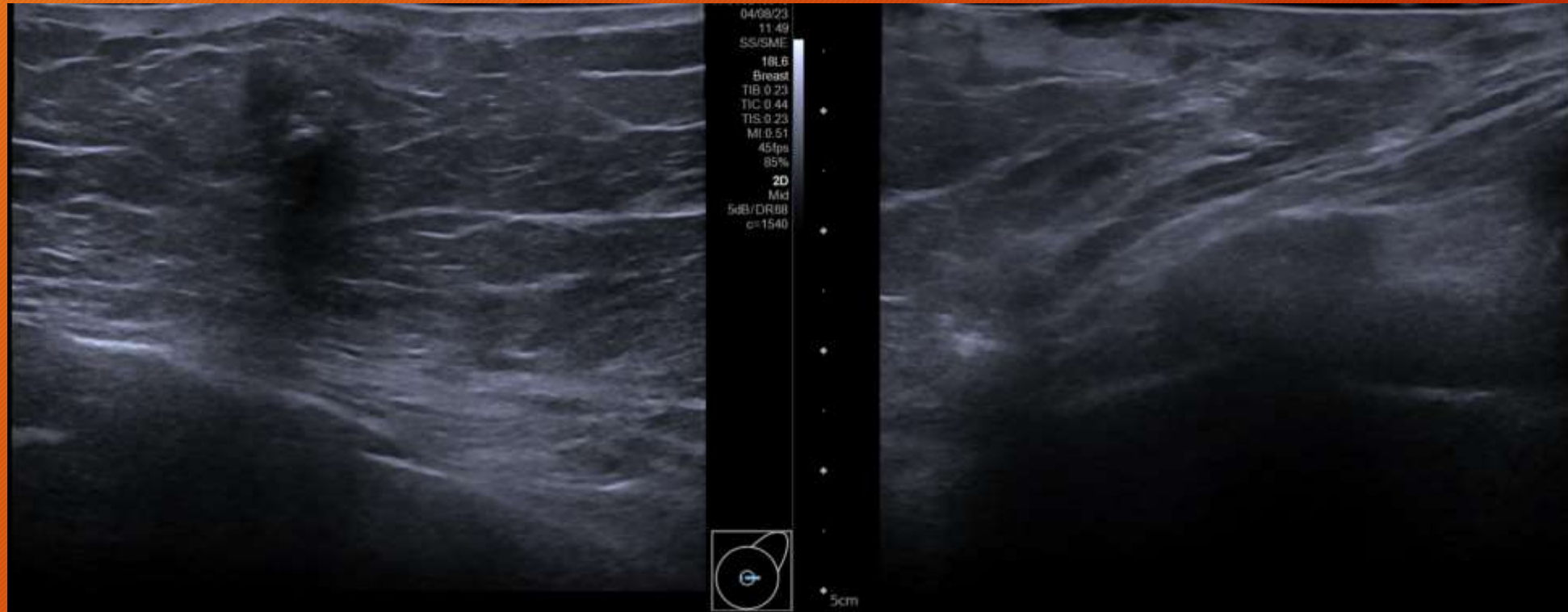




# Post-operative fat necrosis

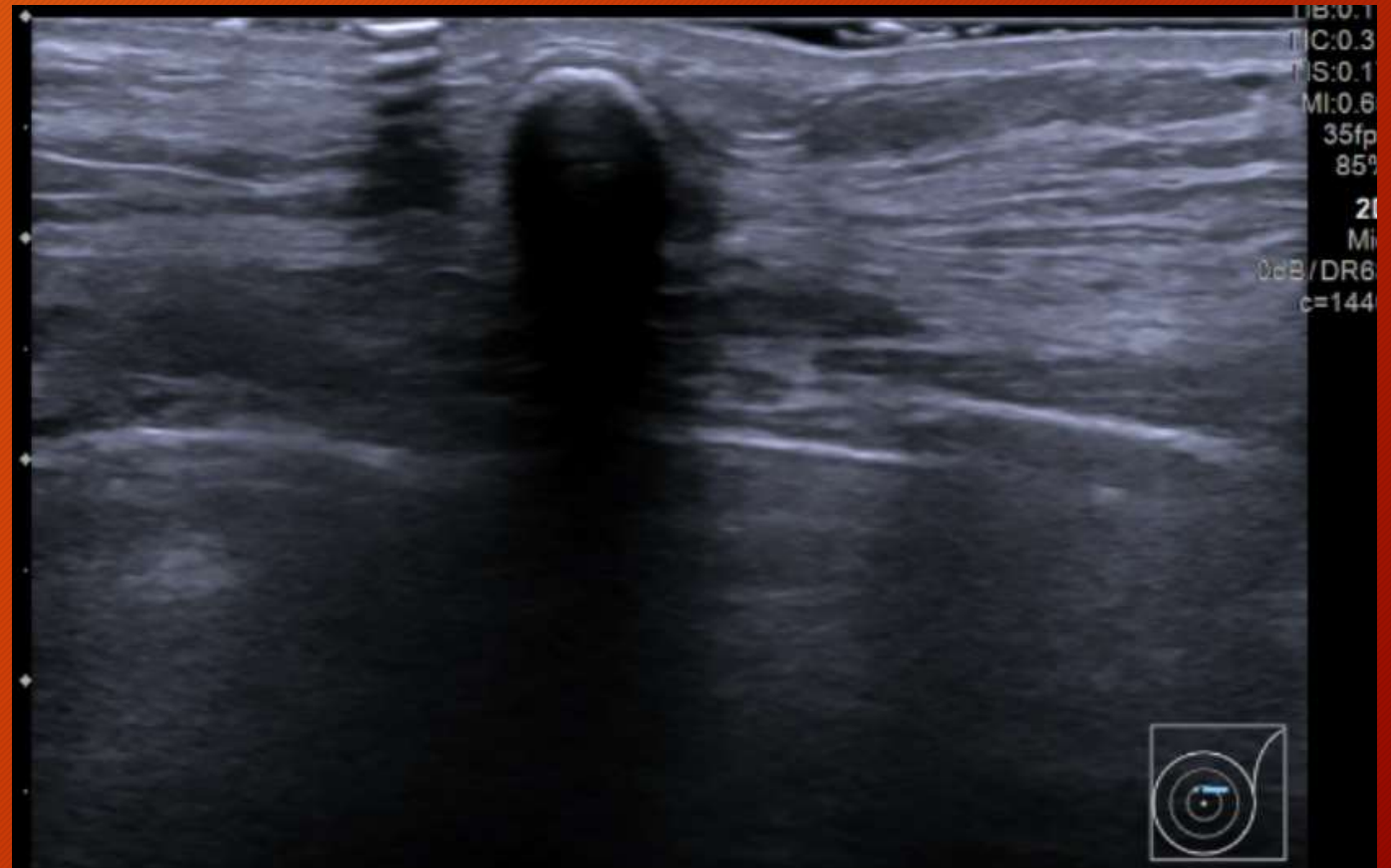
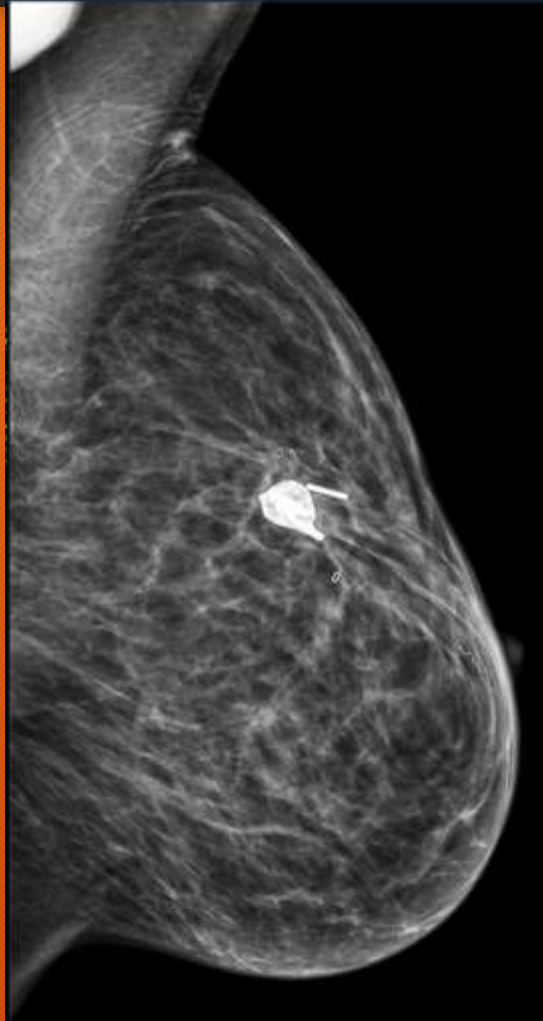


# Post-operative fat necrosis and surgical clips





# Dystrophic calcification/oil cyst





# Seroma at WLE site



# Acute Post- radiotherapy changes

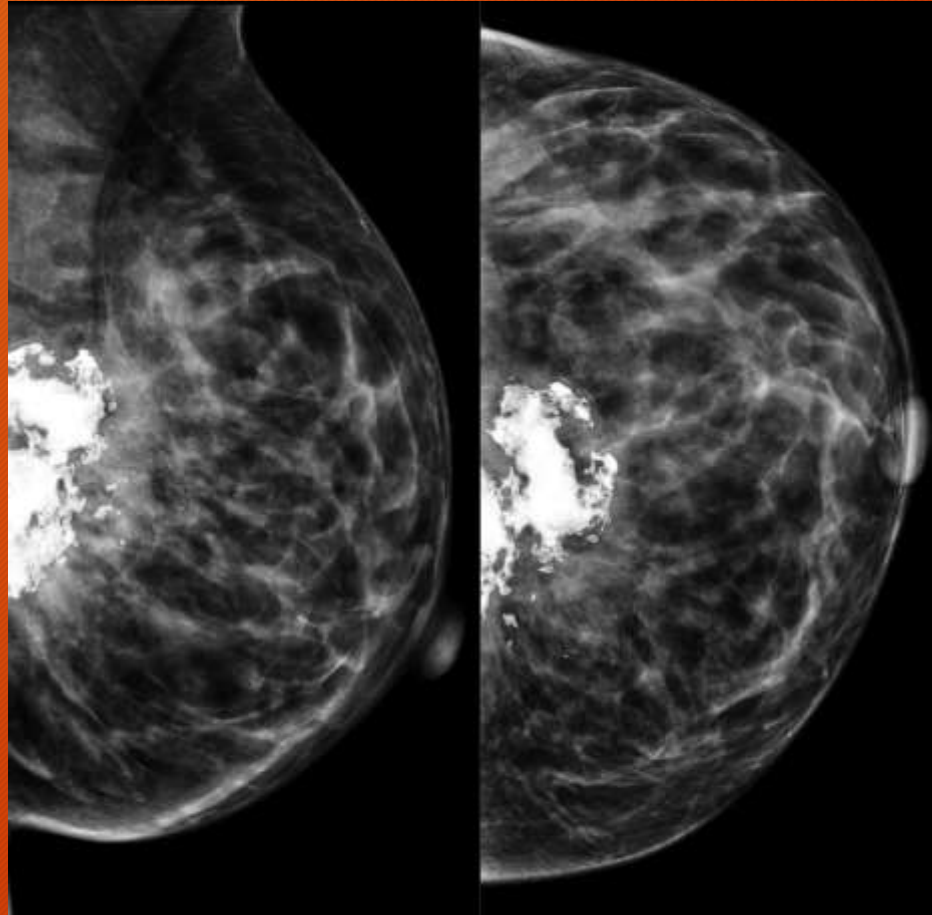


# Post-operative calcification

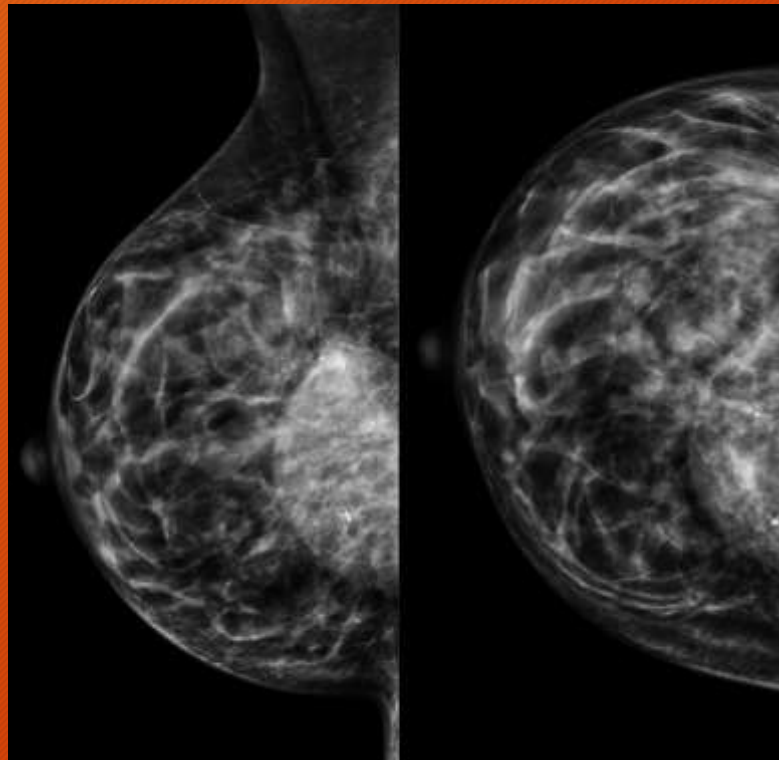




# Calcification within implant capsule



# Residual seroma within implant capsule

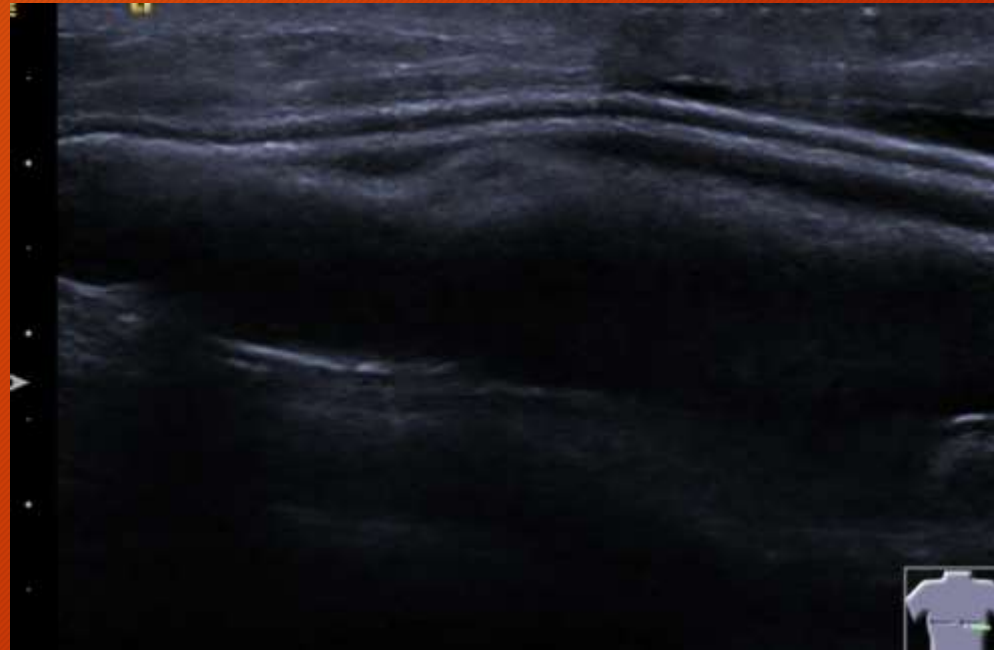
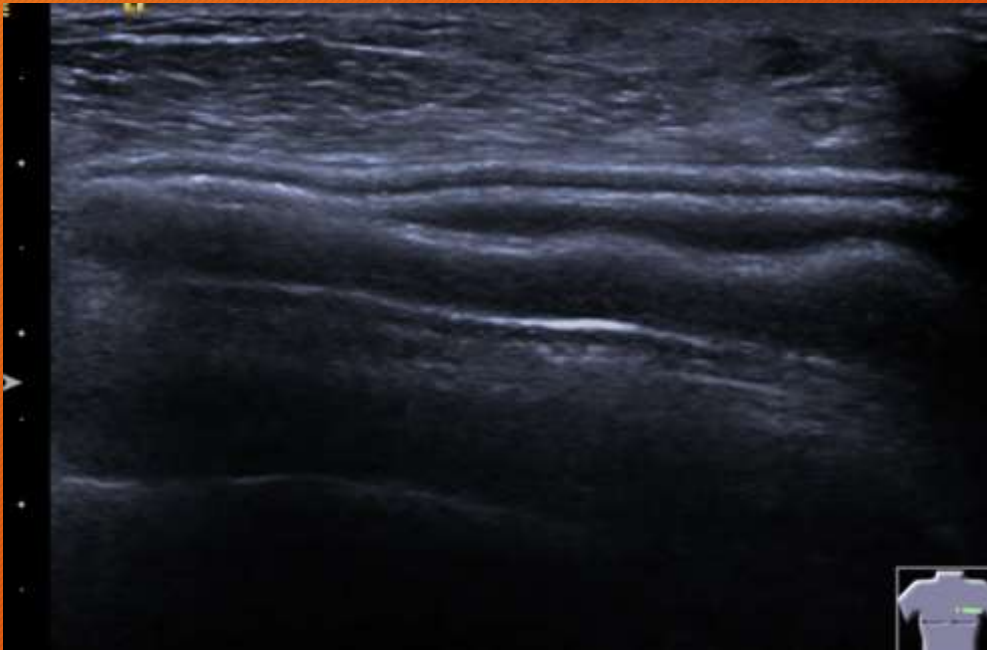


# Residual seroma within implant capsule





# Expander : Normal appearance



# Expander port

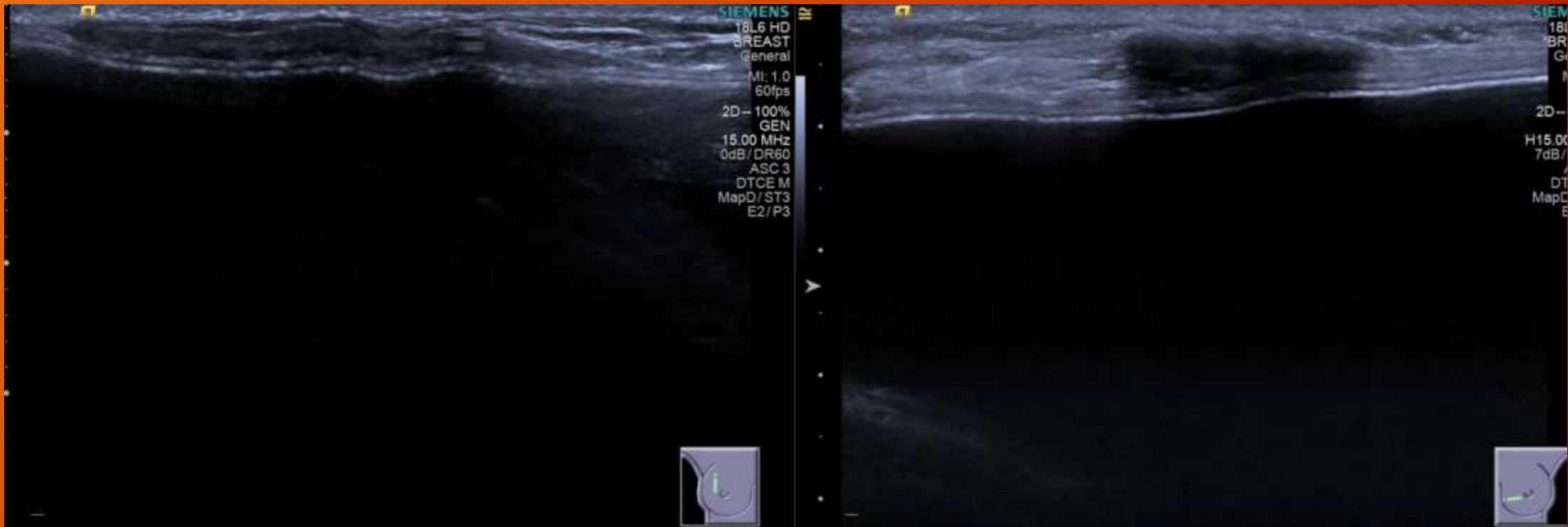


# Flipped expander with integral port





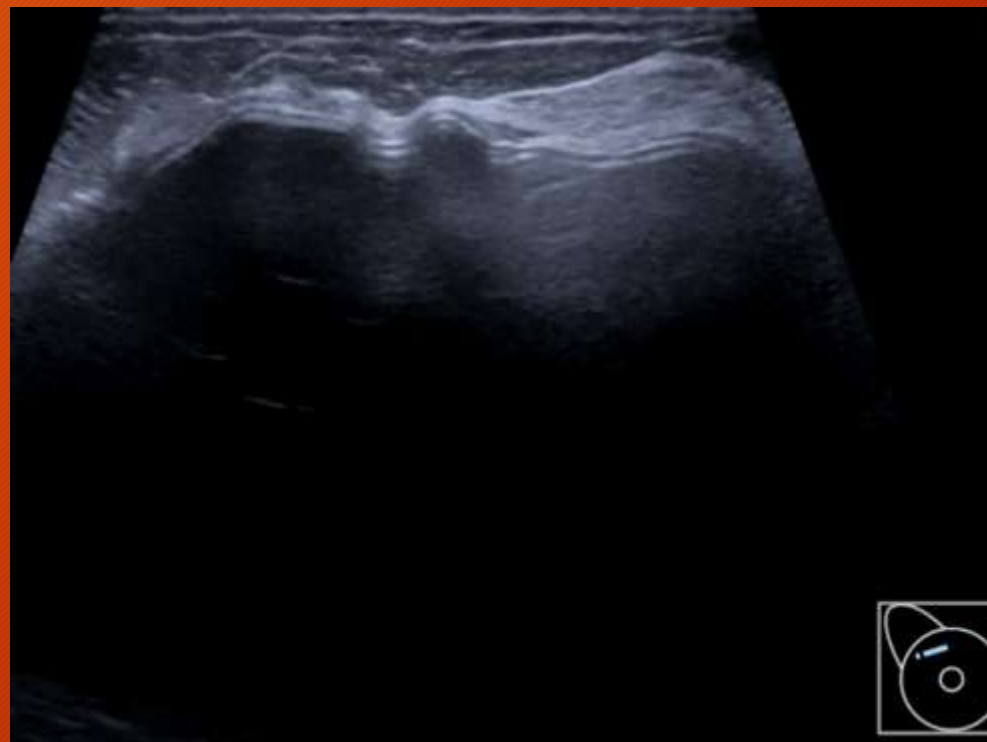
# Implant reconstruction with ADM



# Implants : Normal appearances

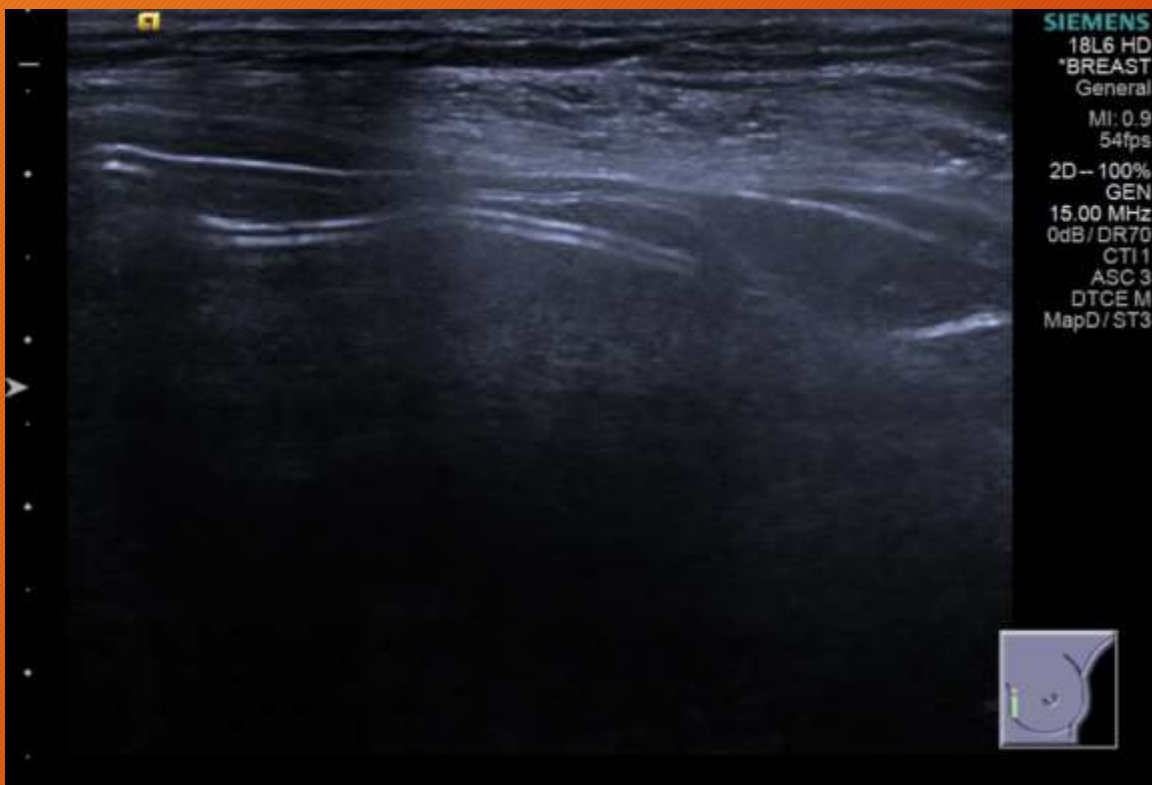


# Implants : Intracapsular rupture

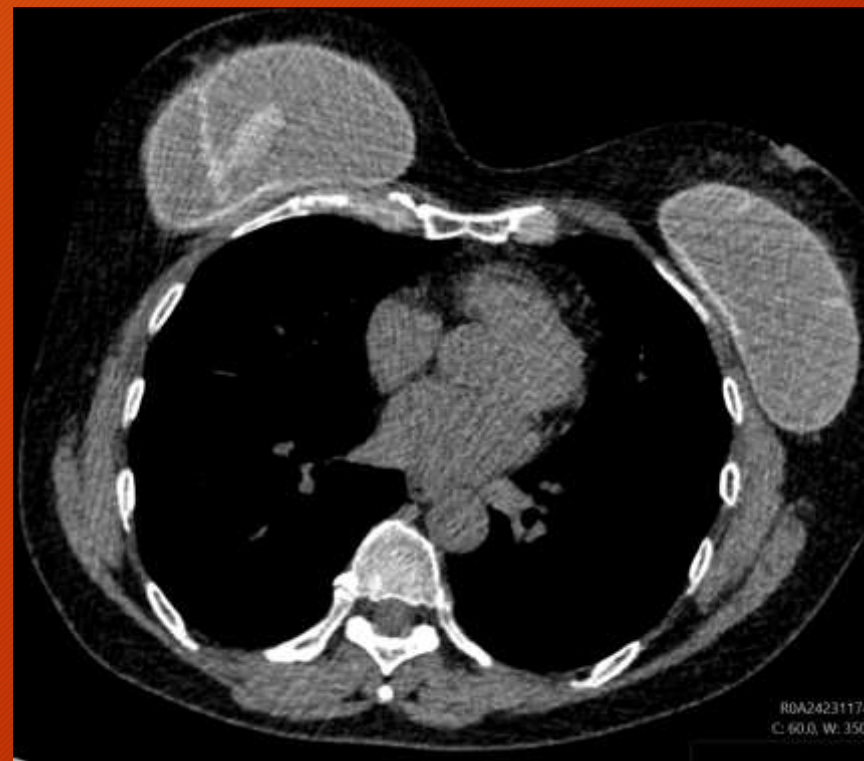
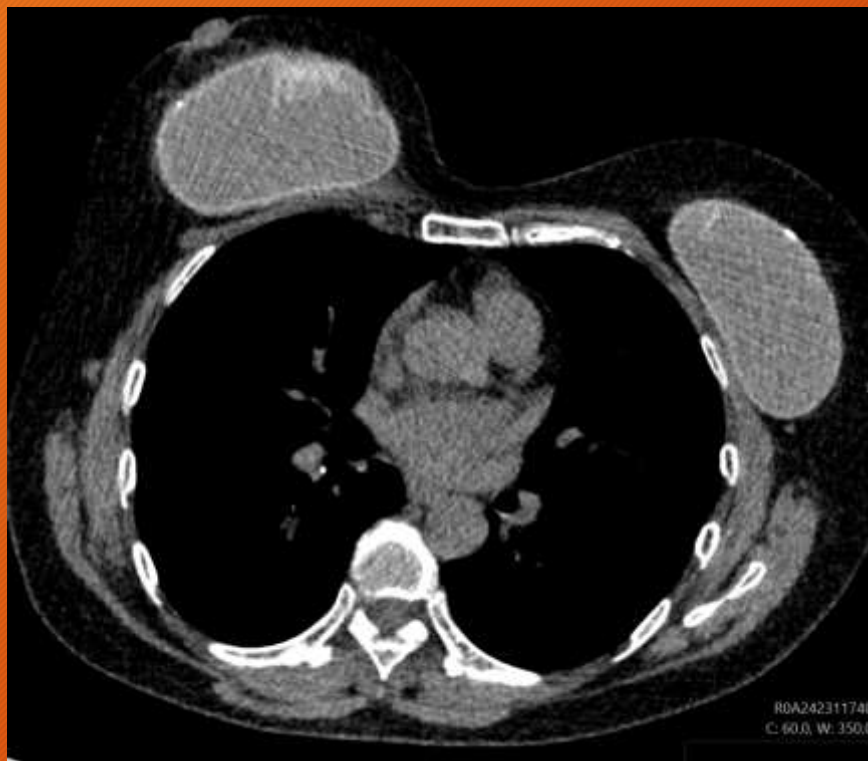




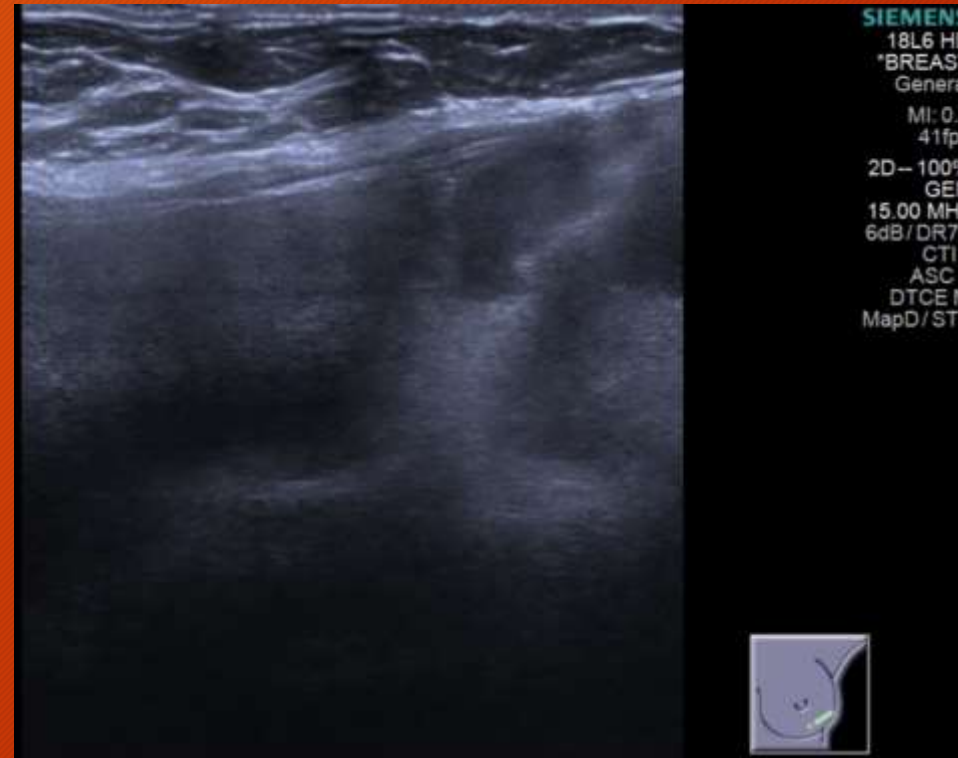
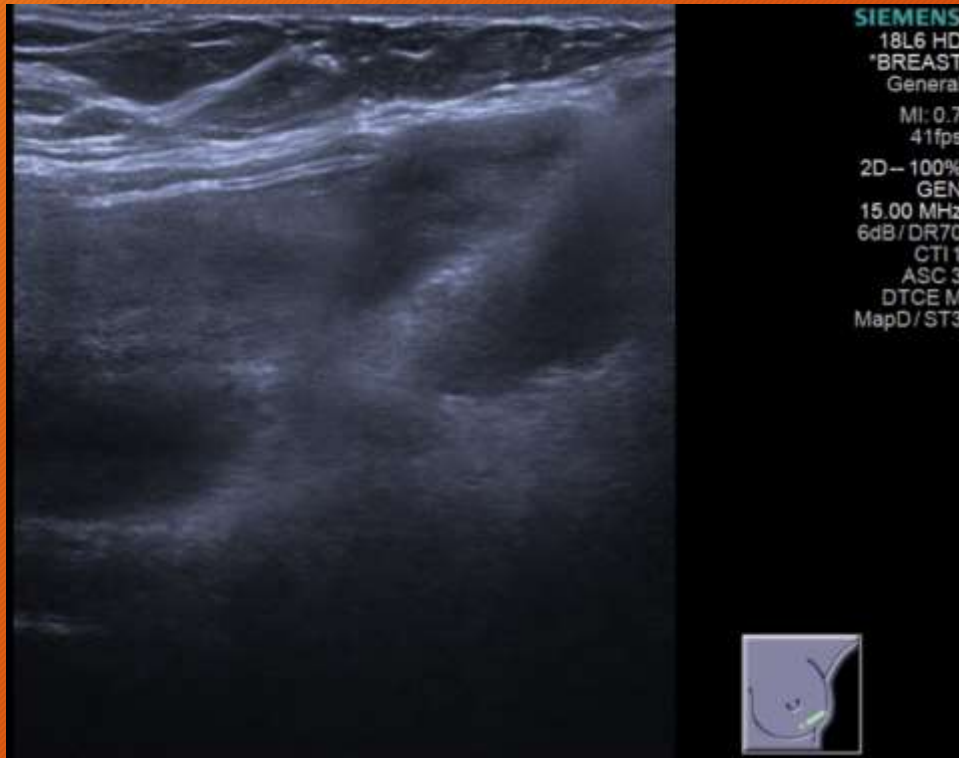
# Implants : Intracapsular rupture



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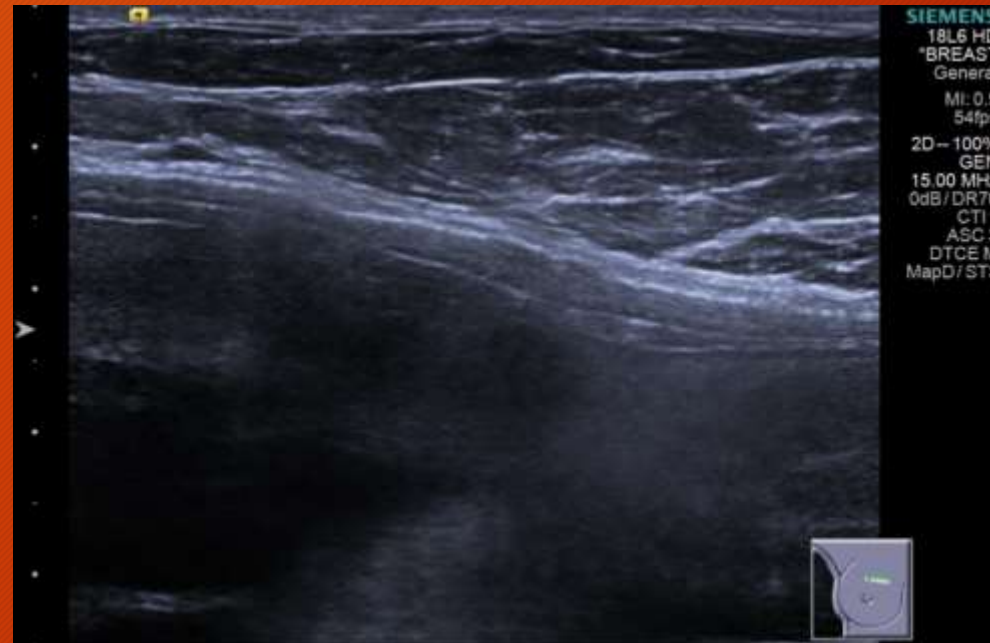
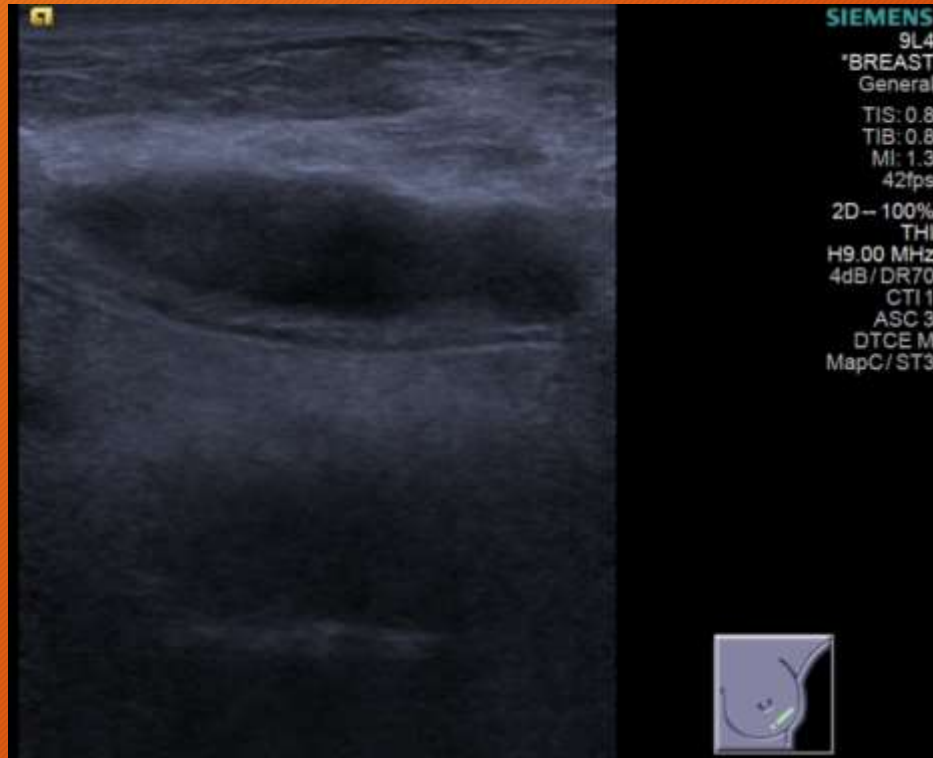


# Implants : Intra+ extracapsular rupture





# Implants : Intra+ extracapsular rupture



# Implants : Intra+ extracapsular rupture



# Capsular contracture !

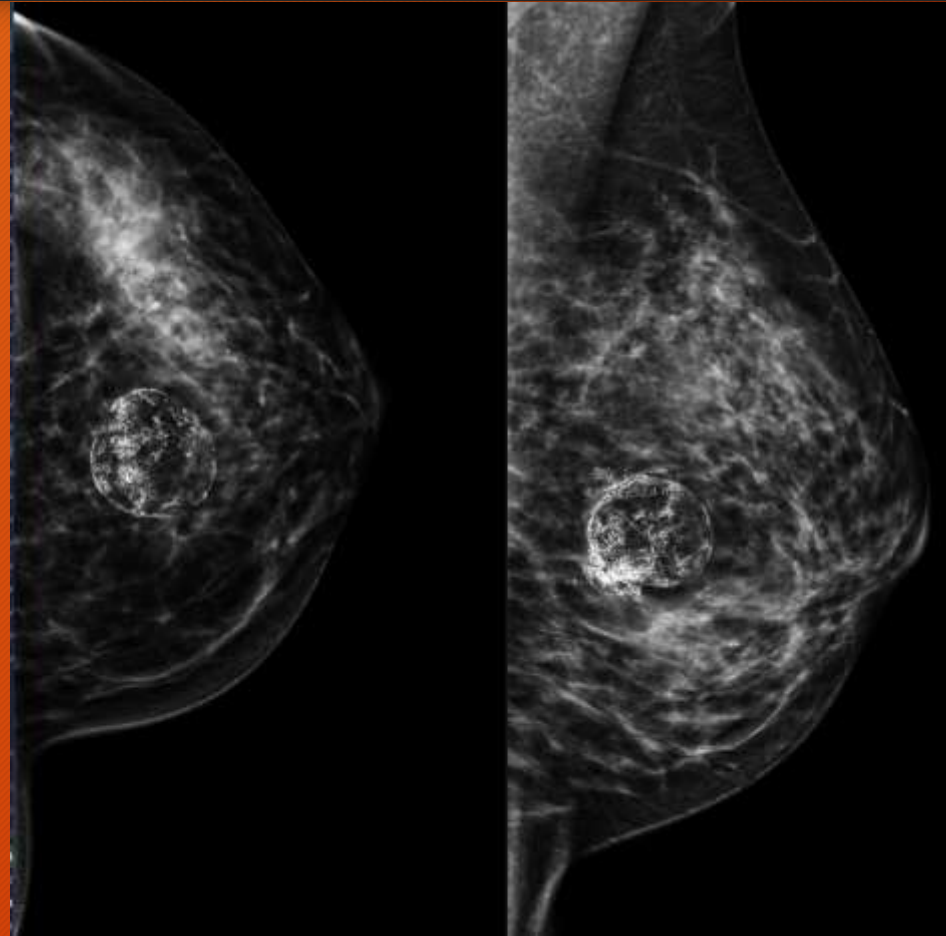




# Silicon injection nodule



# Silicon injection nodule



# Delayed large seroma ? ALCL

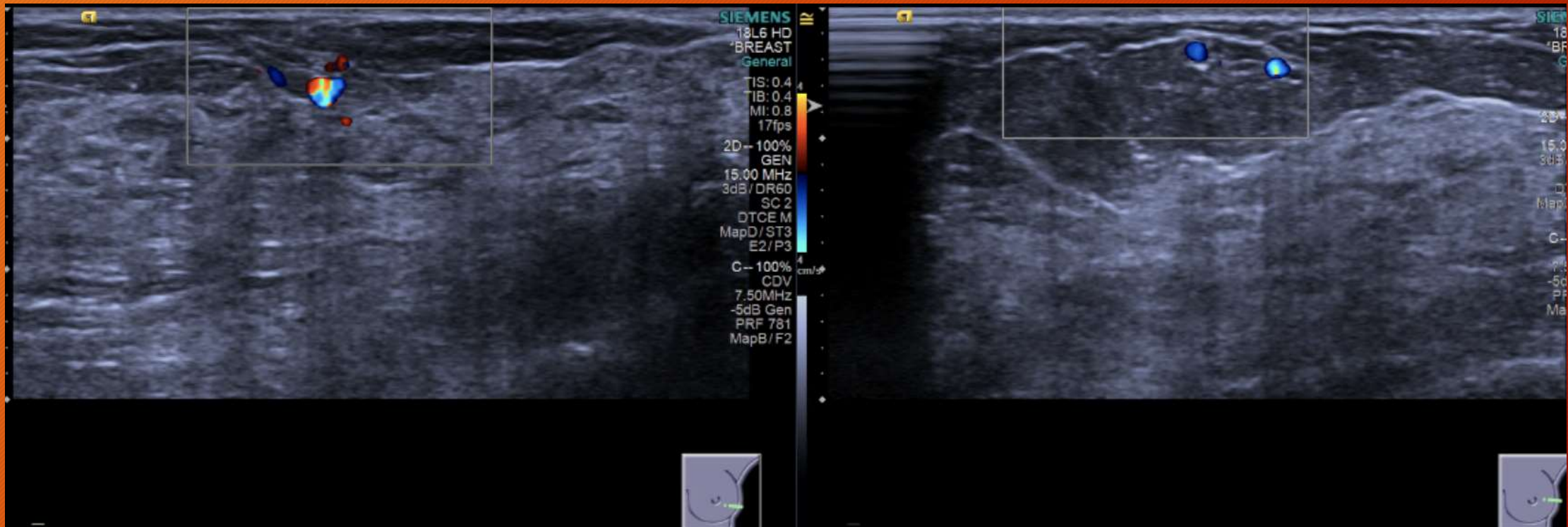




# ALCL



# Superficial thrombophlebitis





# Post biopsy pseudoaneurysm





# Post-therapy change (primary endocrine Rx)

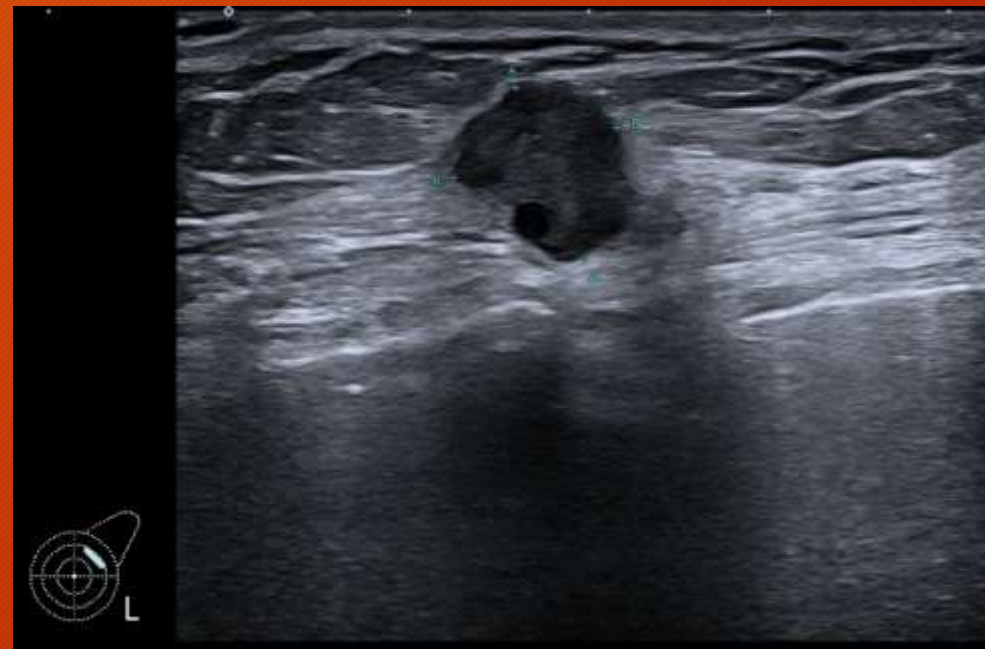


# Post-therapy change (primary endocrine Rx)





# Scar and recurrence





# Strengths of ultrasound in the post-operative breast

- Patient convenience
- No ionizing radiation
- Cost
- Amenable to image guided drainage (seroma/abscess)
- Amenable to image guided biopsy
- Good negative predictive value for implant integrity

# Weaknesses of ultrasound in the post-operative breast

- Overlapping appearances of scar and recurrence
- Anatomical membranes (ADM) may have indeterminate appearance
- Implant rupture detection (sensitivity 50-77%, specificity 55-84%)
- Difficulty in evaluation of dense calcification (correlation with mammography helps)
- Severe artefact with surgical clips (esp. in axilla)



# References

- **The Postconservation Breast: Part 1, Expected Imaging Findings.** Thanissara Chansakul<sup>1</sup> Kenny C. Lai Priscilla J. Slanetz DOI:10.2214/AJR.10.7298
- **The Augmented Breast: A Pictorial Review of the Abnormal and Unusual.** **Natalie Yang and Derek Muradali**  
<https://doi.org/10.2214/AJR.10.4864>
- **Imaging of the treated breast post breast conservation surgery/oncoplasty: Pictorial review.** Subhash K Ramani <sup>1,2</sup>, Ashita Rastogi <sup>3</sup>, Abhishek Mahajan <sup>4</sup>, Nita Nair <sup>5</sup>, Tanuja Shet <sup>6</sup>, Meenakshi H Thakur <sup>7</sup>  
<https://doi.org/10.4329/wjr.v9.i8.321>
- **Imaging of breast implants—a pictorial review.** Sergi Juanpere <sup>1,3,✉</sup>, Elsa Perez <sup>1</sup>, Oscar Huc <sup>2</sup>, Naiara Motos <sup>1</sup>, Josep Pont <sup>1</sup>, Salvador Pedraza <sup>1</sup> <https://doi.org/10.1007/s13244-011-0122-3>



# Questions!!

**Who**

is a person



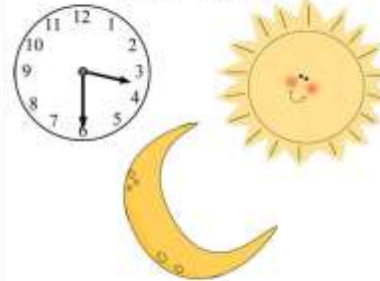
**What**

is a thing or an  
action



**When**

is a time



**Where**

is a place



**Why**

is the reason  
something happened



**How**

is a number, or the  
way something is done

