

Invasive lobular carcinomas – challenges with different imaging modalities

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BREAST CANCER SCREENING AND
DIAGNOSTIC CENTRE

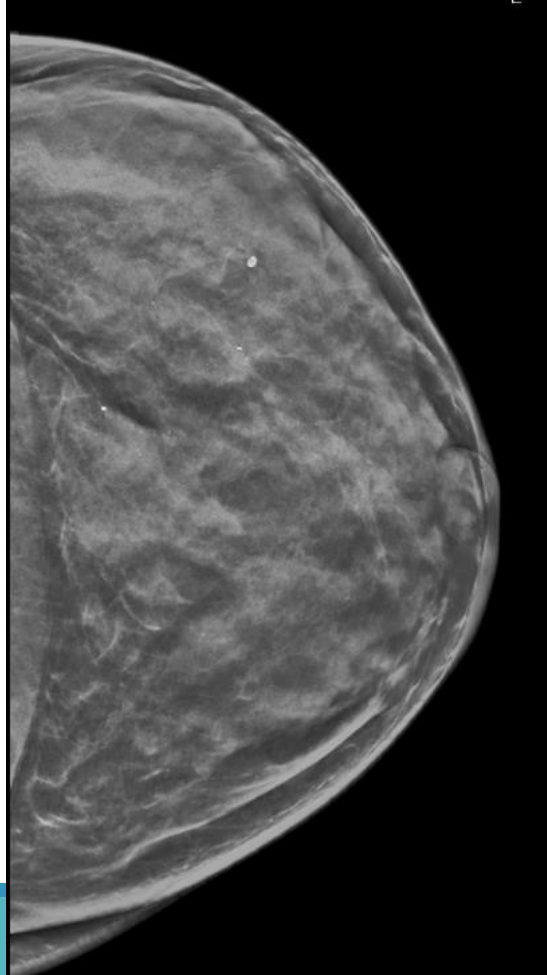
CLINIC OF RADIOLOGY

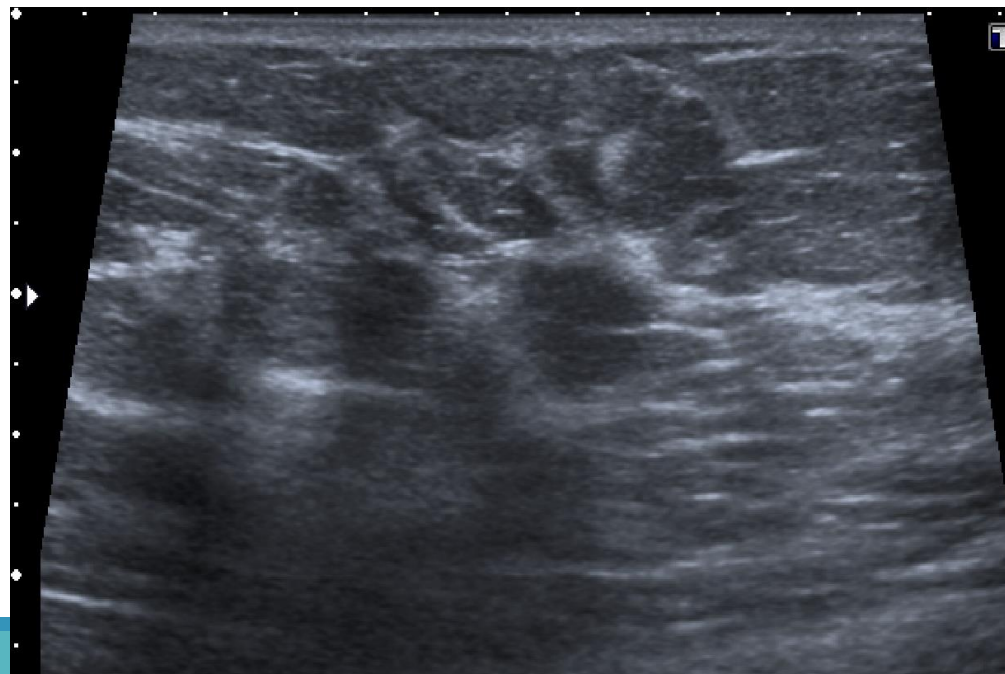
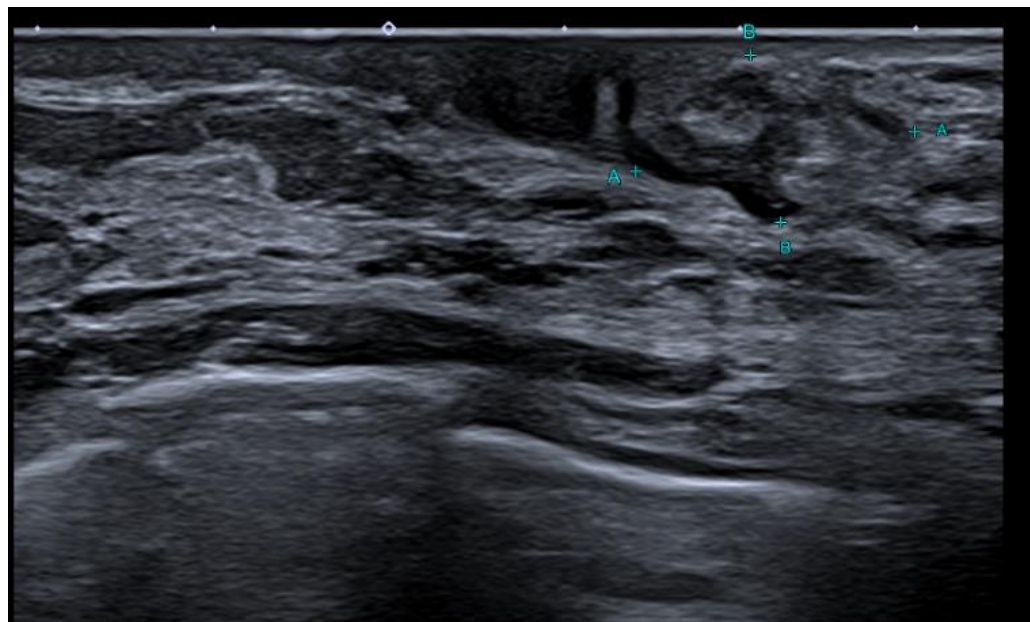
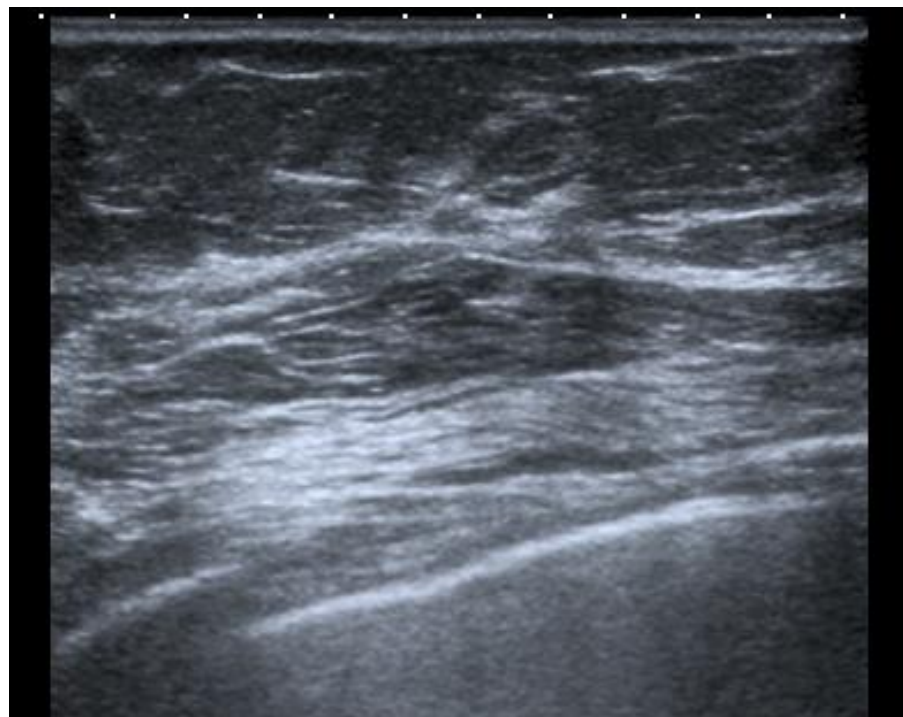
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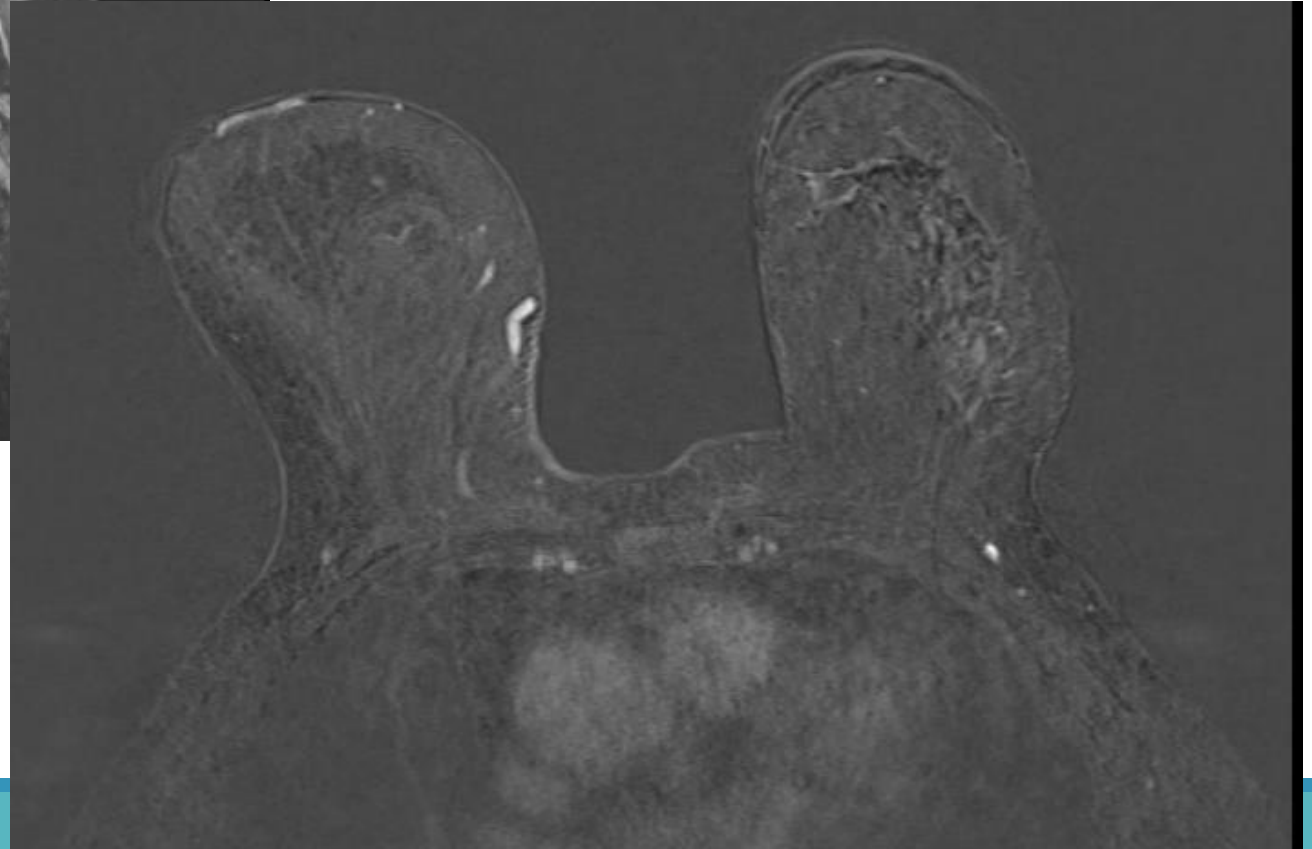
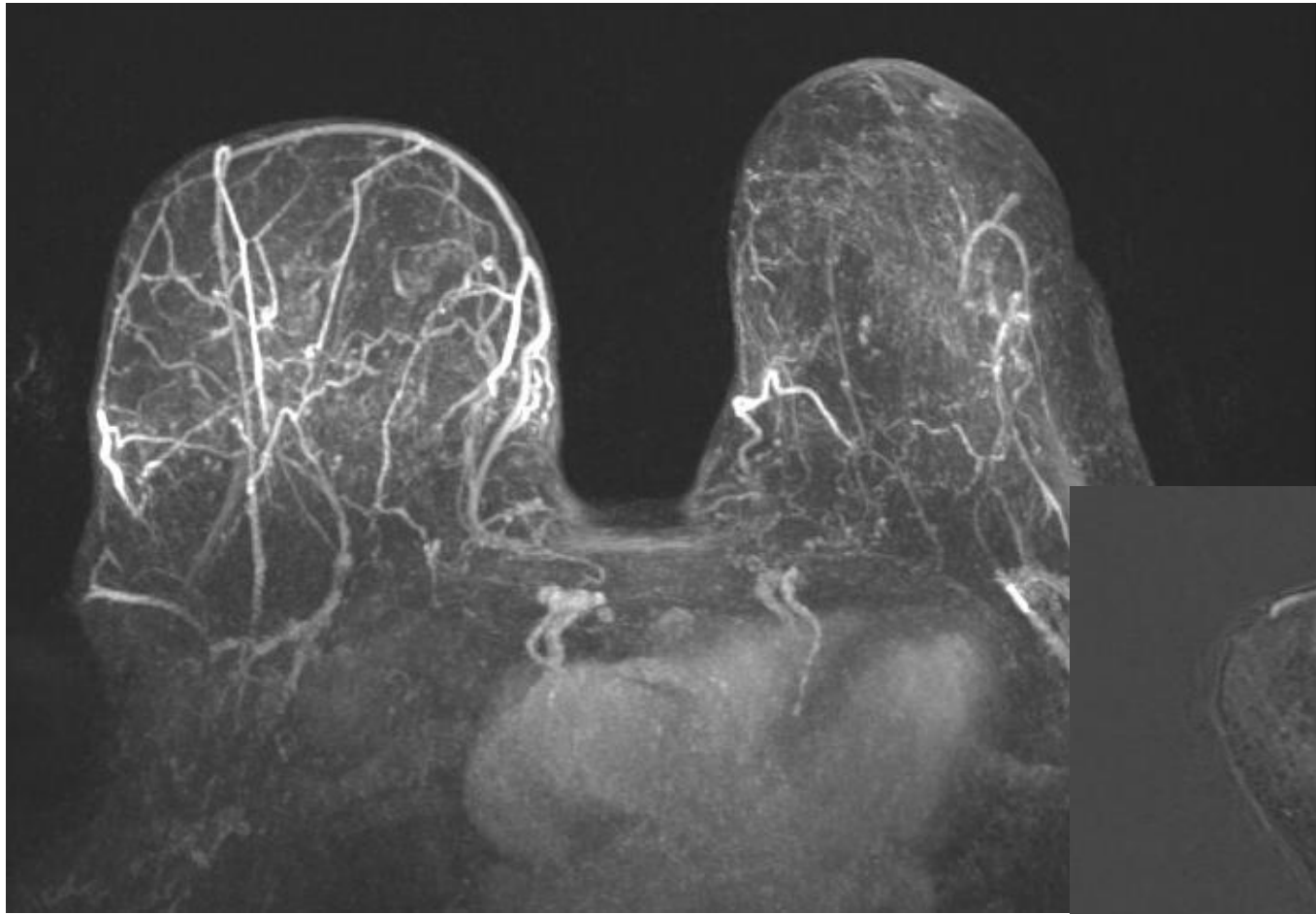
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Detection Prevention Screening



Tumor pattern

Mass/nodule

Spiculated masses up to 28-50%

Associated calcification 1-25%

Atypical findings in 1/3

Distortion 14-25%

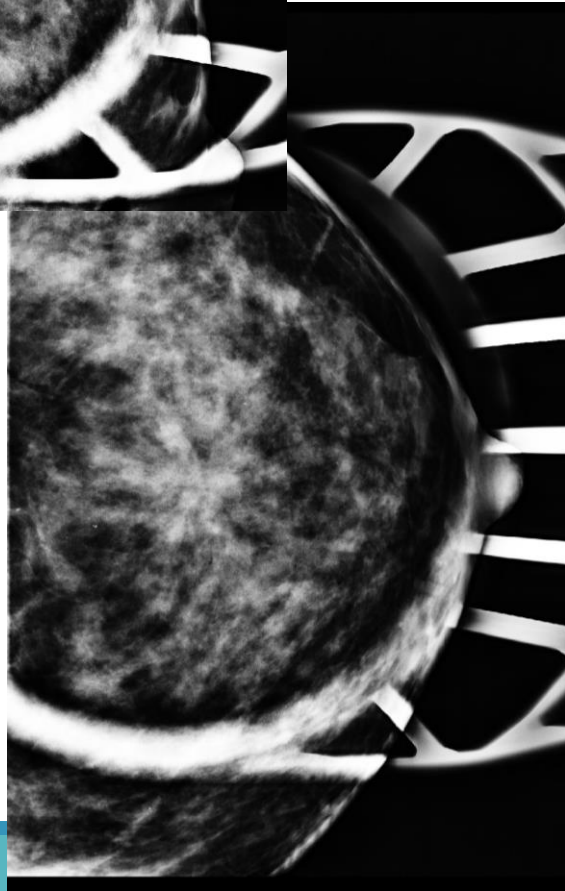
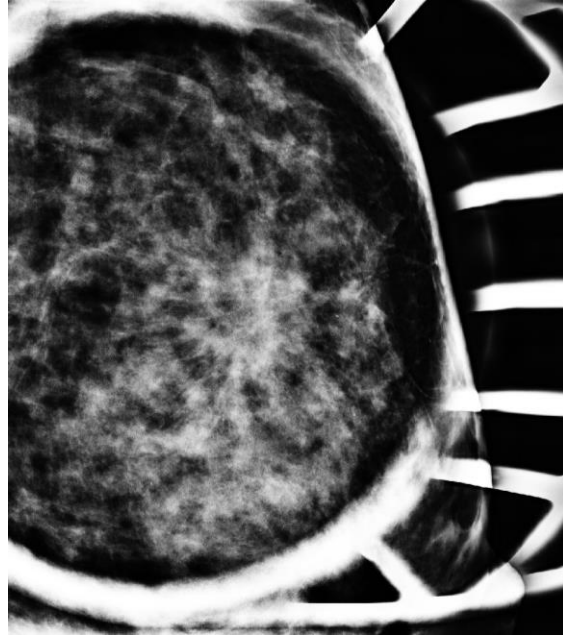
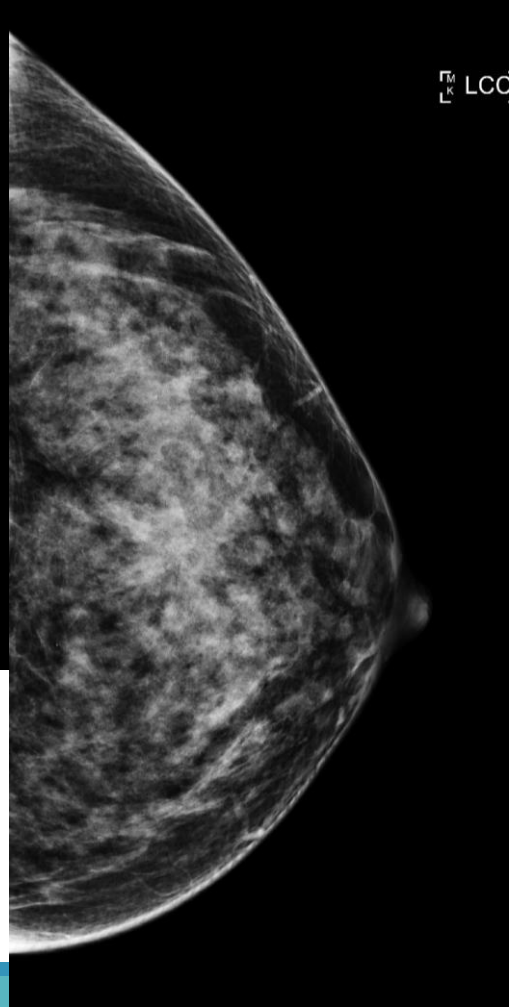
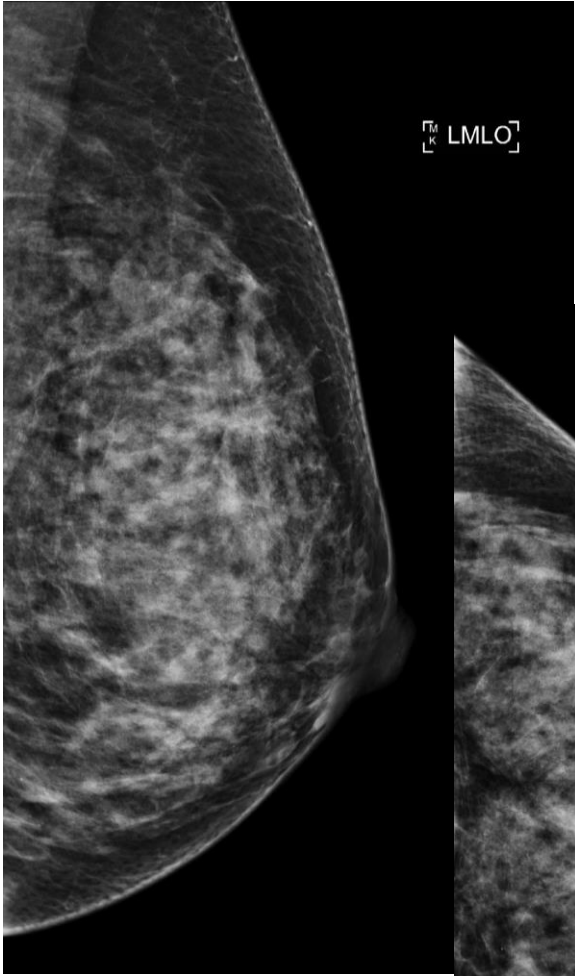
Diffuse infiltration

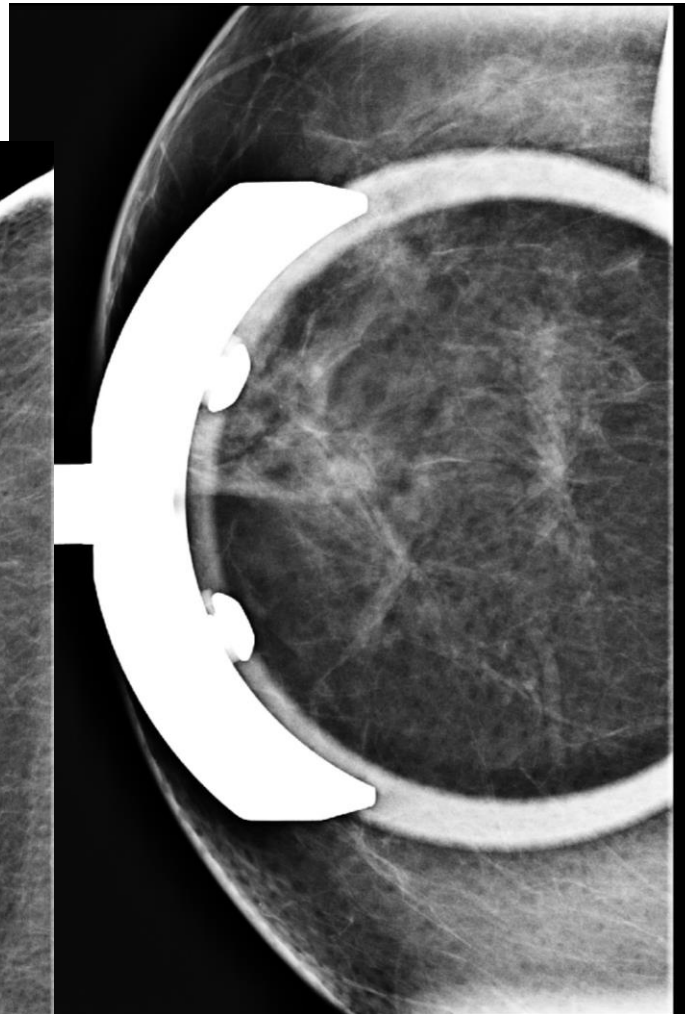
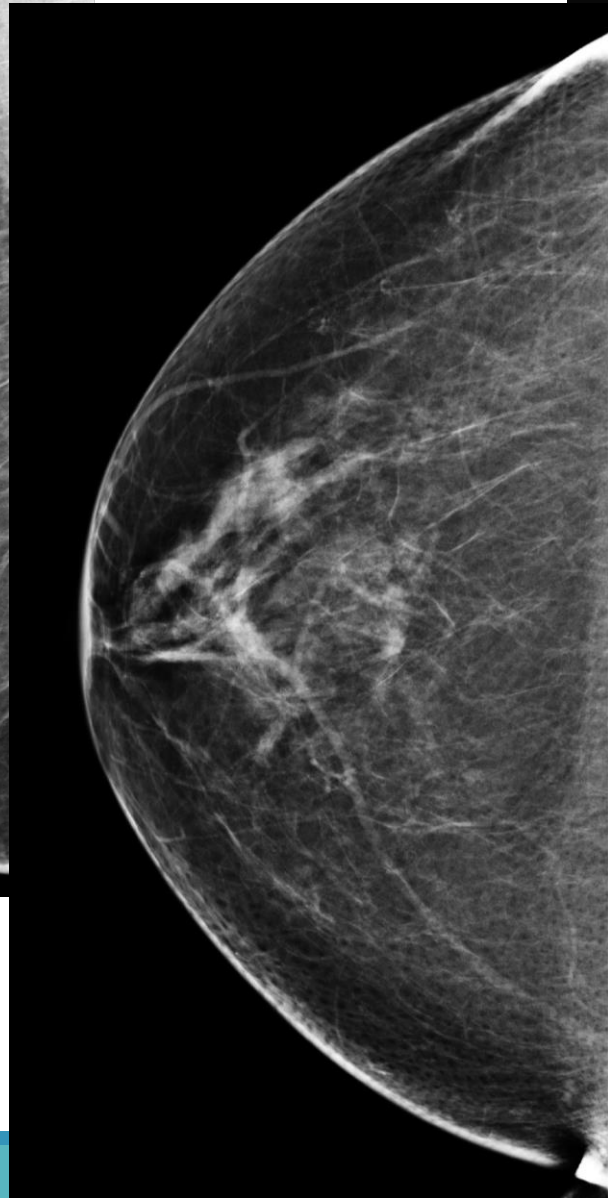
Asymmetry

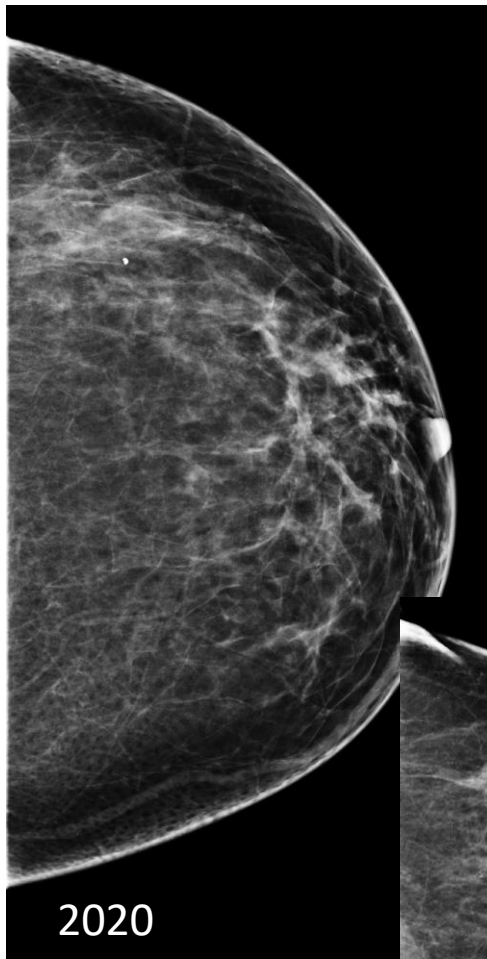
„shrinking breast“

Equally/less opaque than breast tissue

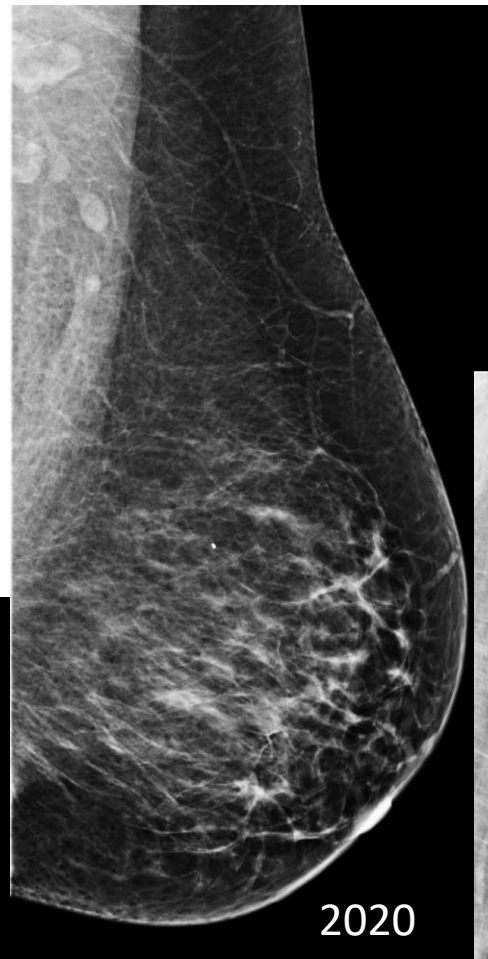
low contrast lesion-parenchyma



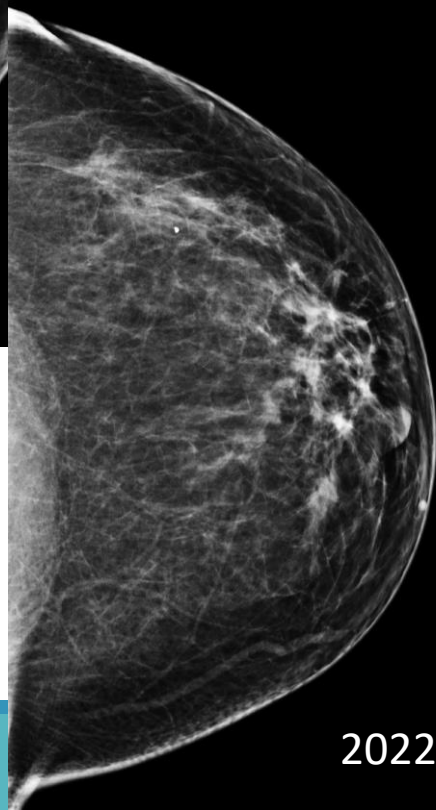




2020



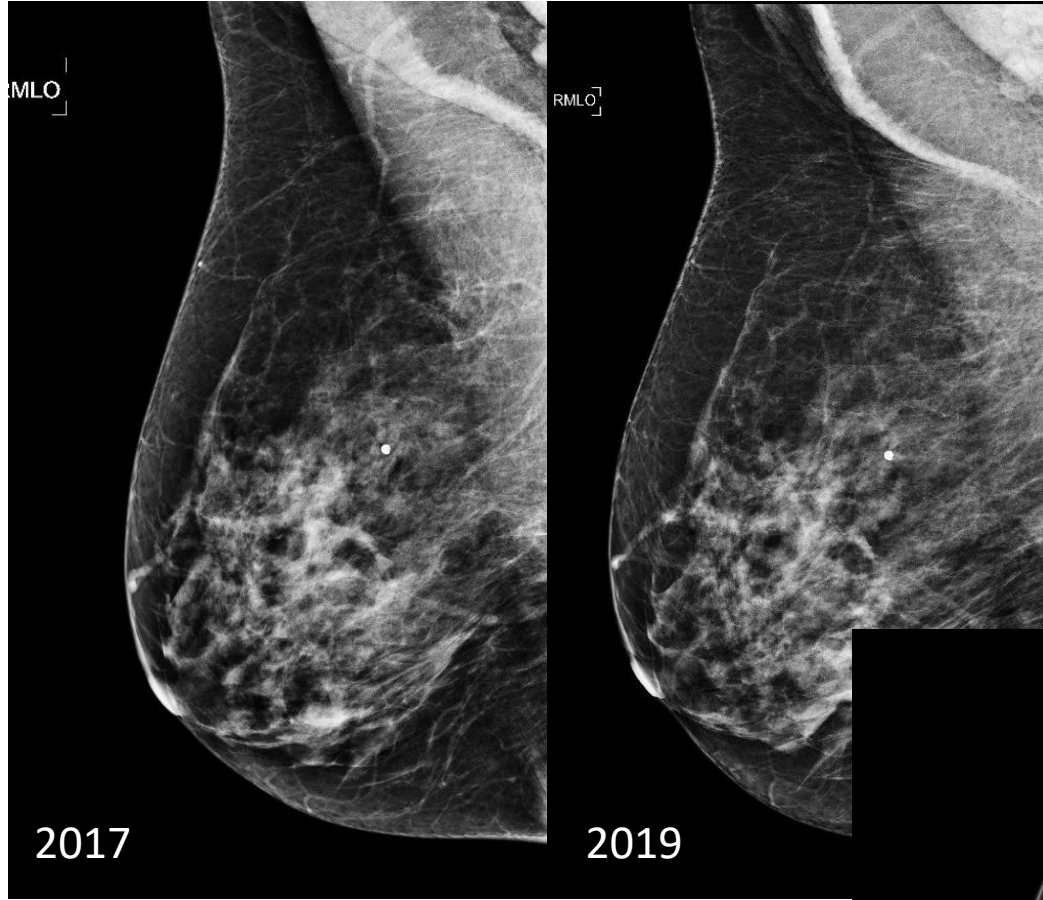
2020



2022

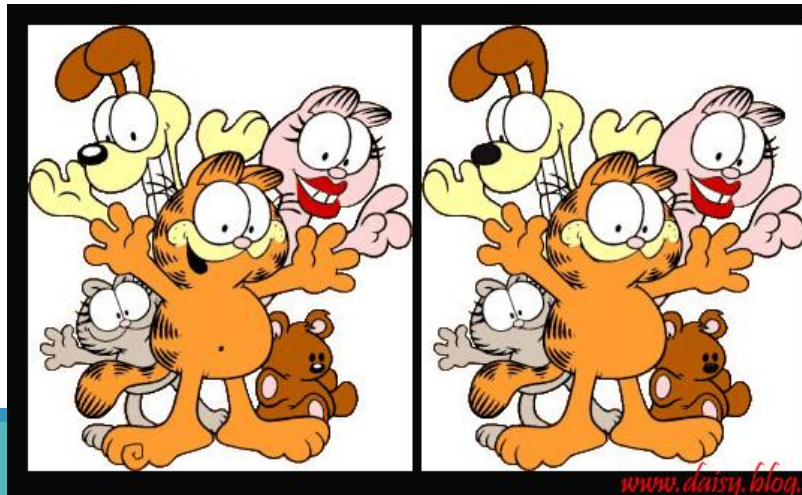


2022



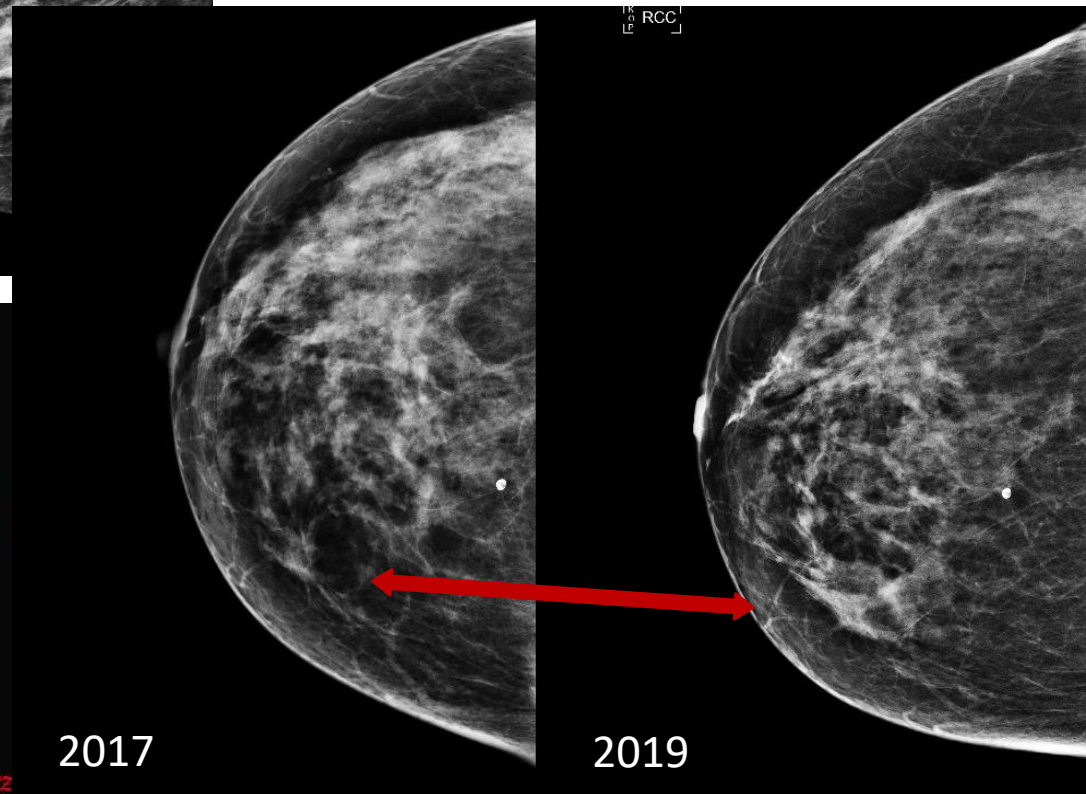
2017

2019



2017

2019



RCC

Mammography

Sensitivity overall 63-98%

Berg 2004 overall 81%

Dense breast overall 60%

Sensitivity for lobular cancer – 57-81%

Berg 2004 34% lobular

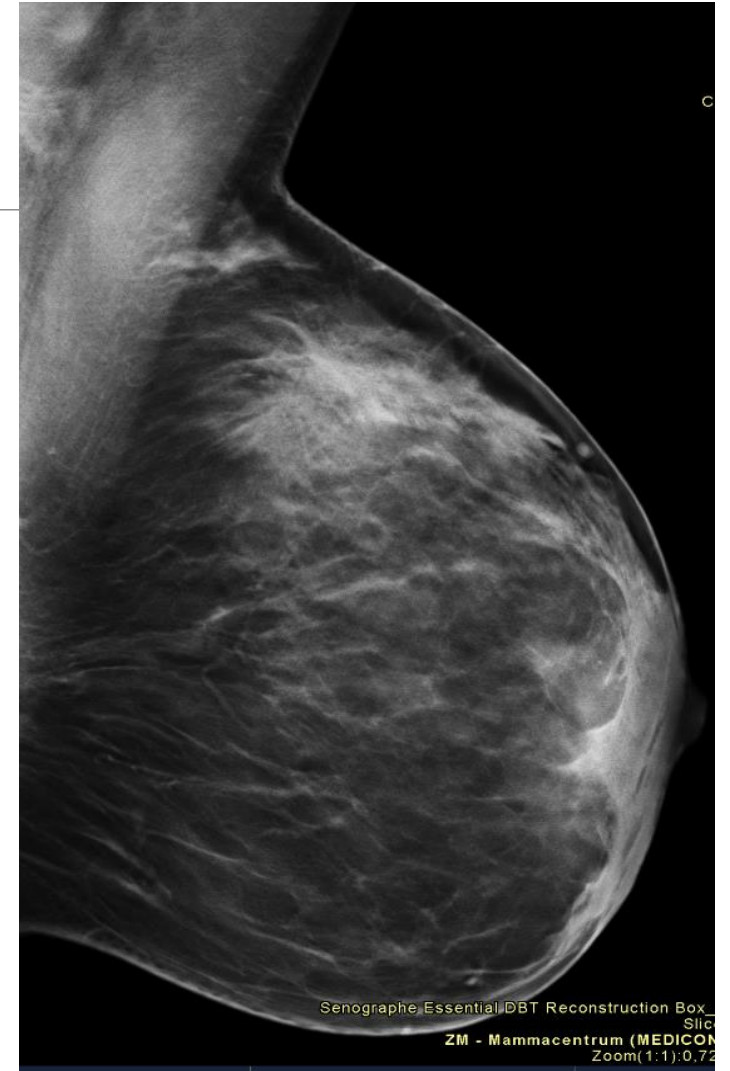
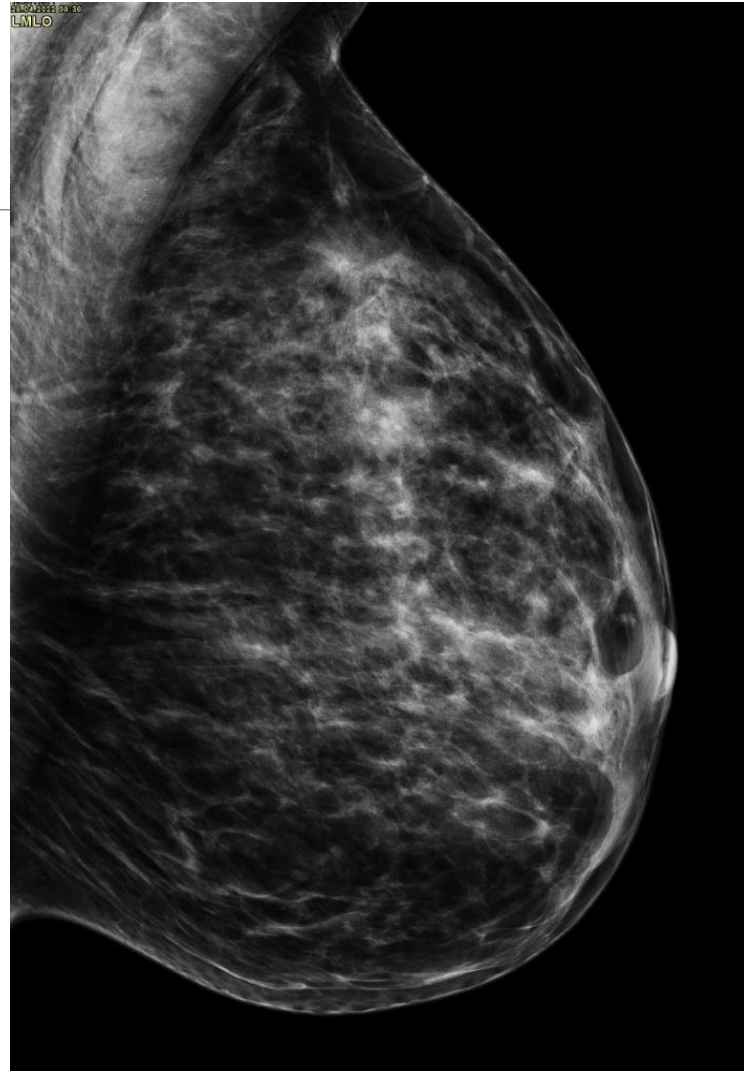
Dense breast 11% lobular

8-30% occult mammographically

Tomosynthesis

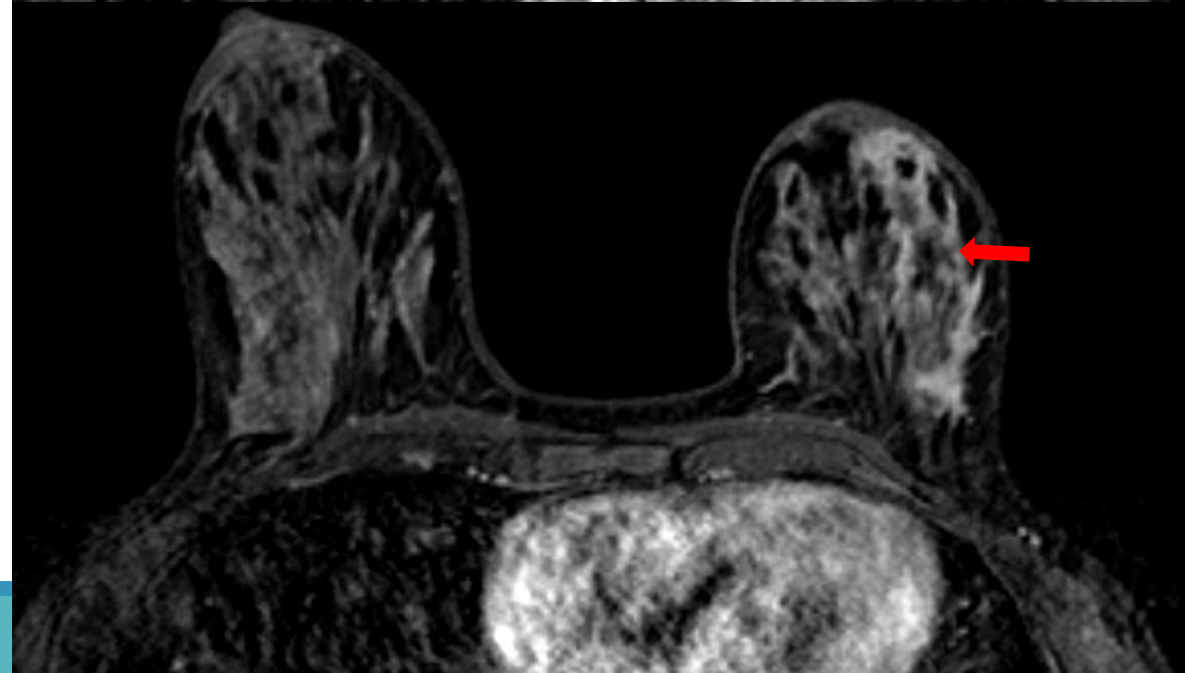
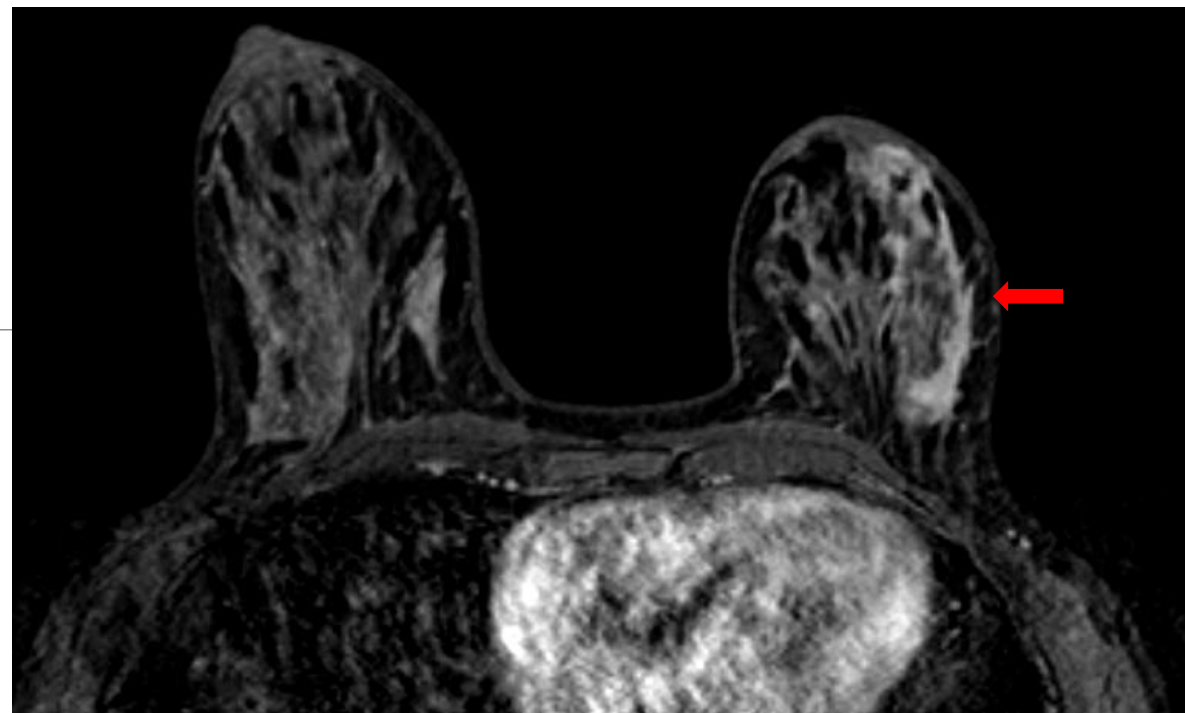
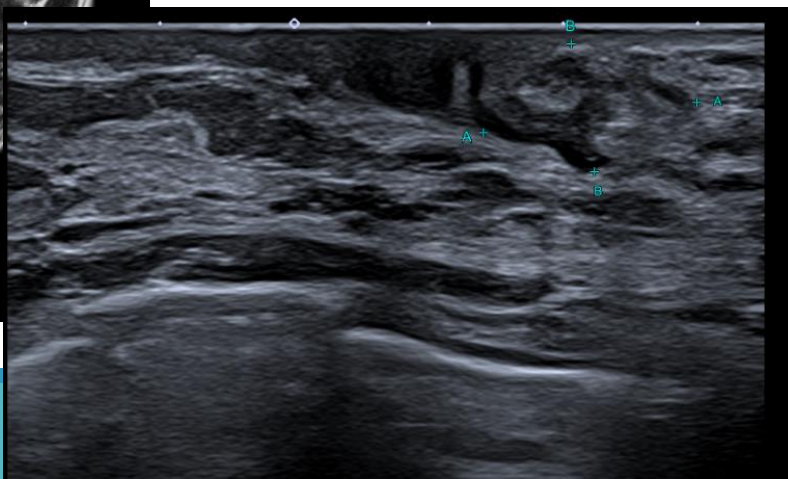
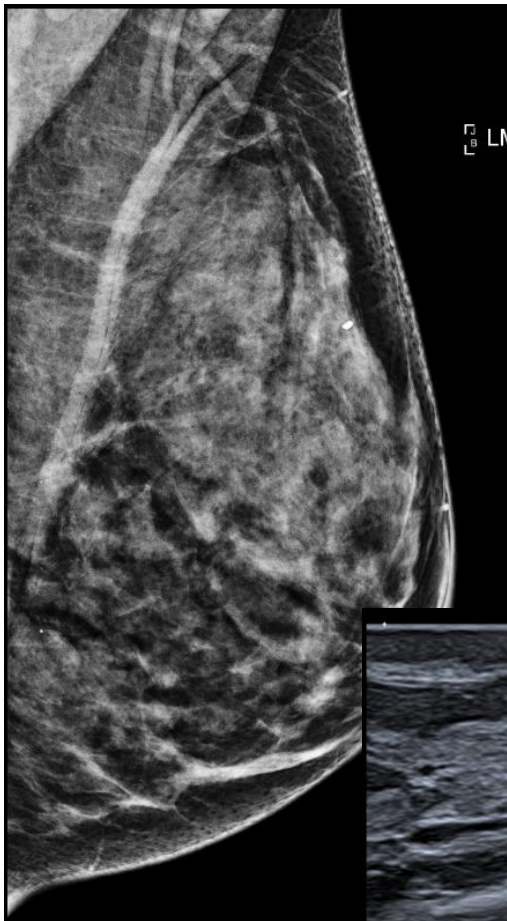
Better for distortions and masses

(84-89% vs. 65-70%)



Diagnostic setting

47 y.o. woman
palpable finding



Ultrasonography

Nodule

Lacking posterior shadowing in 20%

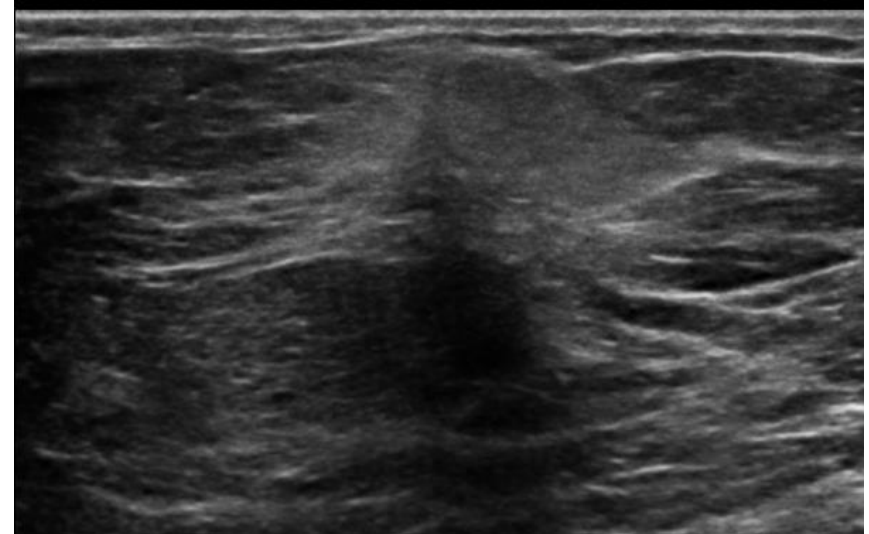
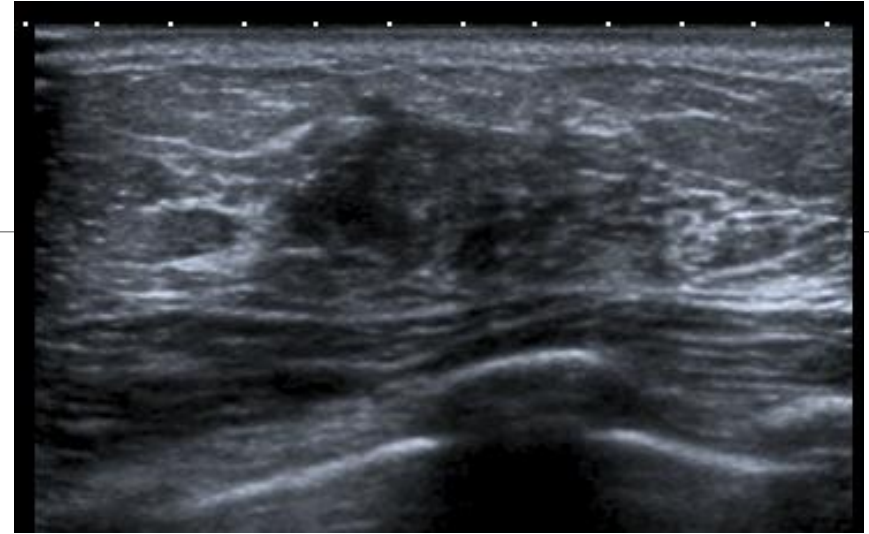
Diffuse areas of decreased echogenicity 15%

Sonographically occult 10%

Hyperechogenic (bright in US)

Sensitivity 68-98%

Underestimation of size



Biology - subtypes

Pleomorphic type

Larger

MG occult 11%

Mass

Malignant calcifications (pLCIS)

Skin/trabeculation

Oedema

Interval cancers/symptomatic

Worse outcomes

Classic type

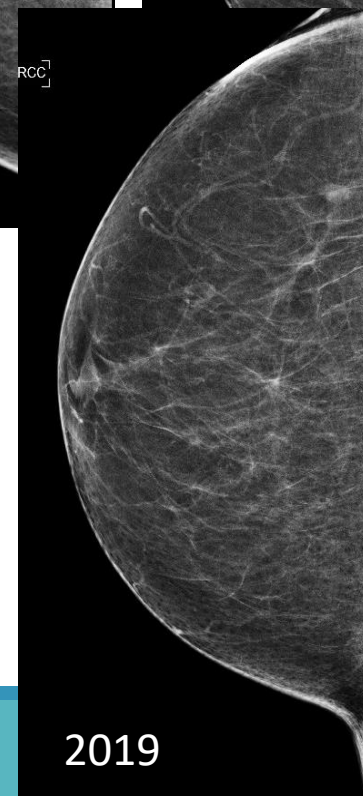
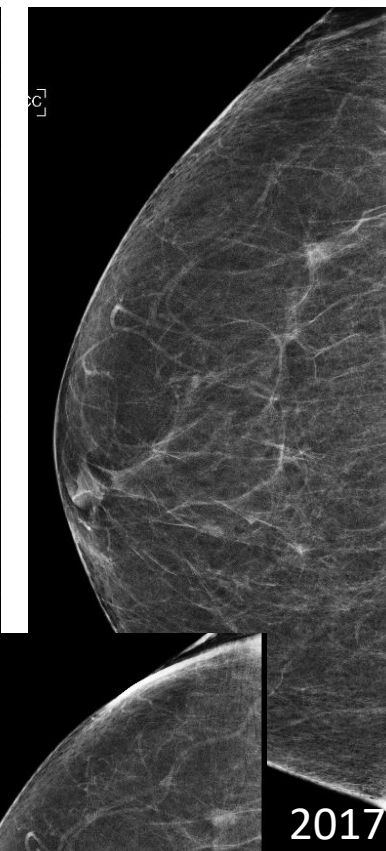
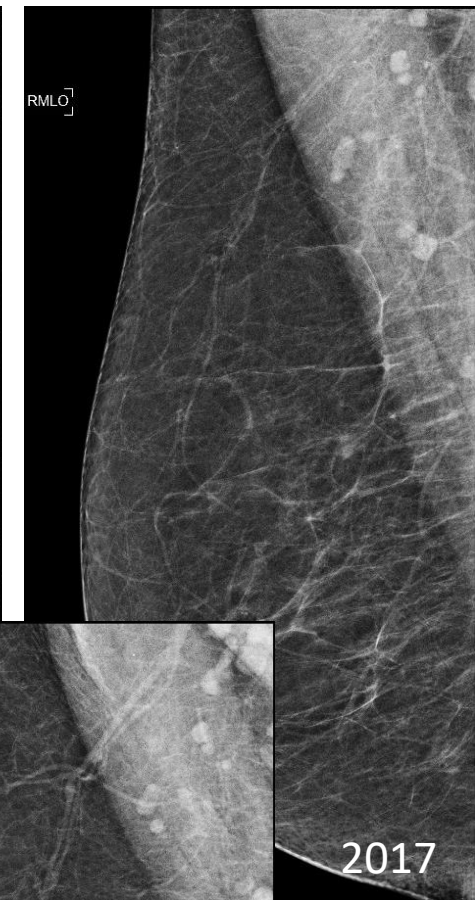
MG occult 14%

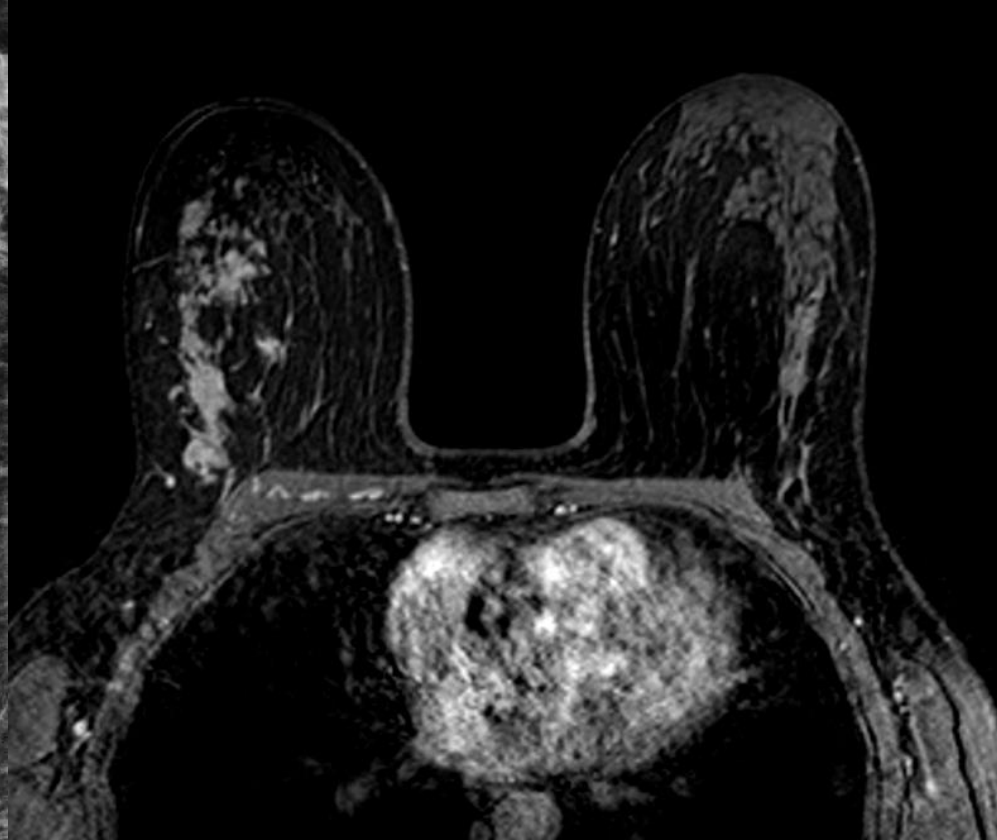
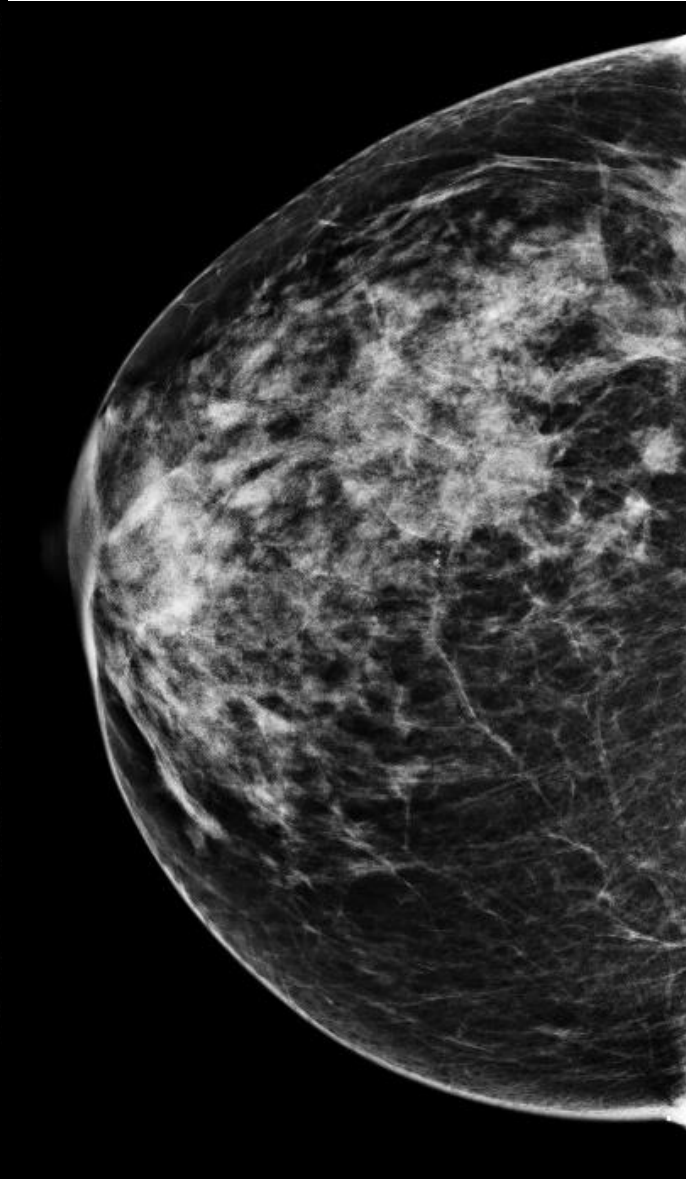
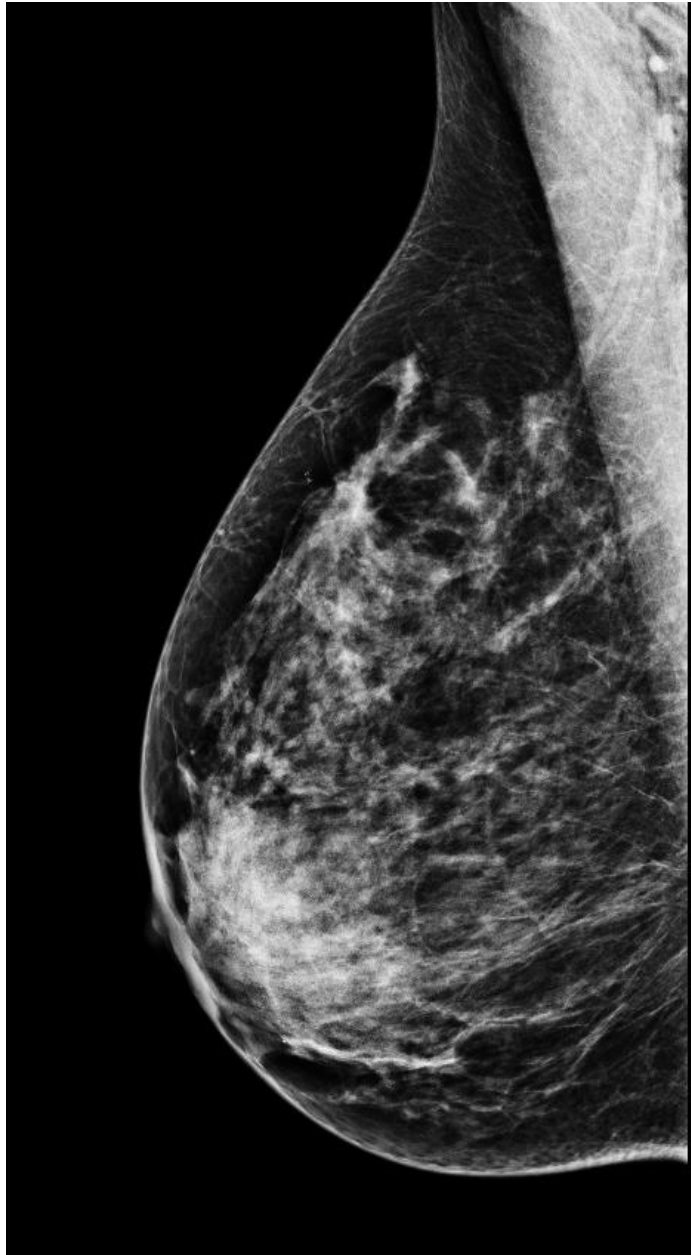
Distortions

Area of altered structure

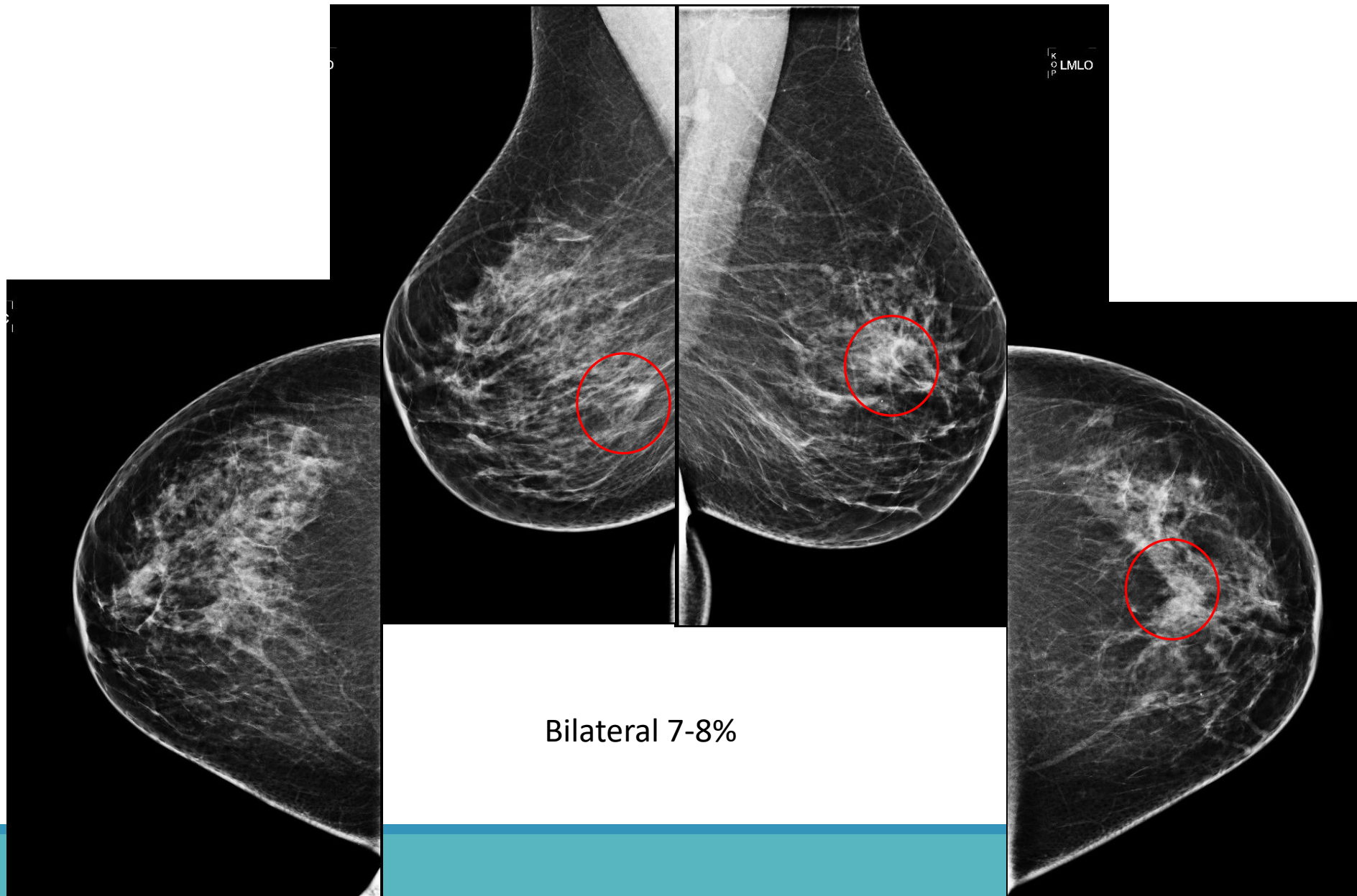
Frequently size underestimated in MG

Also iso/hyperechogenic



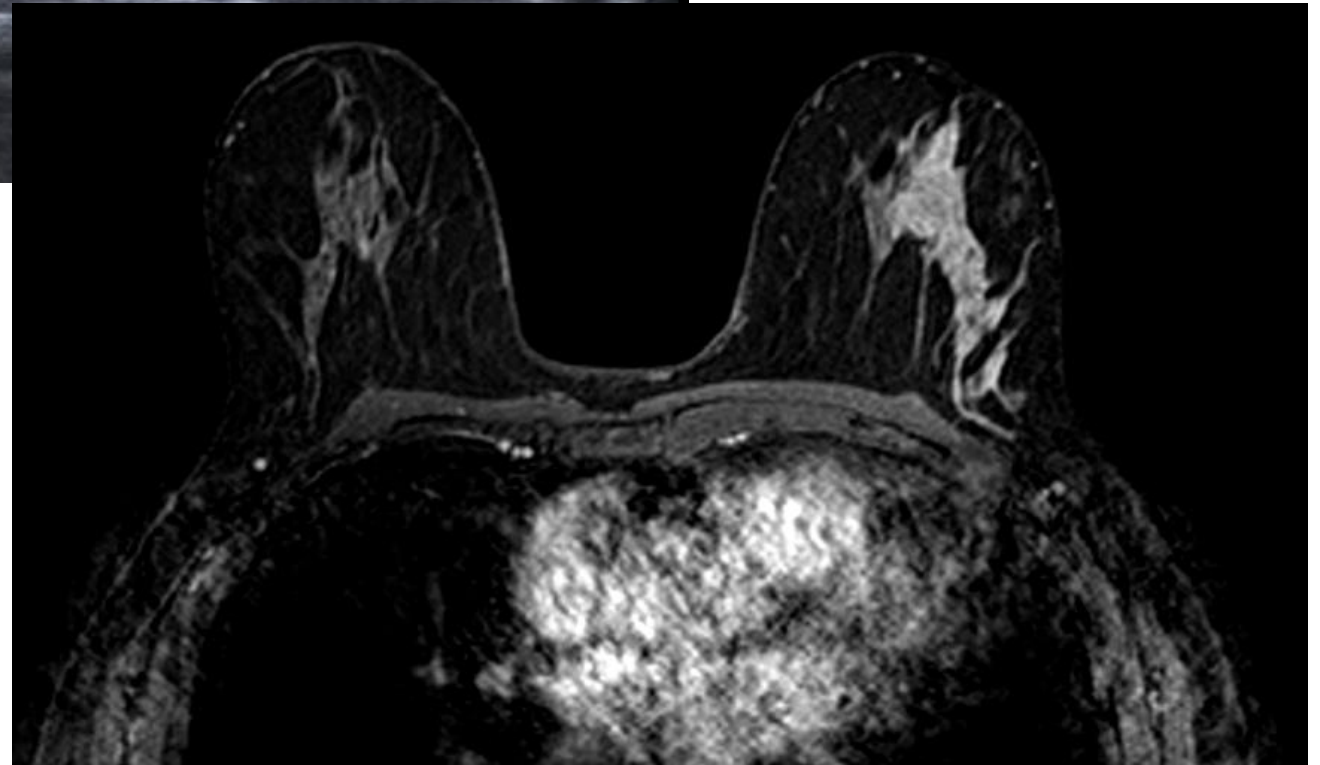
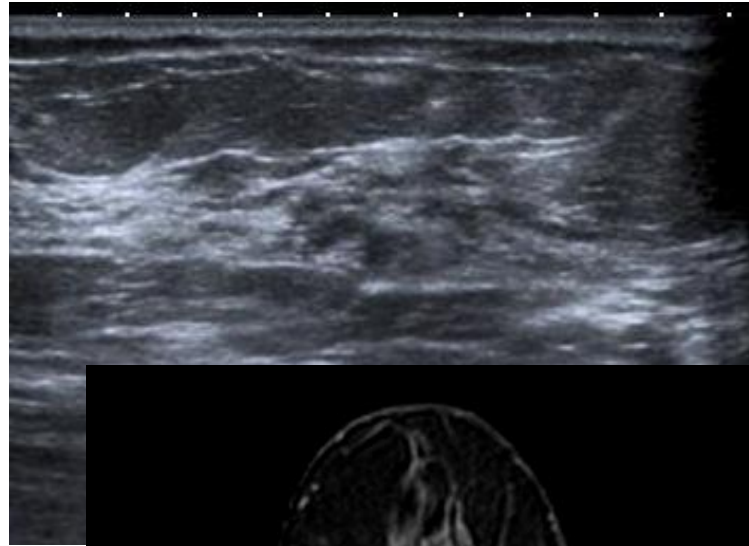


Evaluating extent



Bilateral 7-8%

70% size underestimated in mammography



MRI

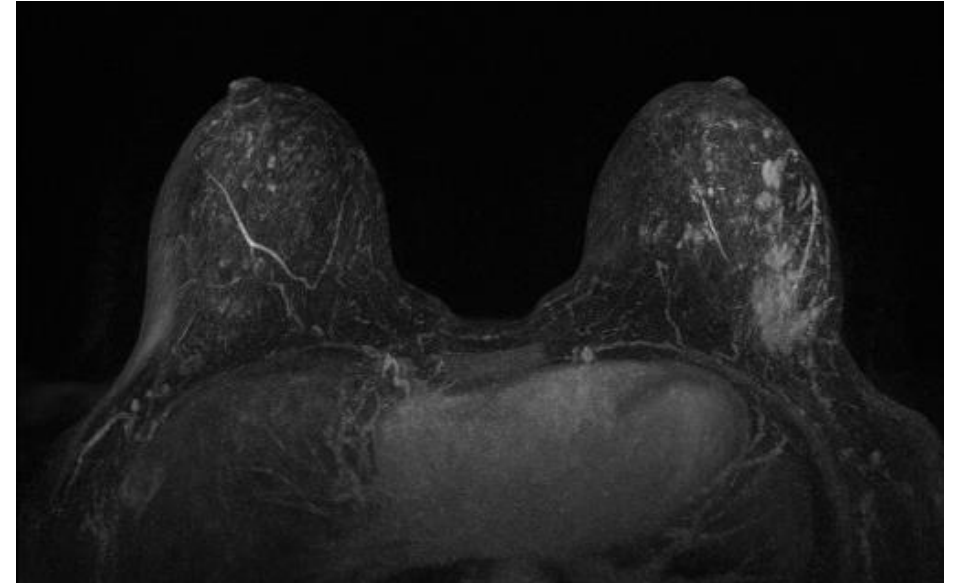
High sensitivity 93%

Mass, spiculated/irregular

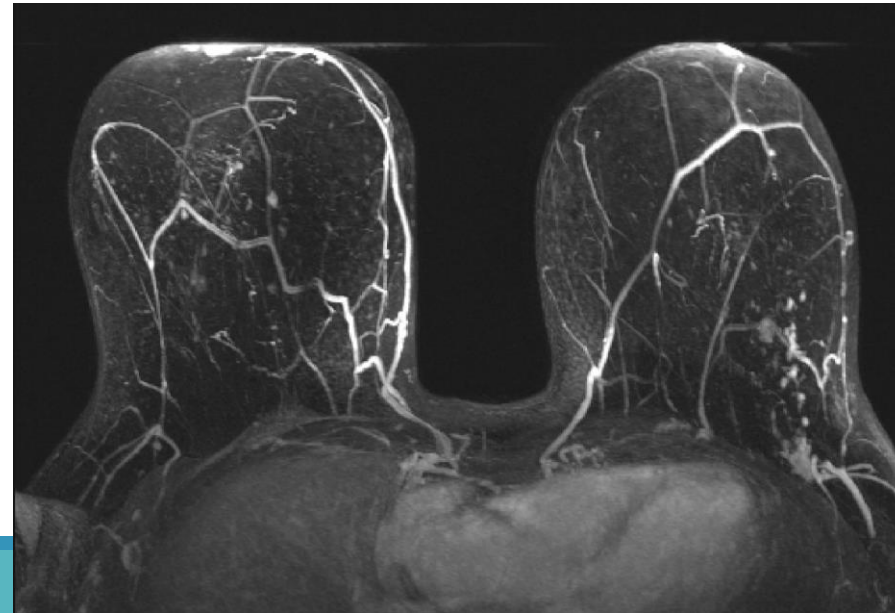
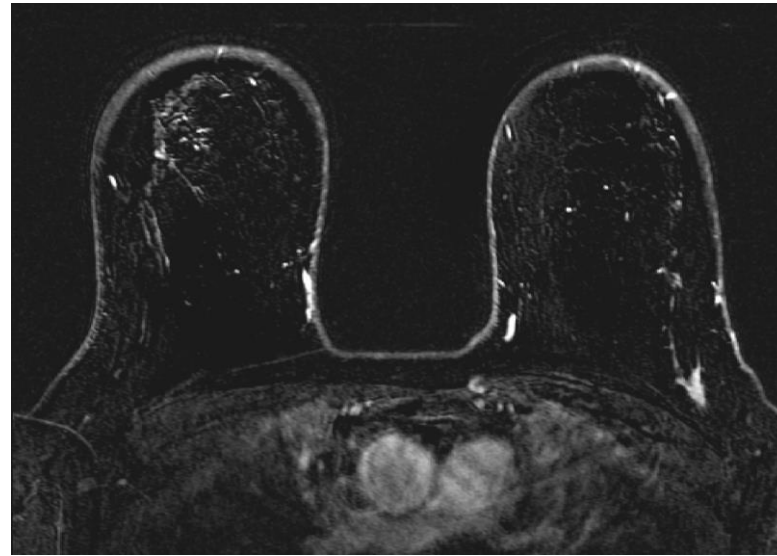
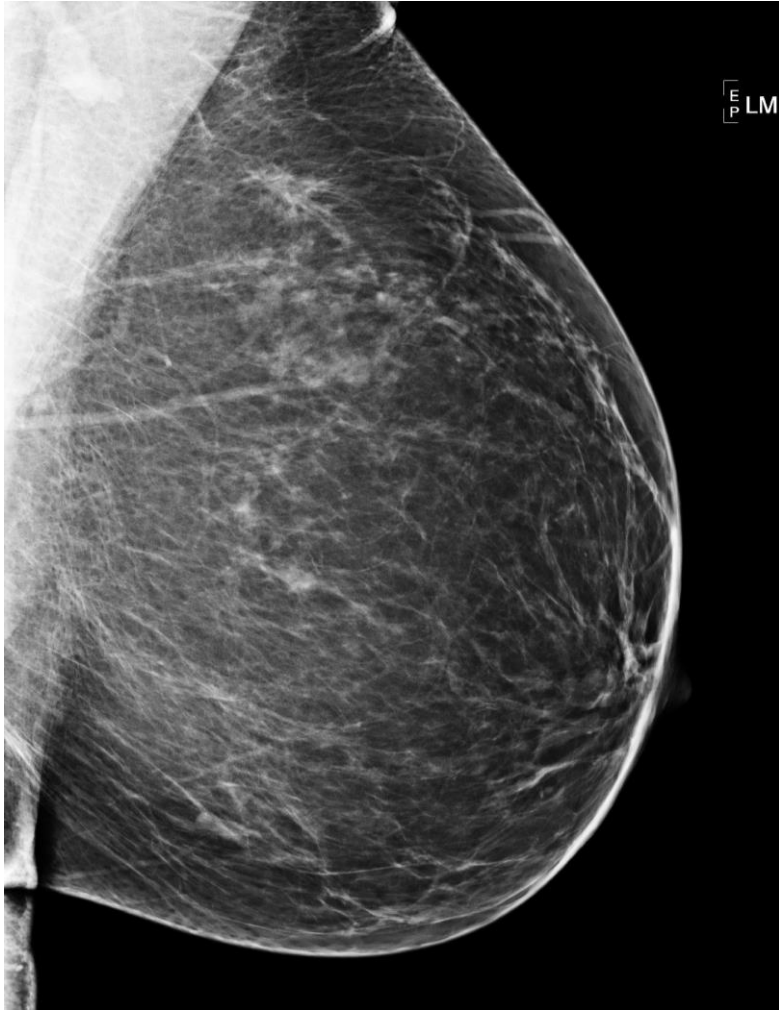
Non-mass lesion 20-40%

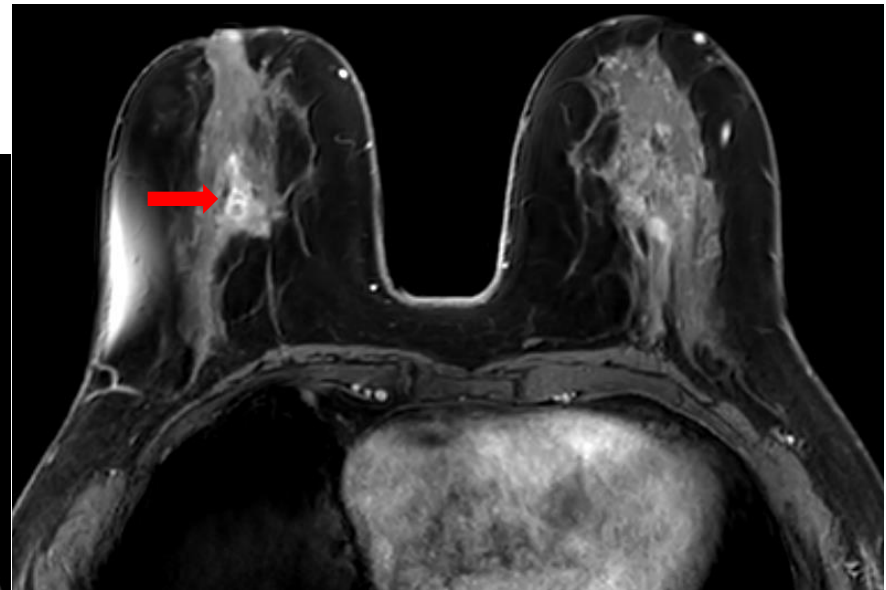
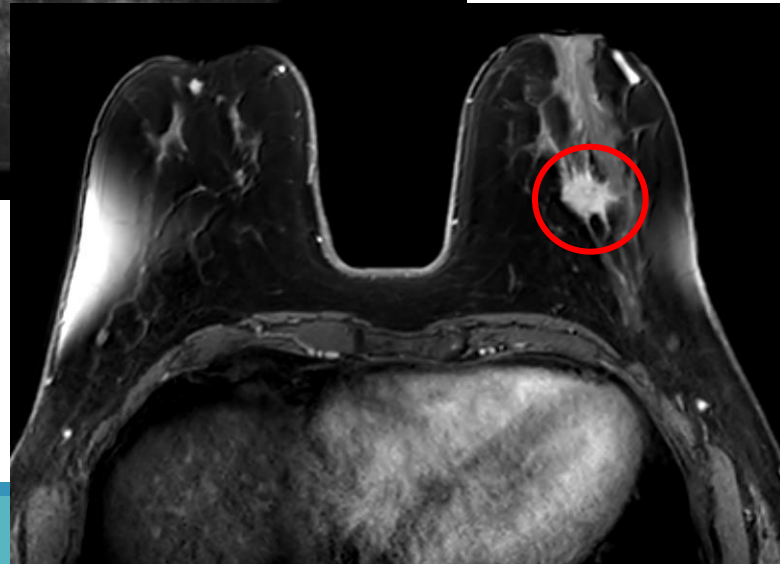
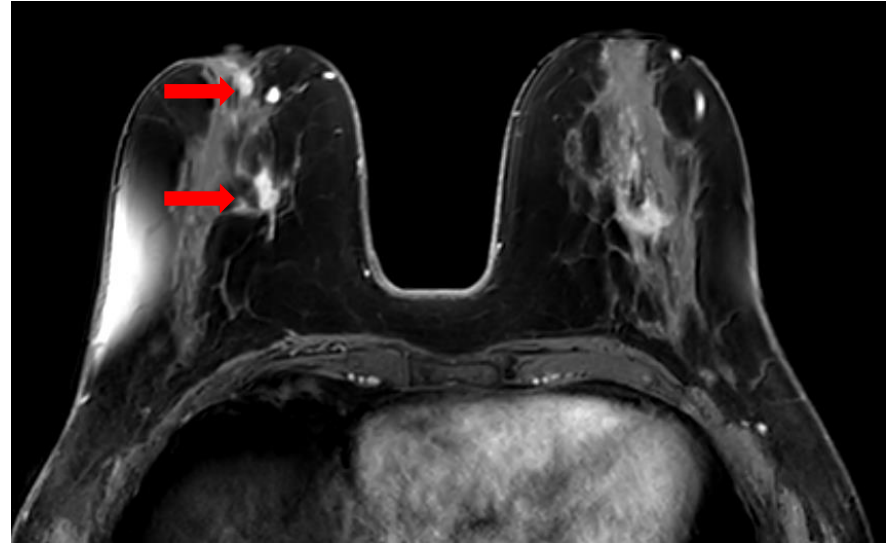
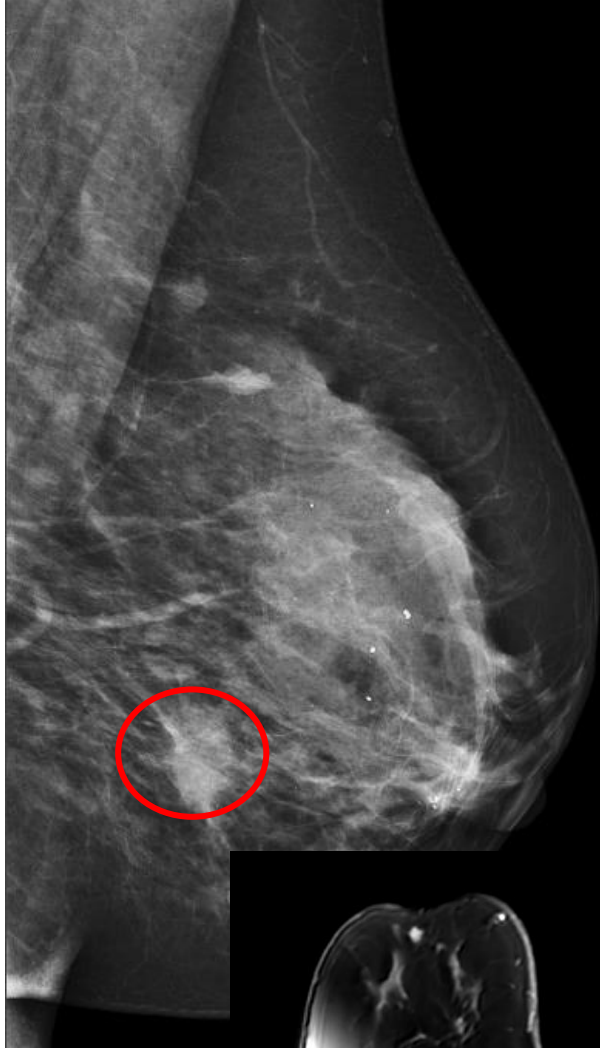
Best predicts tumor size – difference 1,6-7mm

Possibly slower uptake of contrast



55 y.o. woman screening, low density MG





Treatment consequences

Additional ipsilateral lesions 32%

Contralateral lesions 7% (ductal 2-3%)

More mastectomies

ILC highest chance to change in surgical plan

MRI – lower reexcision rate, still 3 times higher in lobular than in IDC

Downsides of MRI

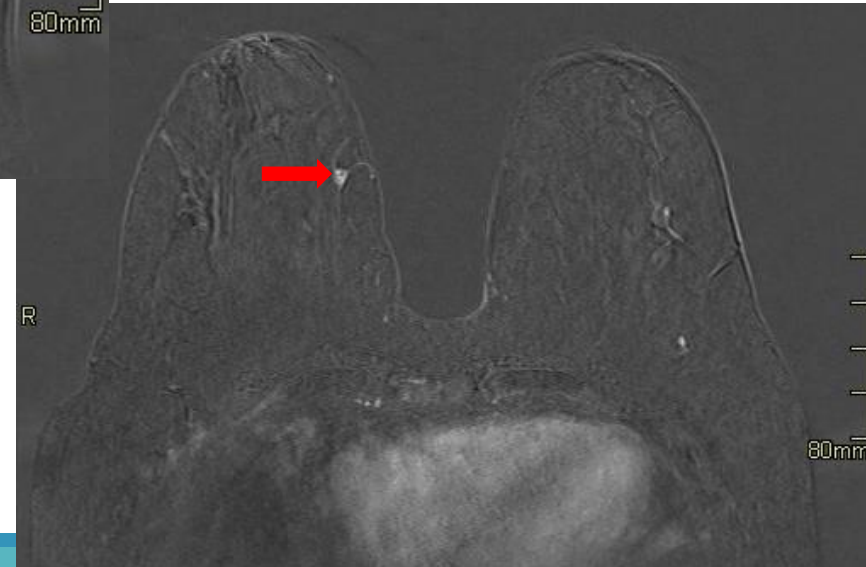
Additional biopsies 28-33%

Additional disease in 1/3, benign/risky histology 2/3

Benefits 28,9% / Harms 28.9%

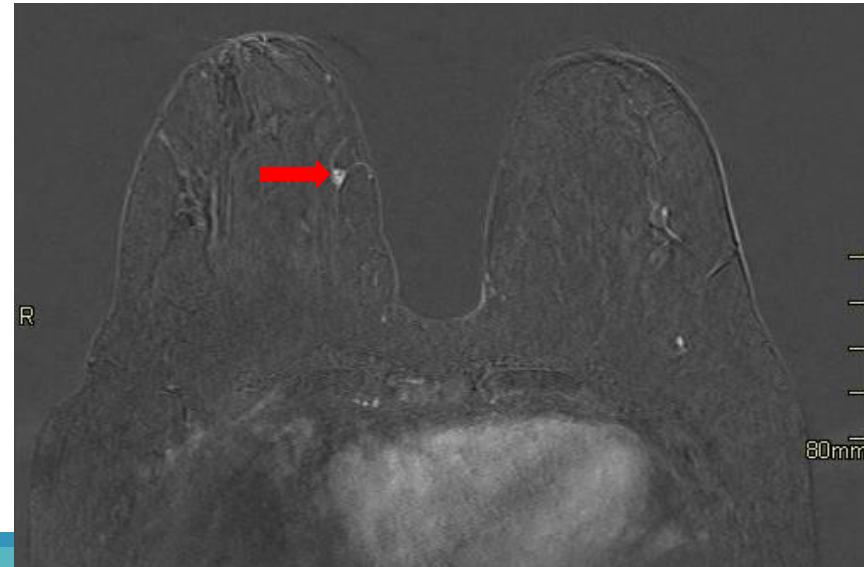
Second-look US +/- biopsy necessary to reduce more extensive surgeries

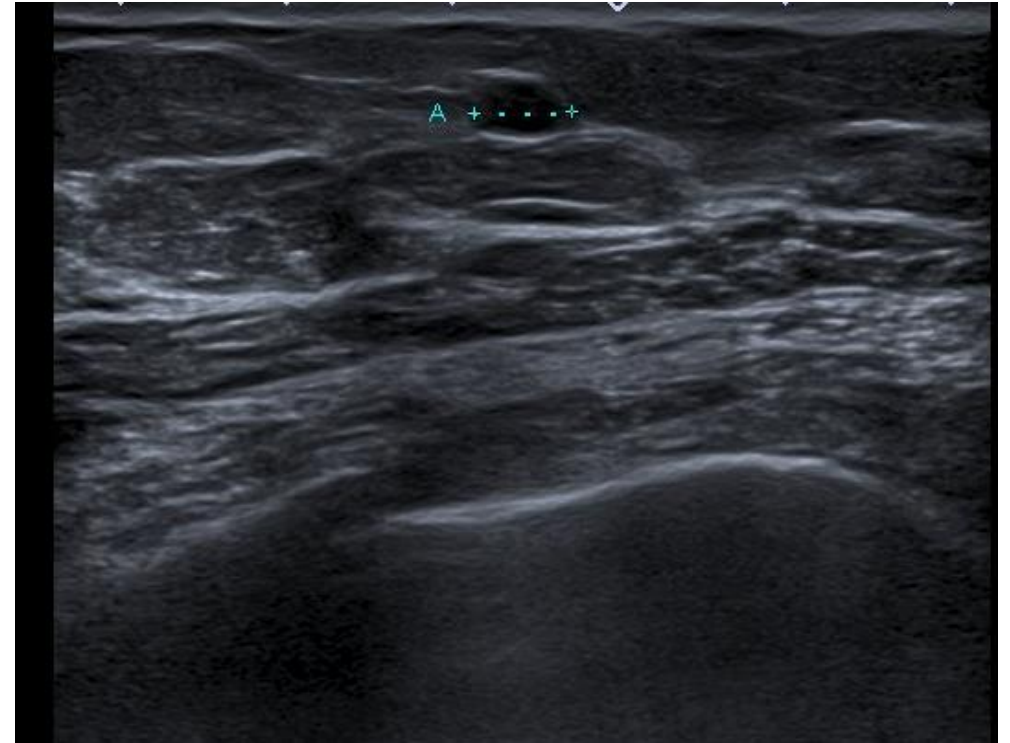
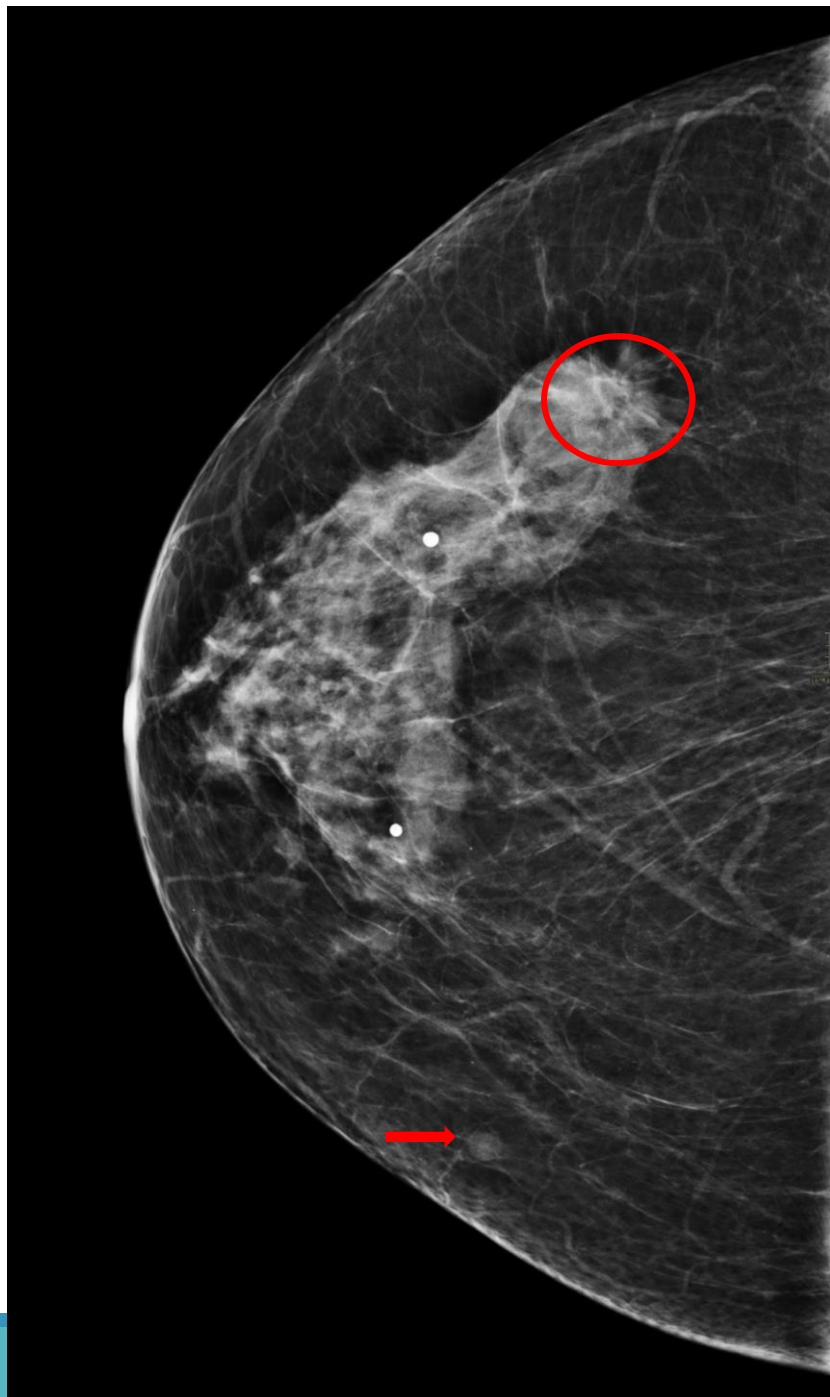
53 y.o.woman - preoperative evaluation



What to do?

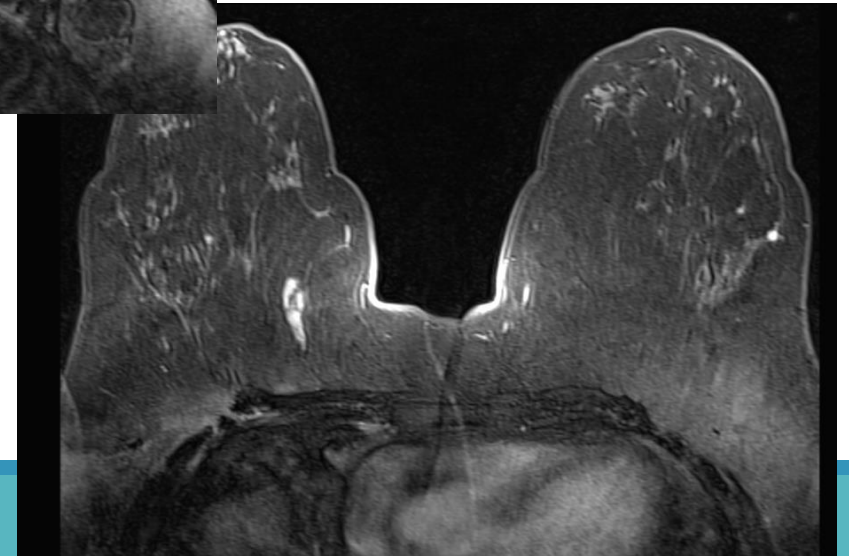
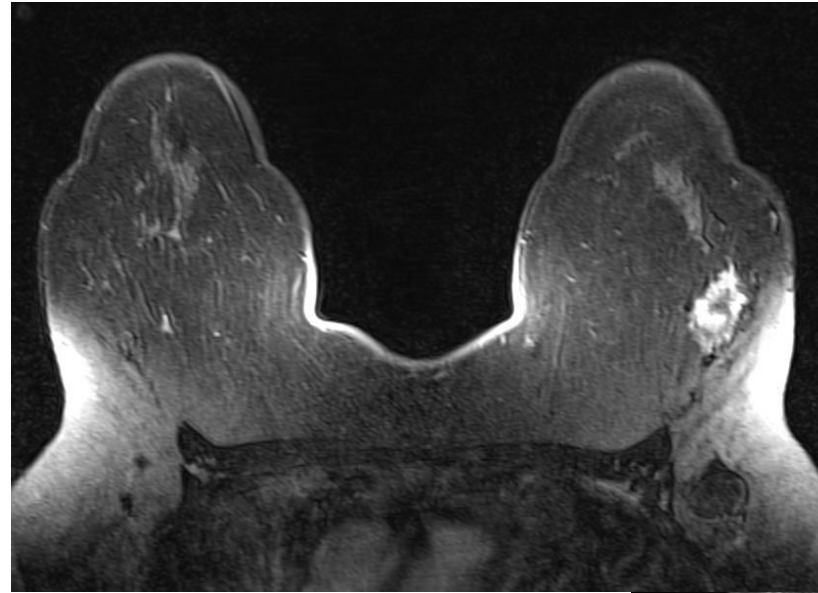
- a) Mastectomy
- b) Originally planned surgery
– breast conserving and
check-up
- c) Second-look ultrasound
- d) MRI –guided biopsy

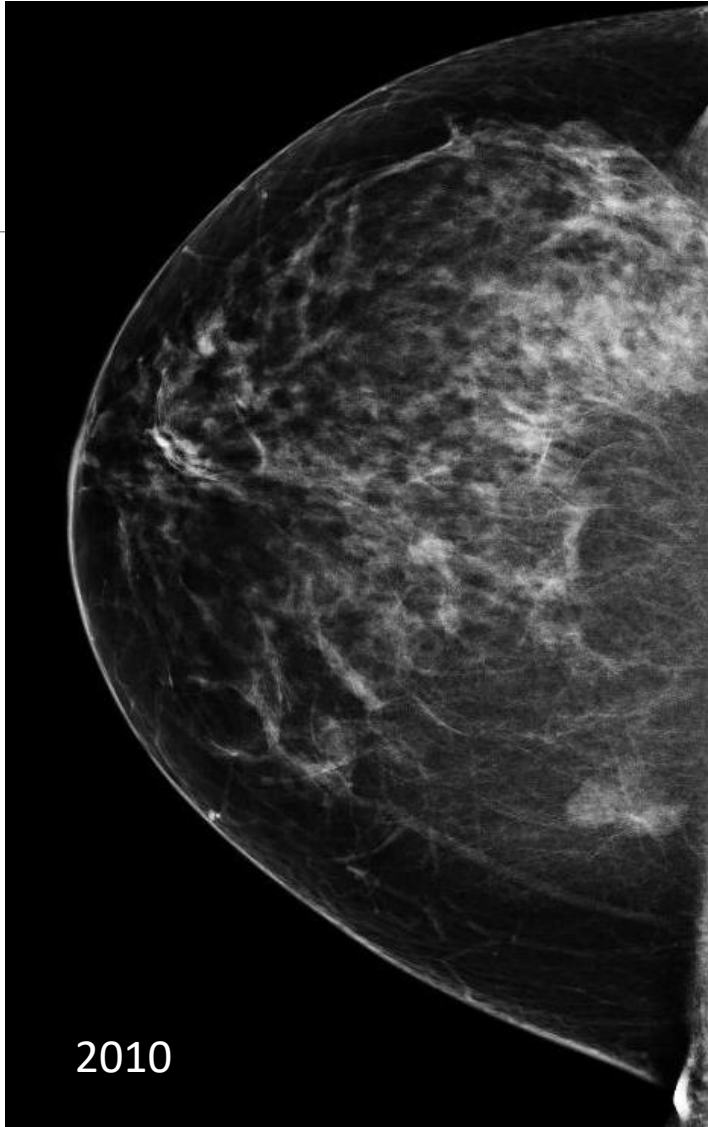




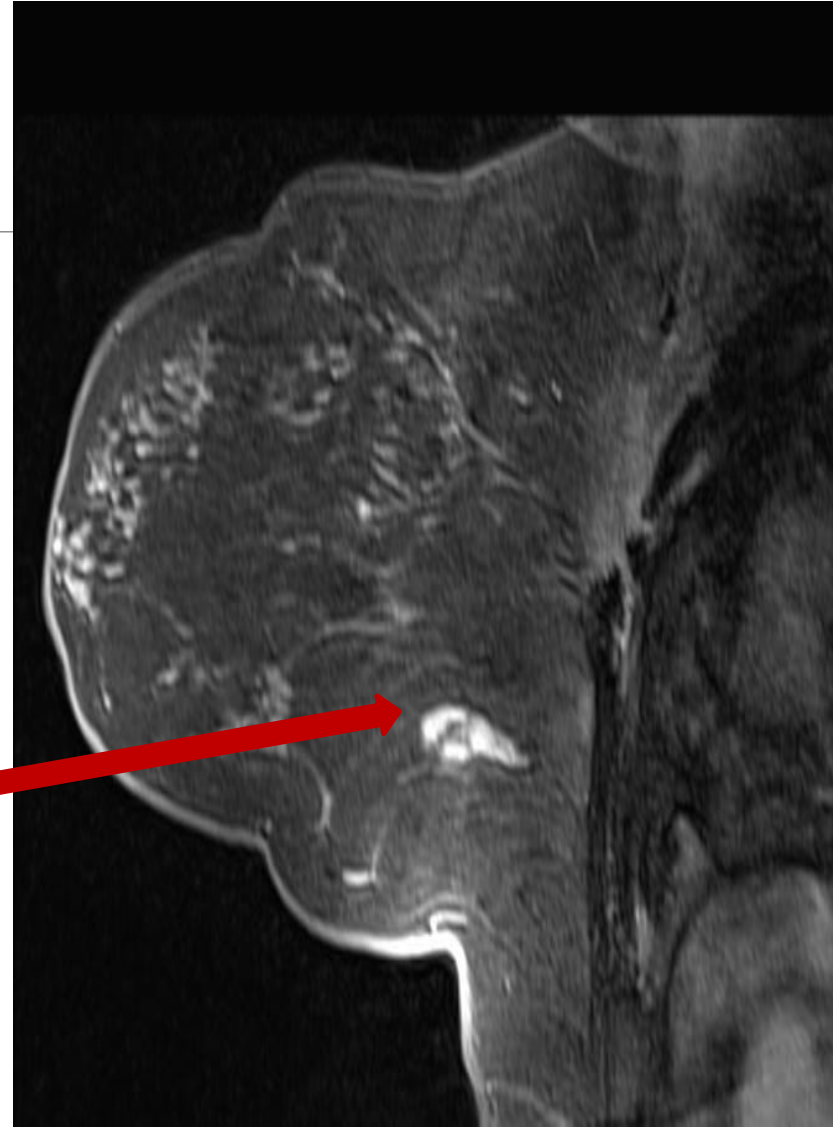
60 y.o woman Preoperative evaluation

- a) Bilateral mastectomy
- b) Second-look ultrasound
- c) Biopsy under MRI guidance
- d) See prior images



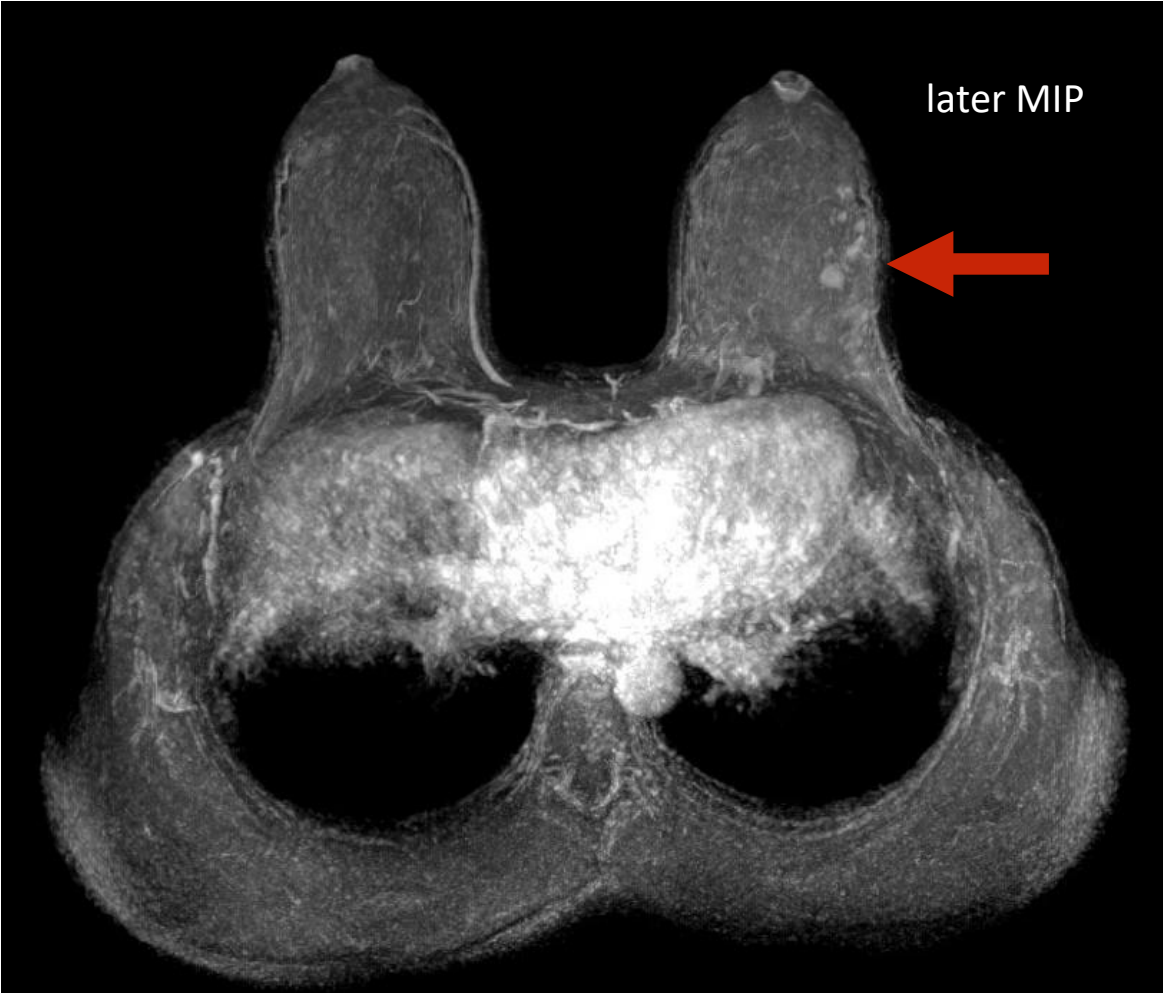


MG 2010

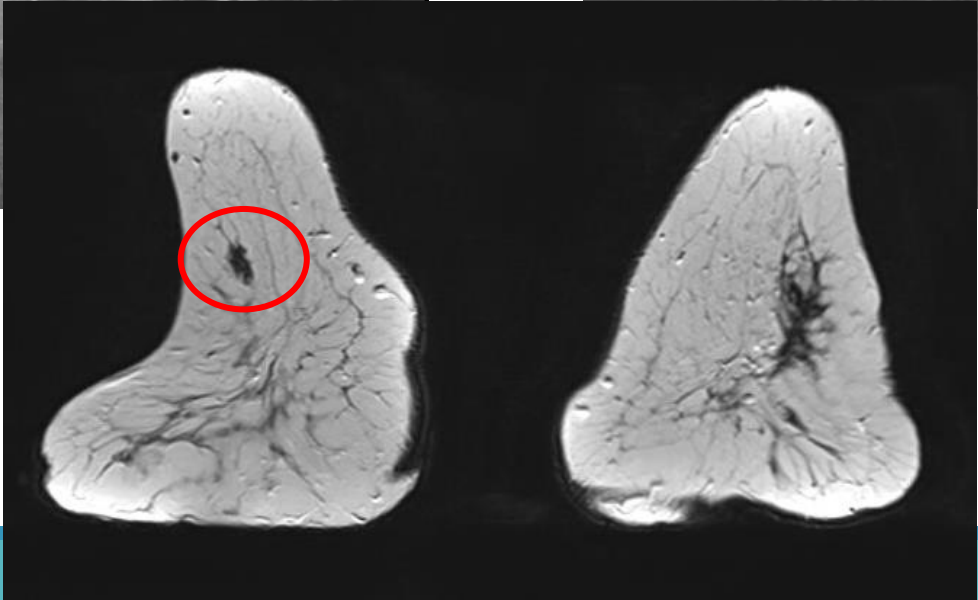
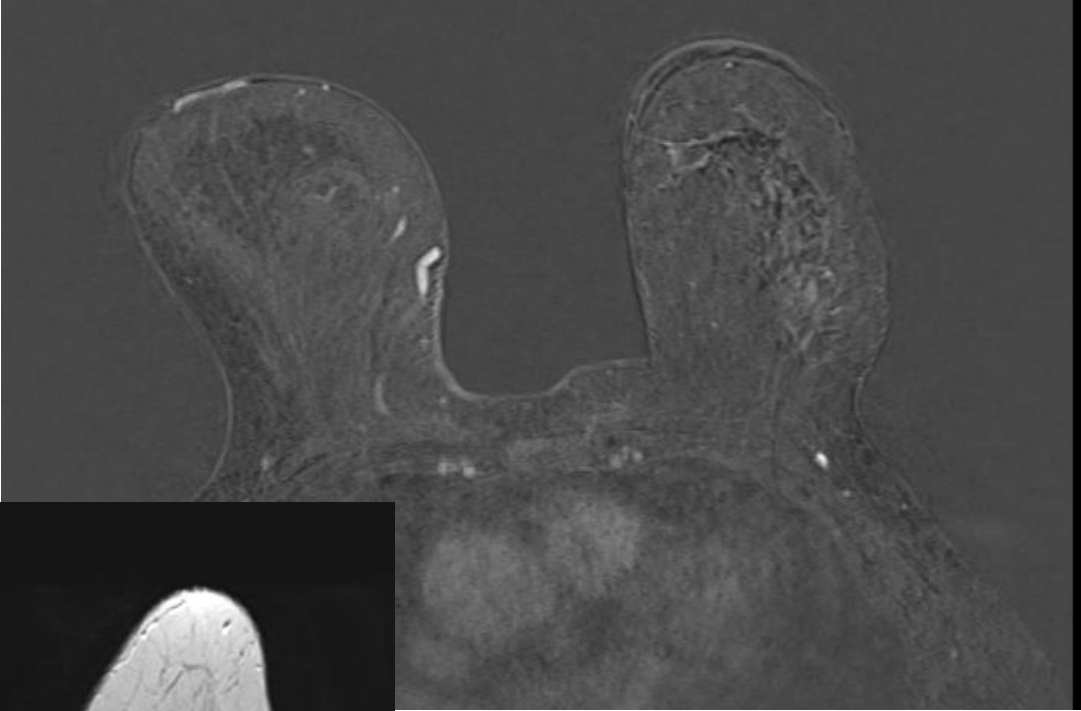
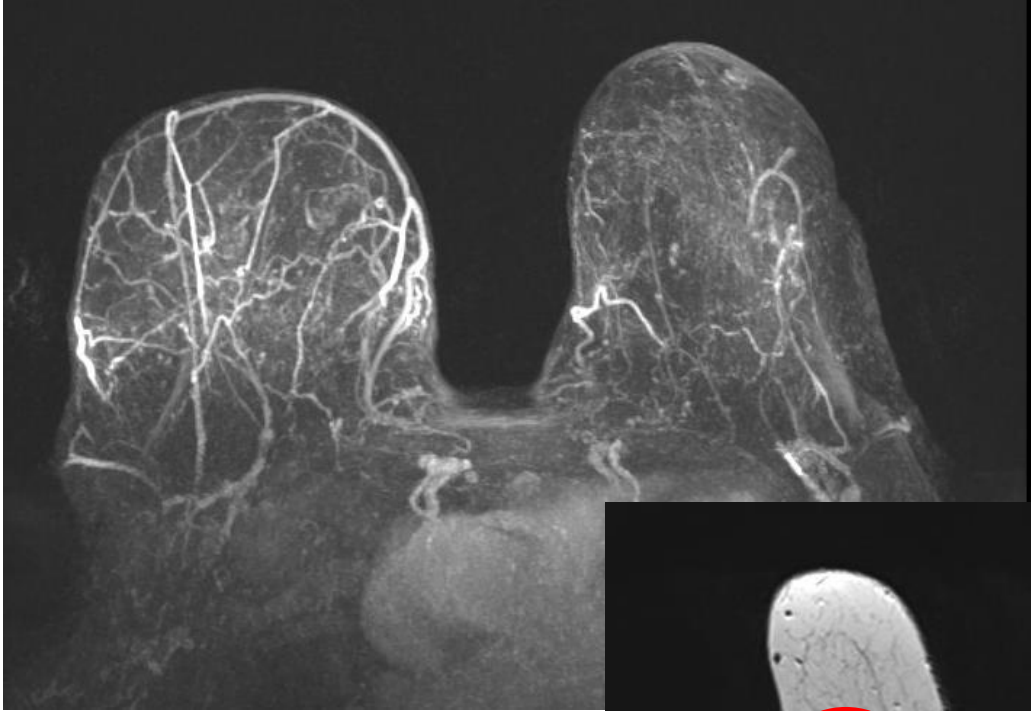


MRI 2021

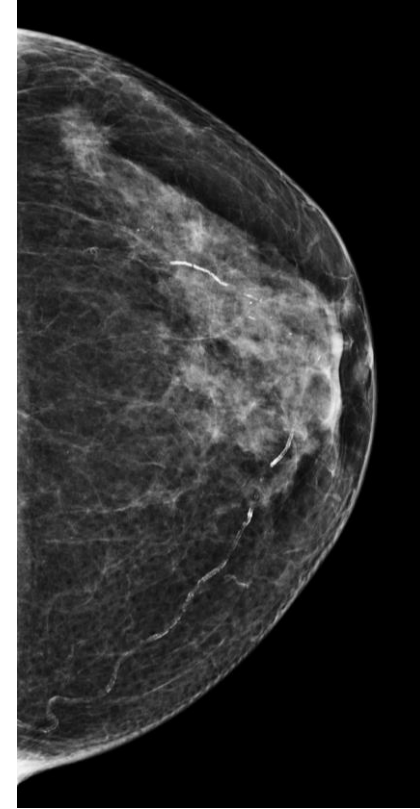
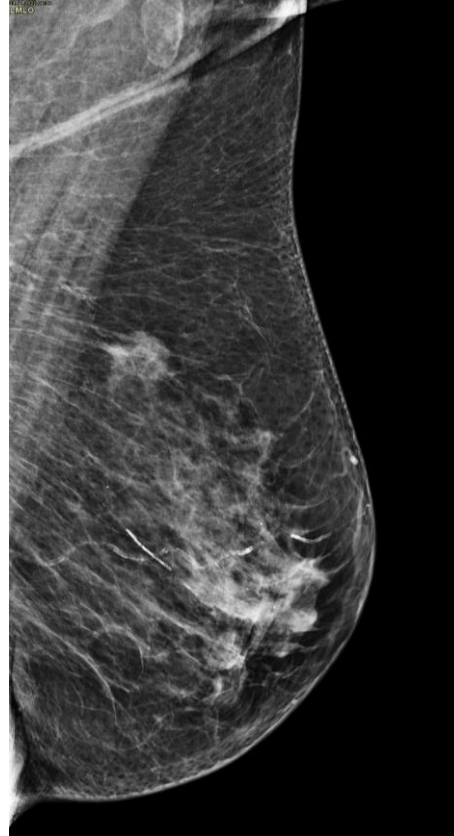
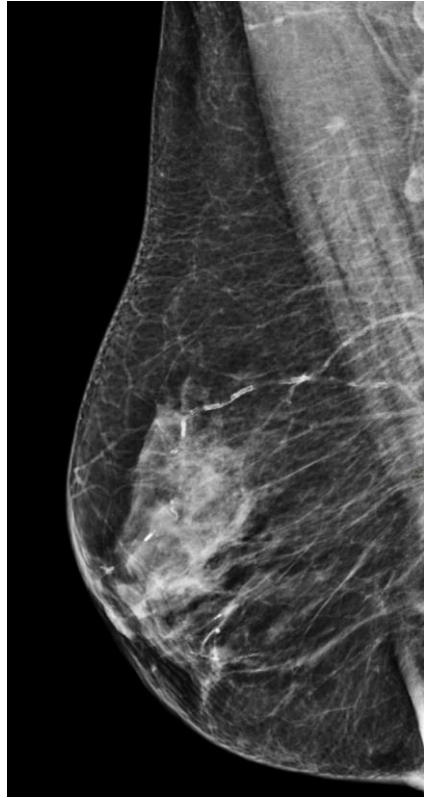
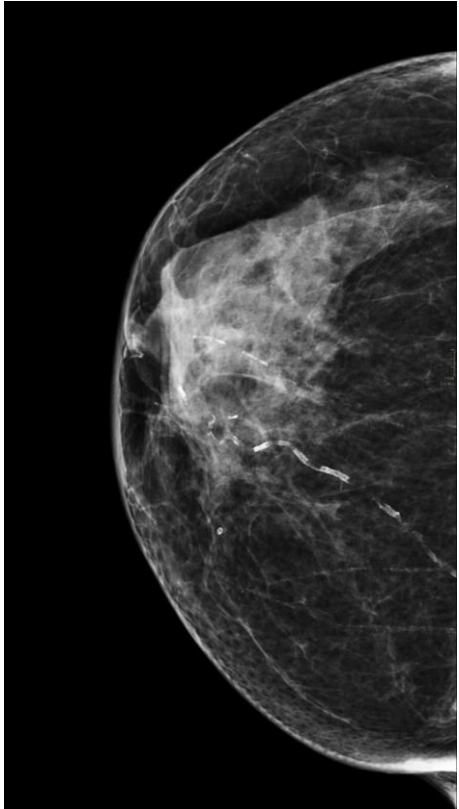
Breast MRI late - enhancing cancers

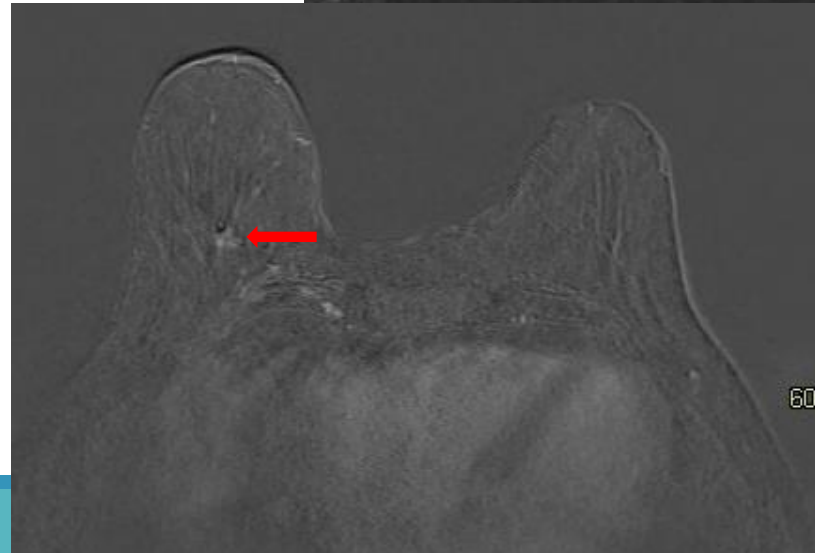
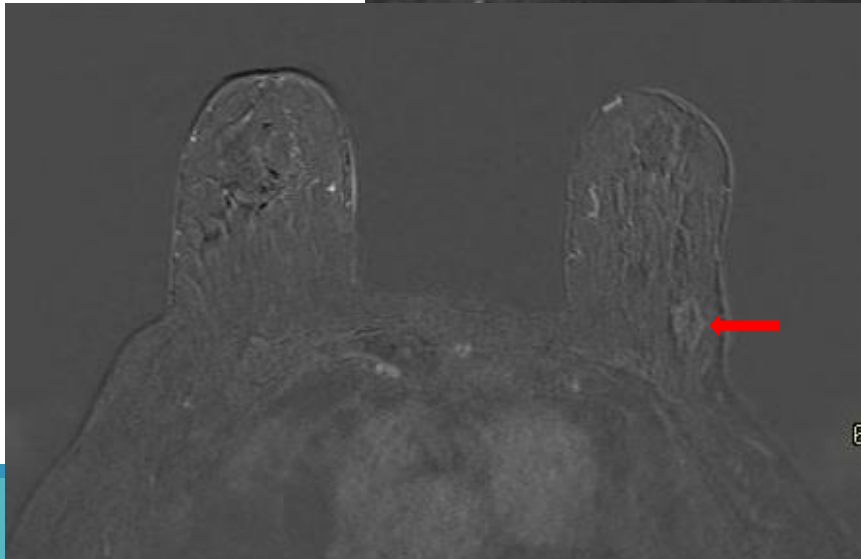
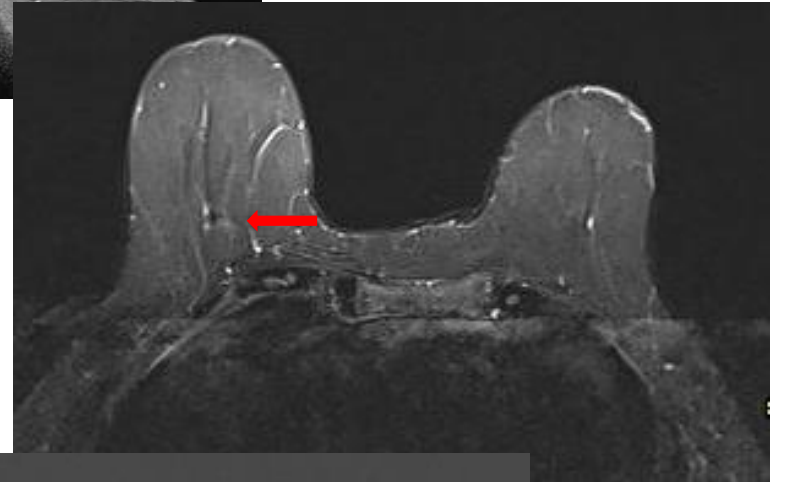
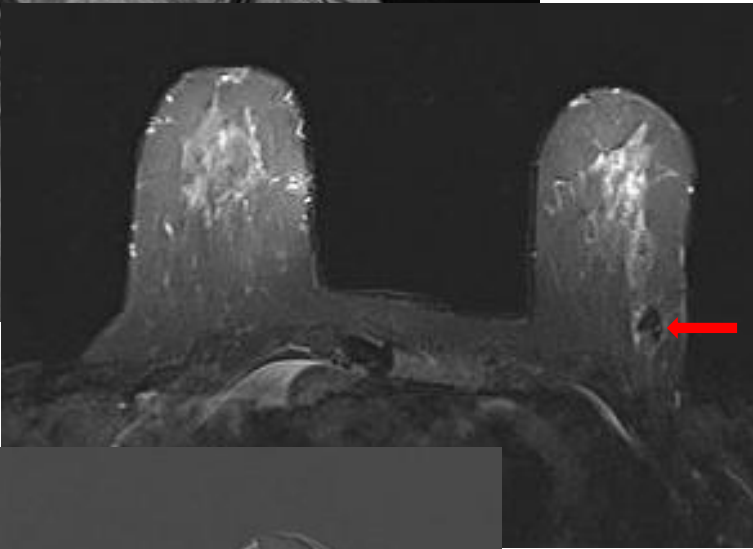
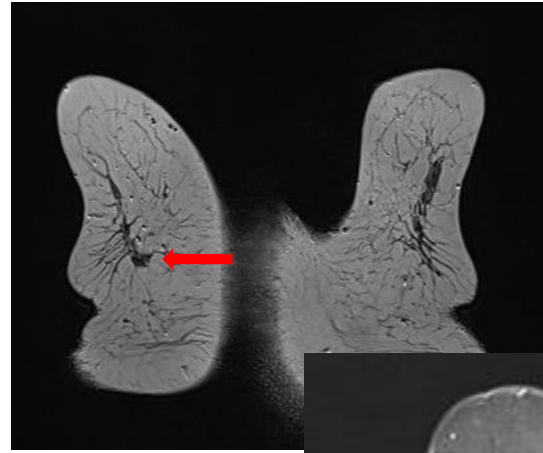
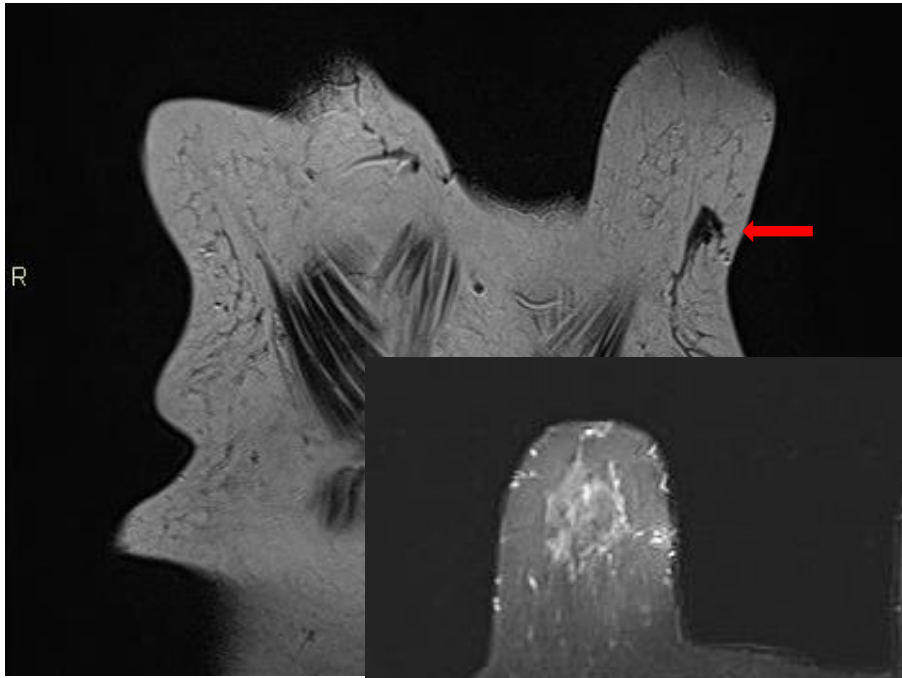


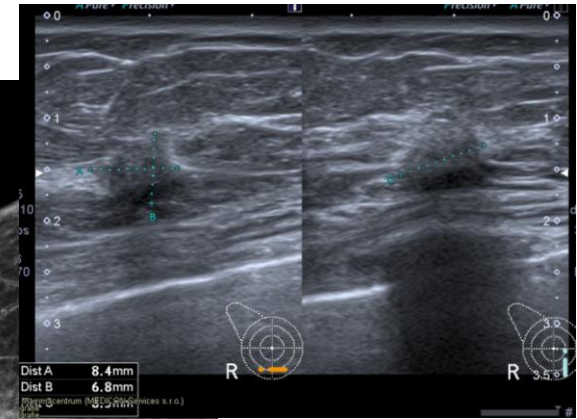
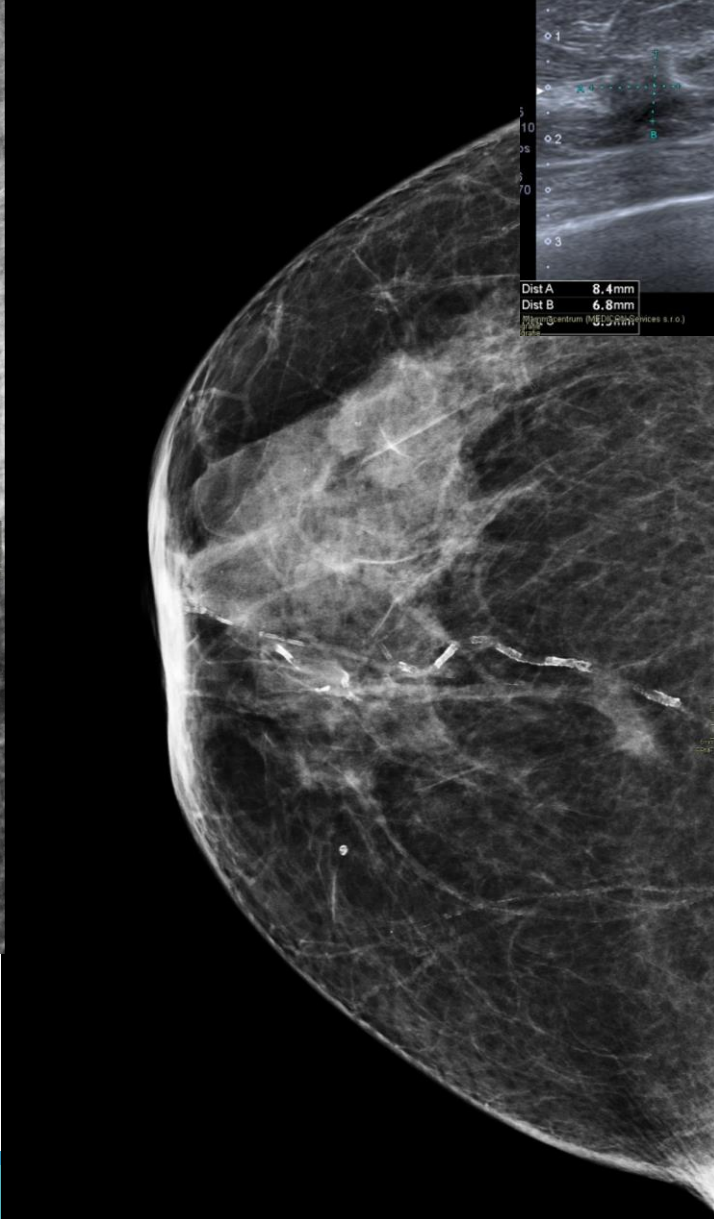
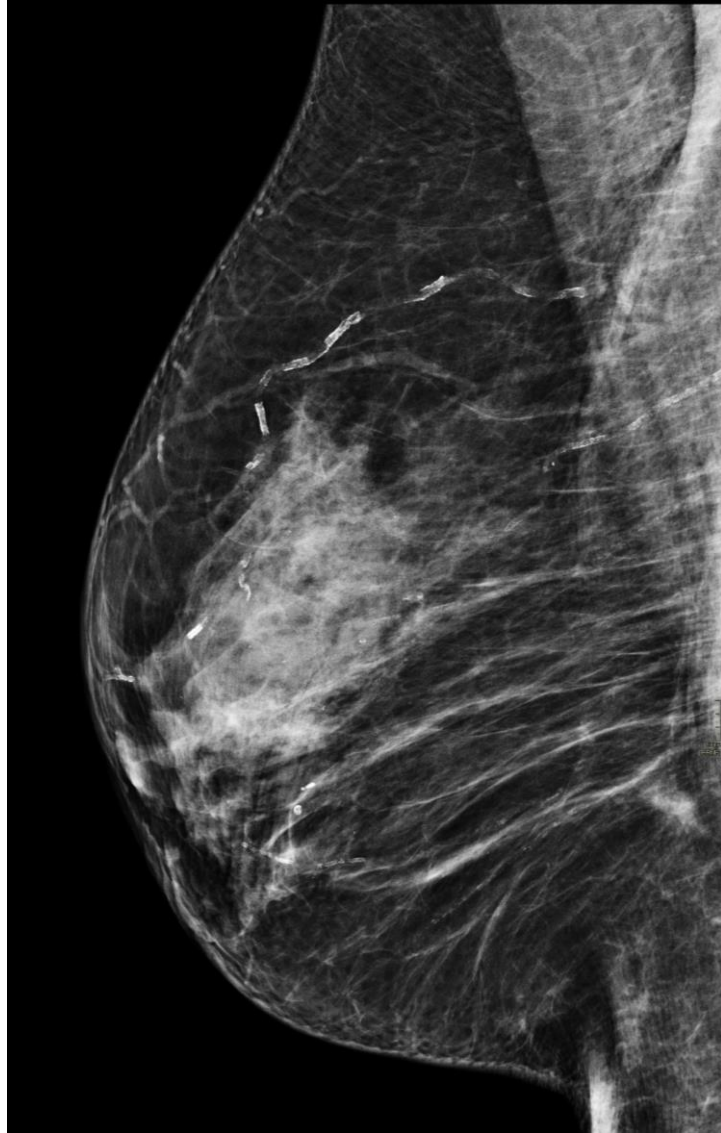
Breast MRI non-enhancing cancers



56 y.o.woman - preoperative evaluation







Locoregional staging - Axillary ultrasound

Different patterns of lymph node involvement – including diffuse infiltration

Lower sensitivity for ILC than IDC

Abnormal US 32% (ILC) vs. 50.1% (IDC)

Sensitivity for more than 3 positive LN 49% (ILC)
68% (IDC)

	No. of positive nodes					
	Invasive lobular cancer			Invasive ductal cancer		
	0	1-2	≥ 3	0	1-2	≥ 3
AUS result						
Positive	25	23	44	323	356	344
Negative	358	97	45	2381	538	161
Sensitivity for ≥ 3 positive nodes (%)	-	-	49	-	-	68.1

Axilla

Core-cut better than FNA

To biopsy even unsuspecting LN in younger, larger tumors...

Clinical value?

Ultrasound still excludes major burden

	Final pathology node-positive	
	Invasive lobular	Invasive ductal
FNAC		
Positive	11	90
Negative	9	29
Sensitivity (%)	55	75.6
Core biopsy		
Positive	43	478
Negative	7	78
Sensitivity (%)	86	86.0

Summary

- Lobular cancer is tricky
- In all imaging modalities
- MRI is necessary and helpful /mostly 😊/
- Change in size/surgical extent is to be expected
- There are ways how to minimize harms

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Thank you for your attention!