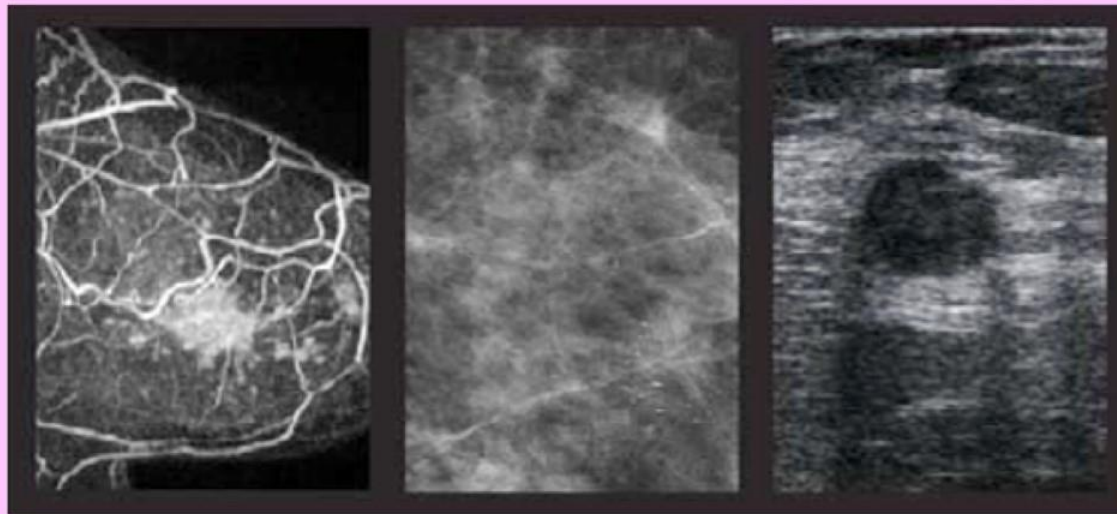


BREAST IMAGING



*Saifullah Khalid, MD, DrRAD
Consultant Radiologist, NCCP
Ministry of Public Health
Kabul, Afghanistan*

1398/2019



Imaging modalities:

Digital mammography

Digital tomosynthesis

Ultrasonography

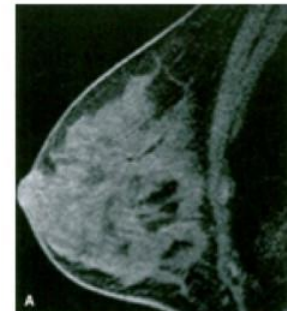
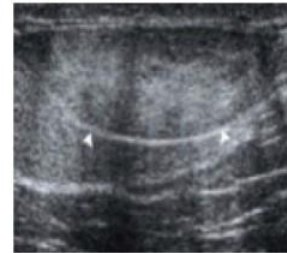
MRI

Dedicated breast CT

PET scan

Scinti-mammography

SPECT/CT imaging





Digital Mammography:

The mainstay of screening (at age 40 and above)

Screening:

- Asymptomatic women (General population risk).
- The goal is early detection.
- The ACR recommends annual screening MMG for women starting at age 40, as breast cancer incidence increases substantially around this age.

(intermediate risk patients, High risk patients)

Diagnostic:

- Symptomatic patient with pain or a lump.





Ultrasound:

A second look procedure

Handheld & automated whole breast US

Screening

- High risk patients
- Dense breasts (88% sensitivity compared to 56% of MMG alone)

Diagnostic

- As a second-look procedure to further evaluate MMG findings
- Evaluation of lump.





MRI of the breast:

1.5 T or >

Indications:

- High risk patients
- Lobular cancer (30% contralateral, multifocal, multicentric)
- Occult cancer
- To determine the exact dimensions of cancer.
- Post-op scar vs tumor recurrence
- Neo-adjuvant chemo
- Implants integrity
- Problematic MMG (rare)

Major drawback:

- High false positive rate causing unnecessary biopsies.





Imaging characteristics of breast masses:

Mammography

1- Density

(High, average, low)

2- Shape

(Round, oval, irregular)

3- Edges

(Circumscribed, obscured, micro-lobulated, indistinct, speculated)

4- Calcification

Benign (Dystrophic, popcorn, rim, round, milk of calcium)

Suspicious (Amorphous, fine pleomorphic, fine linear, fine-linear branching)



Ultrasonography

1- Shape

Well circumscribed, irregular or speculated)

1- Orientation

(Deep or wide)

2- Echopattern

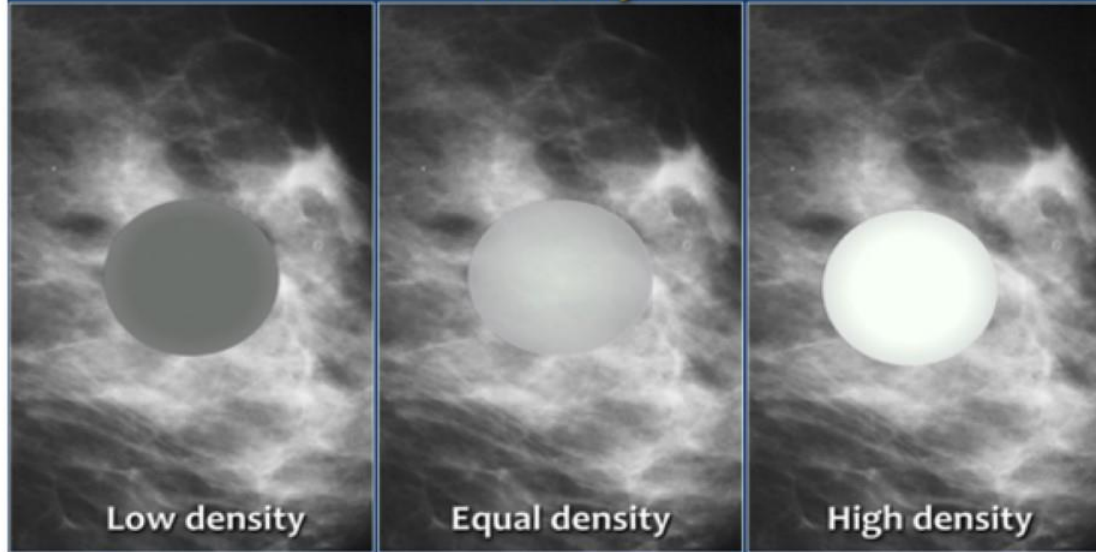
(Hyper or hypoechoic)

3- Posterior features

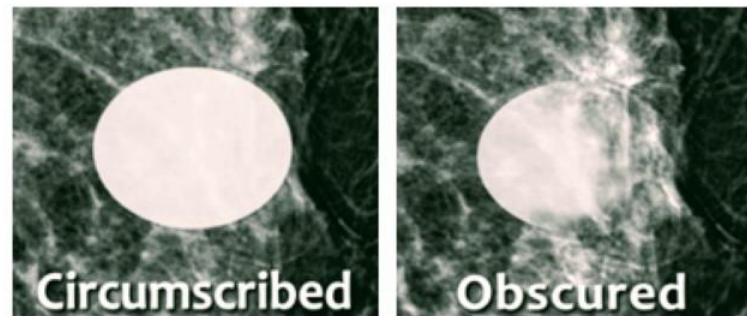
(Enhancement or shadowing)



Density

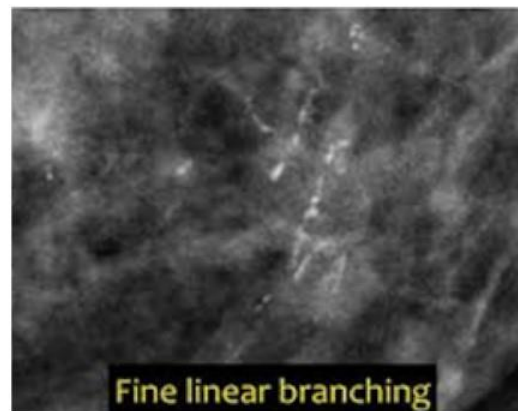
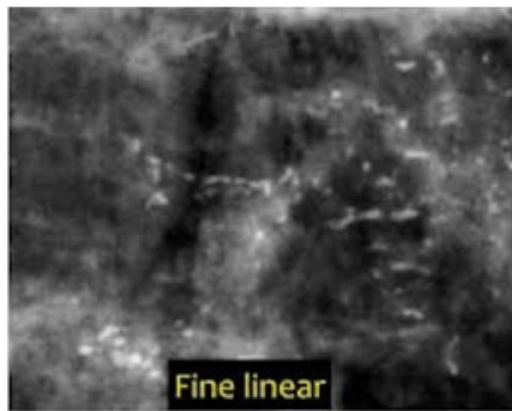
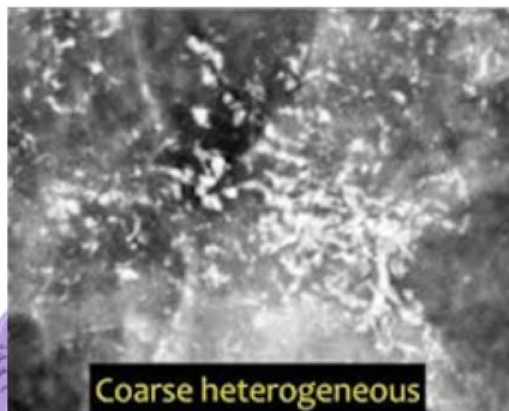
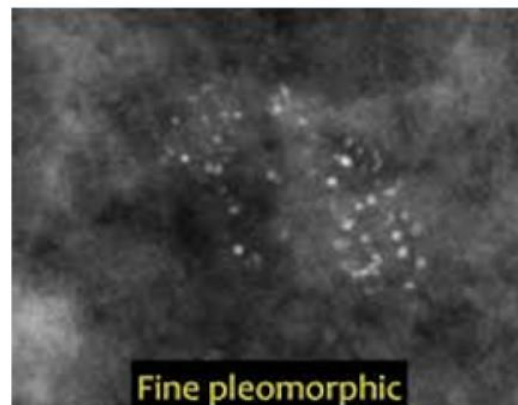
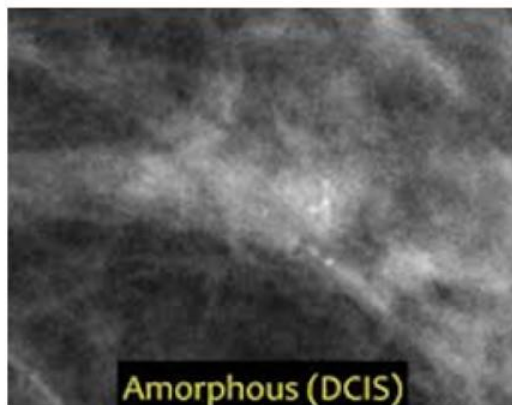
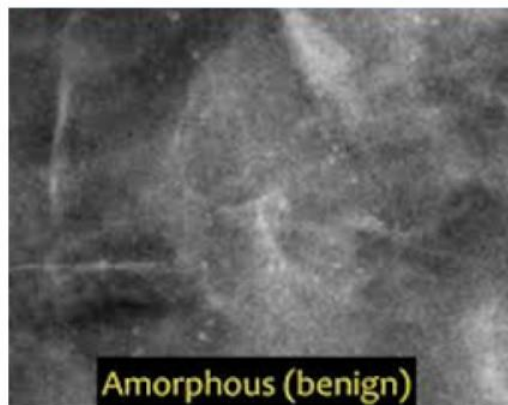


Edges:

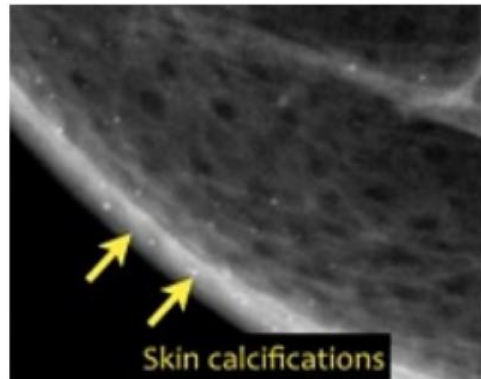




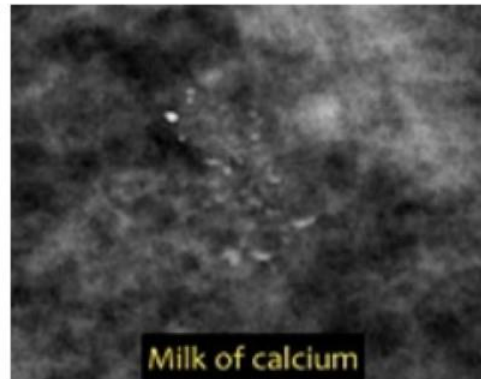
Suspicious calcifications:



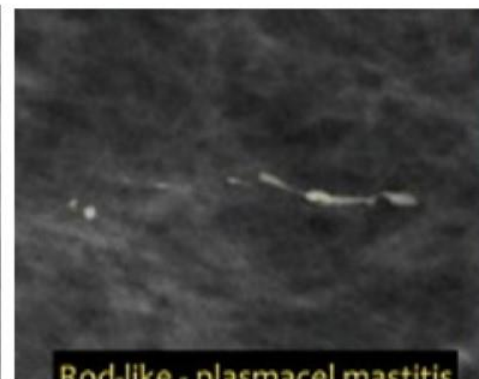
Benign calcifications:



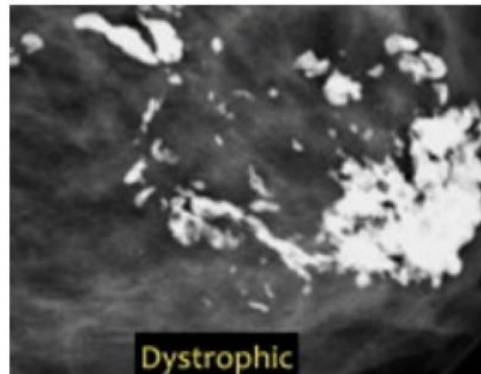
Skin calcifications



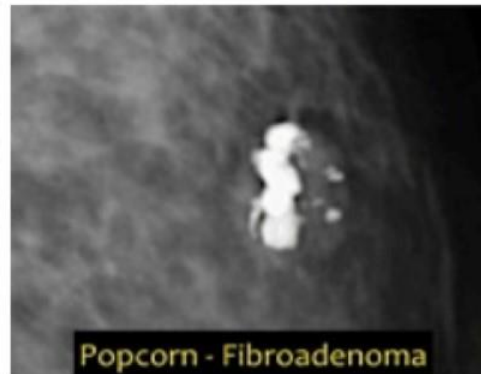
Milk of calcium



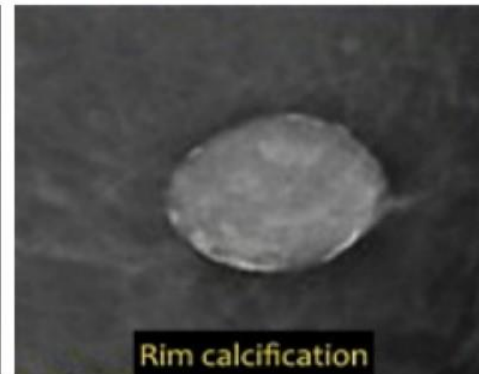
Rod-like - plasma cell mastitis



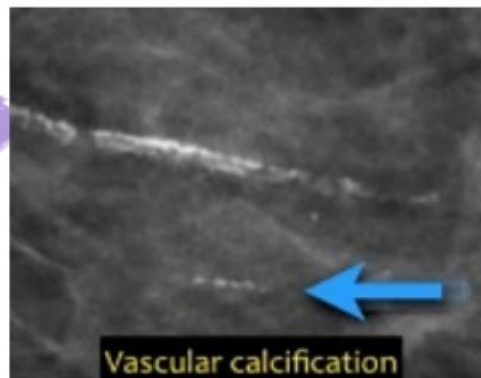
Dystrophic



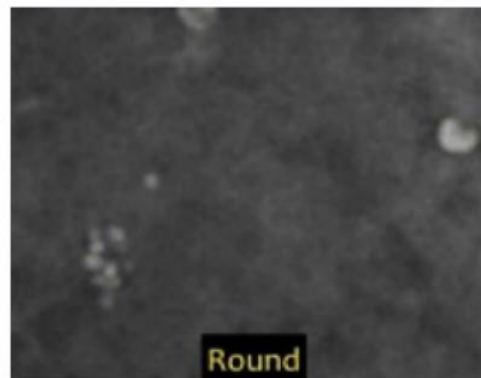
Popcorn - Fibroadenoma



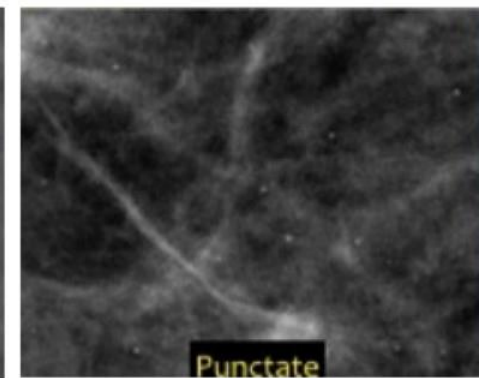
Rim calcification



Vascular calcification



Round



Punctate

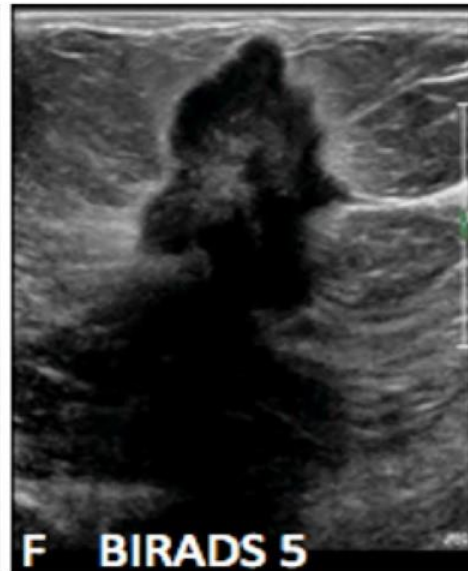
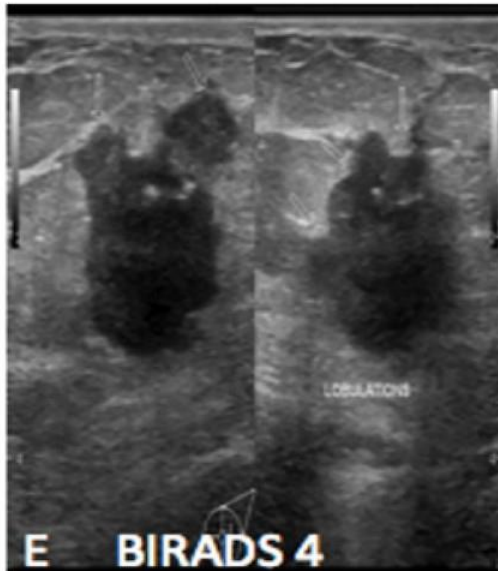
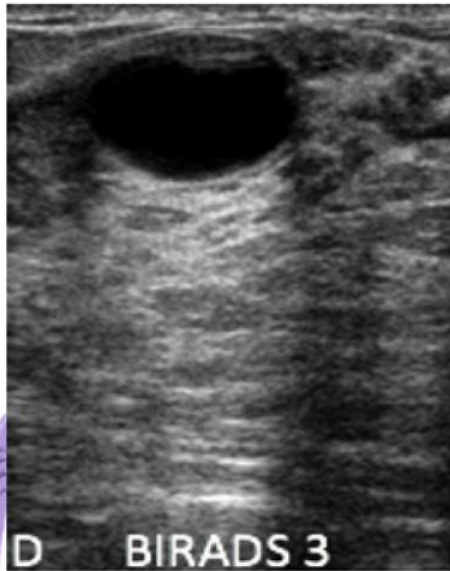
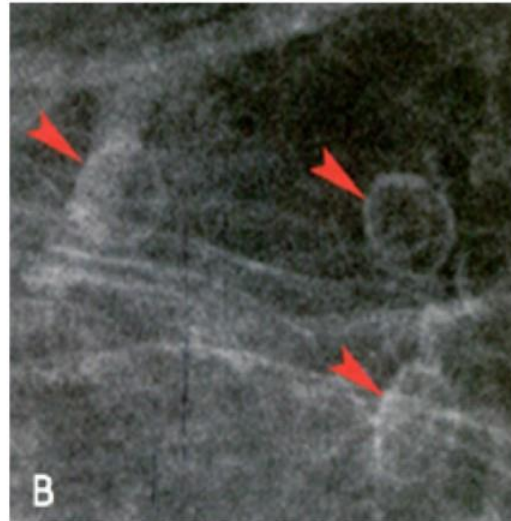
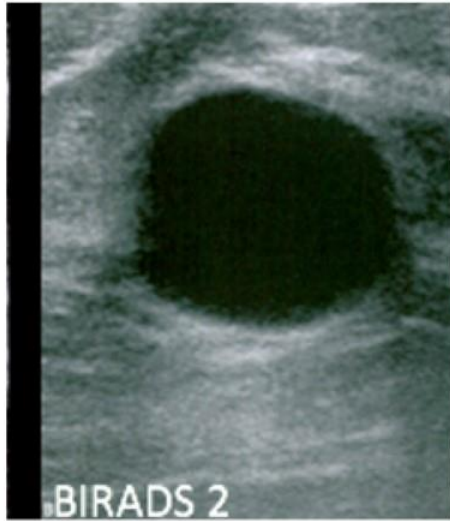


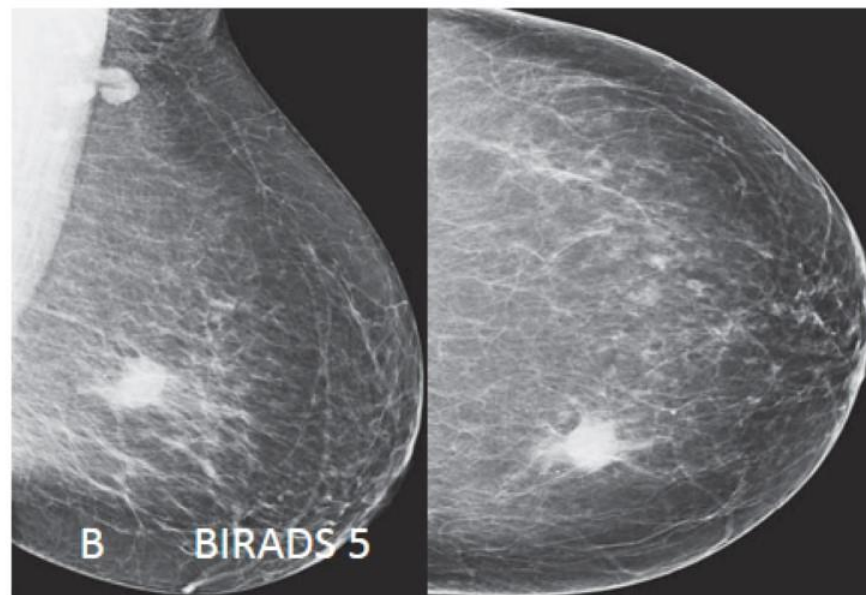
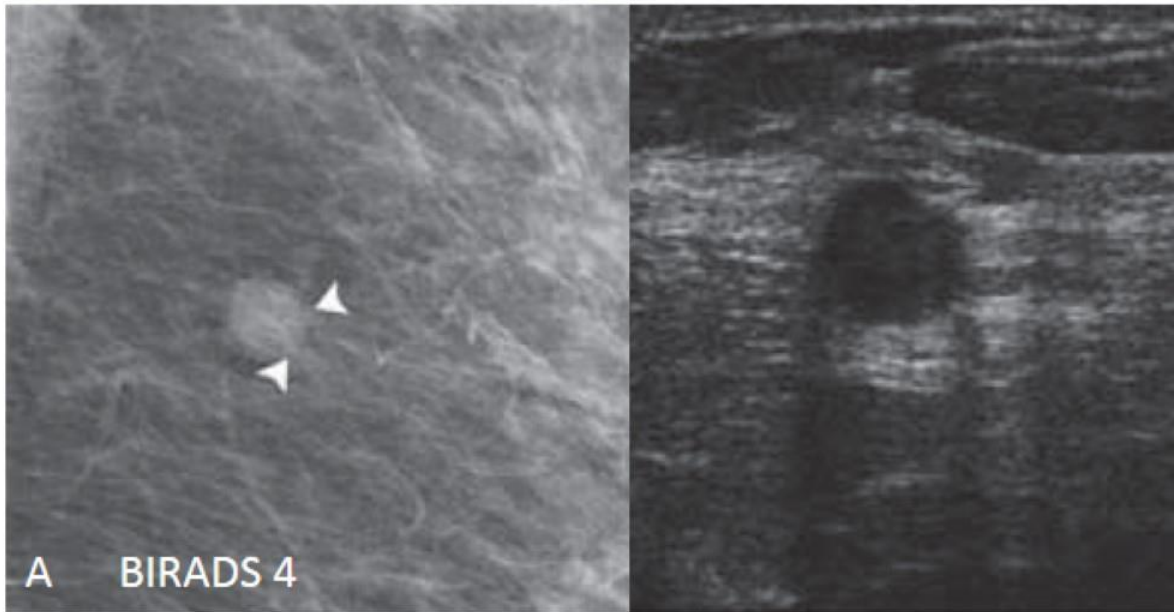
BIRADS classification of breast lesions:

Final Assessment Categories

Category		Management	Likelihood of cancer
0	Need additional imaging or prior examinations	Recall for additional imaging and/or await prior examinations	n/a
1	Negative	Routine screening	Essentially 0%
2	Benign	Routine screening	Essentially 0%
3	Probably Benign	Short interval-follow-up (6 month) or continued	>0 % but \leq 2%
4	Suspicious	Tissue diagnosis	4a. low suspicion for malignancy (>2% to \leq 10%) 4b. moderate suspicion for malignancy (>10% to \leq 50%) 4c. high suspicion for malignancy (>50% to <95%)
5	Highly suggestive of malignancy	Tissue diagnosis	\geq 95%
6	Known biopsy-proven	Surgical excision when clinical appropriate	n/a

Use after incomplete excision



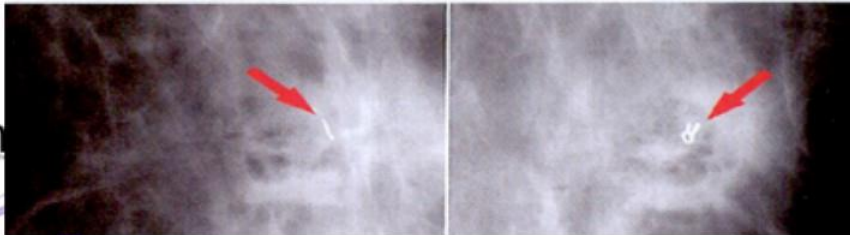
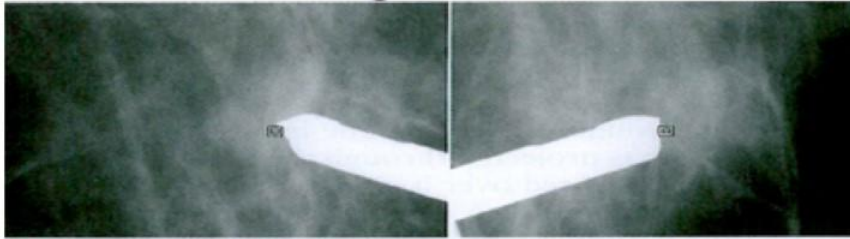




Ultrasound and MMG guided biopsies:

Core biopsy is **SUPERIOR** to fine needle aspiration biopsy !







Goal of screening mammography is
early detection !

 Mammography Saves Lives®
... one of them may be yours





THANK YOU

