

# BREAST MRI IN THE MANAGEMENT OF BREAST CARCINOMA



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# Questions asked ?

- Multiple synchronous (multifocal and multicentric) breast cancer?
- Synchronous controlateral breast cancer ?
- Sizing and locating the cancer ?

# Presurgical breast MRI

## Synchronous contralateral breast cancer

- Breast MRI is useful in the detection of synchronous contralateral breast cancer in patient with newly diagnosed breast cancer
- Between 3 – 5 % occult contralateral breast cancer detected

(Lee SG, Orel SG. MR imaging screening of the contralateral breast with newly diagnosed breast cancer. *Radiology*, 2003)

# Presurgical breast MRI

## Contralateral synchronous cancer

### Case 1

- 60 years old women with newly diagnosed right retroareolar breast cancer
- Historic family : aunt mother side with breast cancer

# Presurgical MRI

Synchronous contralateral cancer ?



# U.S. findings and U.S. guided biopsy



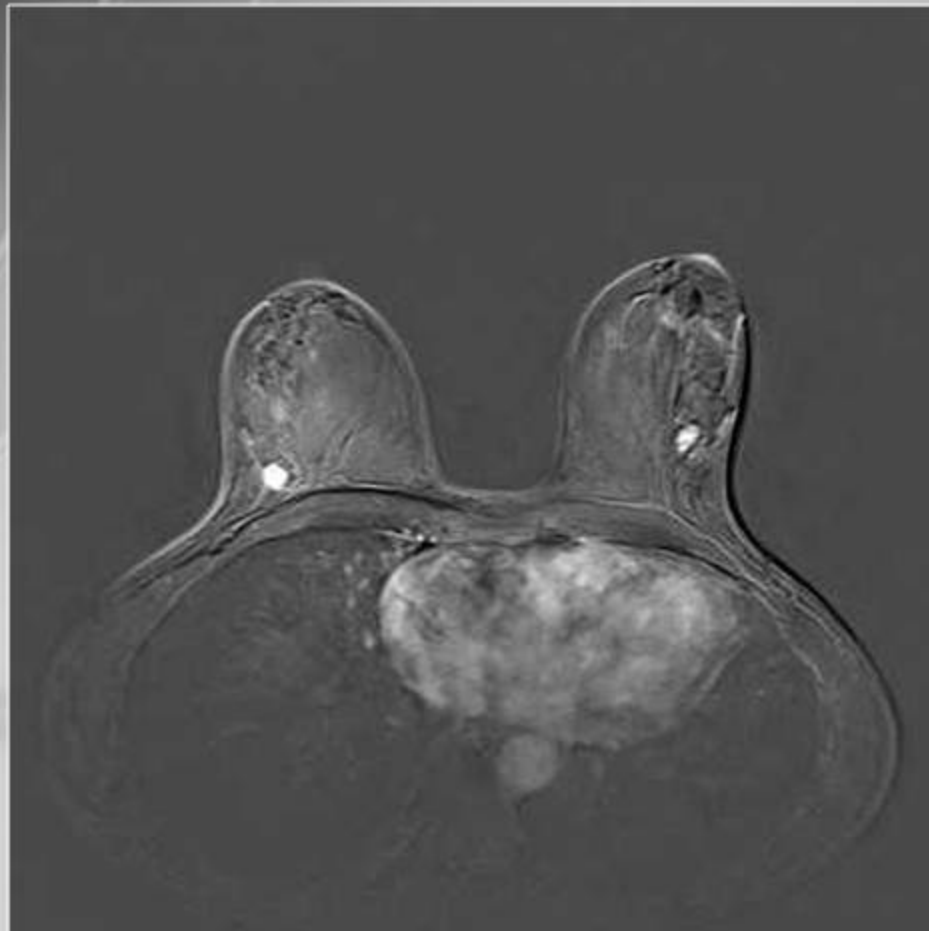
# Presurgical breast MRI

## Synchronous contralateral cancer ?

### Case 2

- 45 years old patient with newly diagnosed right breast cancer
- No historic family

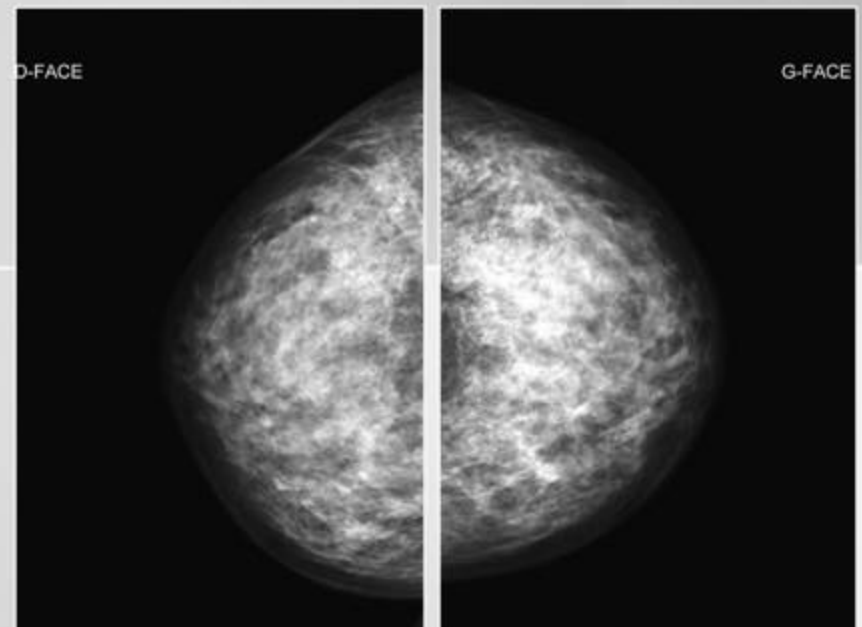
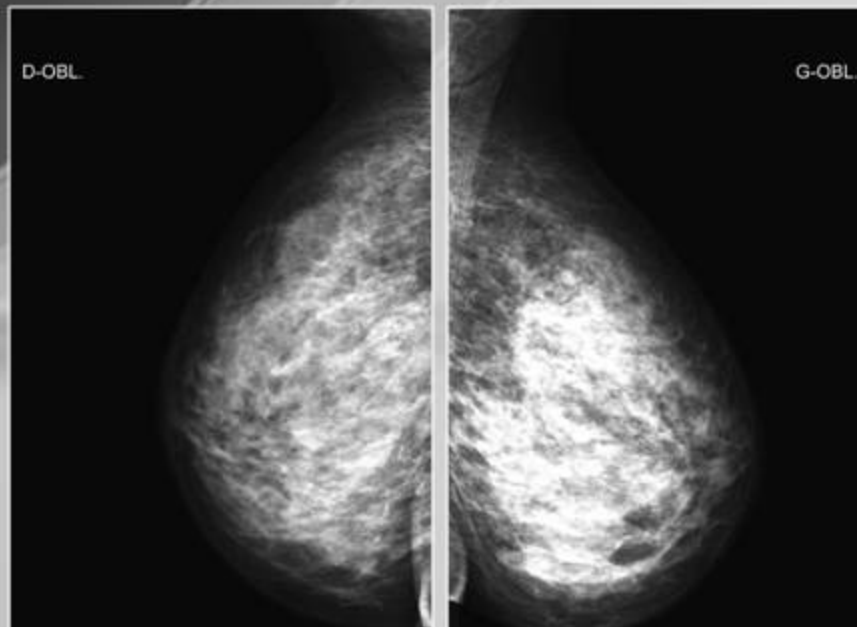
# U.S. findings and U.S. guided biopsy



# Contralateral ?

## Case 3

- 45 years old patient with newly diagnosed left breast cancer  
DENSE BREAST +++
- Presurgical MRI

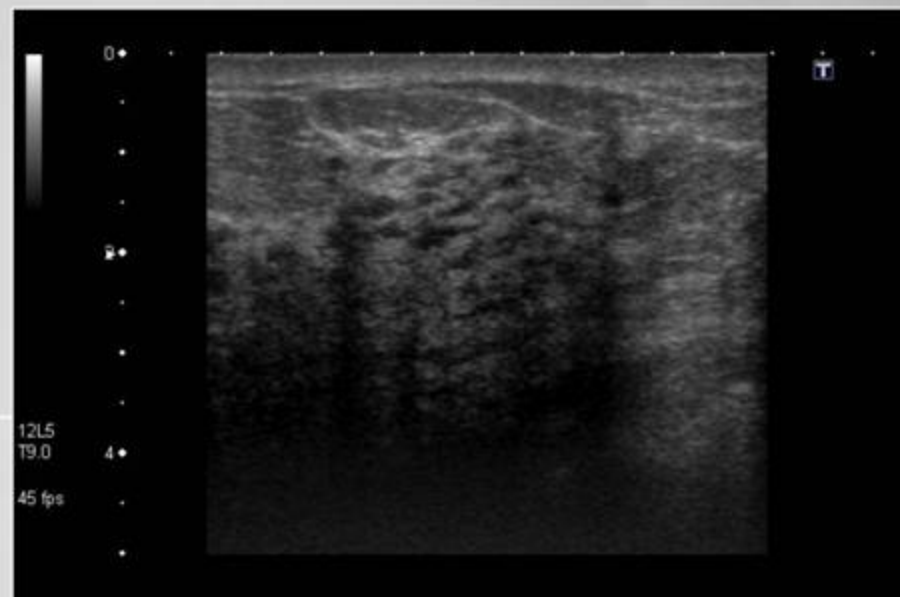
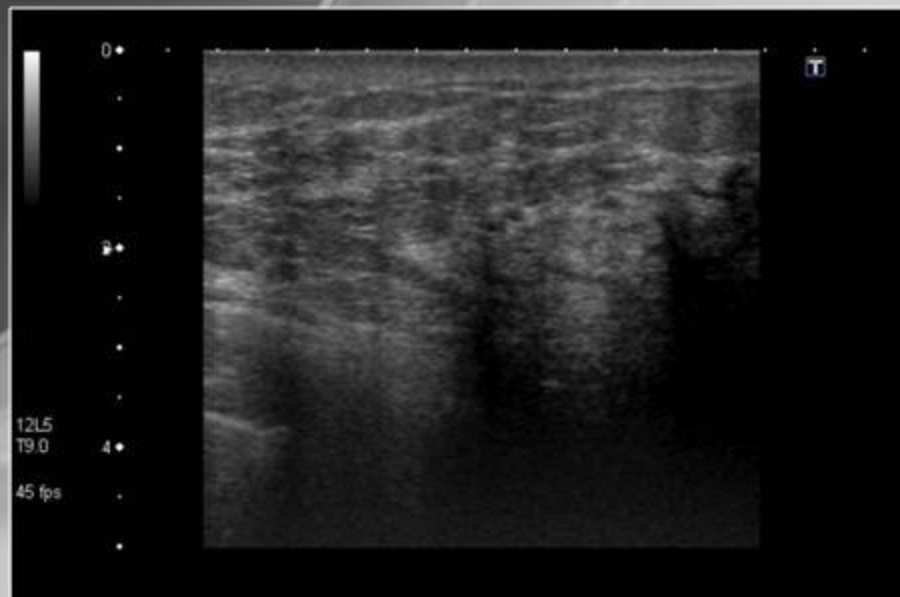


**Contralateral?**



# U.S.

Even when you know the location of the enhancement  
very difficult to locate.



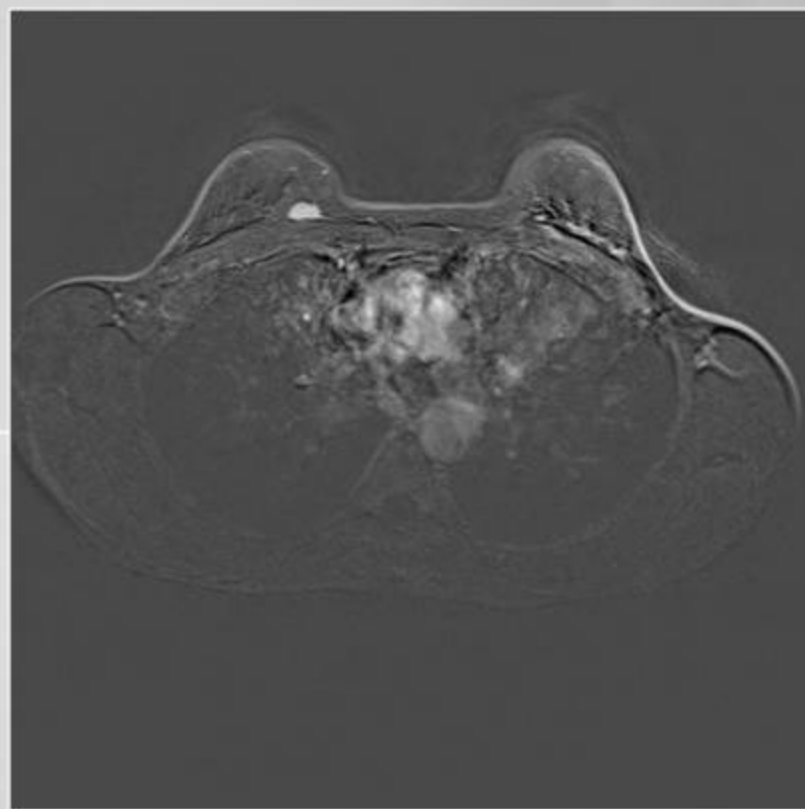
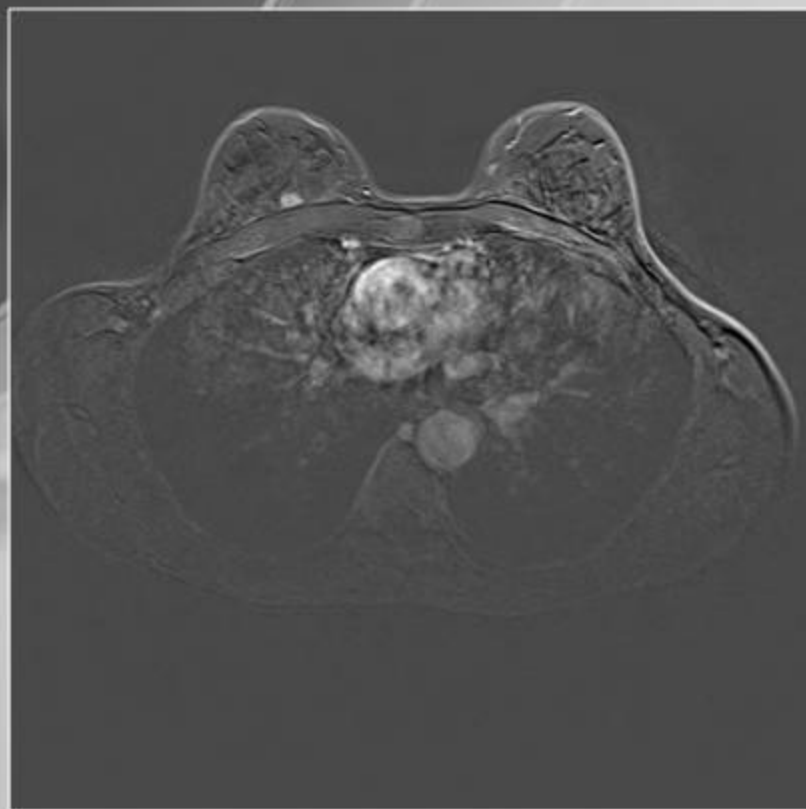
# Multifocal breast cancer ?

- The aim is to identify patient theoretically eligible for conservative surgery instead of the radical mastectomy  
Change of management ?
- 2/3 of the second cancer is located in the same quadrant
- Additional value of breast MRI is particularly useful in patient with dense breast and high risk factor for local recurrence

# Multifocality ?

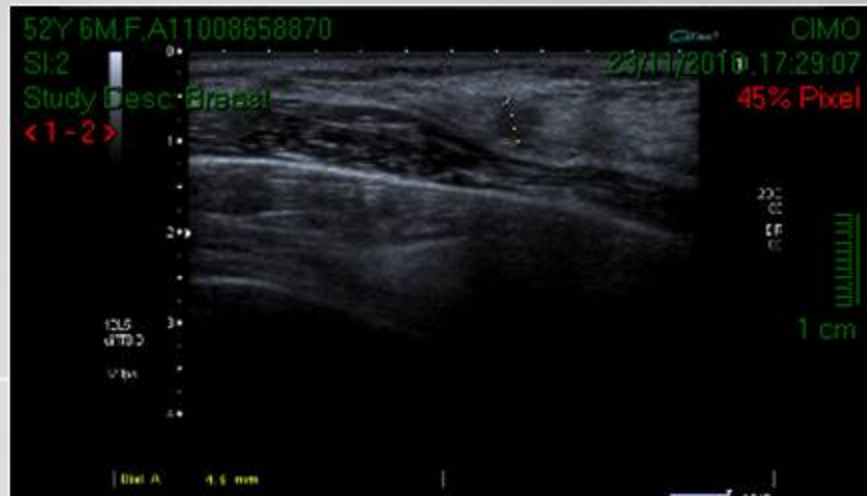
## Case 1

- 52 years old woman, no historic family
- Presurgical MRI for right breast cancer



# Multifocality ?

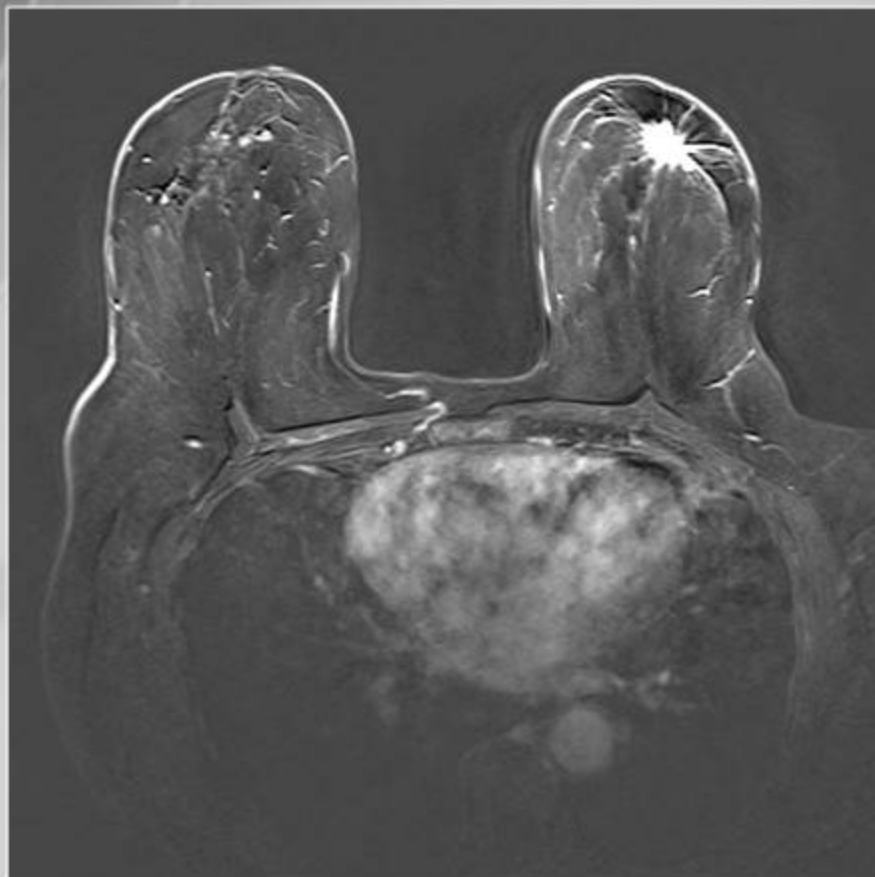
U.S.



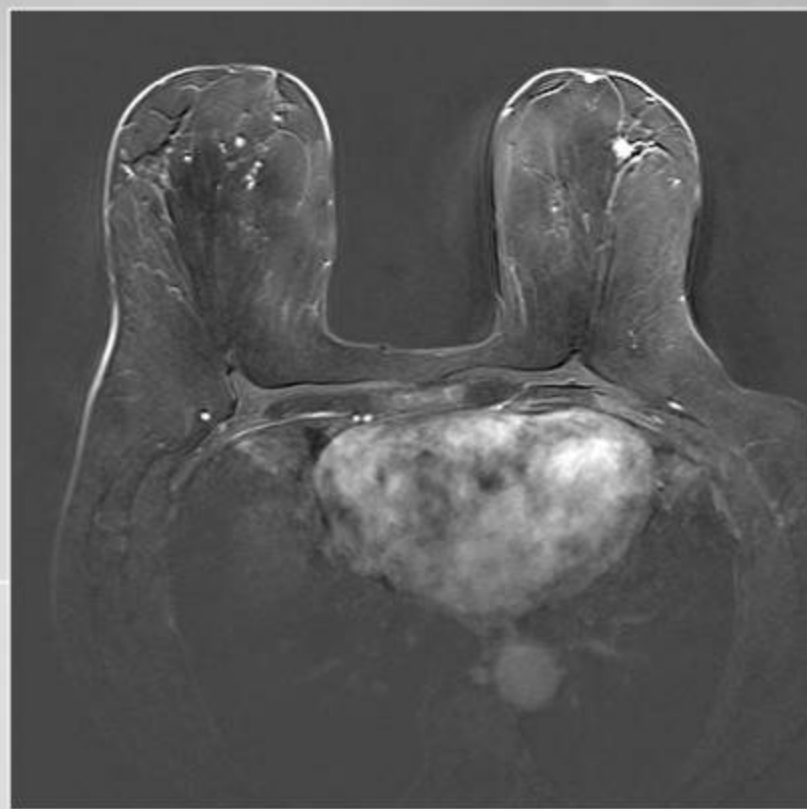
# Multifocality ?

## Case 2

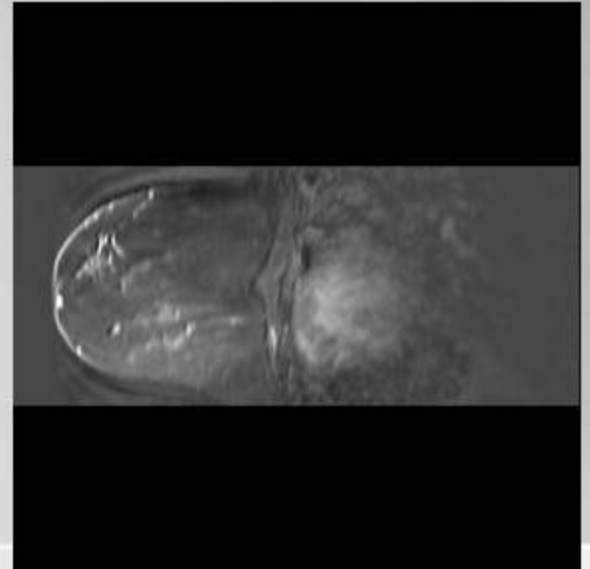
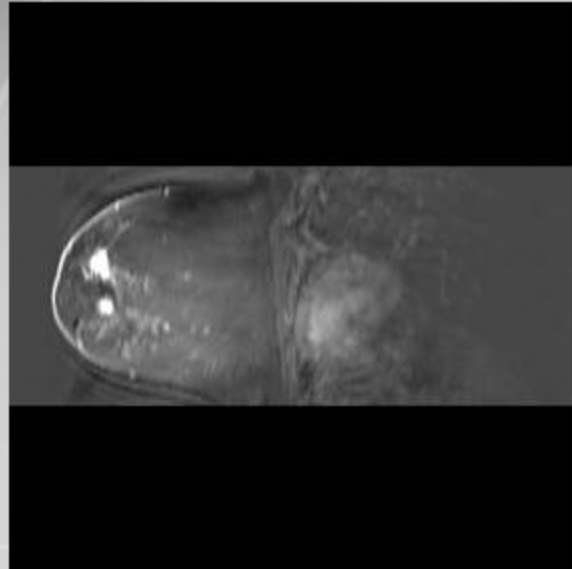
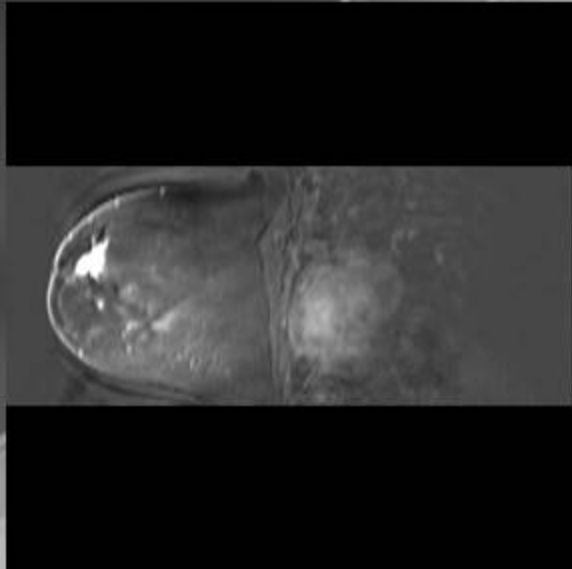
- 68 years old woman with left lobular left cancer  
22 mm mammo / U.S.



**2 others enhancement on the left breast**



# Multifocality ?



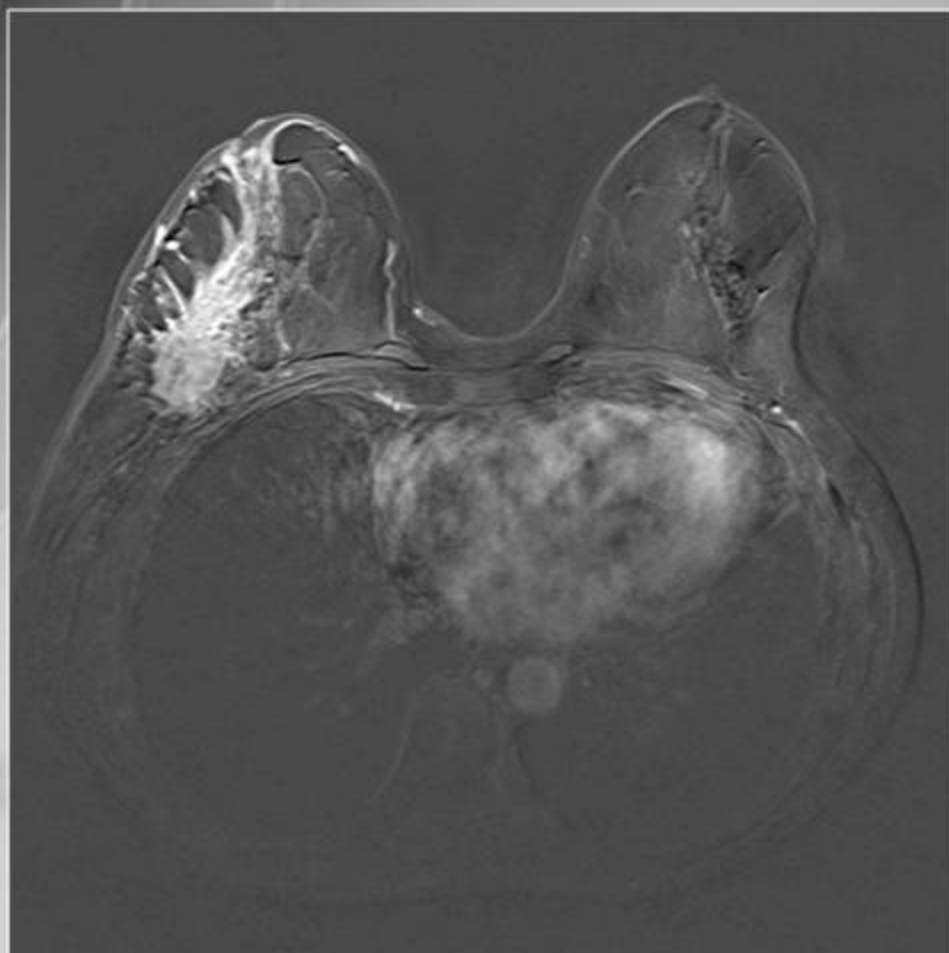
# Multifocality ?



# Sizing and locating ?

- MRI appears to assess the size of breast cancer better than mammography by limiting the number of under and over estimation compared to histo pathology findings.
- MRI appears to locate the breast cancer better than mammography specially evaluate the distance to the nipple or the chest wall.

# Sizing and locating ?



# OUR EXPERIENCE

We analysed 100 files of women who were theoretically eligible for conservative surgery after standard breast examination (mammography and U.S.) and who had a presurgery breast MRI between june 2006 to june 2007.

In 17 cases MRI determined a change of management:

Pathologic findings revealed :

- 7 multifocality,
- 3 bilaterality,
- and in 7 cases cancer was bigger than expected with standard breast examination and needed a larger surgery.

# CONCLUSION

- MR imaging is the most sensitive technique for detecting breast cancer (93 % for invasive cancer and 60 % for ductal carcinoma).
- The additional value of MRI is validated in patients candidates for a breast conserving surgery.

(Breast 2007; Role of presurgical breast MRI in the management of invasive breast carcinoma, the additional value of MRI is validated in patient candidates for breast conserving surgery)

- Presurgical MRI for breast cancer management change in 18 to 23 %.

(Bedrosian I, Mick R, Orel SG Changes in the surgical management of patients with breast carcinoma based on preoperative MRI. Cancer 2003)

# CONCLUSION

**BUT**

**A DECISION OF MASTECTOMY SHOULD NOT BE MADE SOLELY ON THE BASIS OF MRI (false positive more than 20 % ?) AND REQUIRE ADDITIONAL TISSUE SAMPLING OF THE AREAS OF CONCERN IDENTIFIED BY BREAST MRI  
(biopsy guided by U.S. or MRI)**

**Radiologist must work in concert with the multidisciplinary treatment team.**

**M.R.I.**

**-**

**+**

**US**

**+**

**-**

**Small size (< 5 mm)  
Benign aspect**

**Malignant aspect**

**BIOPSY**

**SURVEILLANCE  
4-6 MONTHS**

**BIOPSY / M.R.I.**