

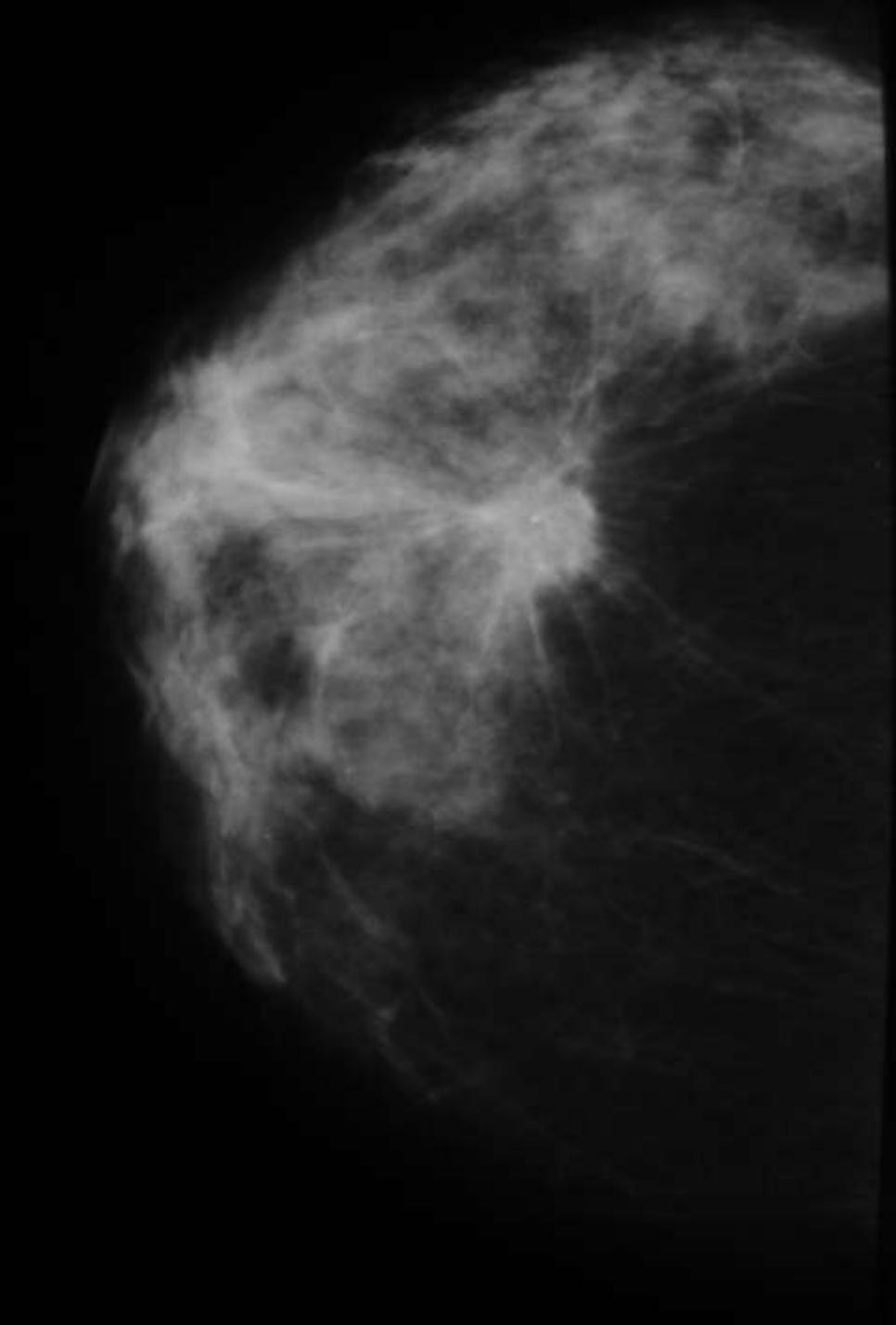
# Sénologie interventionnelle

Cédric de Bazelaire, Olivier Mathieu  
Marcela Albiter, Cécile Farges, Coralie Sicard  
Eric de Kerviler, Jacques Frija

*Hôpital Saint-Louis, paris*



# Biopsie



# Objectifs des biopsies

- ACR 3 < 2% de malignité
  - Rassurer les patientes
- ACR 4 ≈ 20 - 40% de malignité
  - Réduire les faux positifs
- ACR 5 > 95% de malignité
  - Optimiser la chirurgie
    - Réduire le nombre de temps opératoires
    - Multifocale ⇒ Mastectomie
    - Infiltrant ⇒ ganglion sentinelle
  - Optimiser les chimiothérapies
    - Récepteurs hormonaux
    - Récepteurs HER2
    - Cytokératine basale
    - Protéine P53



# Procédure générale

## ■ Patientes

- Hémostase
- Rassurées sur la douleur
- Installées confortablement
  - Immobilité requise pendant 15 à 45 minutes



# Options des techniques de biopsies

| Outils de prélèvements  | Méthode de guidage   |
|---|--|
| <ul style="list-style-type: none"><li>■ Microbiopsie avec pistolet<ul style="list-style-type: none"><li>- 14 ou 16G</li><li>- Automatique</li></ul></li></ul>                                 | <ul style="list-style-type: none"><li>■ Échographie<ul style="list-style-type: none"><li>- Masses</li></ul></li><li>■ Stéréotaxie<ul style="list-style-type: none"><li>- Microcalcifications</li><li>- Distorsions</li></ul></li></ul> |
| <ul style="list-style-type: none"><li>■ Macrobiopsie avec aspiration<ul style="list-style-type: none"><li>- 8 et 11 G</li><li>- Mammotome<sup>®</sup>, Vacora<sup>®</sup></li></ul></li></ul> | <ul style="list-style-type: none"><li>■ IRM<ul style="list-style-type: none"><li>- Images ACR 4 ou 5 non visibles en imagerie conventionnelle</li></ul></li></ul>  |



# Microbiopsie

Sous guidage échographique

18 G : 1,2 mm



16 G : 1,7 mm

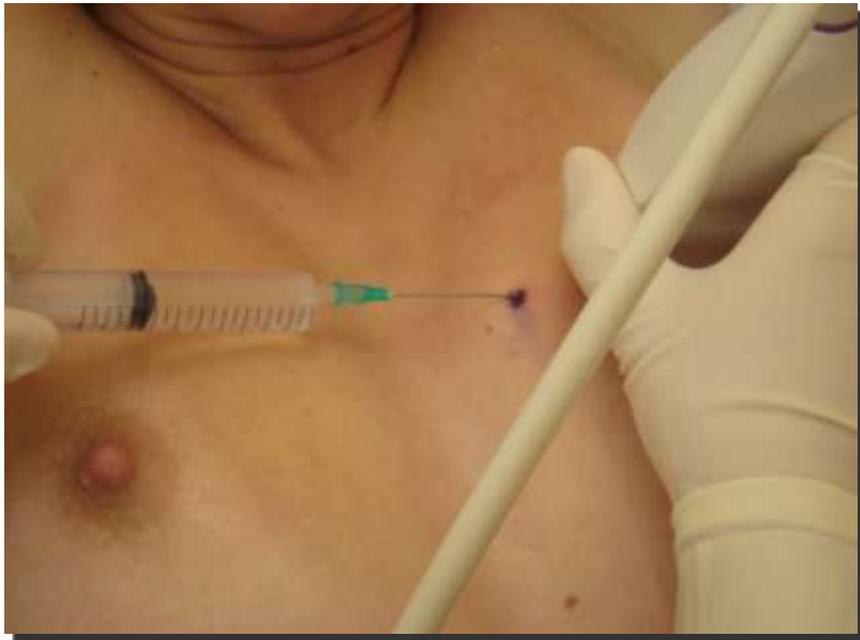


14 G : 2,1 mm



# Microbiopsie échoguidée

- Anesthésie locale



# Microbiopsie échoguidée

- Mise en place de l'introducteur



# Microbiopsie échoguidée

- Prélèvements



# Limites des microbiopsies sous échographie

- Prothèses mammaires
- Lésions profondes
- Mauvaises indications
  - Les microcalcifications
  - Désorganisations architecturales



# Macrobiopsie

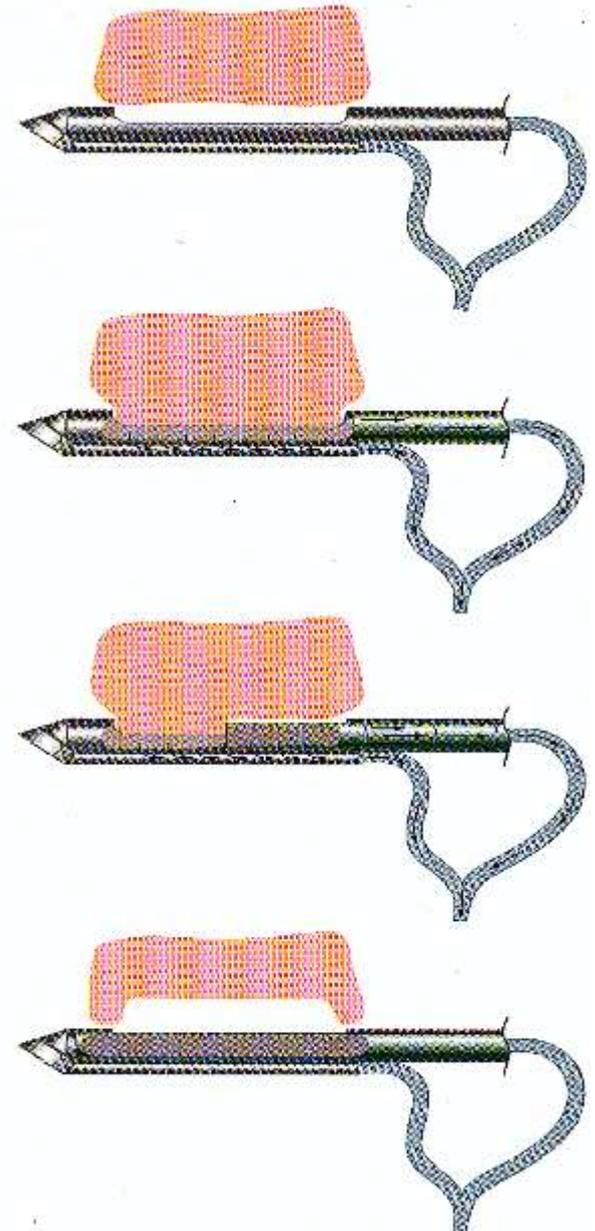
Sous guidage Stéréotaxique

# Macrobiopsie sous stéréotaxie

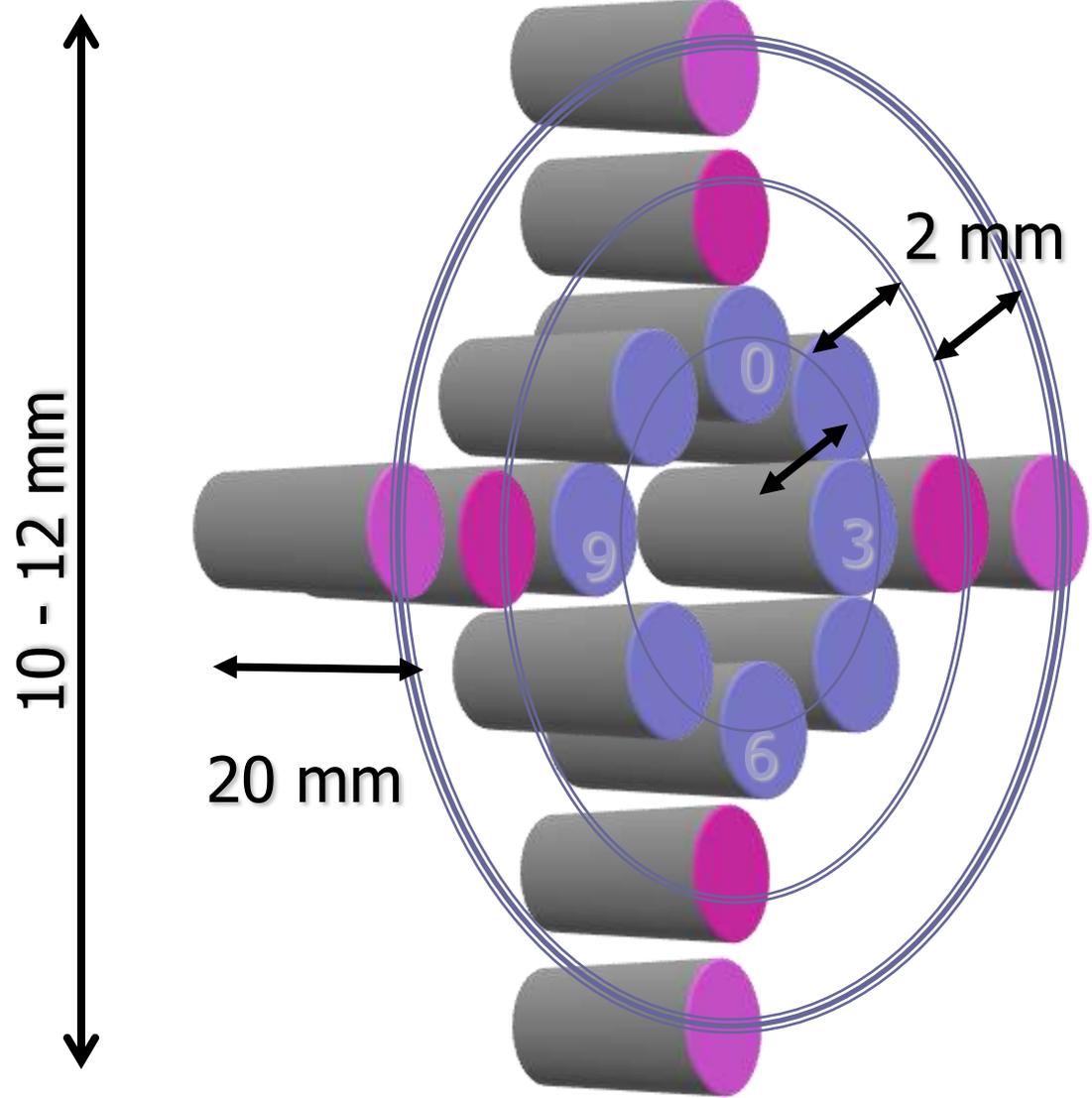




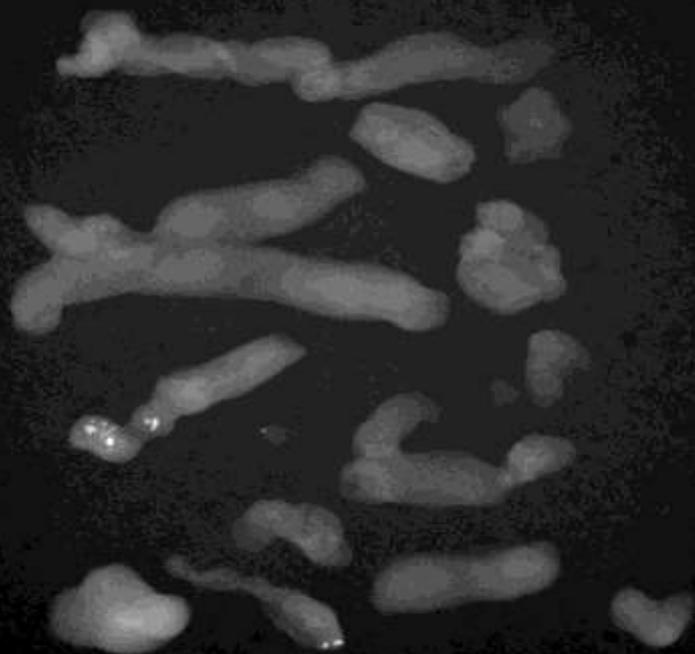
# Aspiration



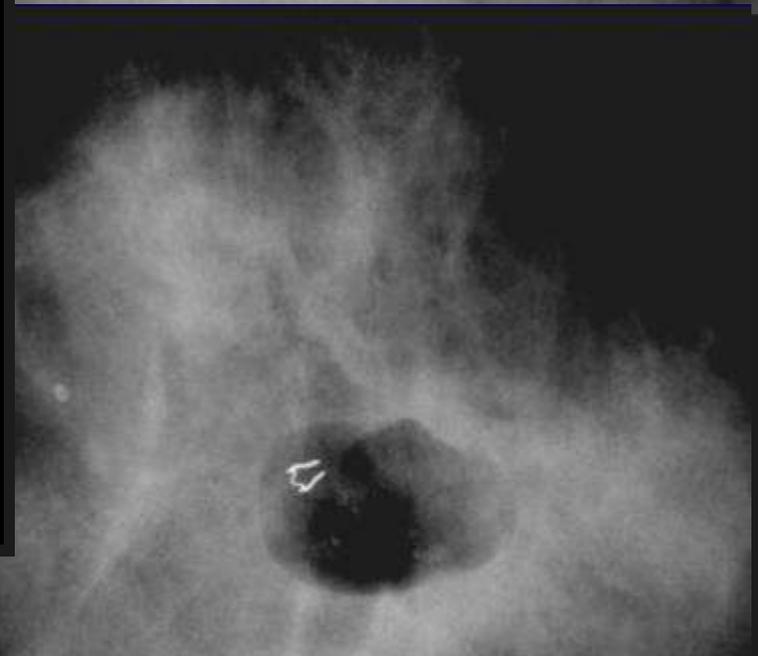
Volume prélevé :  
1-1,5 cm<sup>3</sup>



des prélèvements



Contrôle post-biopsie :  
Exérèse complète



Foyer de microcalcifications



W:645 L:2417

Placement d'un clip  
radio-opaque



# Limites des macrobiopsies sous stéréotaxie

- Coût
- Durée de la procédure
- Petits seins, localisation profonde, axillaire ou proche du mamelon
- Foyers de microcalcifications amorphes, étendus
- **Mauvaises indications**
  - Nodules et masses
  - Les désorganisations architecturales



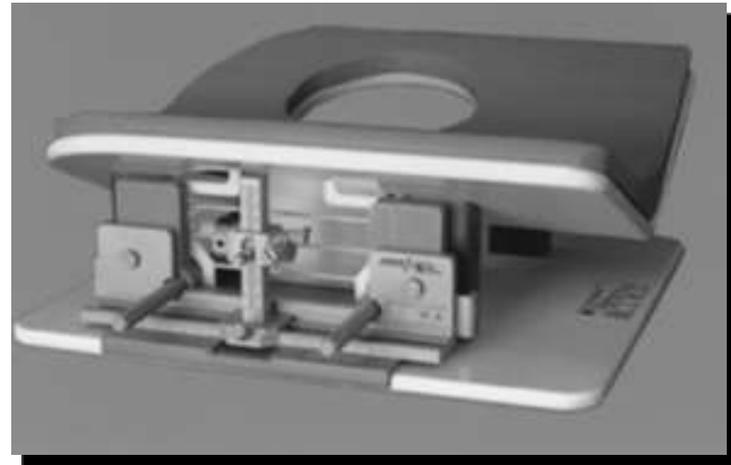
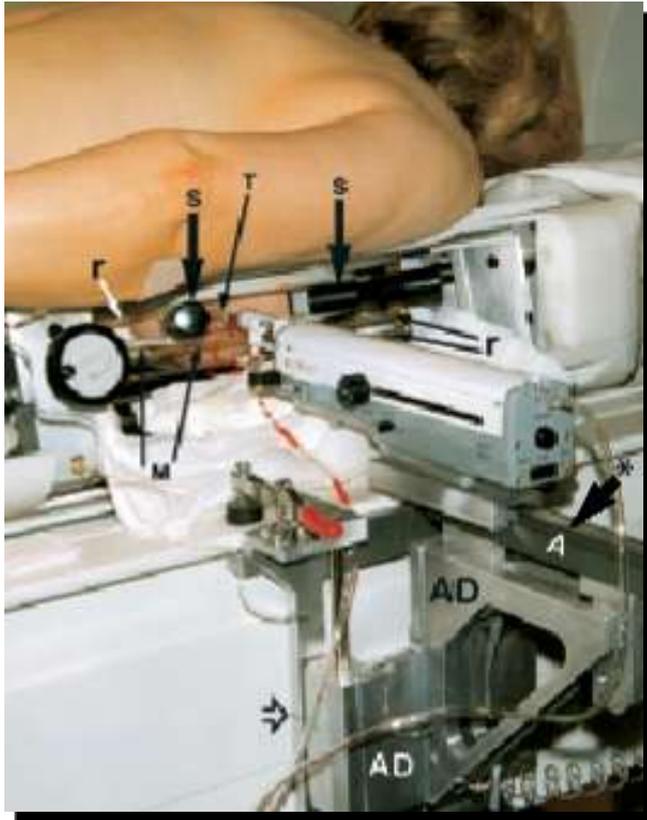
# Macrobiopsie

Sous guidage IRM

# IRM

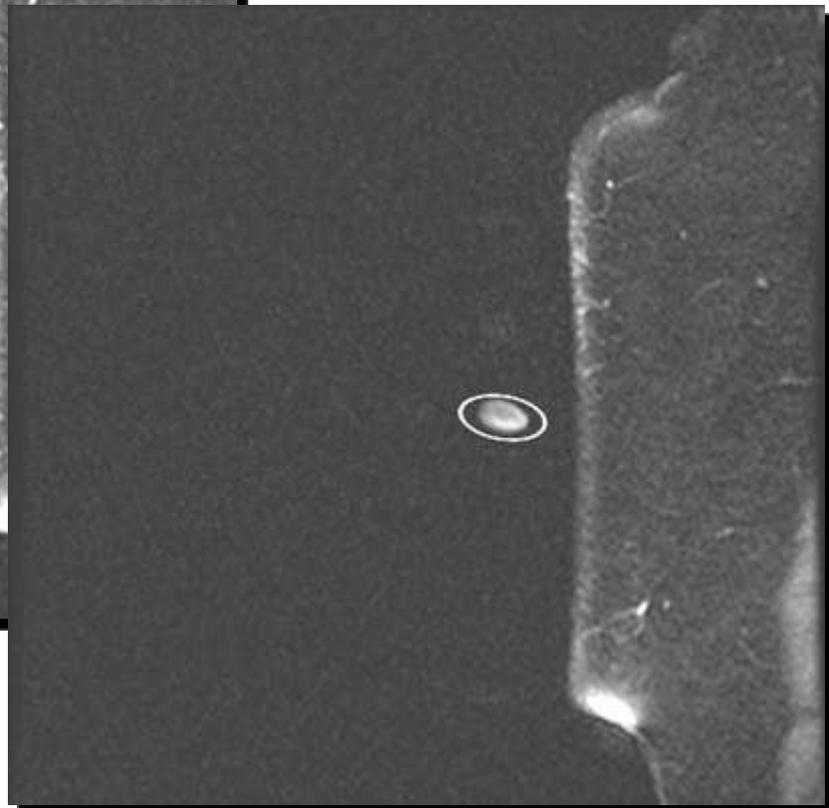
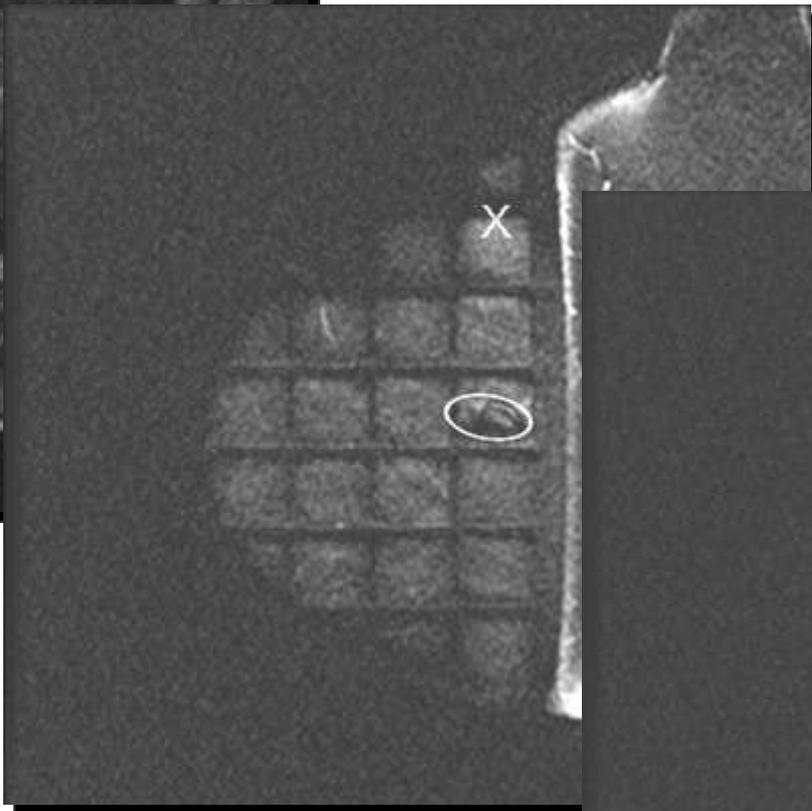
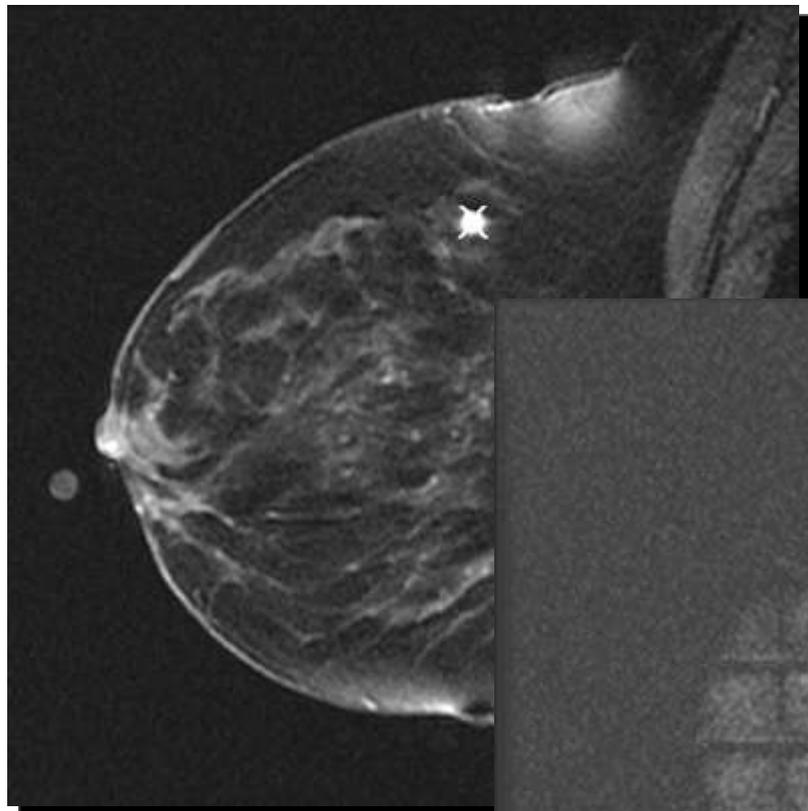
- Sensibilité = 95%
- Spécificité = 70%
- VPP = 75%
- VPN = 85%
  
- Faux positifs  $\Rightarrow$  Biopsie sous IRM

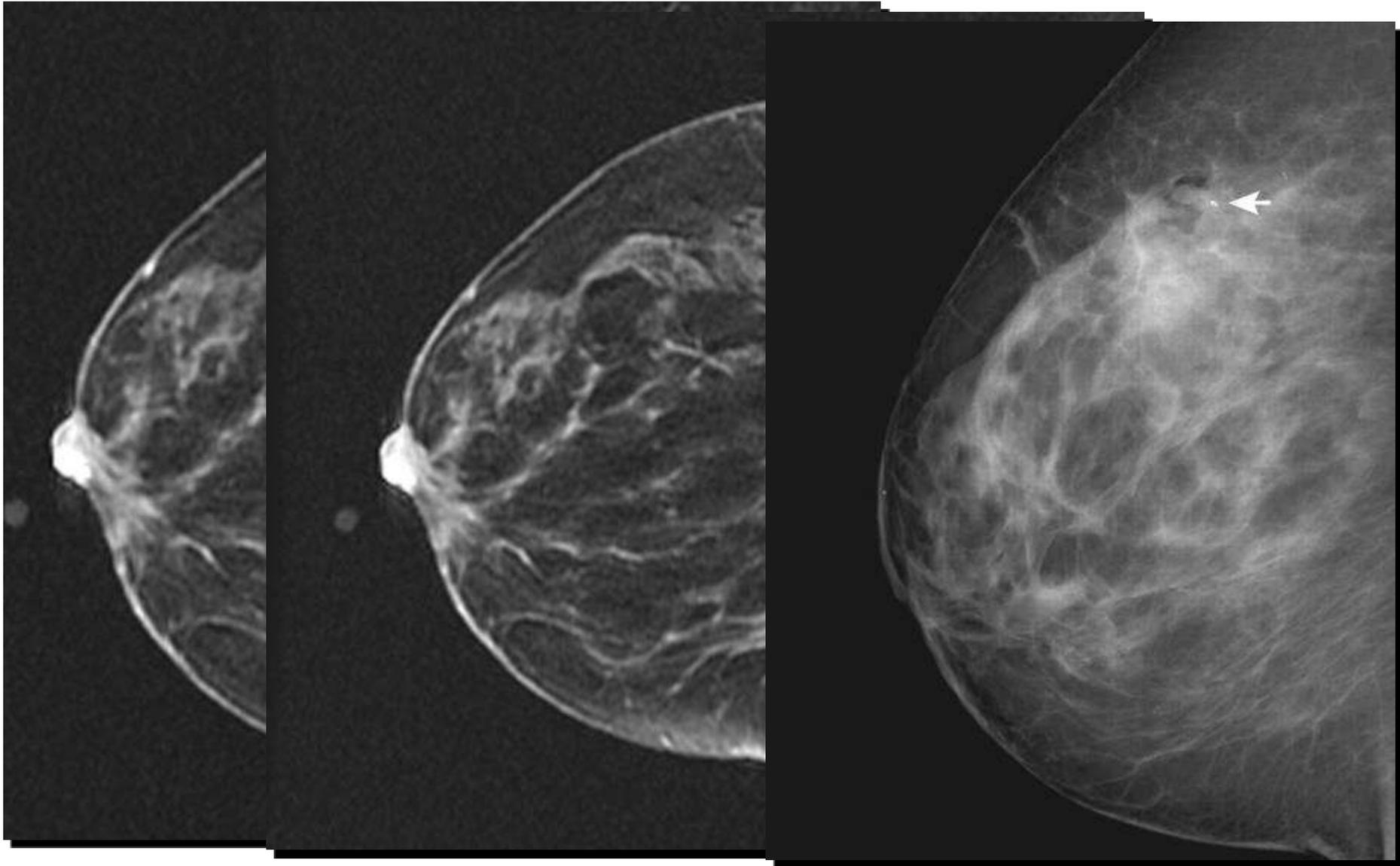
# Biopsie en IRM



# Biopsie en IRM







60 minutes par prélèvements

# Limites des macrobiopsie sous IRM

- Lésions profondes, hautes, basses ou internes
- Lésions de moins de 5mm
- Lésions non retrouvées = 12%
  - ⇒ **Surveillance** (7% de cancer)



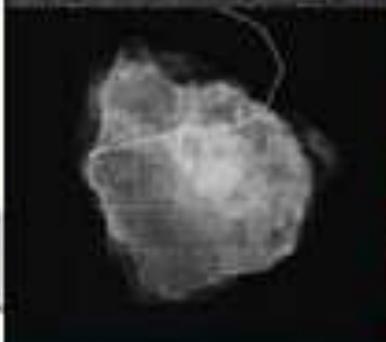
# Macrobiopsie

Systeme Intact

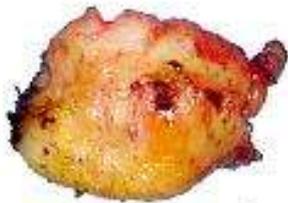
# Intact



# Systeme INTACT

| Technique  | Radiography  | Histology  |
|--|--|--|
| <p><b>Intact Breast Lesion Specimen System</b></p>  |    |   |
| <p><b>Surgery</b></p>                              |   |    |
| <p><b>VACNB</b></p>                               |  | <p>Fragmented architecture<br/>unclear margins</p>  |

# Spécimènes larges



20mm



cm

3.0 grams



15mm



cm

2.1 grams



12mm



cm

1.1 grams



10mm



cm

0.8 grams



All sample sizes can be retrieved with one device. *Intact*<sup>™</sup> specimen samples are available in four sizes: 10mm, 12mm, 15mm and 20mm diameters.

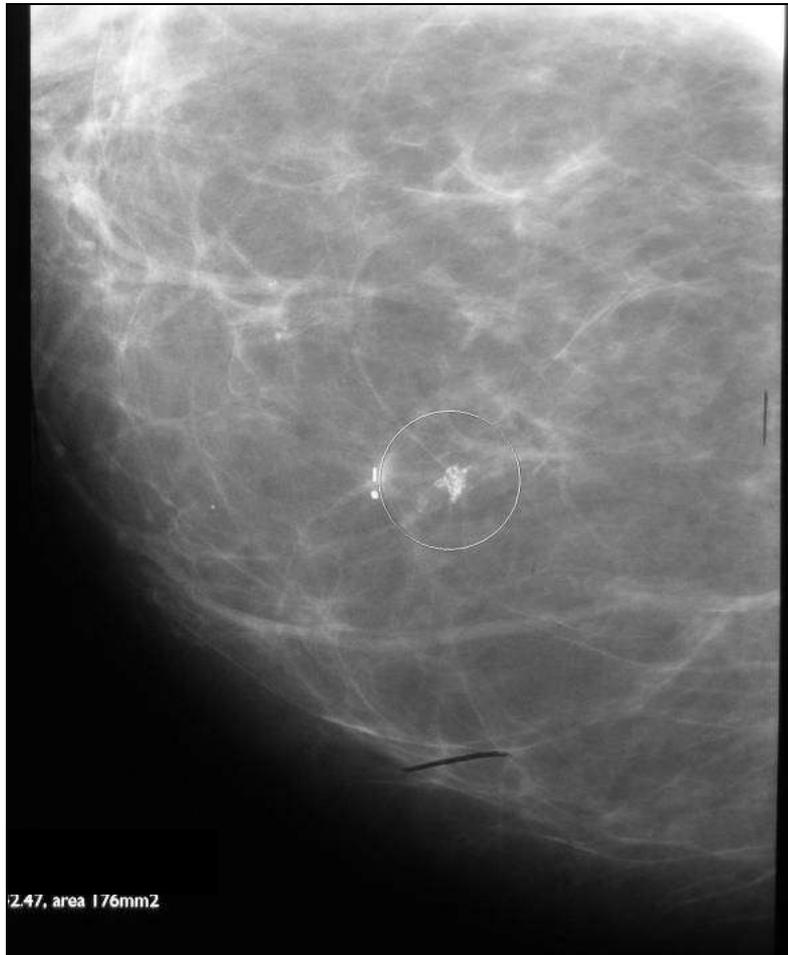
# Concordance

|                                    | <i>Intact</i> <sup>TM</sup> | Mammotome <sup>®</sup> |                 |
|------------------------------------|-----------------------------|------------------------|-----------------|
| DCIS Upgrades                      | 5 of 110 (4.6%)             | 15 of 112 (13.4%)      | <b>p = 0.03</b> |
| ADH Upgrades                       | 3 of 32 (9.4%)              | 11 of 30 (36.7%)       | <b>p = 0.01</b> |
| Complete ADH<br>Excision at Biopsy | 21 of 32 (65.6%)            | 10 of 30 (33.3%)       | <b>p = 0.02</b> |

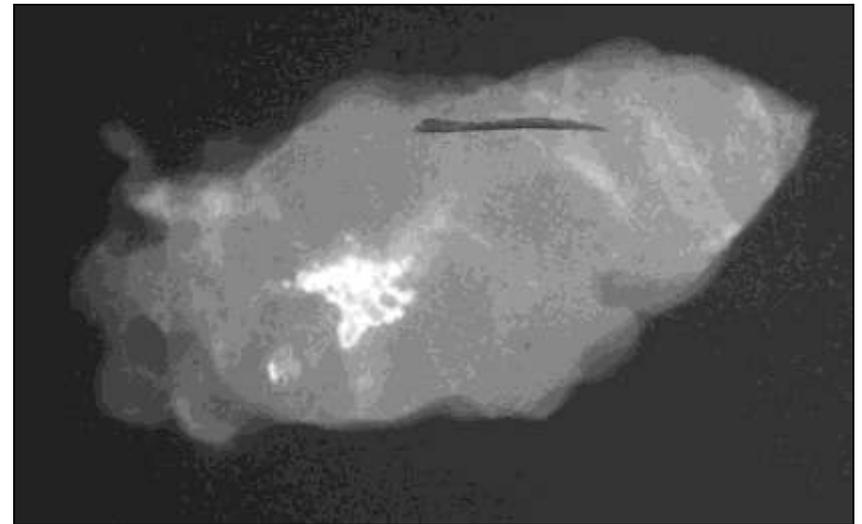
Fewer subsequent surgeries due to:

1. Fewer upgrades
2. Complete excision of lesion at biopsy

# Microcalcifications



Specimen Radiograph

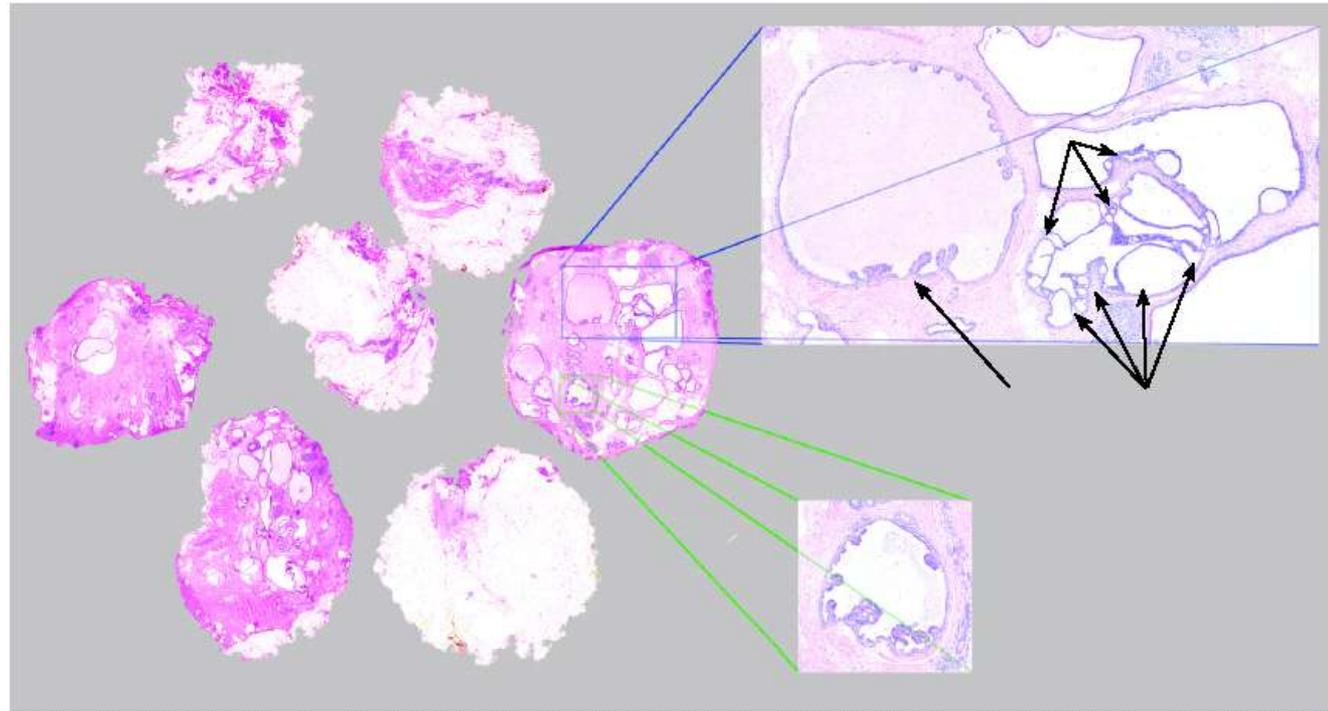


← Pre-Procedure Mammogram

# Atypical Ductal Hyperplasia



**ADH Specimen  
Radiograph**



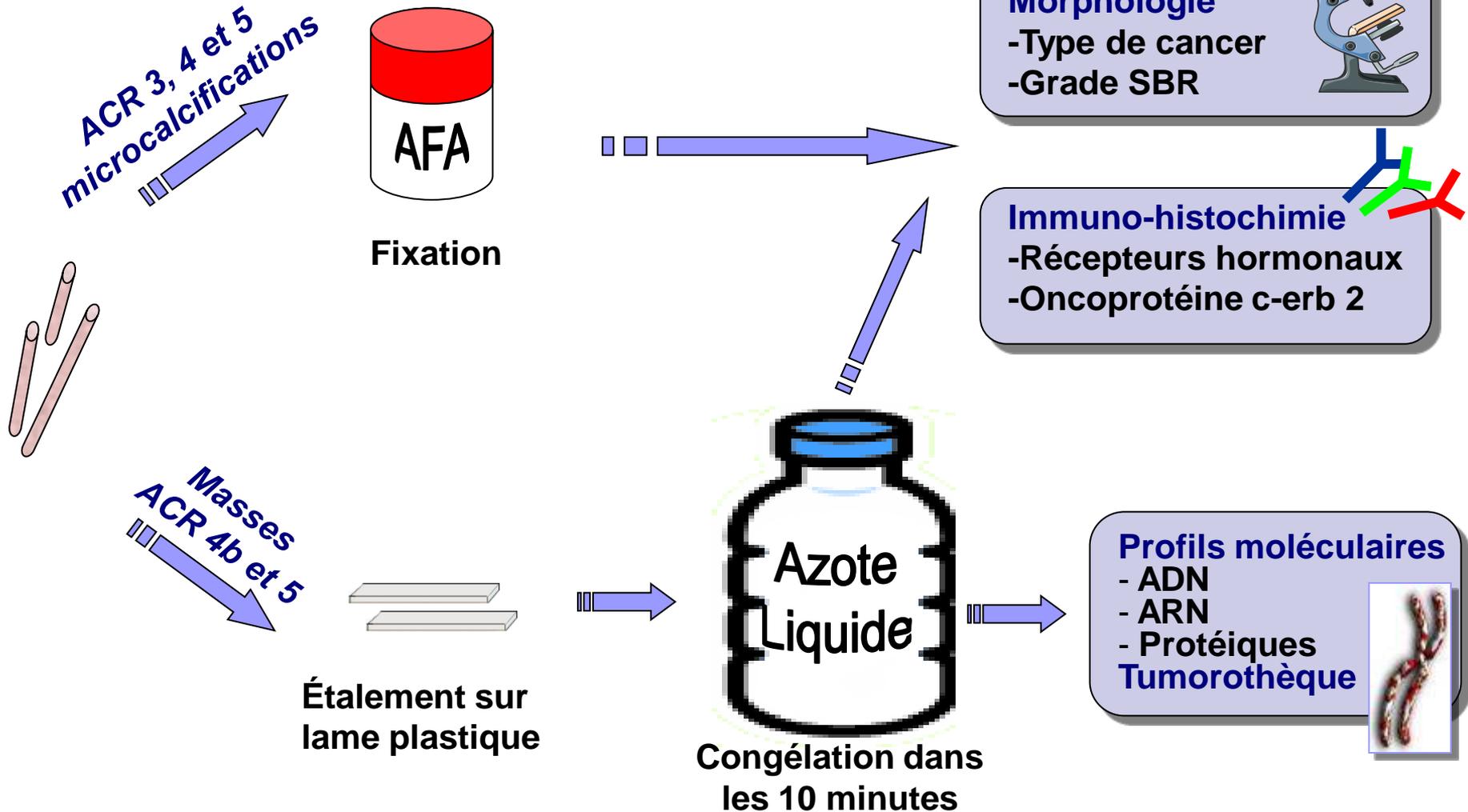
**Histopathology of specimen showing two small foci of ADH**



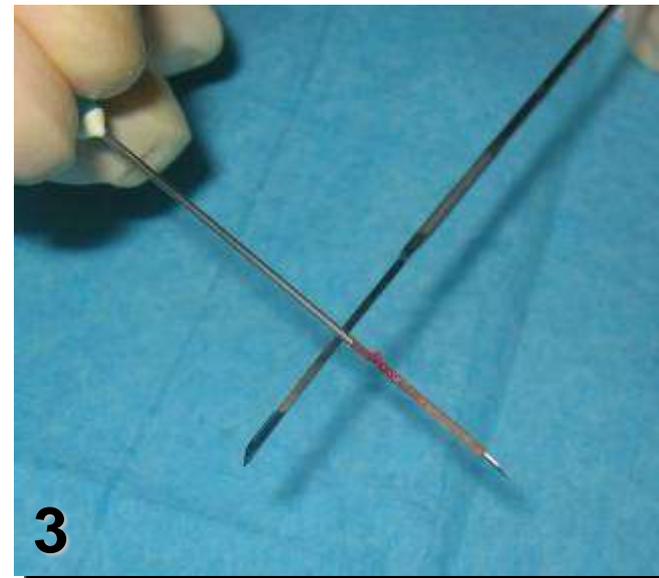
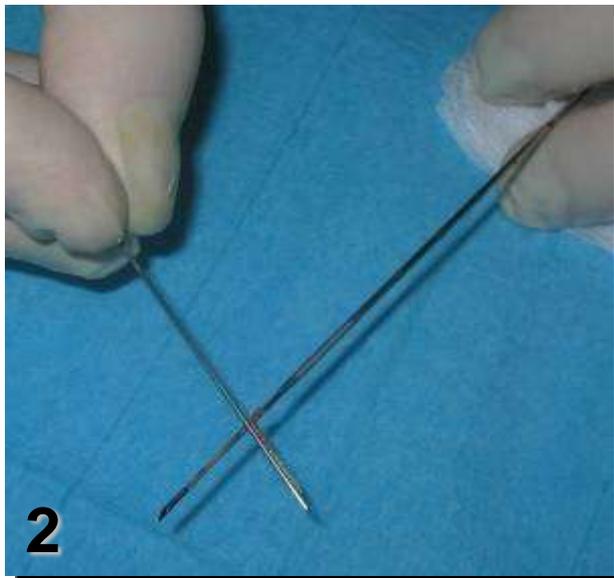
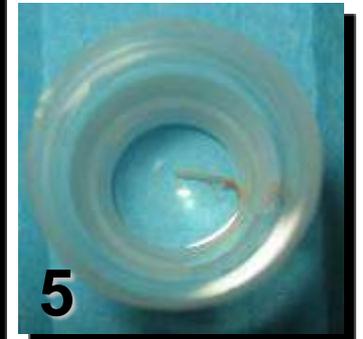
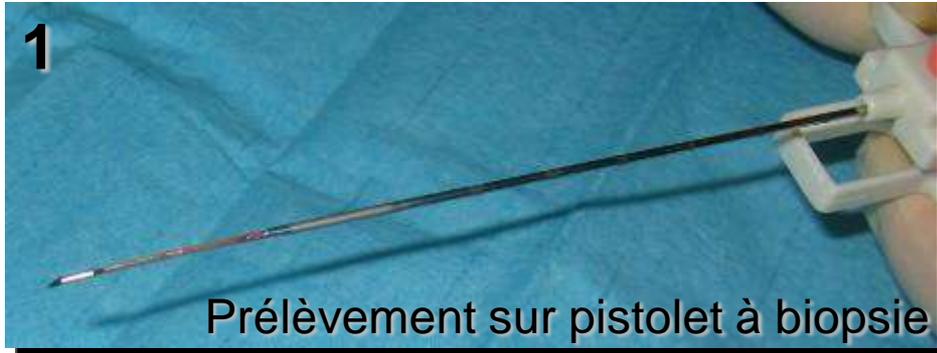
# Conditionnement des prélèvements

# Biopsie (micro et macrobiopsie)

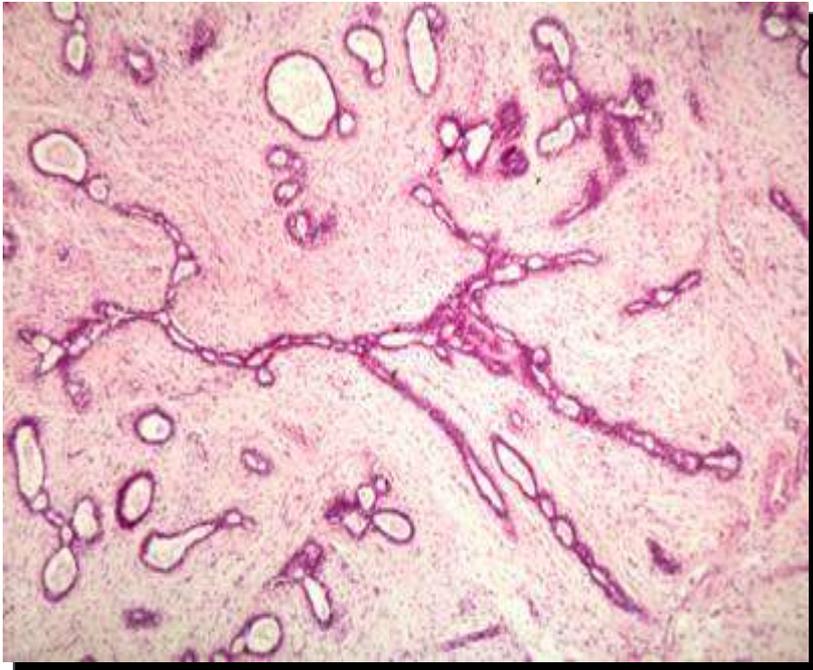
## Étapes du conditionnement



# Fixation dans l'AFA

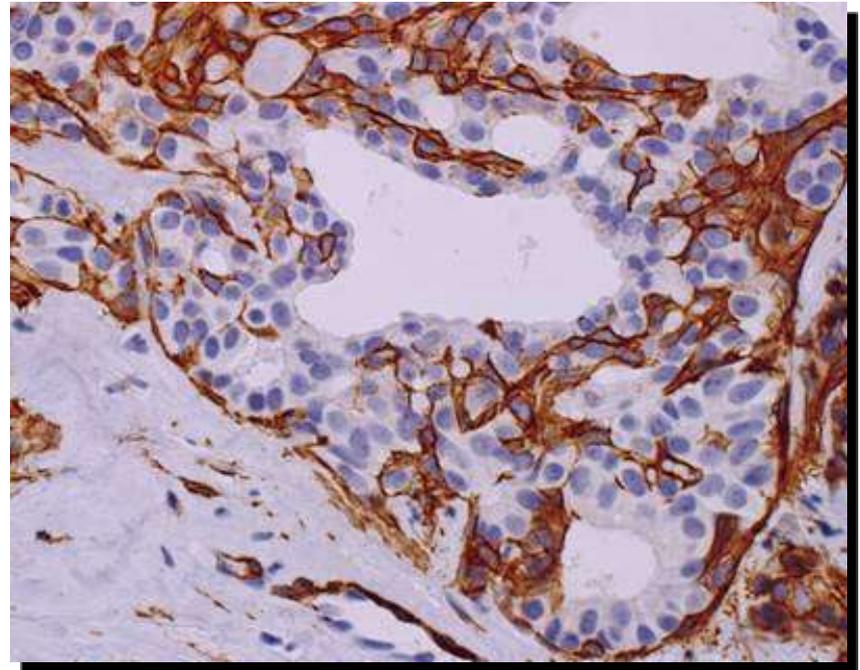


## Morphologie



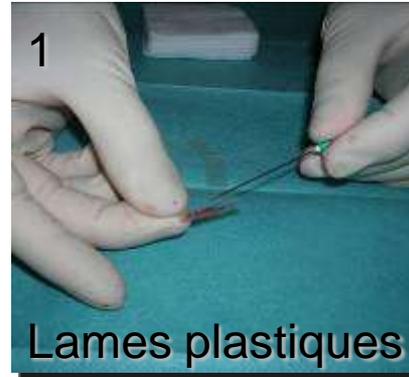
Adénofibrome

## Immunohistochimie

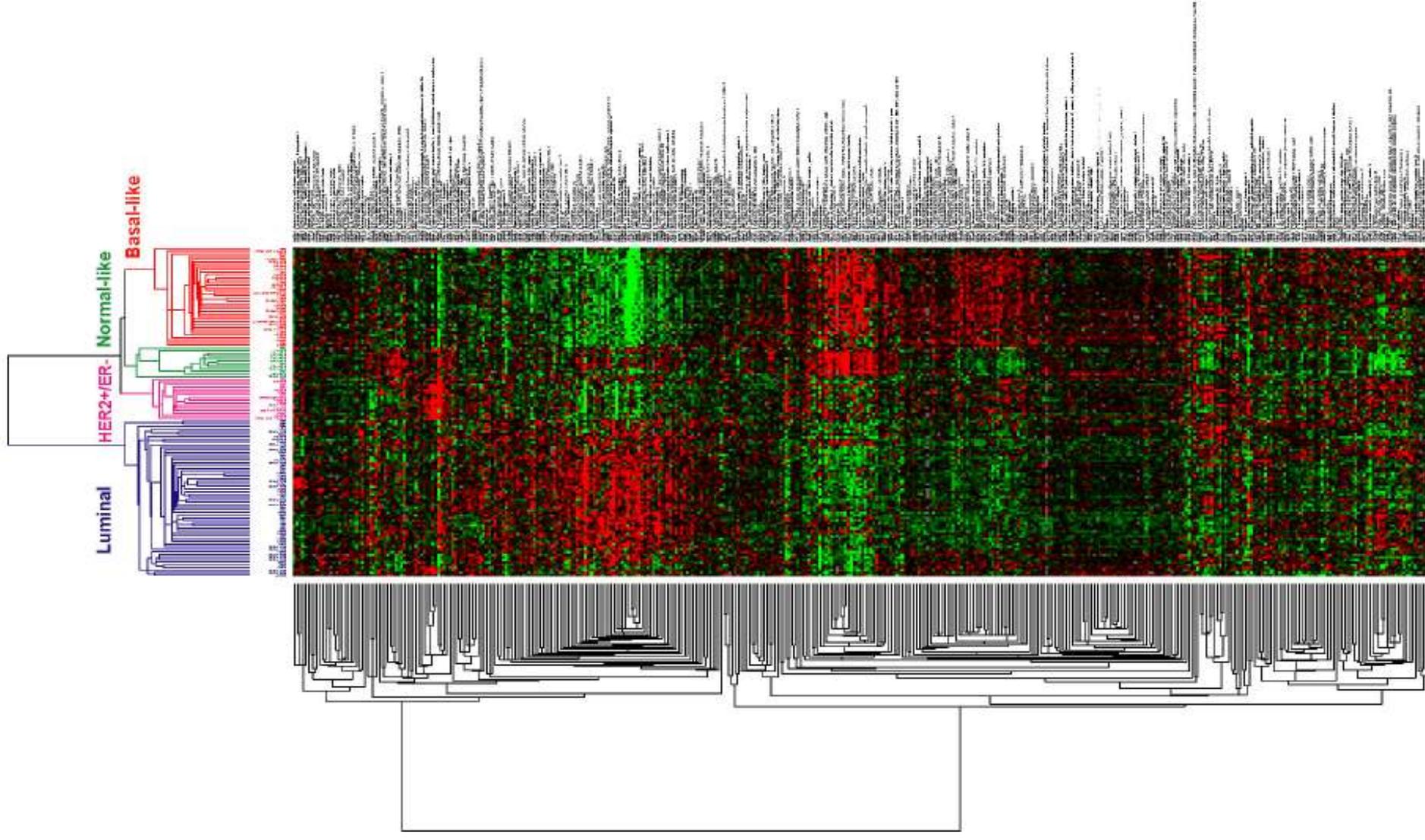


Anti-actine : cellules myoépithéliale

# Congélation



# Puces ADN



# Complications générales

- Rares < 5%
  - Malaise vagal
  - Douleurs : cervicales
  - Saignement faisant interrompre la procédure
  - Hématome à distance
  - Lésion cutanée
  - Abscess exceptionnels

# Performances générales

- Sensibilité = 94%
  - Macrobiopsies > Microbiopsies
- Spécificité = 88%
  - Microbiopsies > Macrobiopsies
- VPP = 85%, VPN = 95 %
- Faux négatifs = 4,5%
- Sous estimation = 28 %
  - Hyperplasie atypique ⇒ CCIS & CCI = 44 %
  - Carcinome in situ ⇒ Carcinome invasif = 23 %
  - Taille de la lésion ⇒ 10 mm = 20 %, 50 mm = 40 %, 100 mm = 40 %
  - Macrobiopsies > Microbiopsies = 10%



# Traitements



# Interventionnel thérapeutique

## ■ Cancers

- Repérage

- Exérèse

  - Radiofréquence<sup>1</sup>, cryoablation<sup>2</sup>, ultrasons focalisés<sup>3</sup>

  - Indications à définir...

- Radiothérapie : Mammosite®

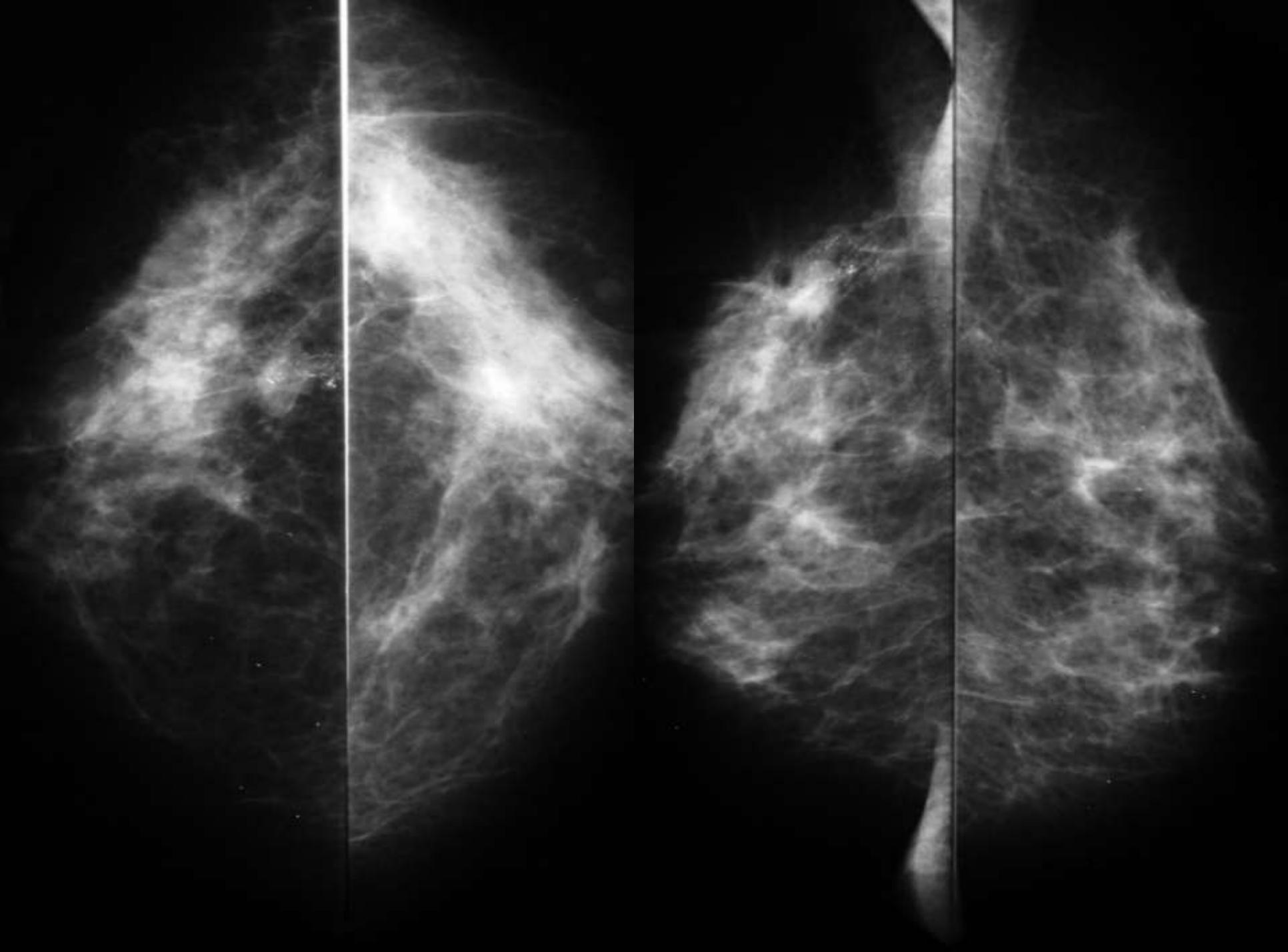
## ■ Adénofibromes symptomatiques

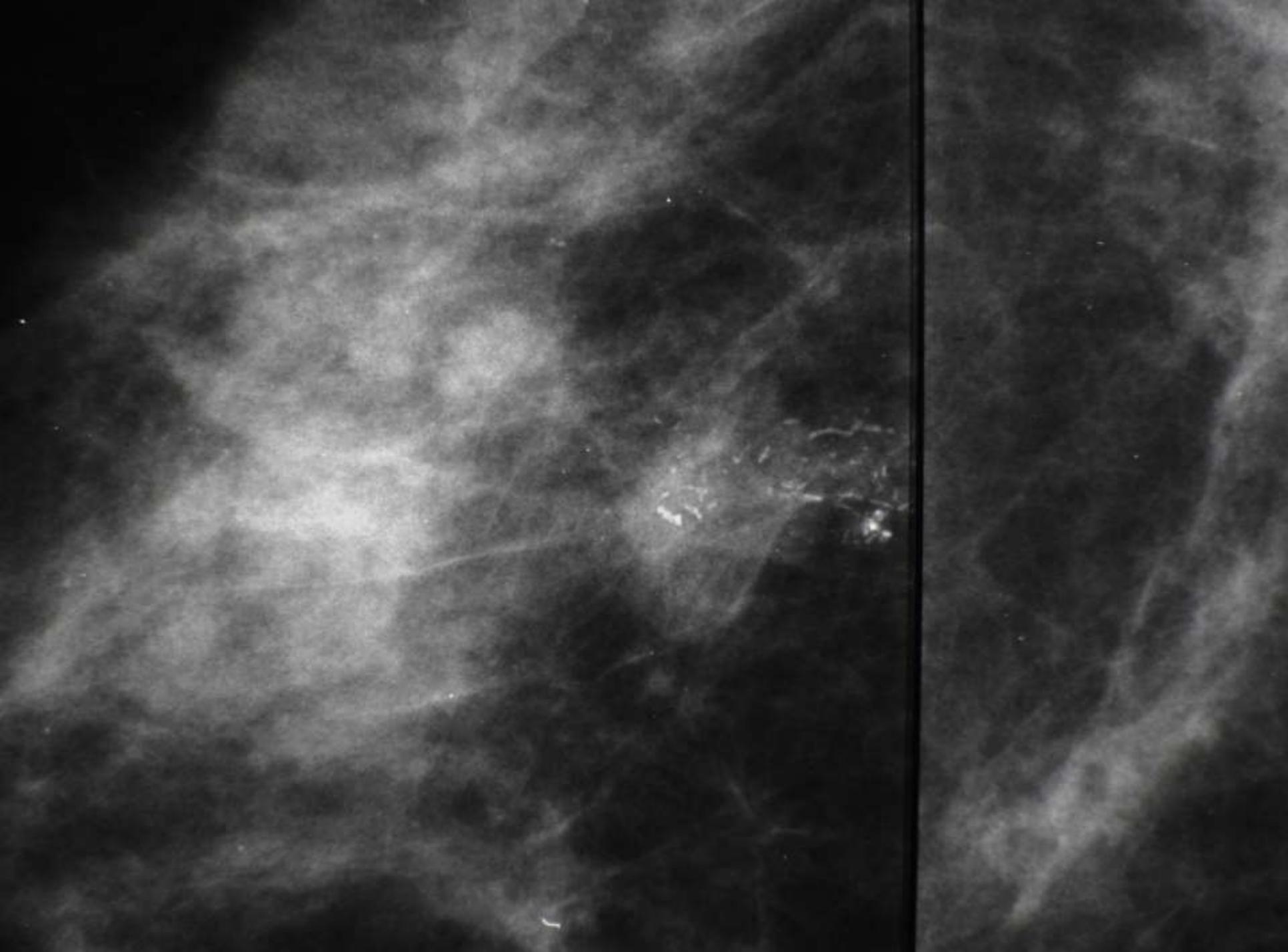
- Réduction de 90% à 1 an et 99% à 2,5 ans

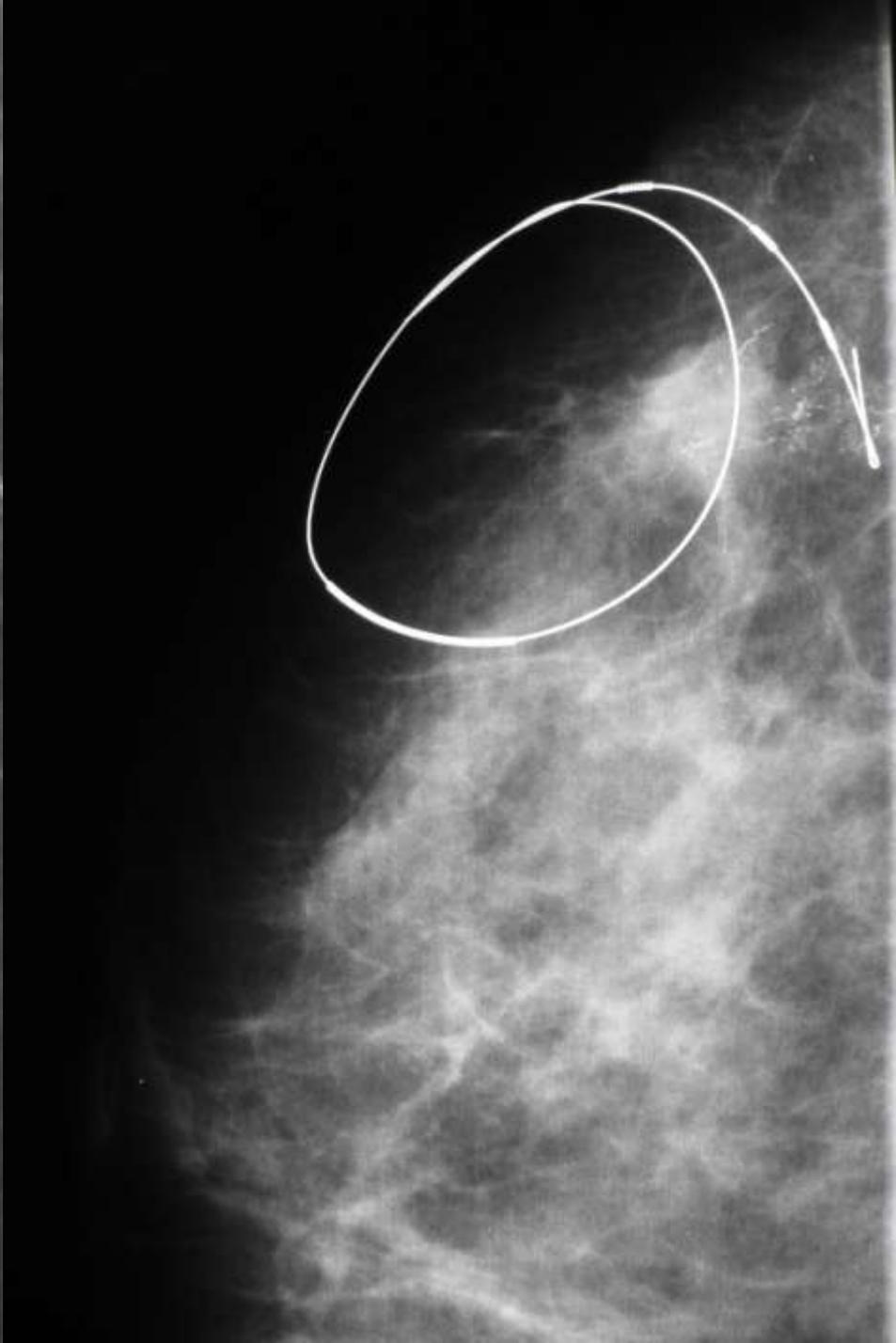
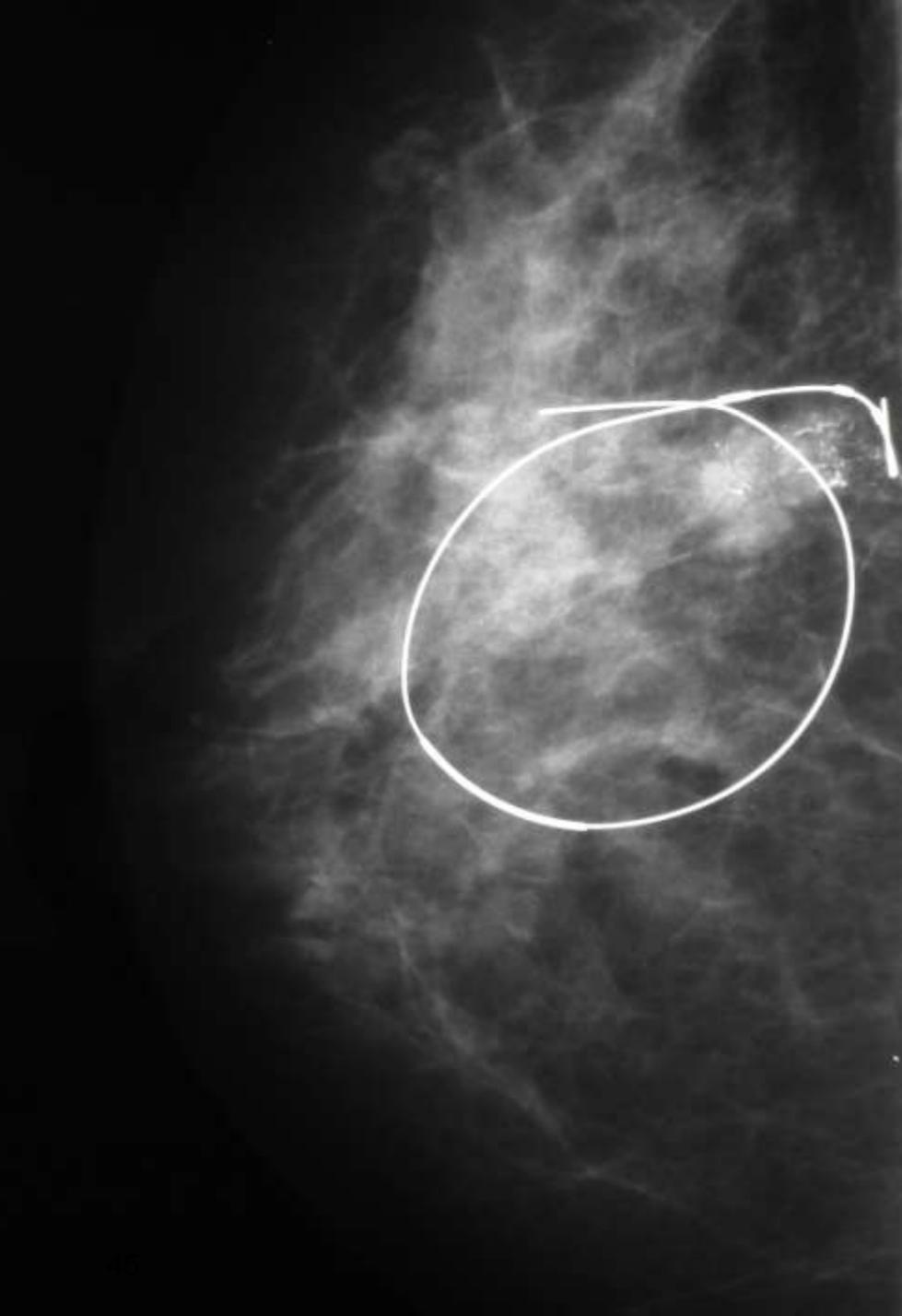
1. Burak et al. *Cancer* 98:1369-1376, 2003

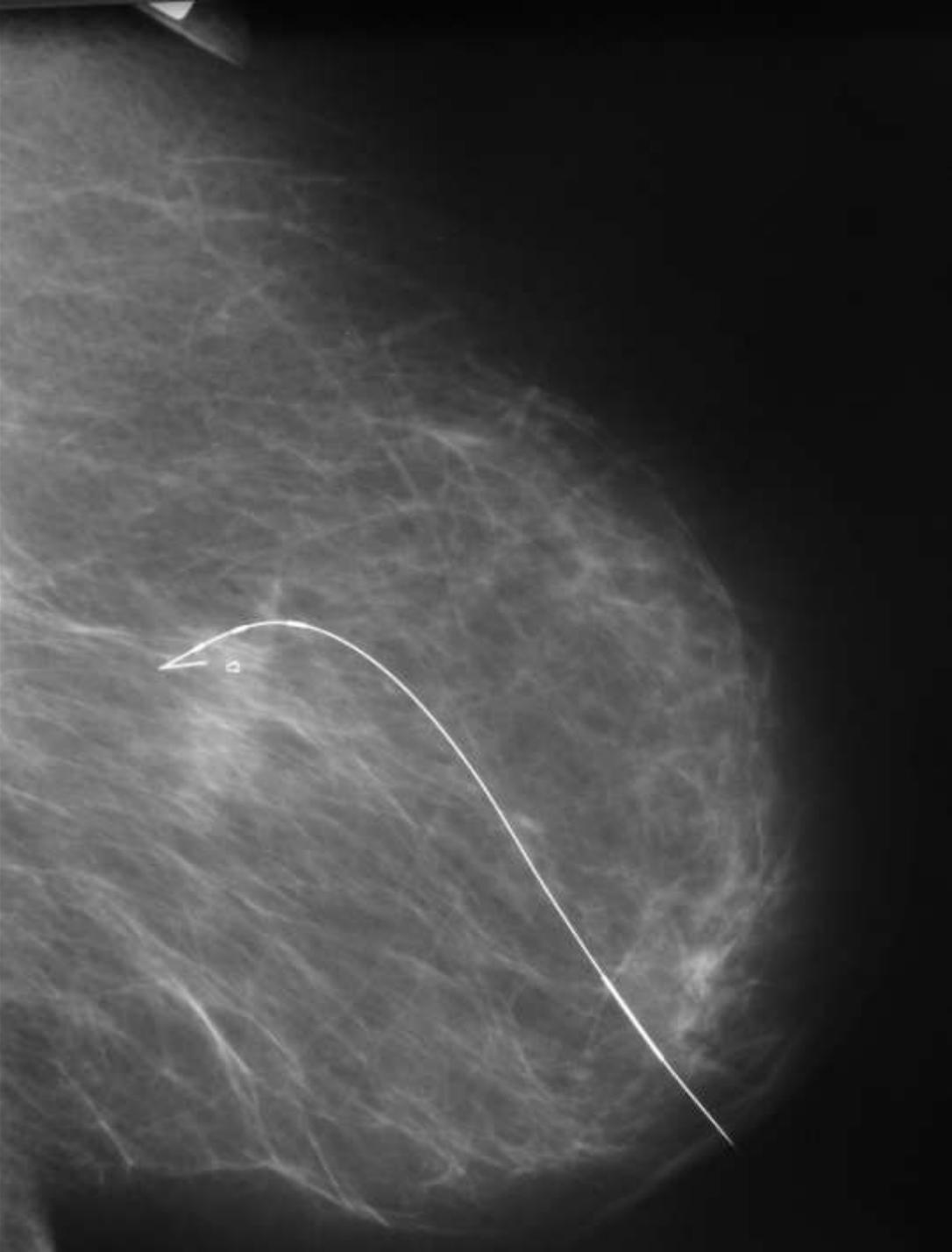
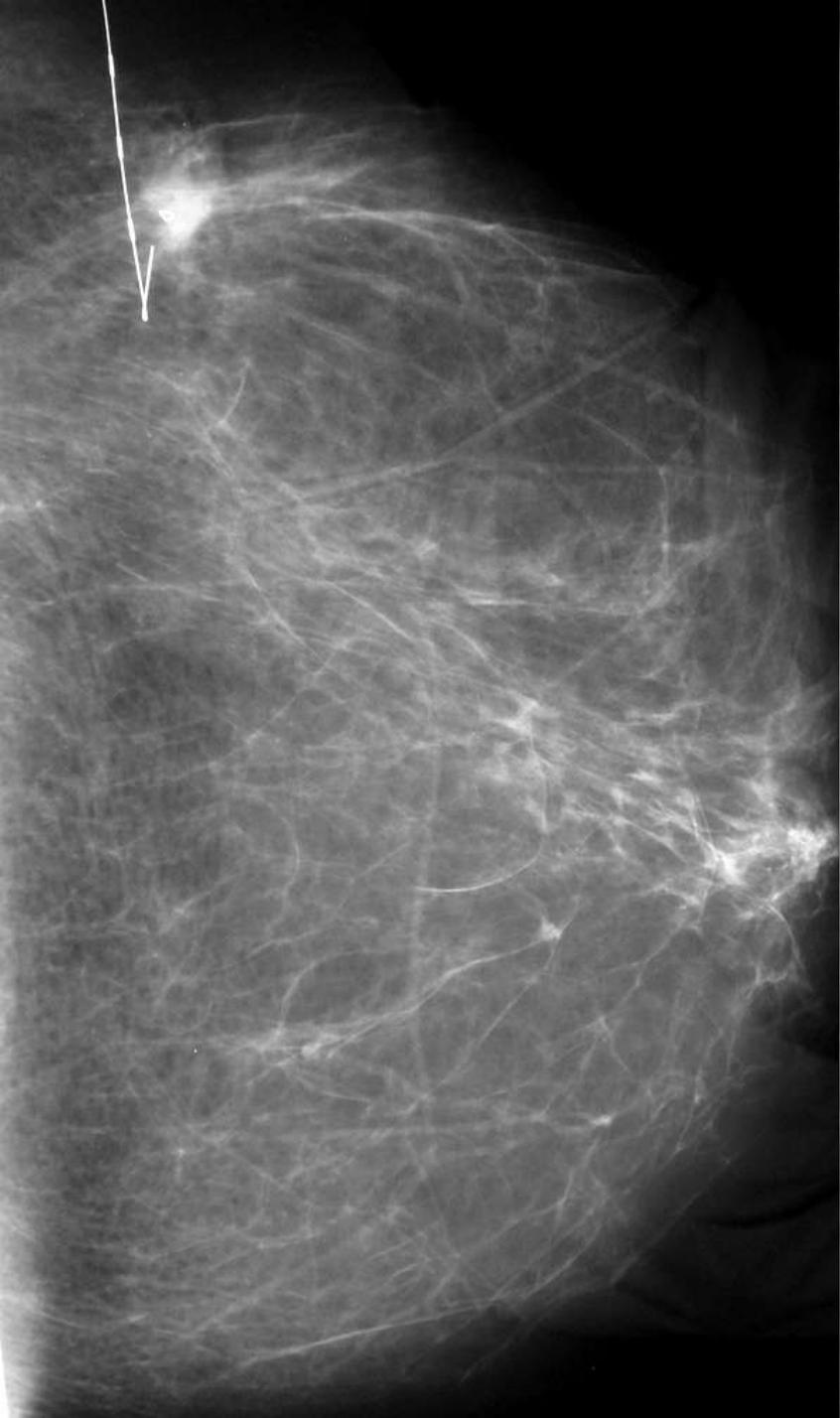
2. Tafra et al. *Ann Surg Oncol* 10:1018-1024, 2004

3. Gianfelice et al. *Radiology* 227:849-855, 2003



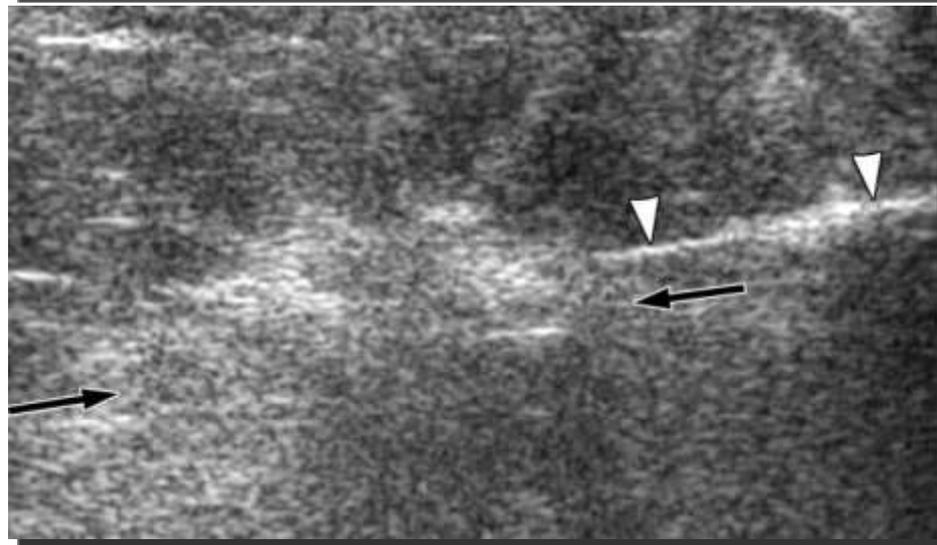
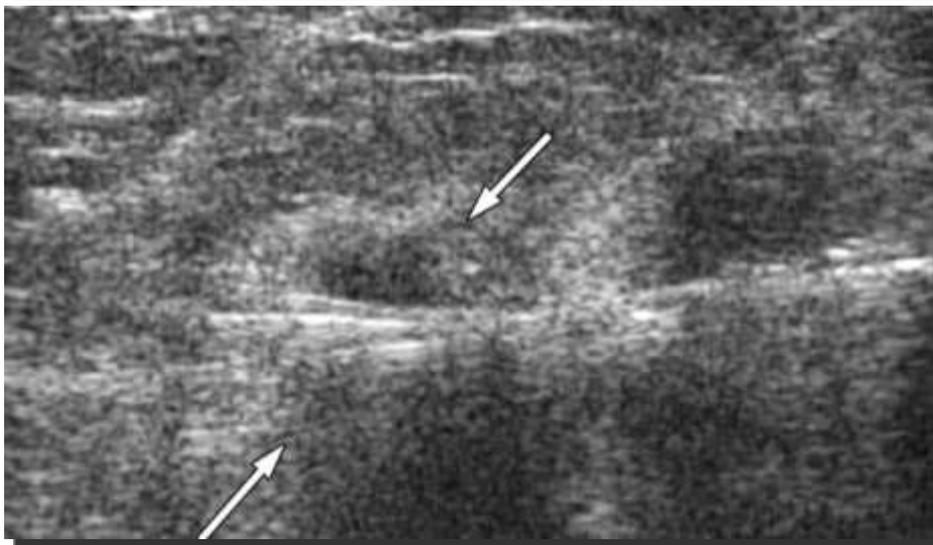
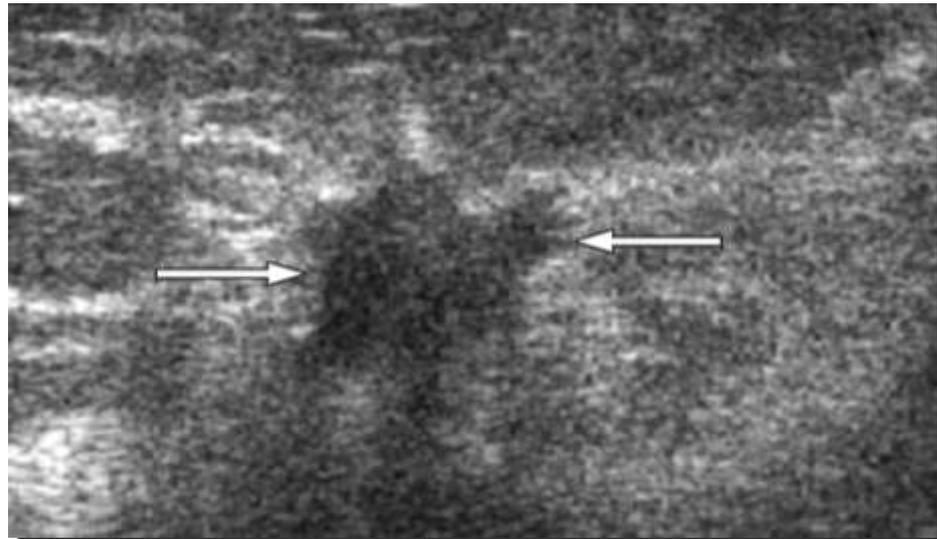
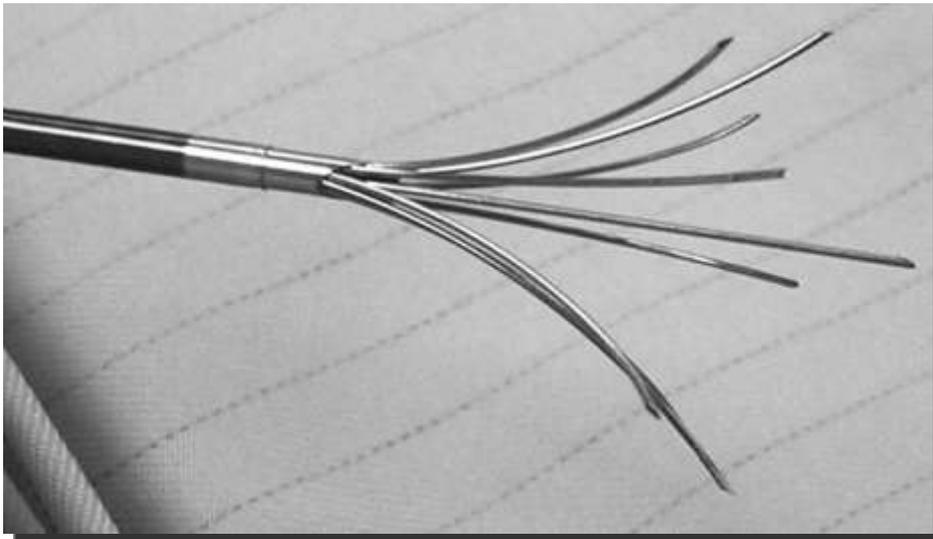


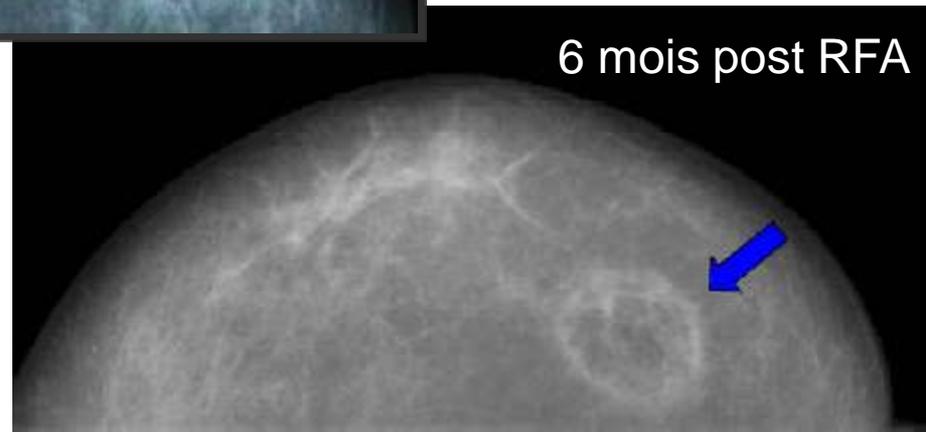
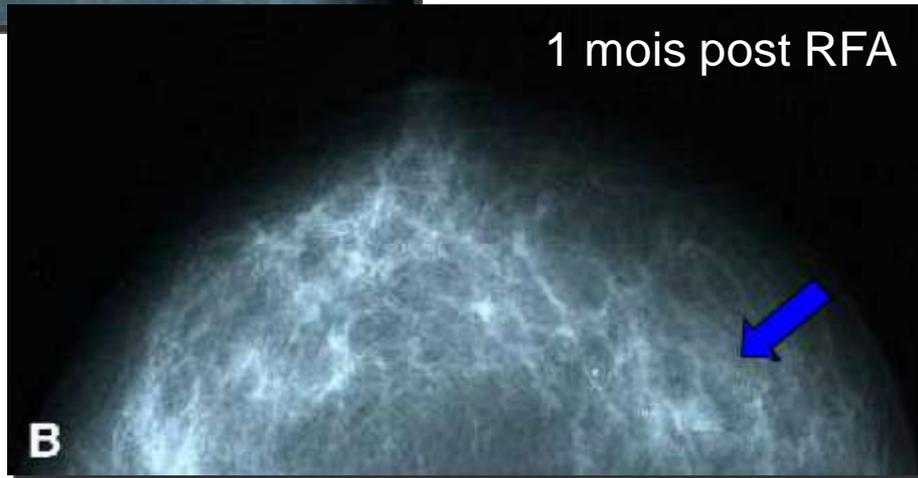
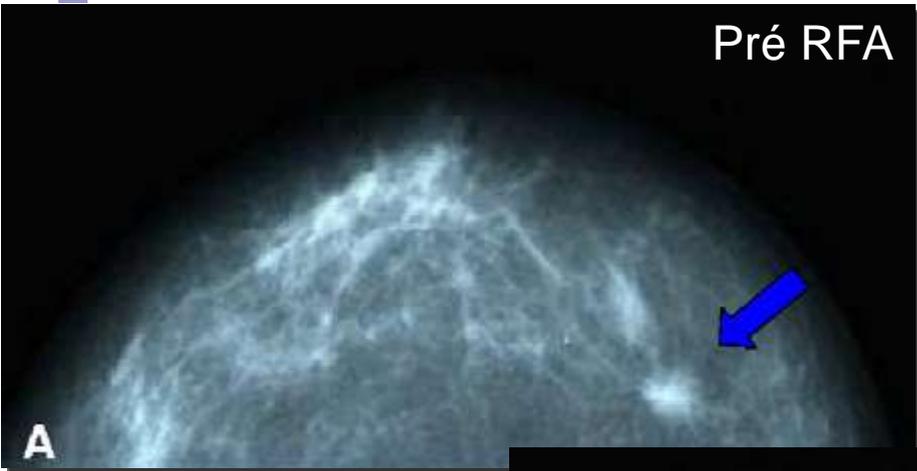






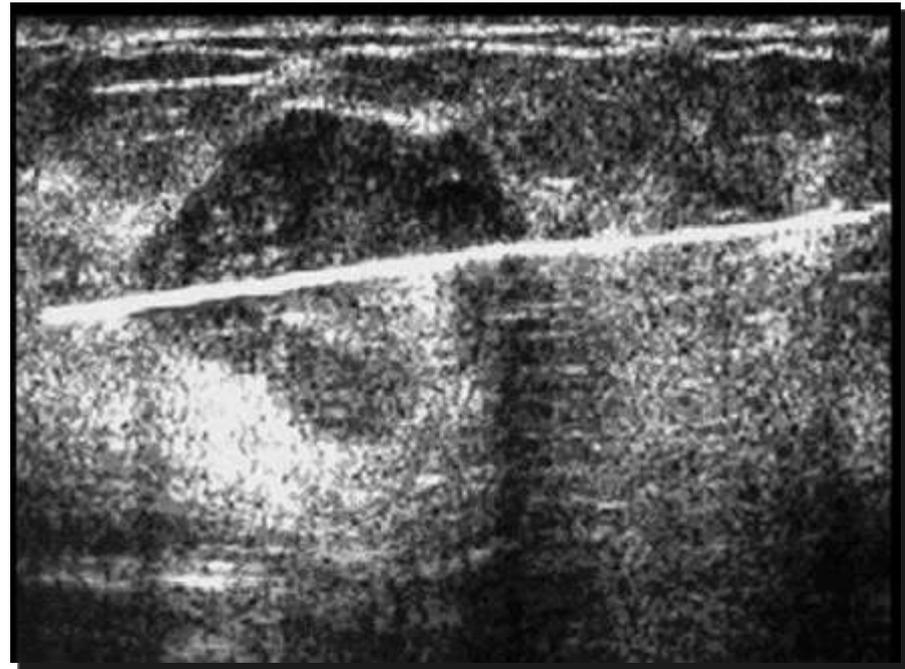
# Radiofréquence

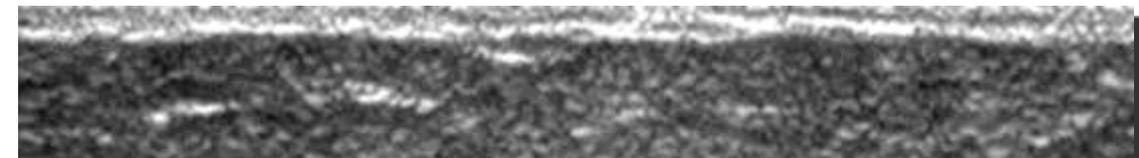




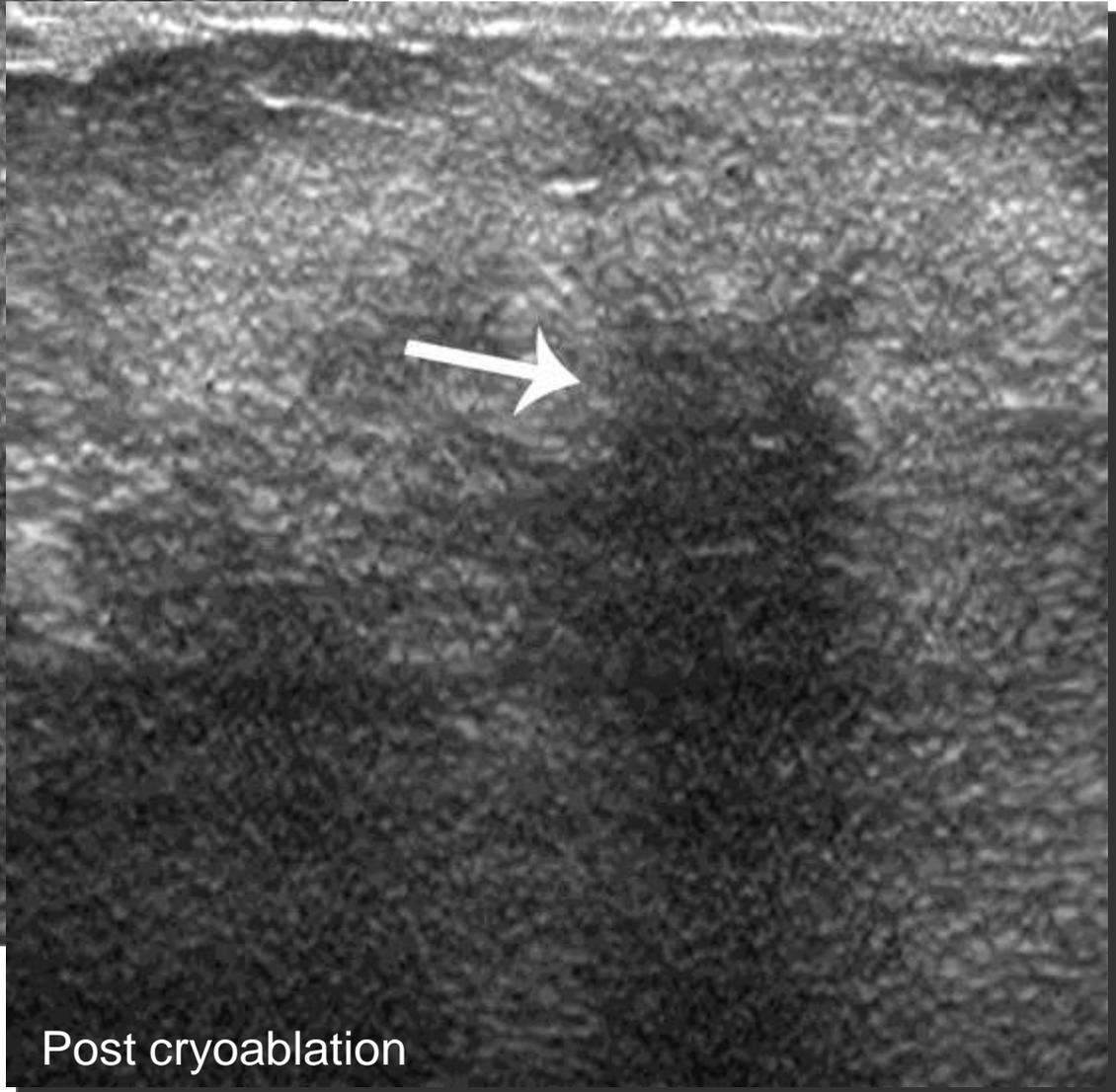
# Cryoablation ablation

Visica (Sanarus Medical)



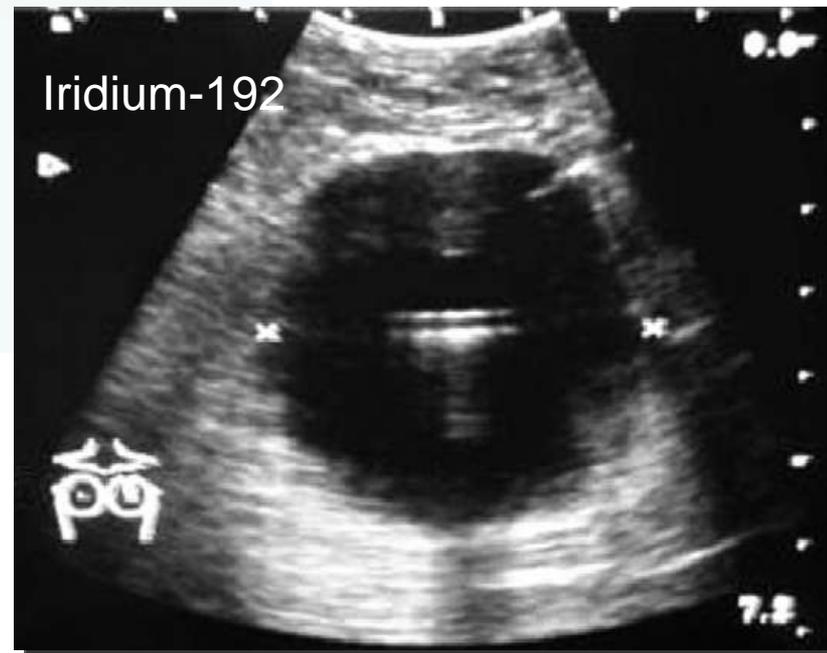


Pré cryoablation



Post cryoablation

# Systeme Mammosite



# Conclusion

## ■ Diagnostic

- Les **performances** dépendent de la qualité des **Indications** et de la **technique de biopsie**
- L'analyse des prélèvements peut être optimisée par le **conditionnement**
- Savoir interpréter les résultats

## ■ Thérapeutique

- Indications et performances en cours d'évaluation