ROLLING OUT A NEW PROCEDURE FOR IMPALPABLE BREAST ABNORMALITIES

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FM SURGERY

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BACKGROUND

- Widespread introduction of breast screening initiatives → significant increase in detection of breast abnormalities
- Majority cannot be felt by the patient or doctor → impalpable abnormalities

- Hence precise lesion localization is required prior to surgery

2 CLINICAL SCENARIOS

- Diagnostic

Abnormality needs biopsy to prove if it is cancerous or benign

- Therapeutic

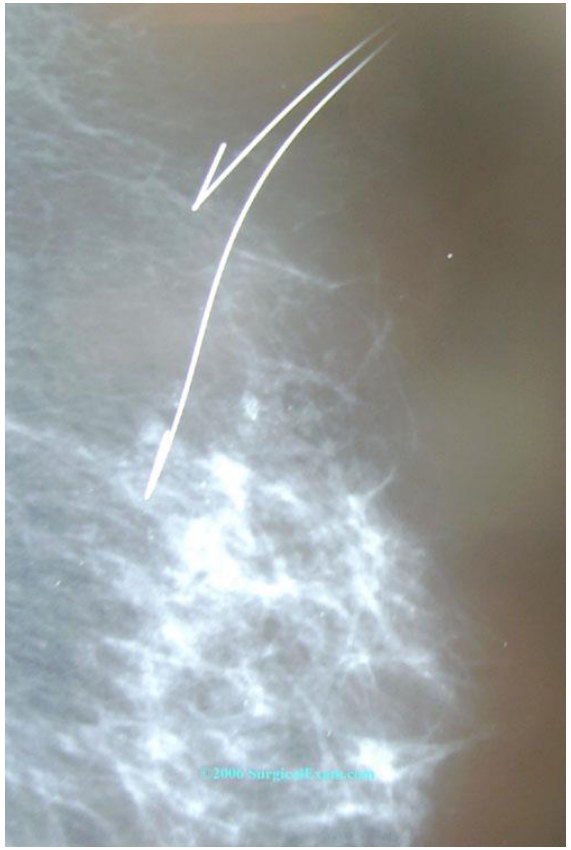
Proven cancerous or pre-cancerous and requires complete surgical clearance

CURRENT PRACTICE

- Hookwire localization



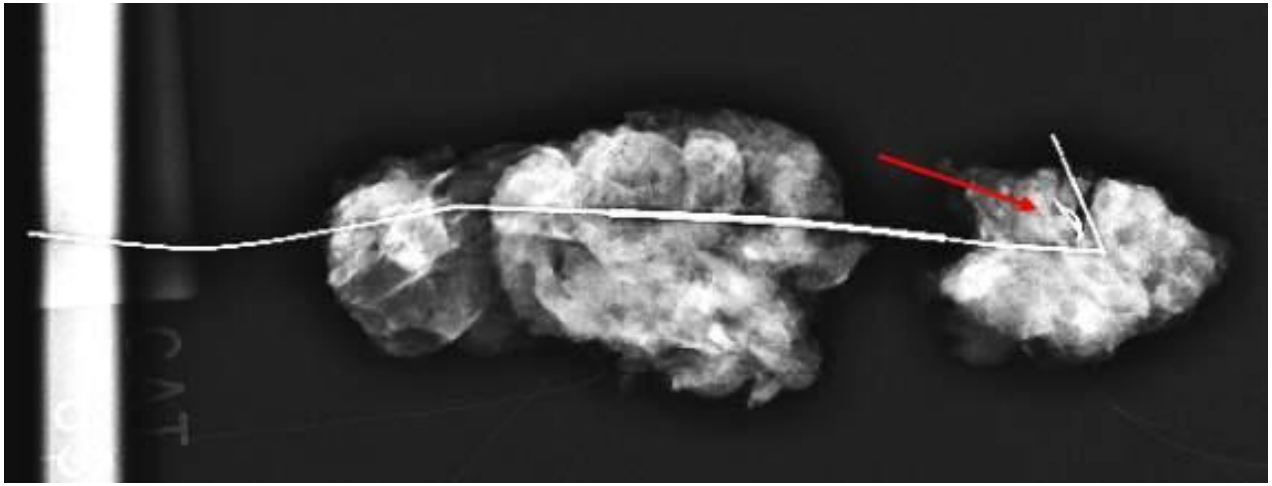
HOOKWIRE LOCALIZATION

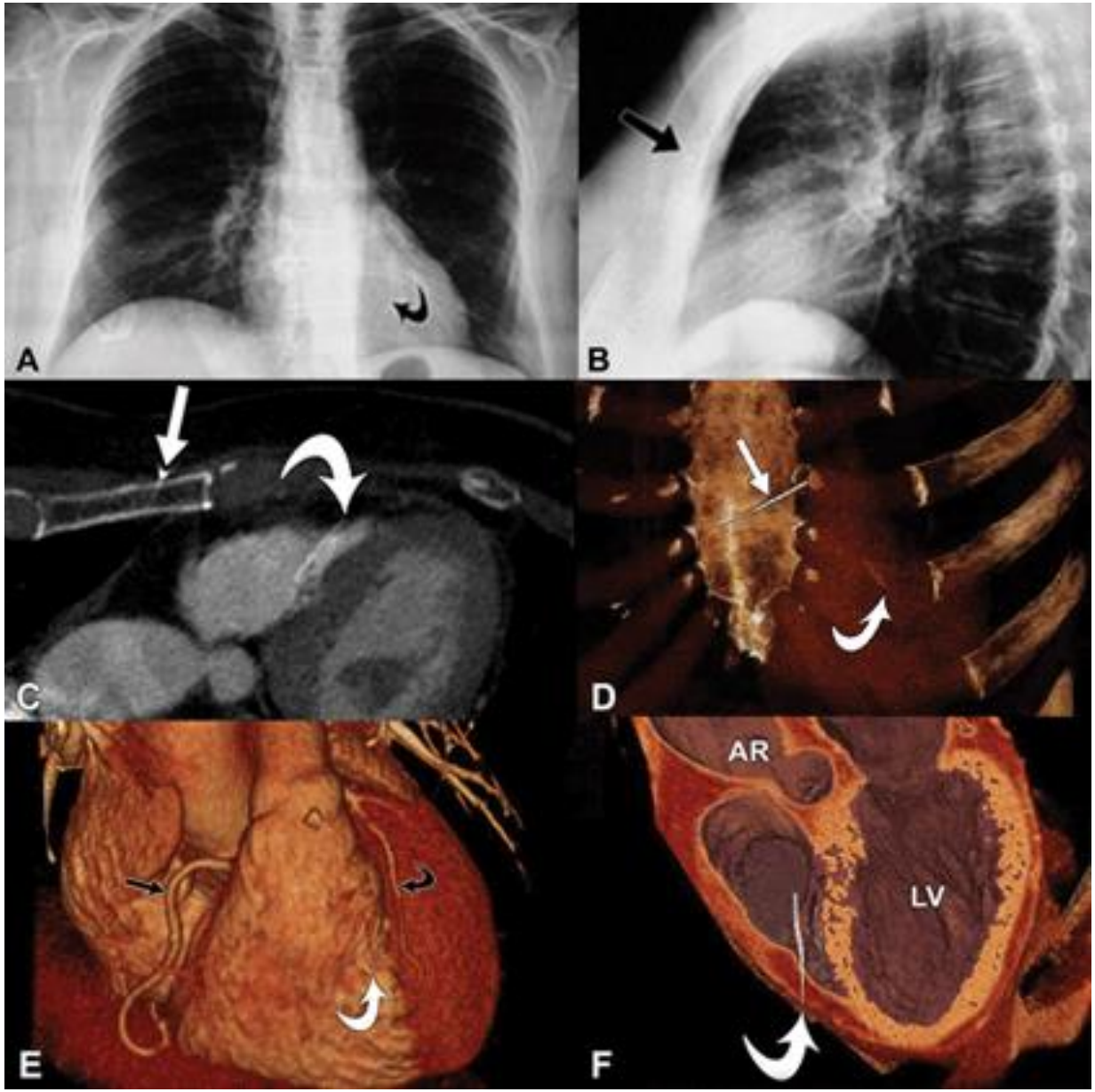




PROBLEMS WITH HOOKWIRE

- Local discomfort
- Inaccurate localization (30-40%)
- Wire dislodgement, fractures, migration
- Injury to surrounding organs (heart, lung) and vessels

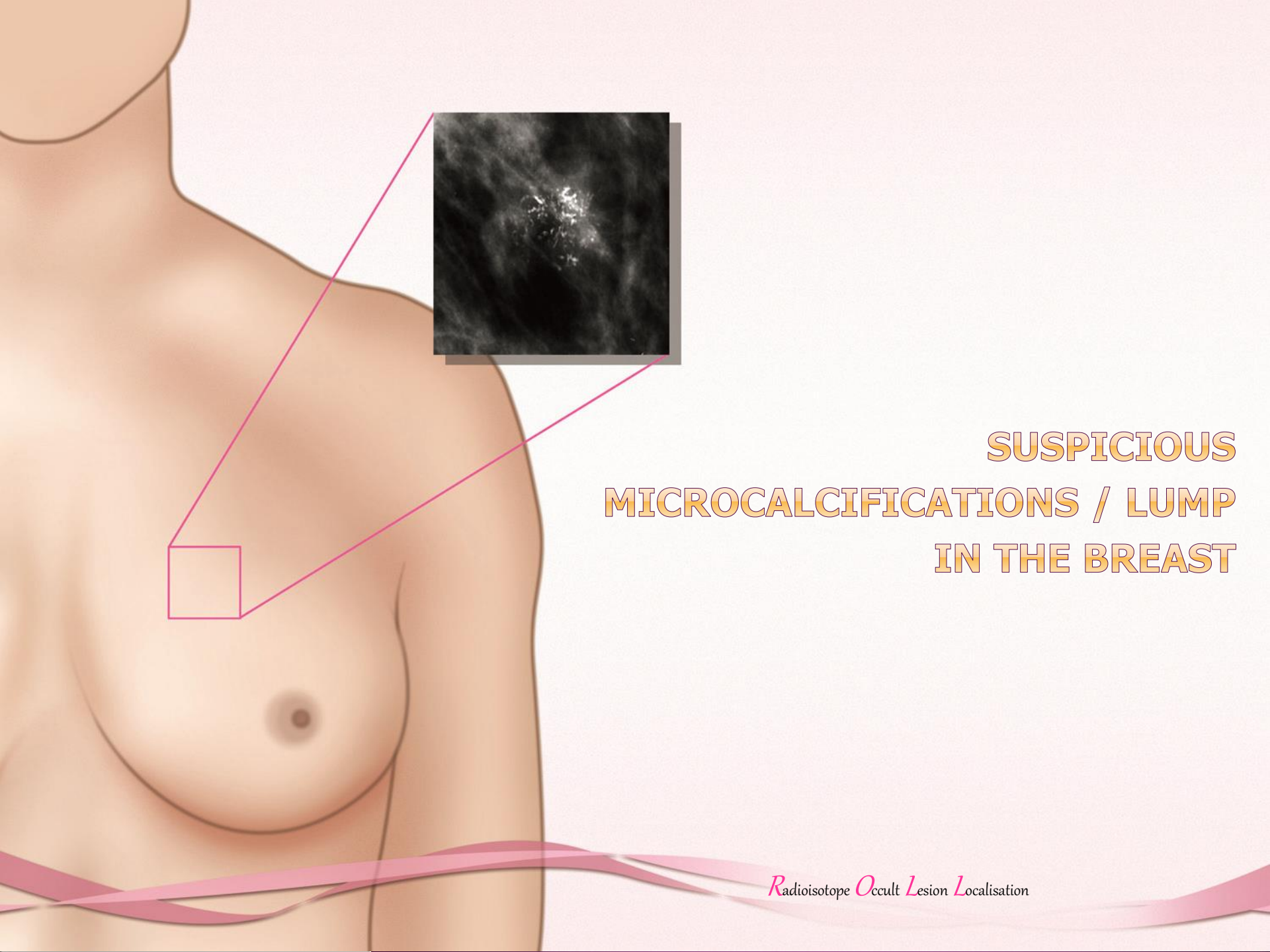



A
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C
D
E
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AR
LV

RADIOISOTOPE OCCULT LESION LOCALISATION - ROLL

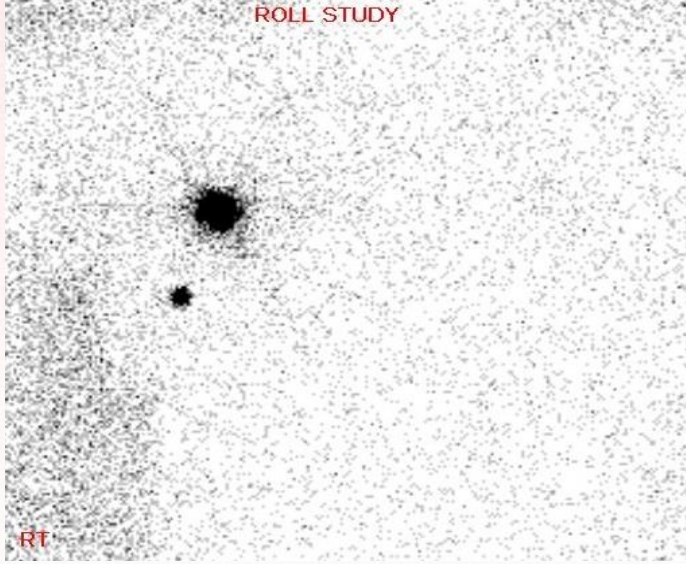
- Use of radioisotopes (radioactive material) to locate breast lesions that cannot be felt
- Invented in the European Oncology Institute in Milan in 1996

- Rationale : Using radioisotope as a marker to be placed inside the occult breast lesion under image guidance
- With the use of a manual gamma probe, the surgeon is able to locate and remove the lesion
- Based on remnant tracer activity, ensure that the lesion is completely removed



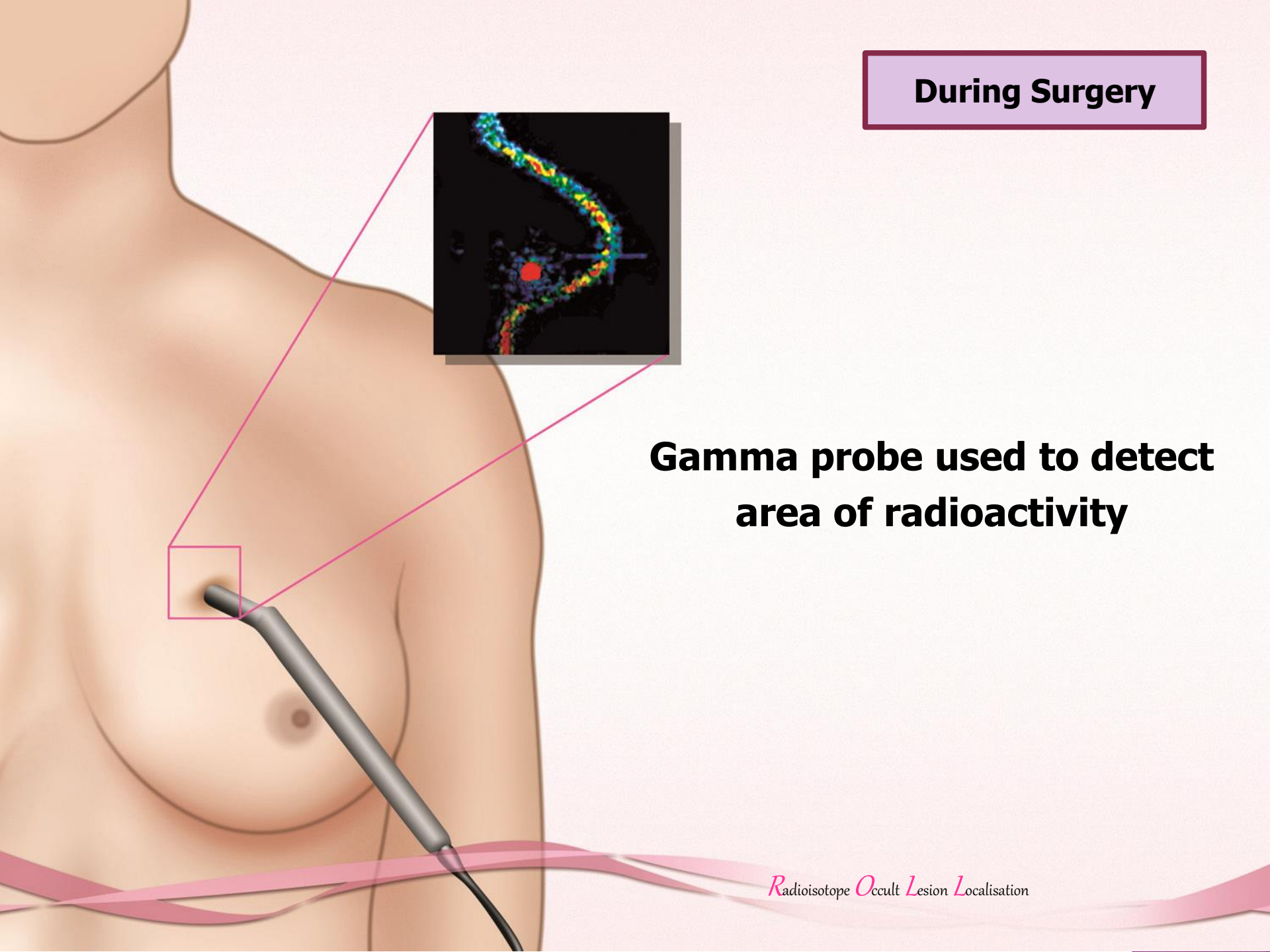
SUSPICIOUS MICROCALCIFICATIONS / LUMP IN THE BREAST

*R*adioisotope *O*ccult *L*esion *L*ocalisation



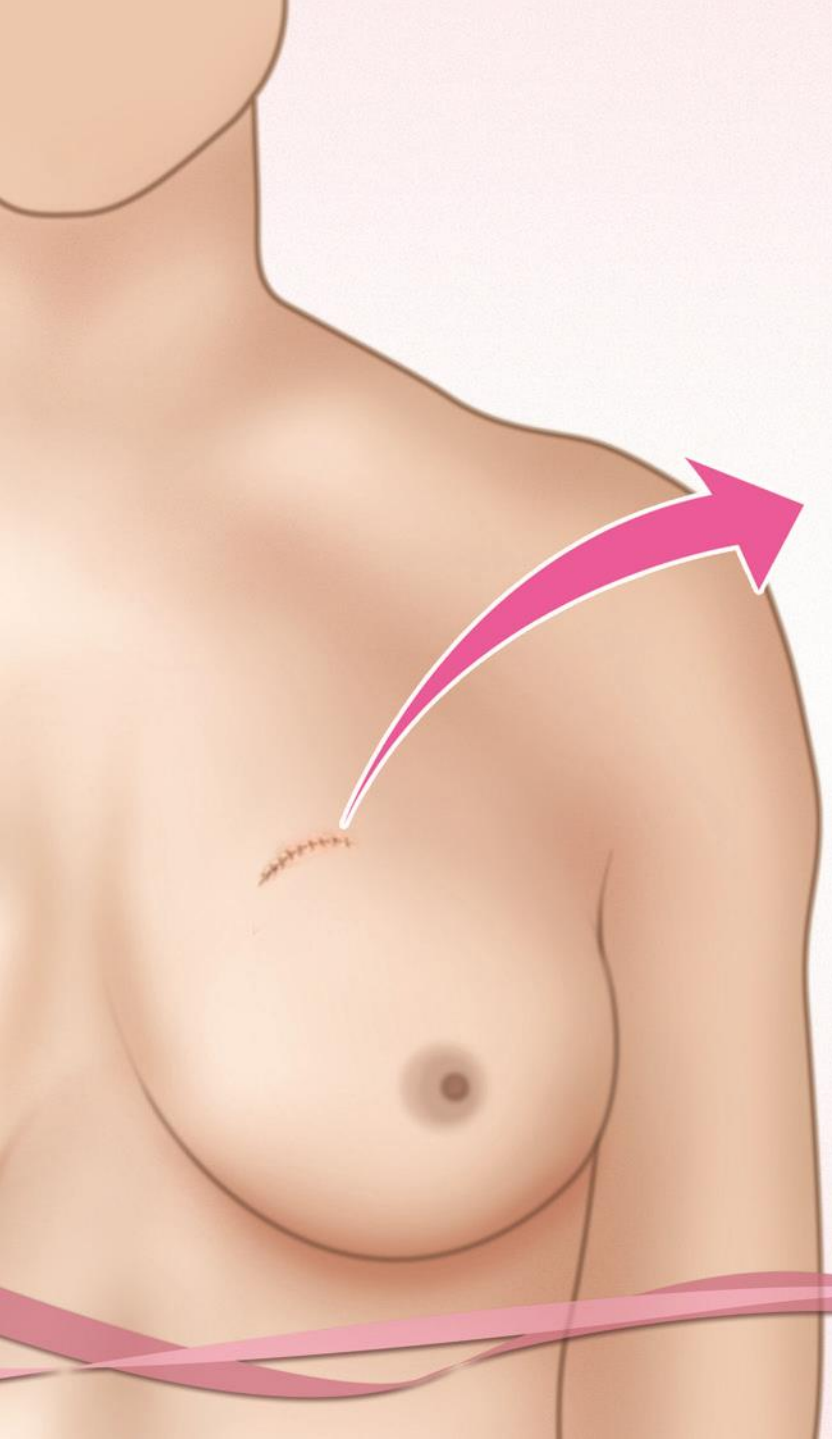
Injection of radioactive material under image guidance

During Surgery



Gamma probe used to detect area of radioactivity

*R*adioisotope *O*ccult *L*esion *L*ocalisation

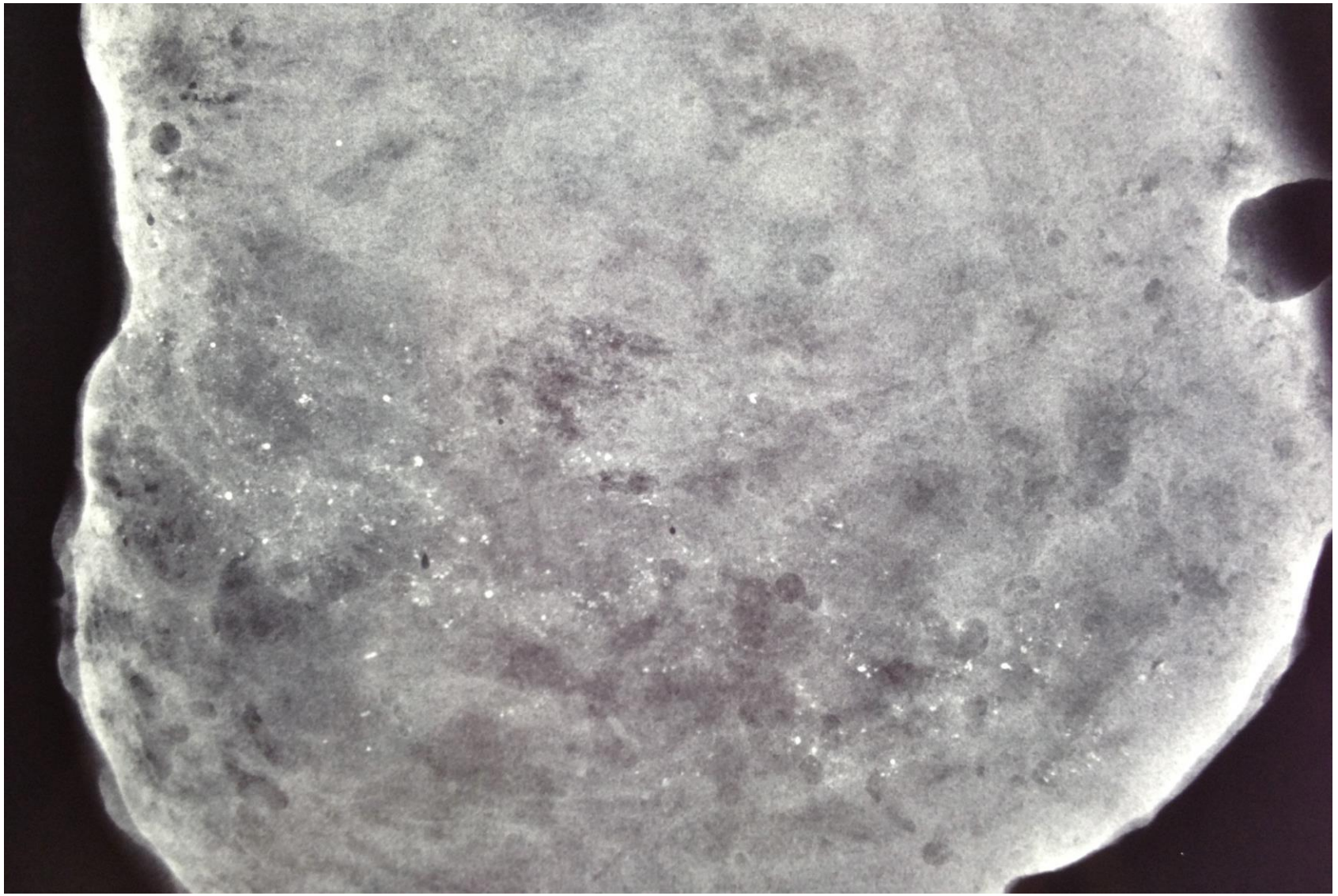


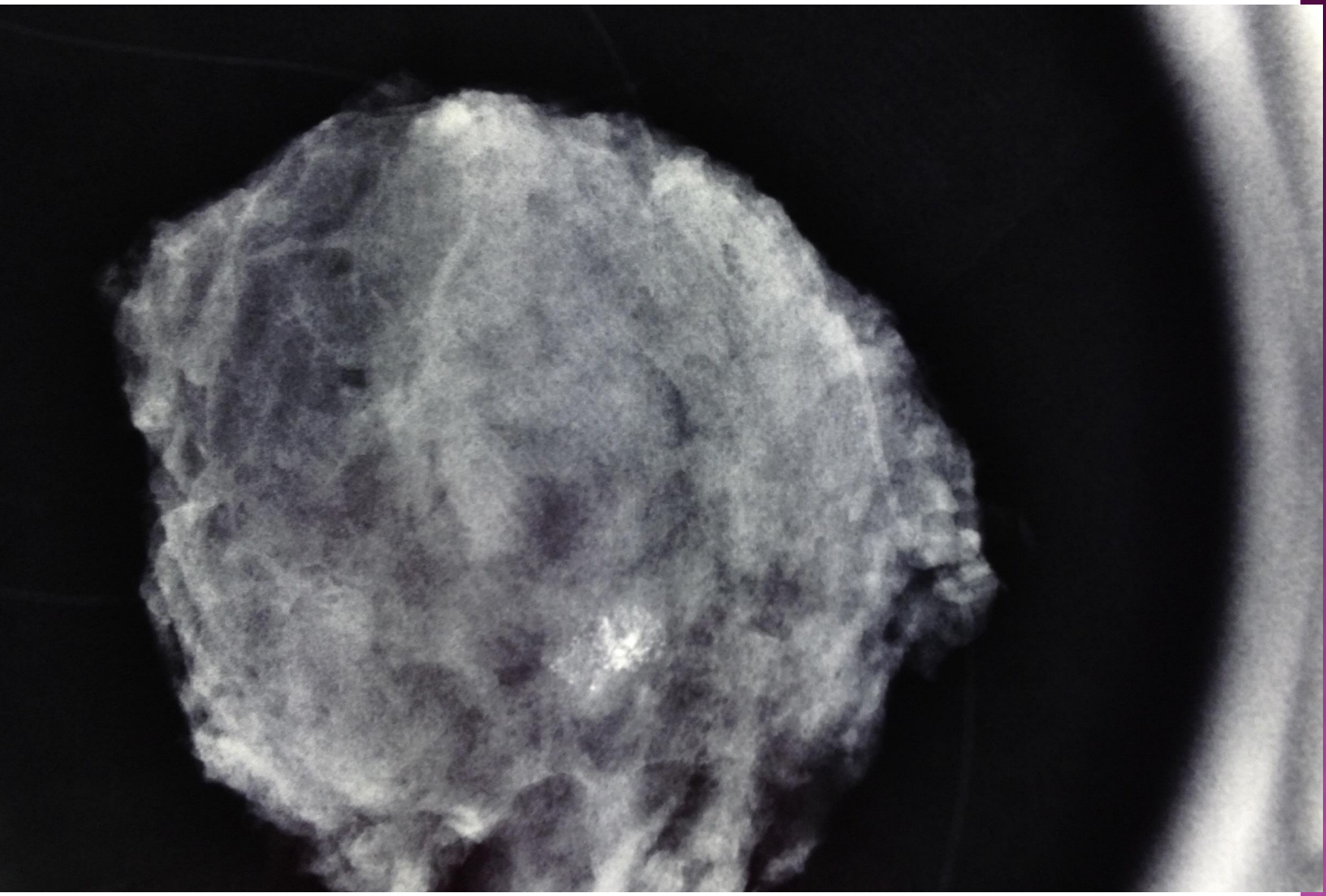
Suspicious lump is removed and sent to the laboratory for testing

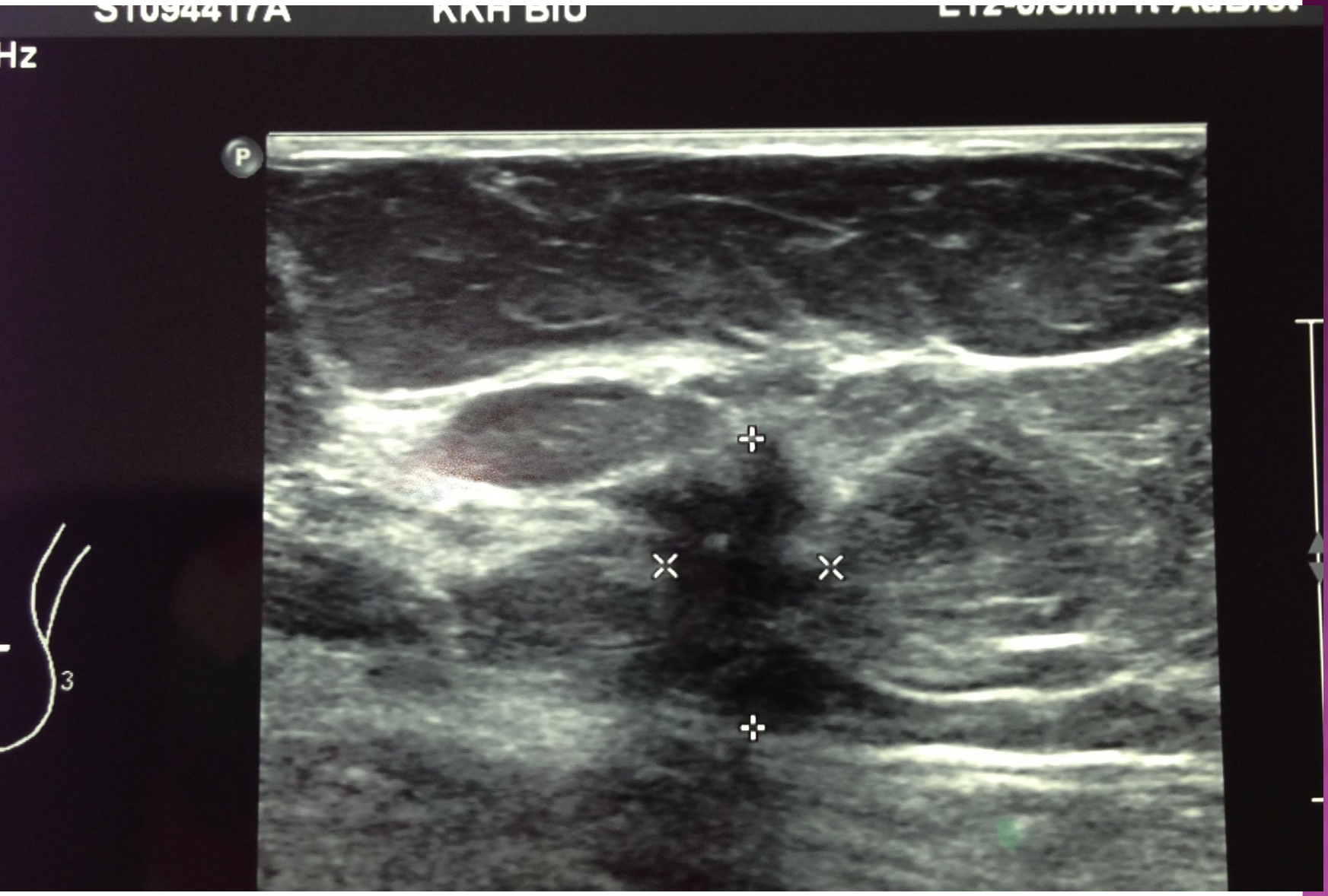
*R*adioisotope *O*ccult *L*esion *L*ocalisation

WHEN TO USE ROLL?

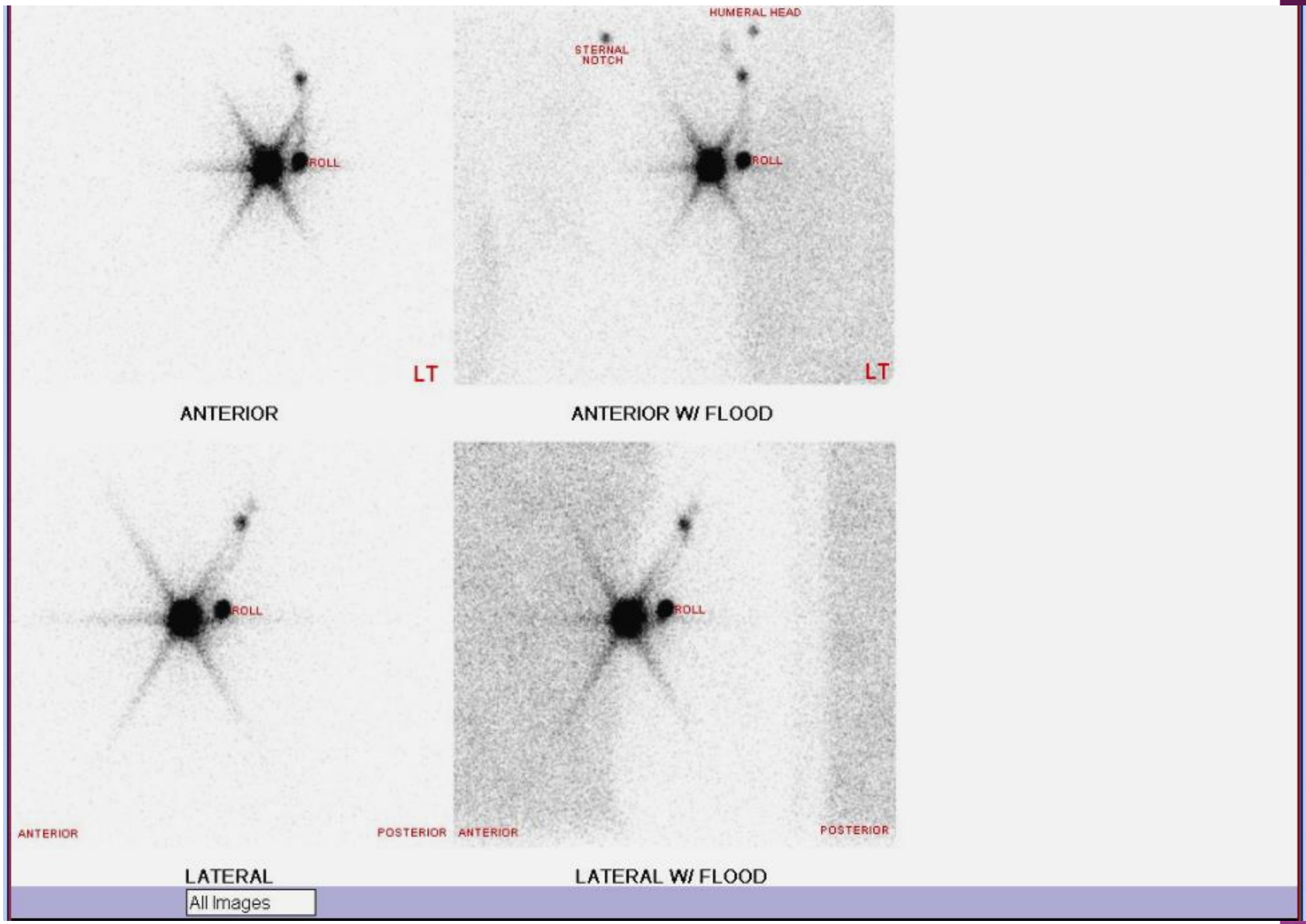
- All cases where you might consider for hookwire
- In combination with sentinel lymph node biopsy - SNOLL
- Cases where ROLL is superior to Hookwire
  - Thin breasts
  - Deep lesions
  - Superficial lesions
  - Widespread/ segmental lesions (Bracketing method)
- Only scenario where I do not use ROLL – Pregnant patient






Hz
P
3

SNOLL


ROLL
LT
ANTERIOR
HUMERAL HEAD
STERNAL NOTCH
ROLL
LT
ANTERIOR W/ FLOOD
ROLL
ANTERIOR
POSTERIOR
LATERAL
ROLL
ANTERIOR
POSTERIOR
LATERAL W/ FLOOD
All Images

EXPERIENCES

Author	Number	Sub-group	Results
Sarlos et al (Ann Surg Onc 2002)	**100**	**120 lesions** **- 88 ultrasound** **- 21 mammography**	**118/120 localized intraoperative (98.3%)** **Average surgical duration 27.8 minutes** **Surgical margins 80% clear**
Thind et al (Clin radiol 2005)	140	70 ROLL 70 Hookwire	ROLL - u/s median (6 min) and mammo (12 min) - 84% clear margins - 73% excellent cosmesis Hookwire - Uls median (15 min) and mammo (20 min) - 60% clear margins - 54% excellent cosmesis
Rampaul et al (BJR 2004)	95	48 ROLL 47 Hookwire	ROLL - Localization 95.8% - Pain 2.7 (Duration 16 min) Hookwire - Localization 93.6% - Pain 3.6 (Duration 23 min) ROLL surgery technique easier, with no adverse impact on outcome

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Moreno et al (J exp and clin research 2008)	**120**	**61 ROLL** **59 Hookwire**	**ROLL** - **Procedure time shorter (26 min vs 37 min)** - **Volume excised smaller** - **ROLL better cosmetic outcome** - **ROLL less discomfort**
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ADVANTAGES OVER HOOKWIRE

1. Easier to perform
2. Less discomfort to patients
3. Precise localization with reliable reproducible results – lower positive margin rate and reoperation rate
4. Shorter operative time
5. Incisions can be planned for a superior cosmetic outcome
6. Safer – no problems of wire migration
7. Staff safety – no additional radioactive handling precautions needed



SUMMARY

- ROLL – a superior alternative to conventional hookwire localization of impalpable breast abnormalities
- Better tolerated by patients with lower risks of injury
- Easier to perform for surgeons and allows for cosmetic incisions