

Breast Cancer:

*A minimally invasive approach to the axilla*

**By**

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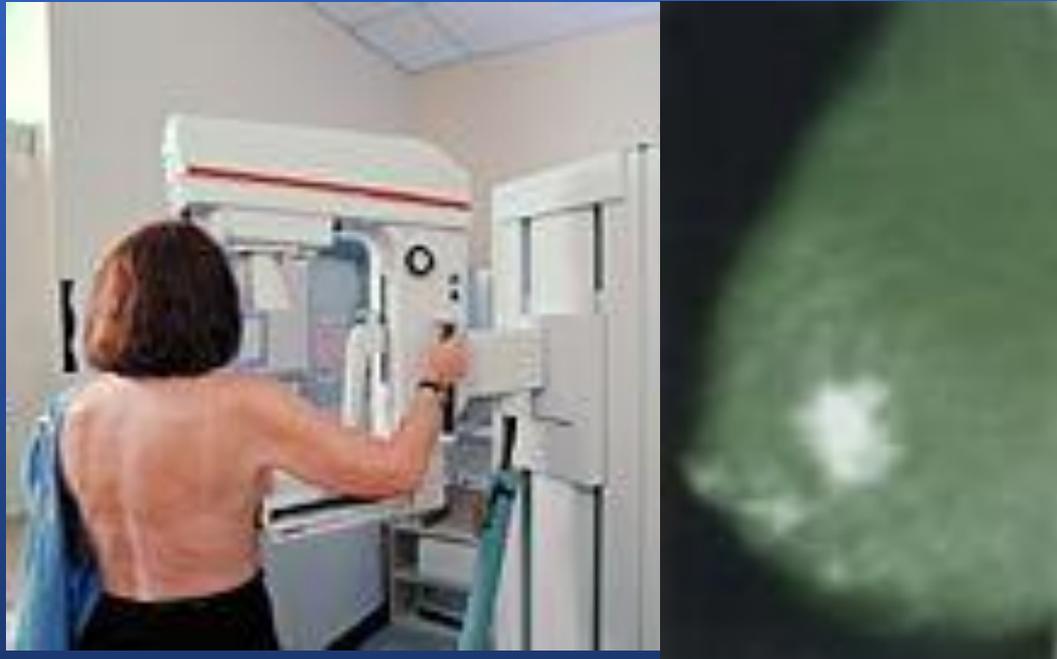
# Introduction

- Establish the diagnosis
  - Evaluate for extent of disease
  - Plan stage appropriate individualised treatment
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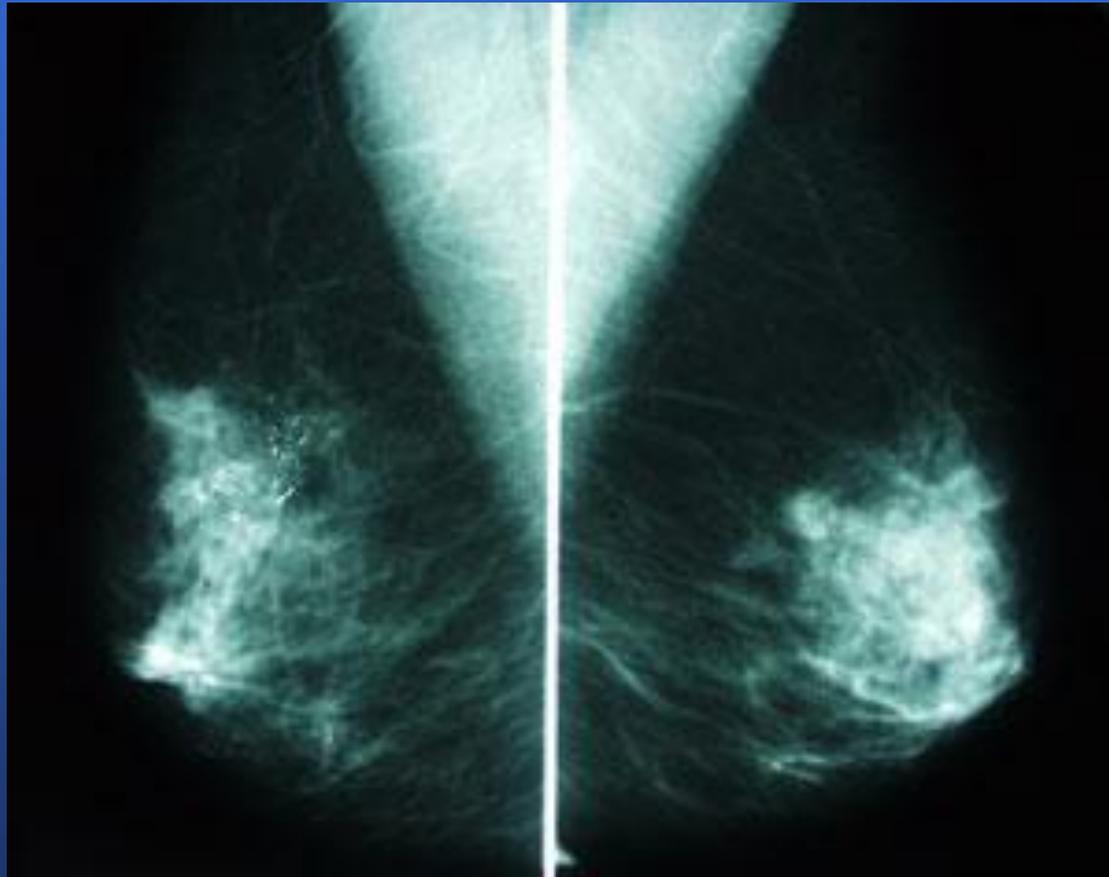
## Patient pathway

- Fast track: one stop breast clinic  
history and examination.
  - Clinical findings
  - Imaging
    - suspicious of breast cancer
    - axillary ultrasound
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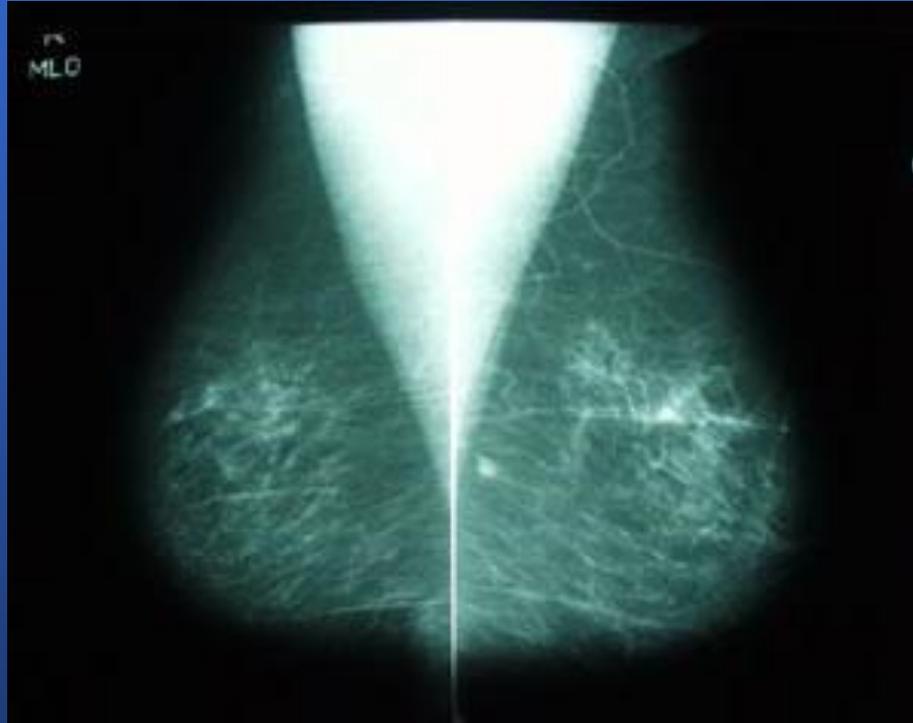
# Axillary Ultrasound



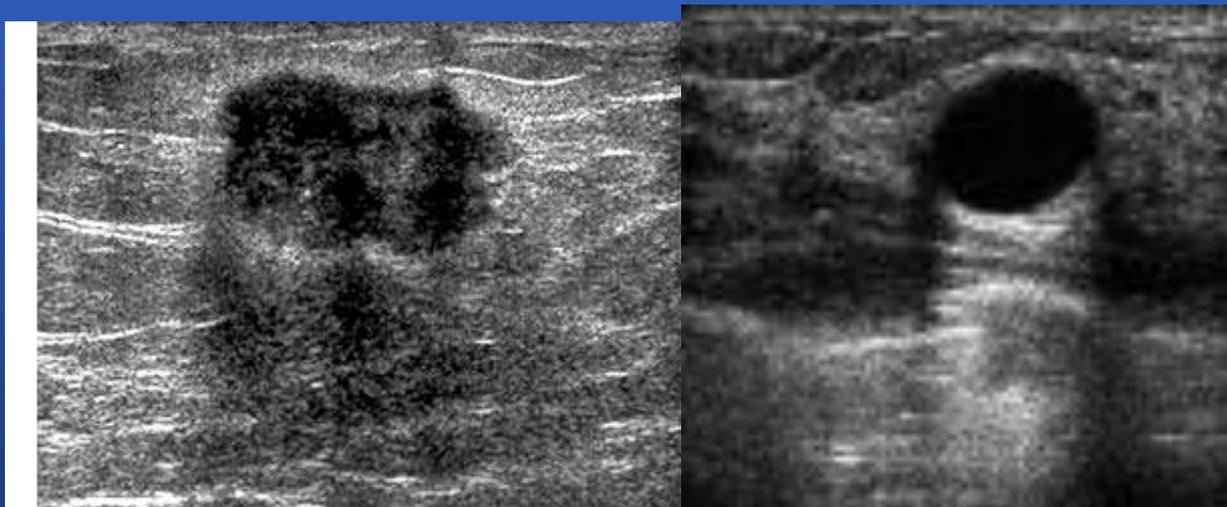
# Ultrasound Pictures



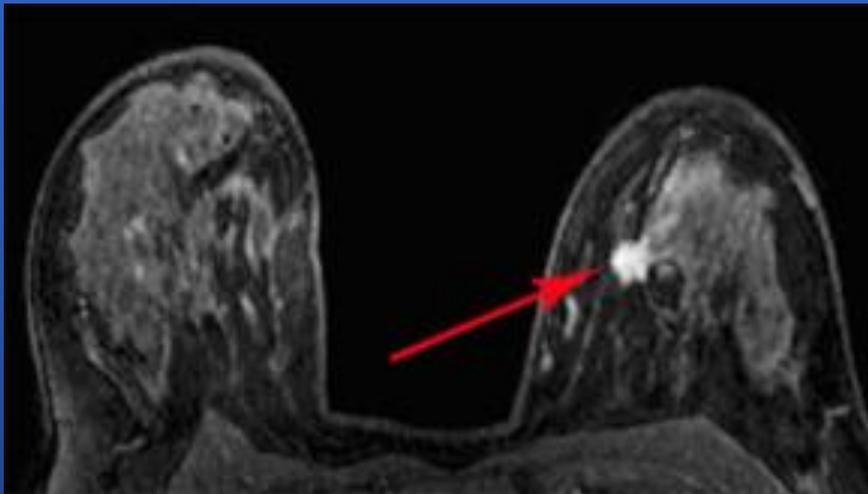
# Examples of pathology



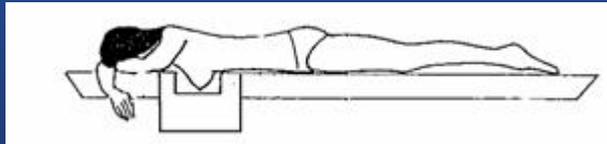
# Breast Ultrasound



# Breast MRI



➤ MRI guided biopsy



## Extent of disease

- 95% of patients who present with breast cancer have apparently local disease.
- Indirect features to suggest systemic involvement
  - ✓ axillary lymph node metastasis
  - ✓ tumour size, grade
  - ✓ vascular or lymphatic invasion
  - ✓ Her2neu status or p53 etc

## Preoperative evaluation of axilla

- Clinical examination inaccurate, false negative rate of 39-45%
  - Mammography/ultrasound
    - ✓ sensitivity of 70%
  - CT
  - MRI
  - PET
  - Ultrasound guided FNAC
-

# Rationale for axillary surgery

- Status
  - Local control
  - Survival impact (B04) study
    - ✓ 10 years 5-6% worse
  - There is no tumour size so small that one can ignore the axilla
    - ✓ upto 20% for T1a
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## Issues with axillary clearance

- Maybe of limited therapeutic value
- 80% of patients maybe LN negative
- Short term drains, seroma
- Lymphoedema
- Sensory loss in area of intercostobrachial nerve
- affects the lifestyle of a third

## Sentinel node concept

- First draining lymph node
  - reflects the status of the axilla
  - can be identified and sampled
-

# SENTINEL NODE CONCEPT

- sentinel node refers to the "node on watch."
  - this node is the first node to receive cancer cells and that if this node is positive, there may be other positive nodes upstream.
  - The cancer cells don't "skip" and go to higher nodes.
  - If this node is negative, all the upstream nodes are negative 99 out of 100 times
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## How We do it

- 35MBq of Tc99m in nanocoll 21hrs
  - injected subdermal
  - lymphoscintigram
  - examine with hand held probe
  - 2ml Patente bleu V on induction
-

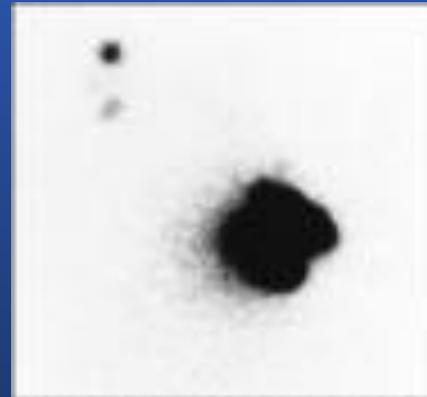


Figure 1. Lymphoscintigram, demonstrating two axillary lymphatic nodes with the largest, located in the axilla of the right breast.

# Procedure



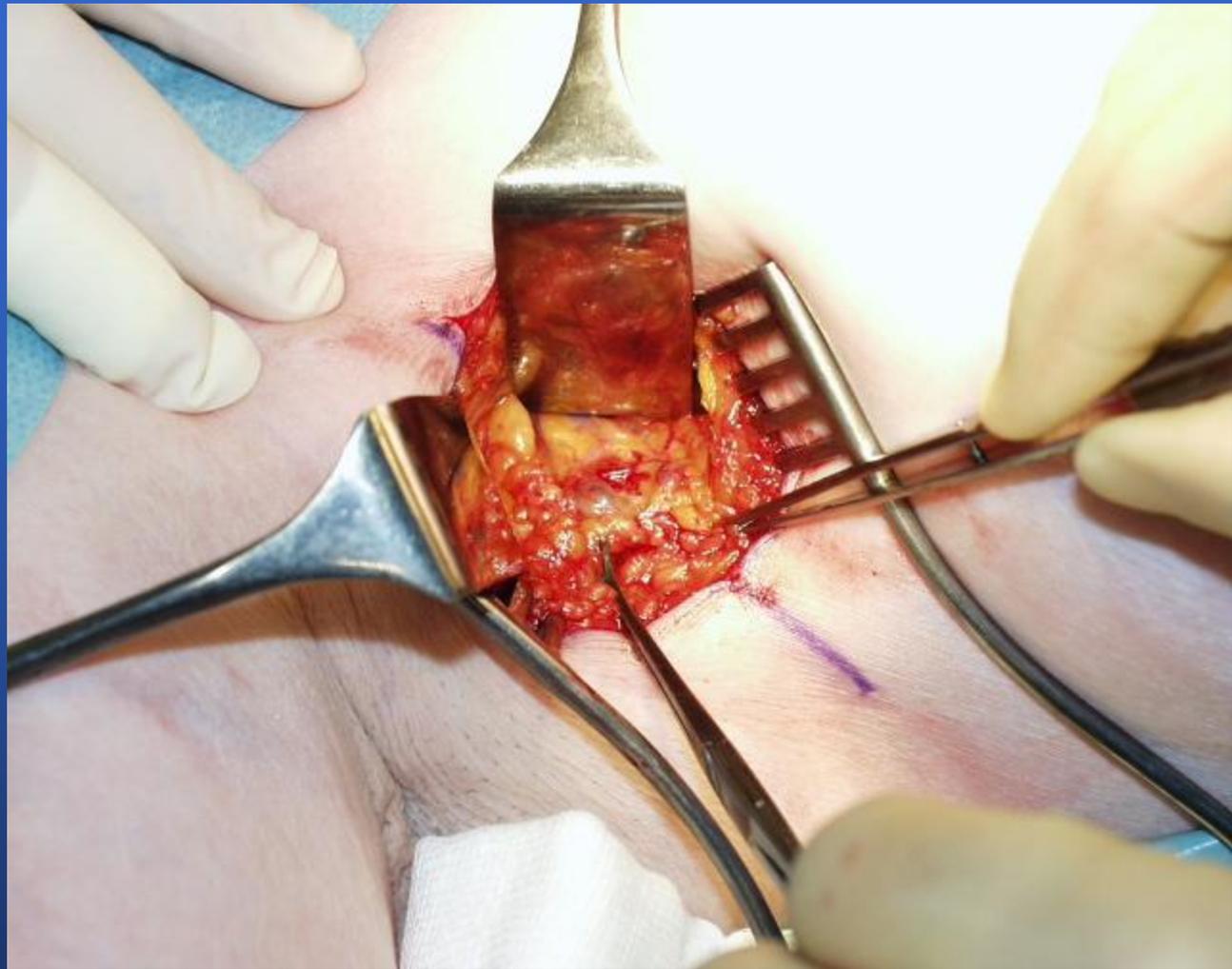
## How We do it

- 2ml patent blue V
  - Clean drape and place incision
-

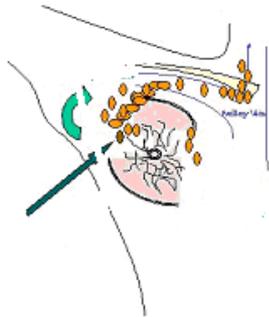
# Further steps







# BIOPSY





## Practical point

After a crime, you don't interrogate a bunch of people who were two blocks away; you focus on eye witnesses at the scene of the crime."

—Marisa Weiss, M.D.

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# Poor candidates

- palpable lymph nodes
  - Locally advanced breast cancer
  - multi-focal breast cancer
  - previous breast surgery (including breast reduction)
  - previous radiation therapy to the breast
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## Can we stop after negative SNB

- Axillary relapse, most studies have median FU that is too short
- melanoma about 3-4%
- expect 1% for breast
- 0.4% at median fu of 84 months

Singhal 1996, MSKCC

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## Should you go back after SNB+

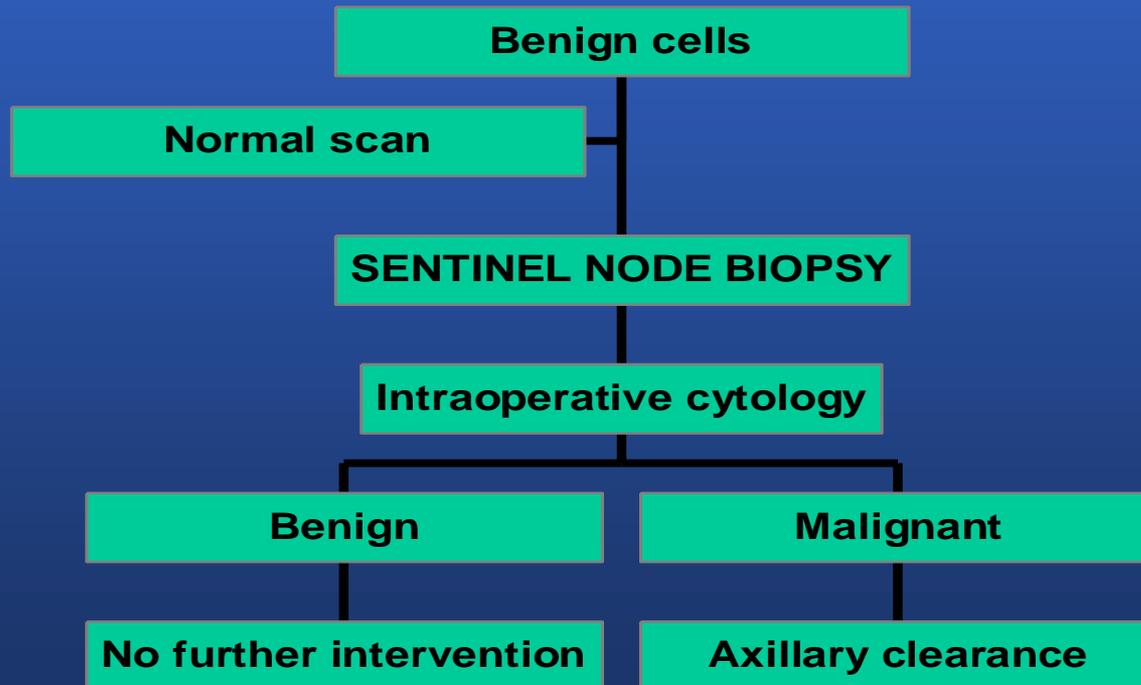
- 39% have further involved nodes
  - this may be obvious at first op
  - intraoperative analysis
    - ✓ cytology 10% false negative
    - ✓ frozen section
-

## The important question

- "HOW MANY lymph nodes are positive?"
  - not just "ARE lymph nodes positive?"
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# Sentinel Node Biopsy

## SENTINEL NODE BIOPSY



# Question

Can pre-operative axillary ultrasound help reduce the number of sentinel node biopsies for breast cancer.

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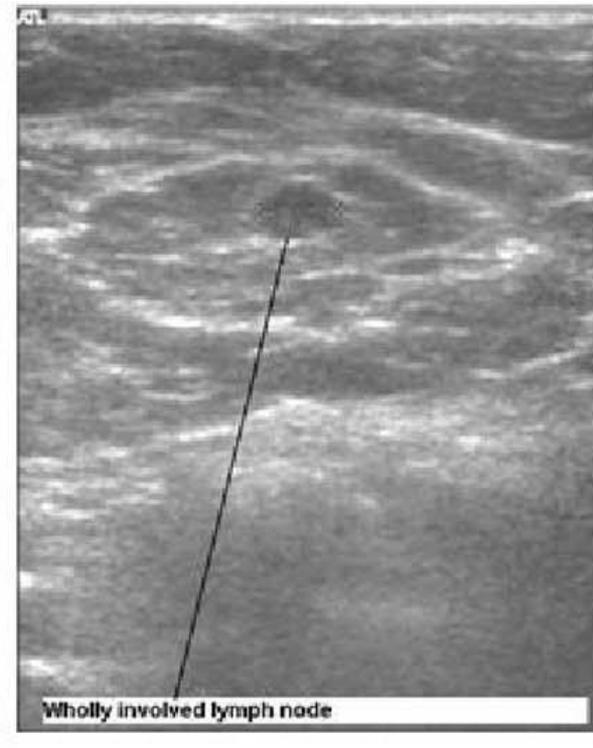
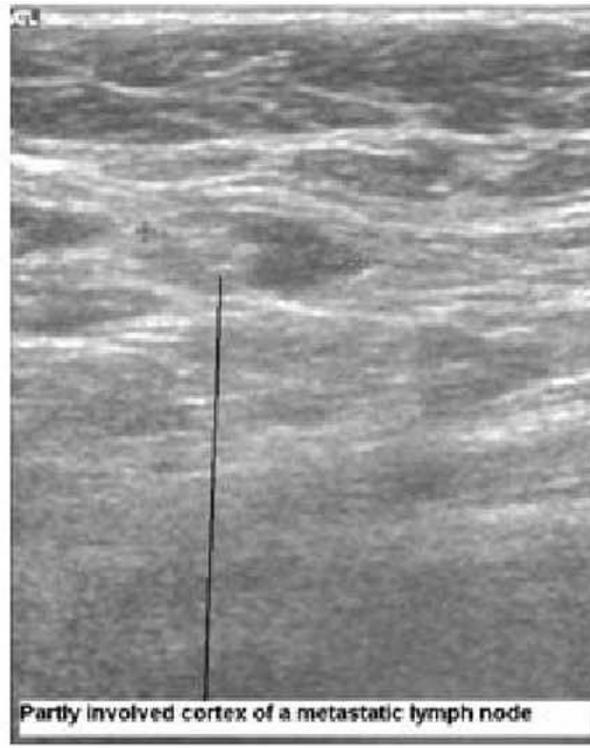
# Patient selection

- 339 primary operable breast cancer cases (T1-3)
- Clinically node negative (N0).
- From June 2003- Feb 2006.

## Radiological criteria of suspicious Axillary Lymph node

- Alteration of Cortico-medullary ratio.
- Cortical thickness more than 2mm.
- Totally replaced LN.

# Axillary Ultrasound images



Normal ALN  
ALN

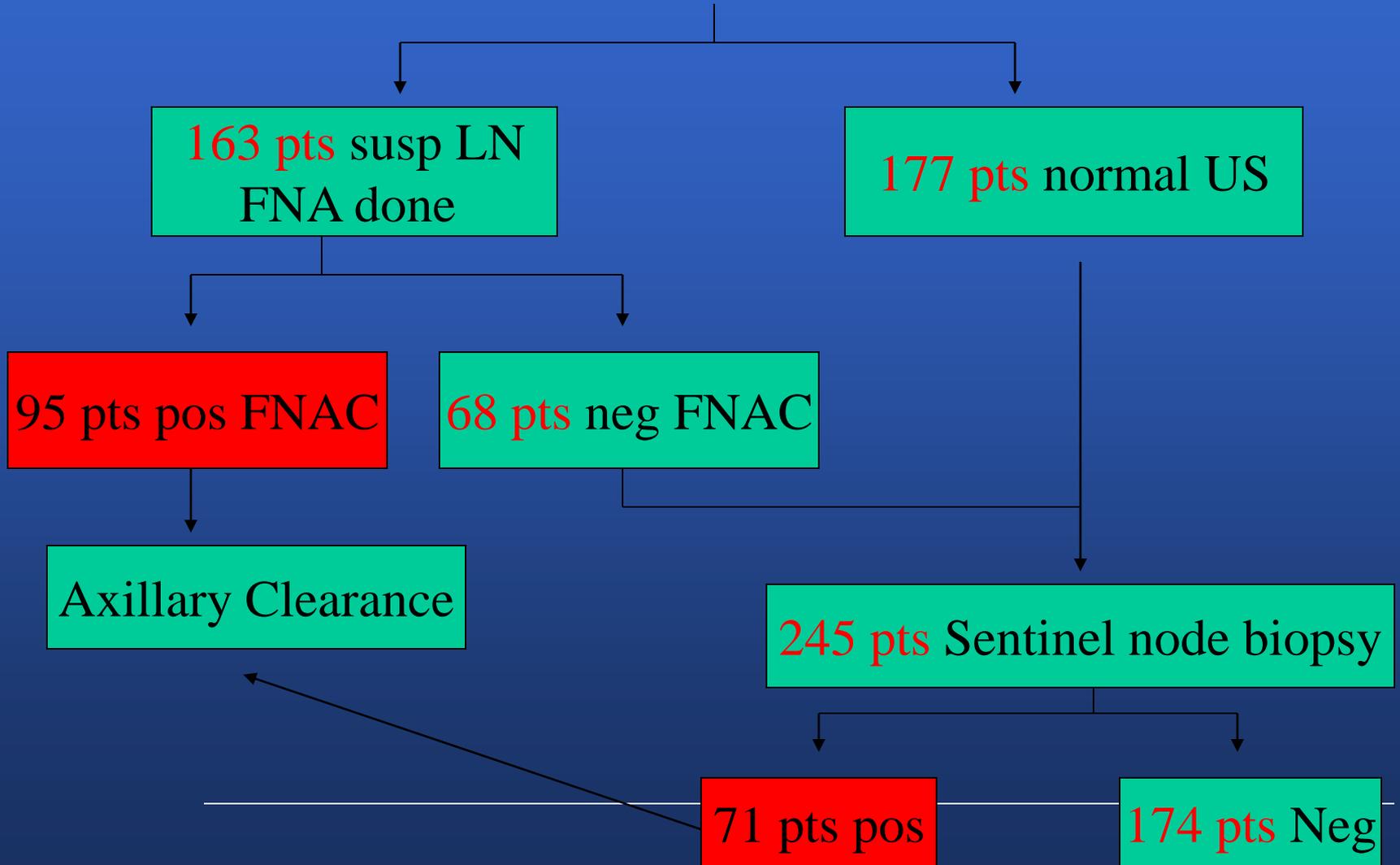
HEMANT SINGHAL

Partly involved ALN

ENDOSURGERY MARCH 2006

Fully involved

339 pts - AUS +/- FNAC



# Results

## Axillary ultrasound plus FNAC

False neg. rate	20%
Sensitivity	80%
Specificity	100%
Pos. Pred. Value	100%
Neg. Pred. Value	64%

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## Results

- SLNB reduced by 28% ( 95 /339 patients)
  - No False Positive FNAC.
  - No Delay or complications from FNAC.
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## Review of literature

- Sensitivity varies-
  - ✓ Improves if multiple lymph nodes involved.
- Specificity-
  - ✓ 100% in most series.
  - ✓ False positives- In pts who had neo- adjuvant chemo.
- Reduction in SLNB- 14-18% approx.

# Conclusion

- Pre-operative axillary ultrasound + FNAC
  - if positive, is an accurate staging method.
  - If negative, does not accurately rule out metastasis.
- Positive patients can proceed - Axillary dissection directly.
- Significant reduction of SLNB - 28%.
- Effective in cost and time saving.
- Way forward                      Part of standard axillary staging.



# Evaluation

## Axillary evaluation

