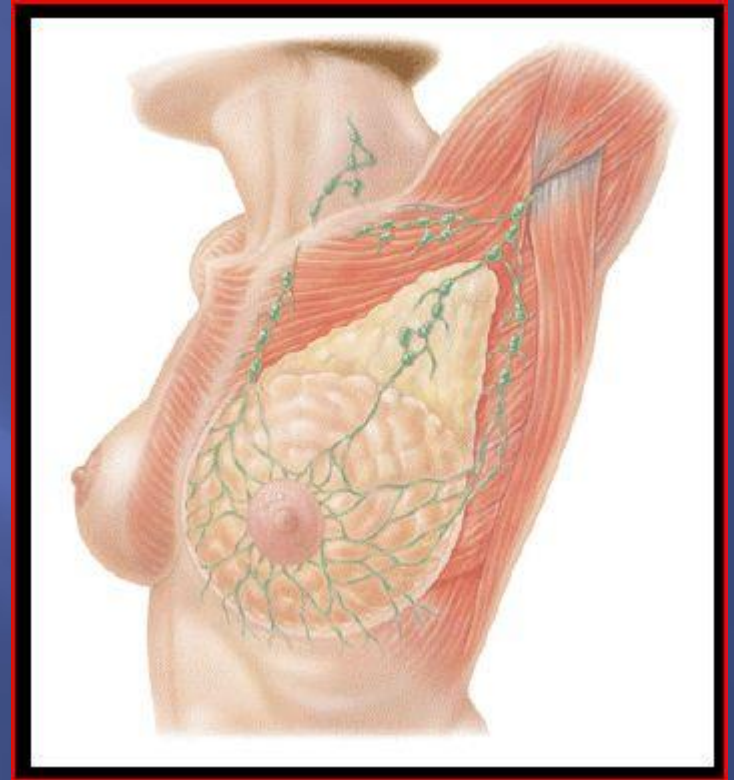


BREAST DISEASE

Dr.Amal Al-Abdulkareem

Breast Modified Sebaceous Glands

- ❖ Upper border
 - clavicle.
- ❖ Lower border.
 - 6th or 7th rib.
- ❖ Inner Border
 - Edge of sternum.
- ❖ Outer border
 - Mid-axillary line.



External Anatomy of the Breast

❖ Nipple

- Pigmented, Cylindrical
- 4th inter-costal space
- * at age 18

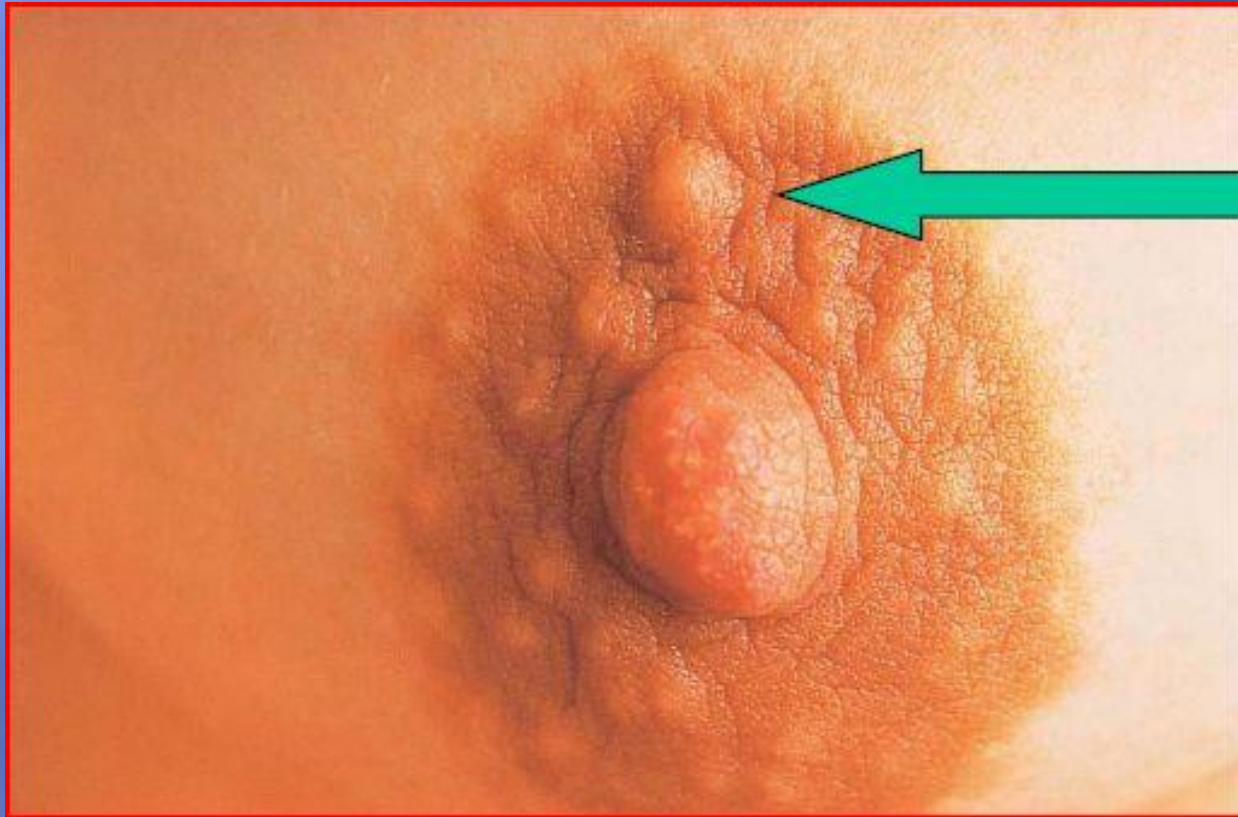
❖ Areola

- Pigmented area surrounding nipple

❖ Glands of Montgomery

- Sebaceous glands within the areola
- Lubricate nipple during lactation

Montgomery's Tubercles



Blocked
Montgomery
Tubercle

Anatomy

Axillary lymph nodes defined by pectoralis minor muscle:

- Level 1 – lateral
- Level 2 – posterior
- Level 3 – medial

Long Thoracic Nerve

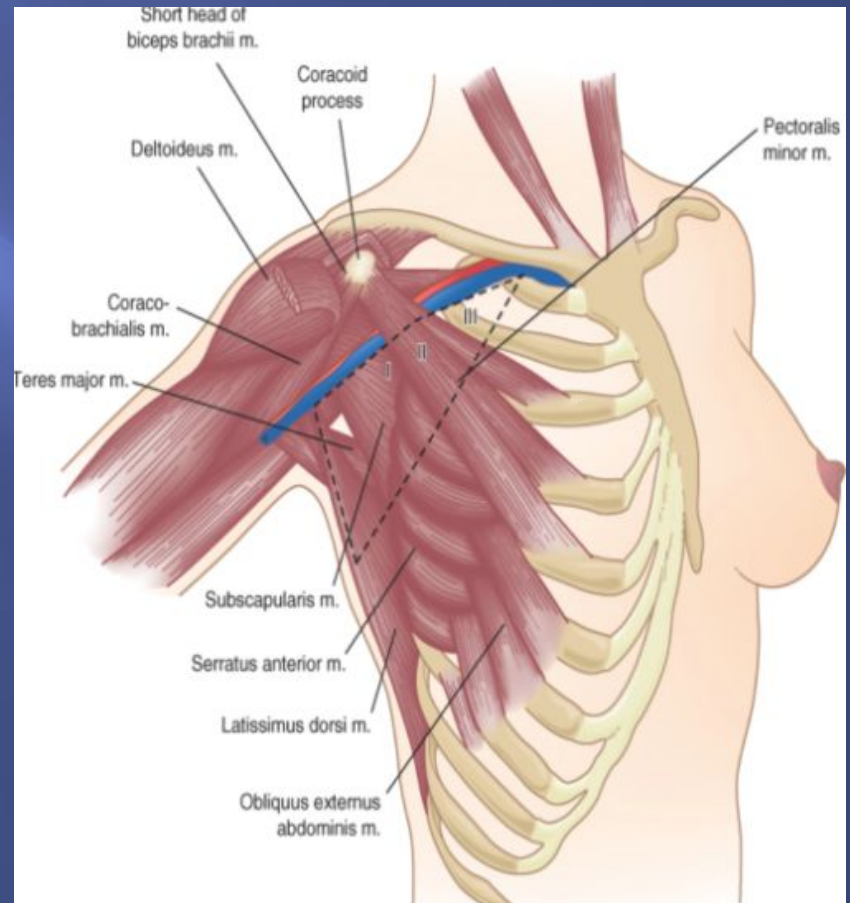
- Serratus anterior

Thoracodorsal Nerve

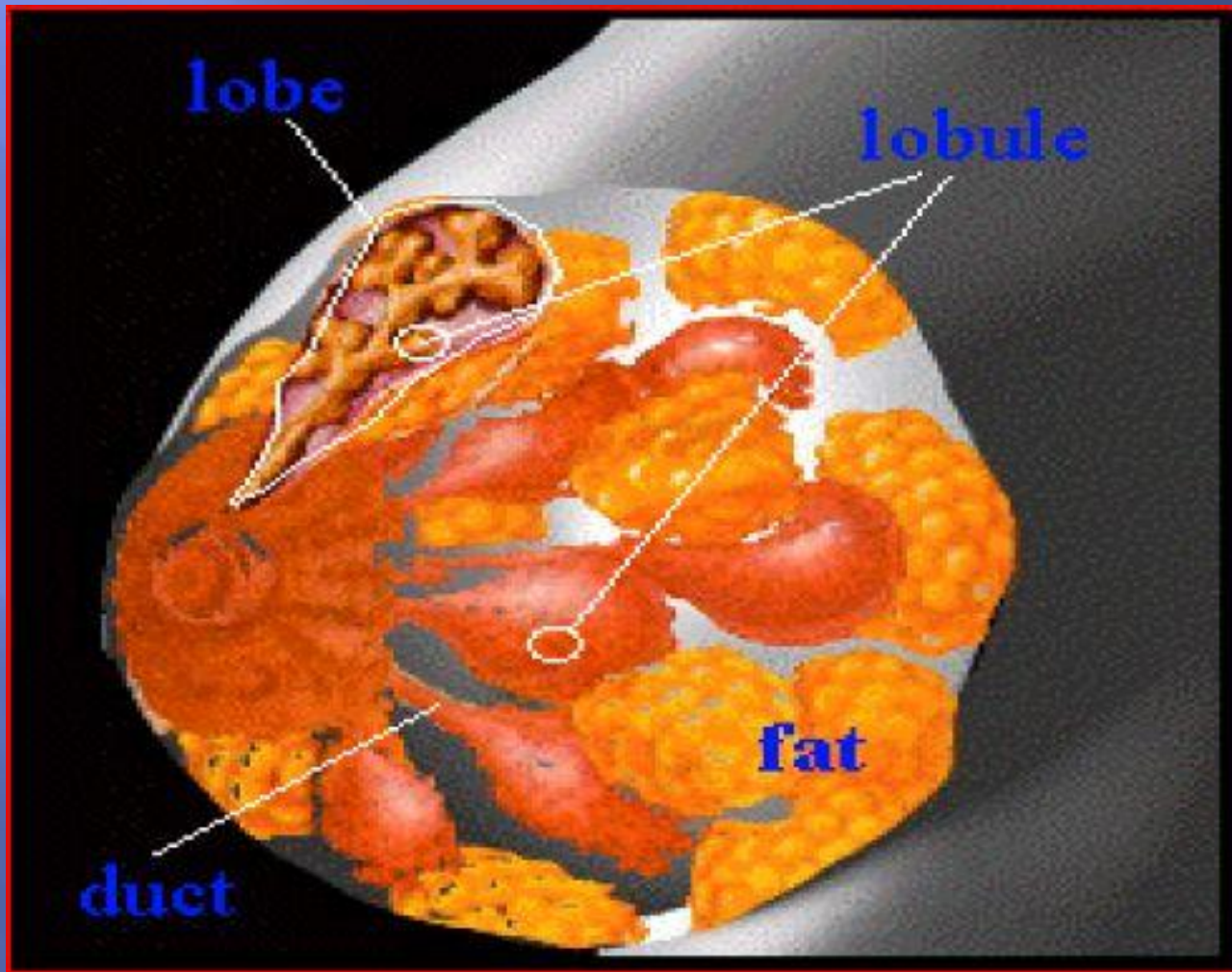
- Latissimus Dorsi

Intercostalbrachial Nerve

- Lateral cutaneous
- Sensory to medial arm & axilla



Internal Anatomy of the Breast



Fibrous Tissue

❖ Cooper's Ligaments

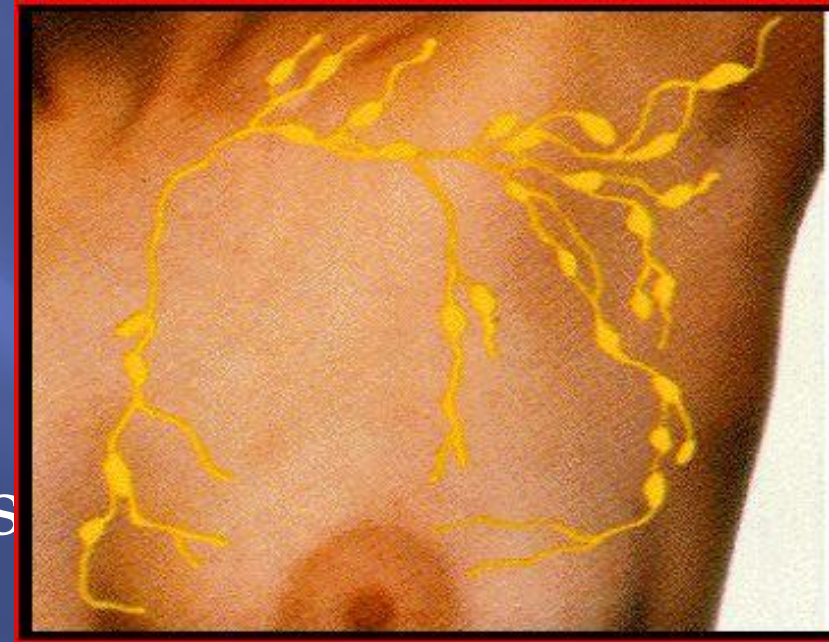
- Suspensor ligaments
 - Extending through the breast to underlying muscle
 - Benign or malignant lesions may affect these ligament
 - Skin retraction or dimpling

Fatty Tissue

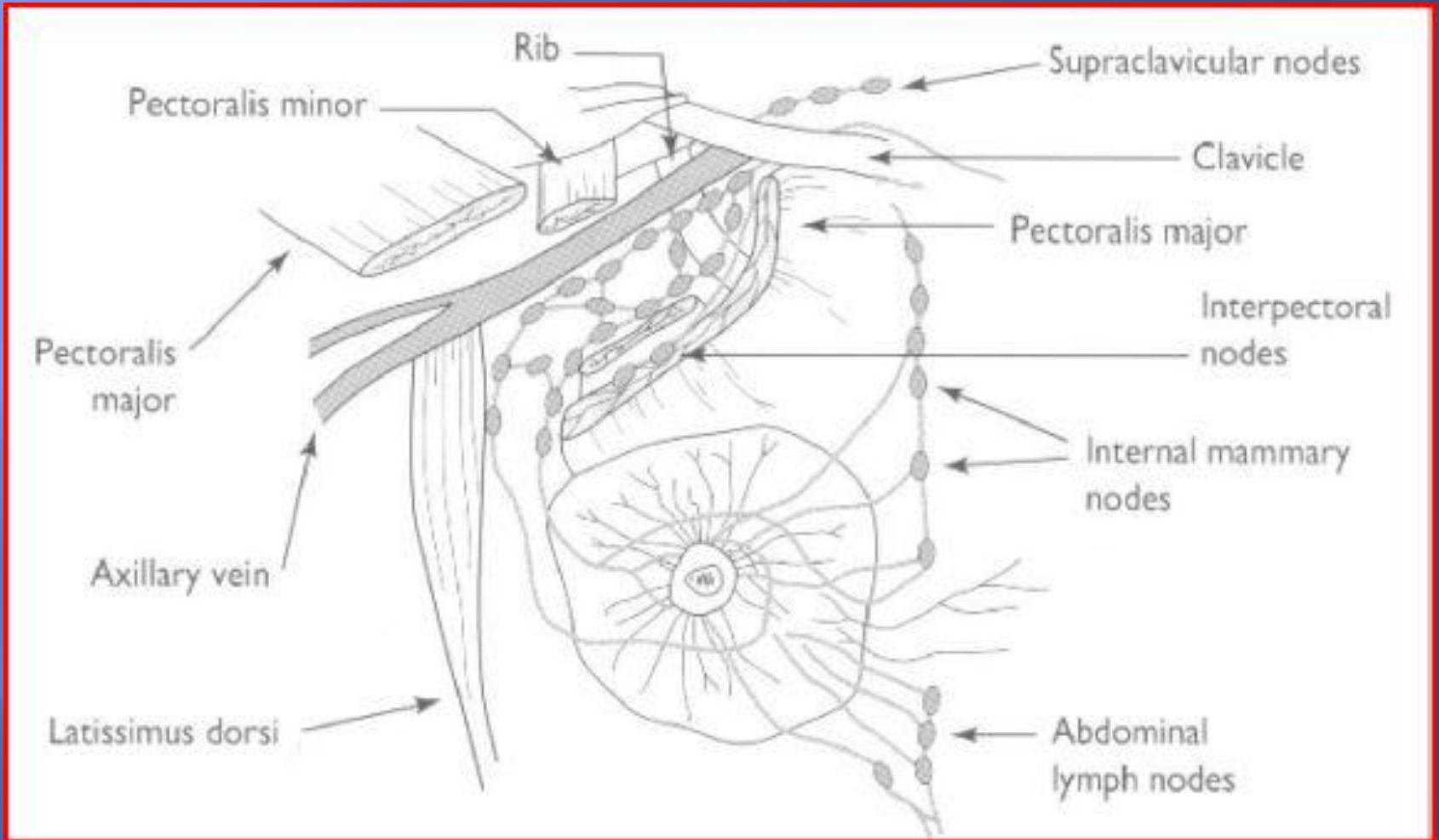
- ❖ Subcutaneous and retro-mammary fat
- ❖ Bulk of breast.
- ❖ No fat beneath areola and nipple

Lymph Nodes

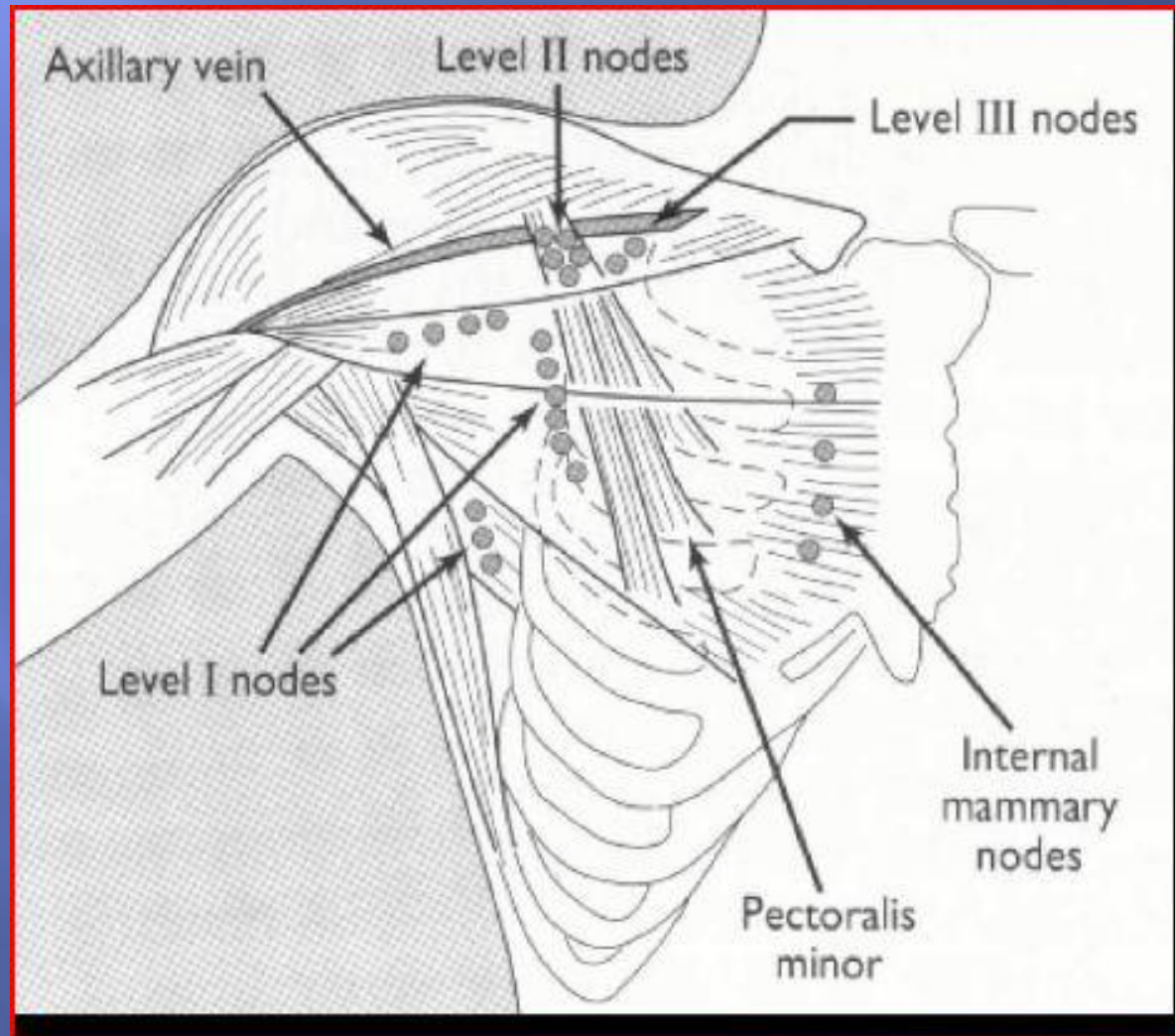
- ❖ Most drain towards axilla.
- ❖ Superficial lymphatic nodes drain skin.
- ❖ Deep lymphatic nodes drain mammary lobules



Lymph Drainage of Breast



Levels of Axillary Nodes



Lymph Nodes

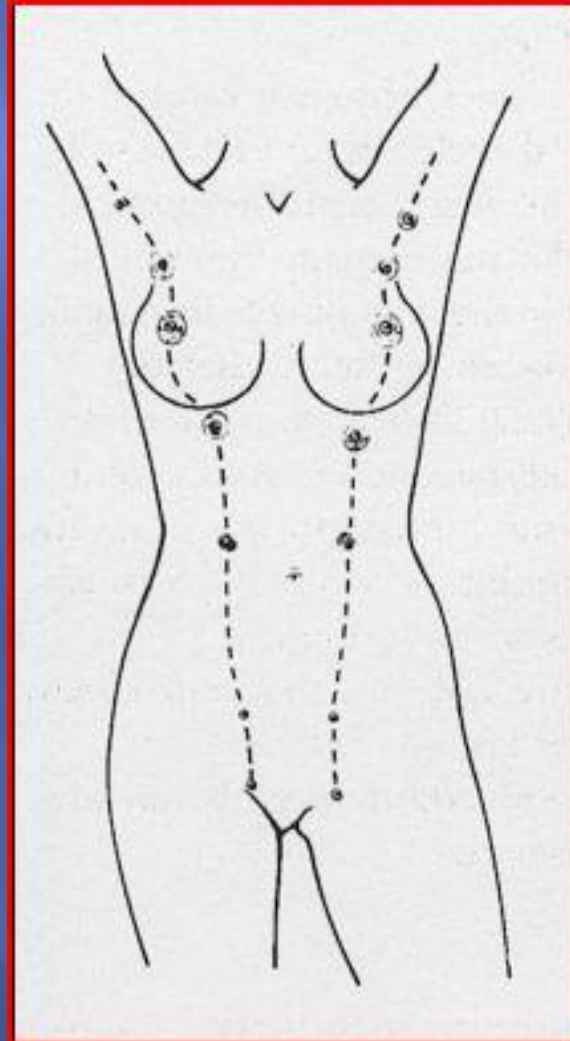
- ❖ Palpate ALL nodes
- ❖ Axillary
- ❖ Supraclavicular
- ❖ Infra-clavicular

Normal Variations of Breast

- ❖ *Accessory breast tissue.*
- ❖ *Supernumerary nipples.*
- ❖ *Hair*
- ❖ *Asymmetry*

Milk Lines

Sites of Accessory Nipples and Breasts



Accessory Breast Tissue



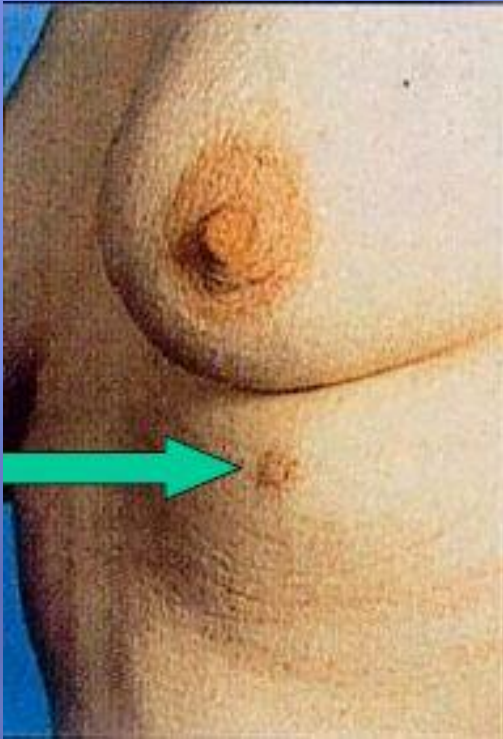
Accessory Tissue

Biopsy

Accessory Nipple



Accessory Nipple and Bilateral Accessory Breasts



Breast with Two Nipples



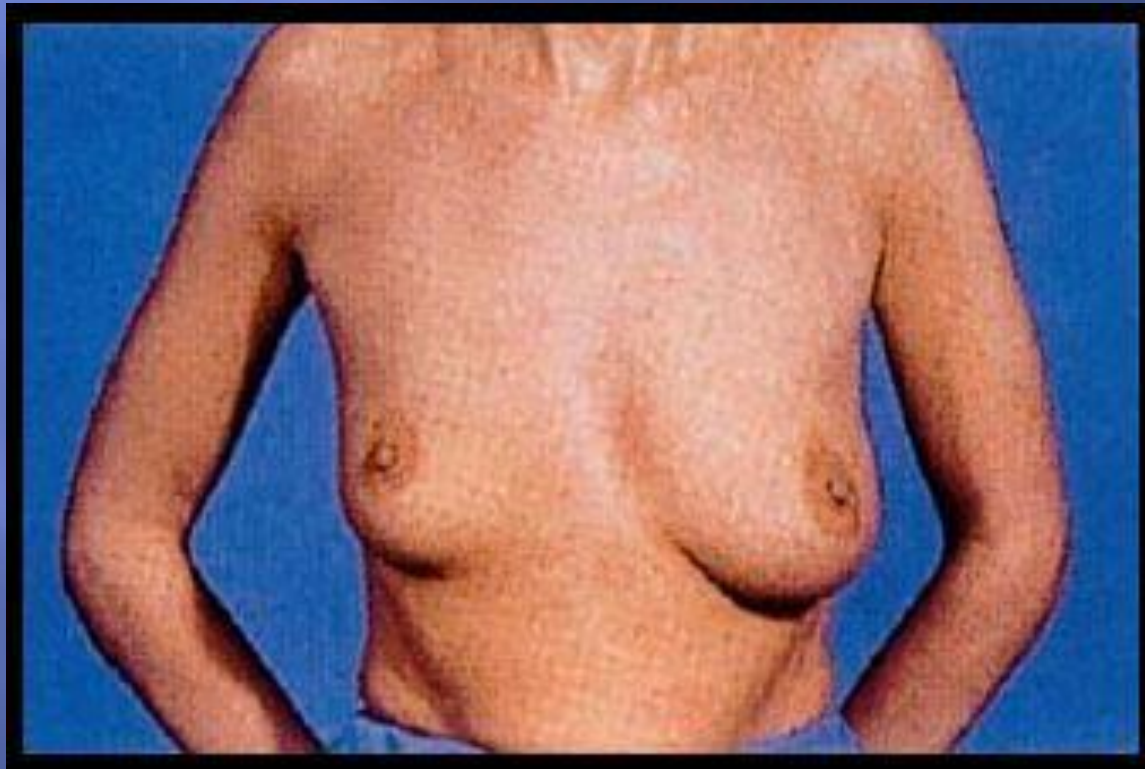
Breast Hair



Breast Asymmetry



Breast Asymmetry



Clinical Breast Exam

Clinical Exam

- Inspection

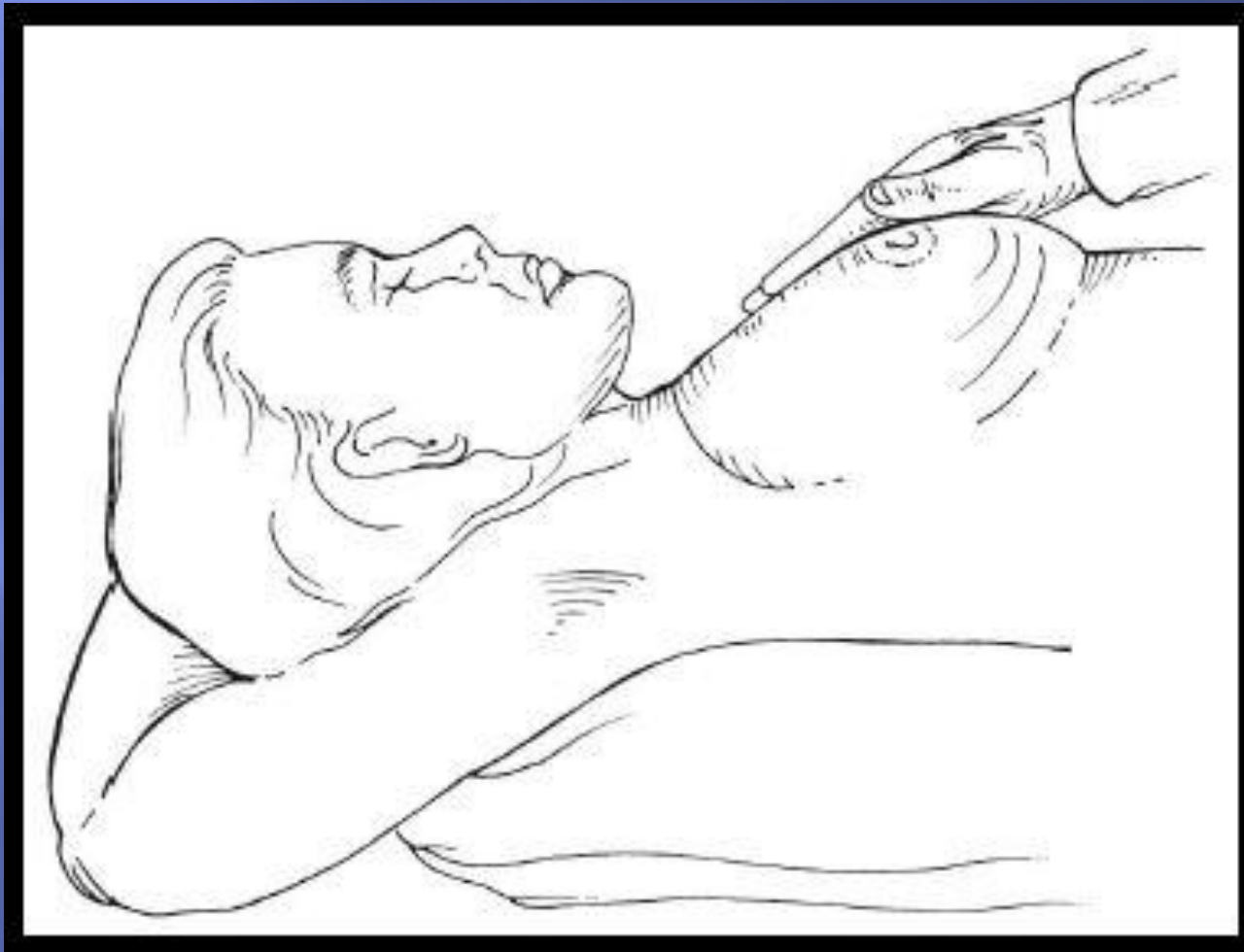
- Skin
- Symmetry
- Masses

- Palpable

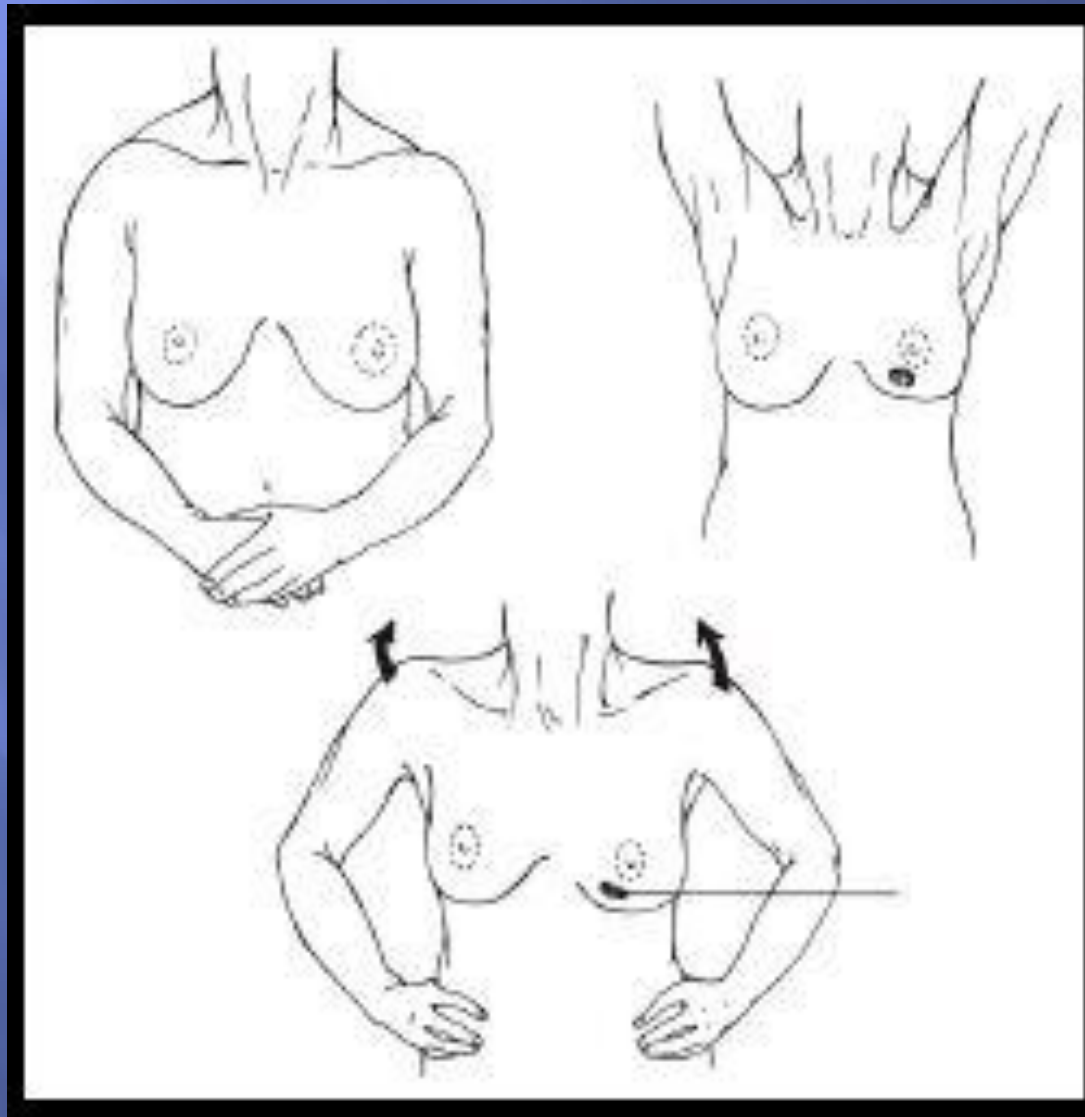
- Gland
- Axilla, Supraclavicular spaces
- Nipple-areola complex



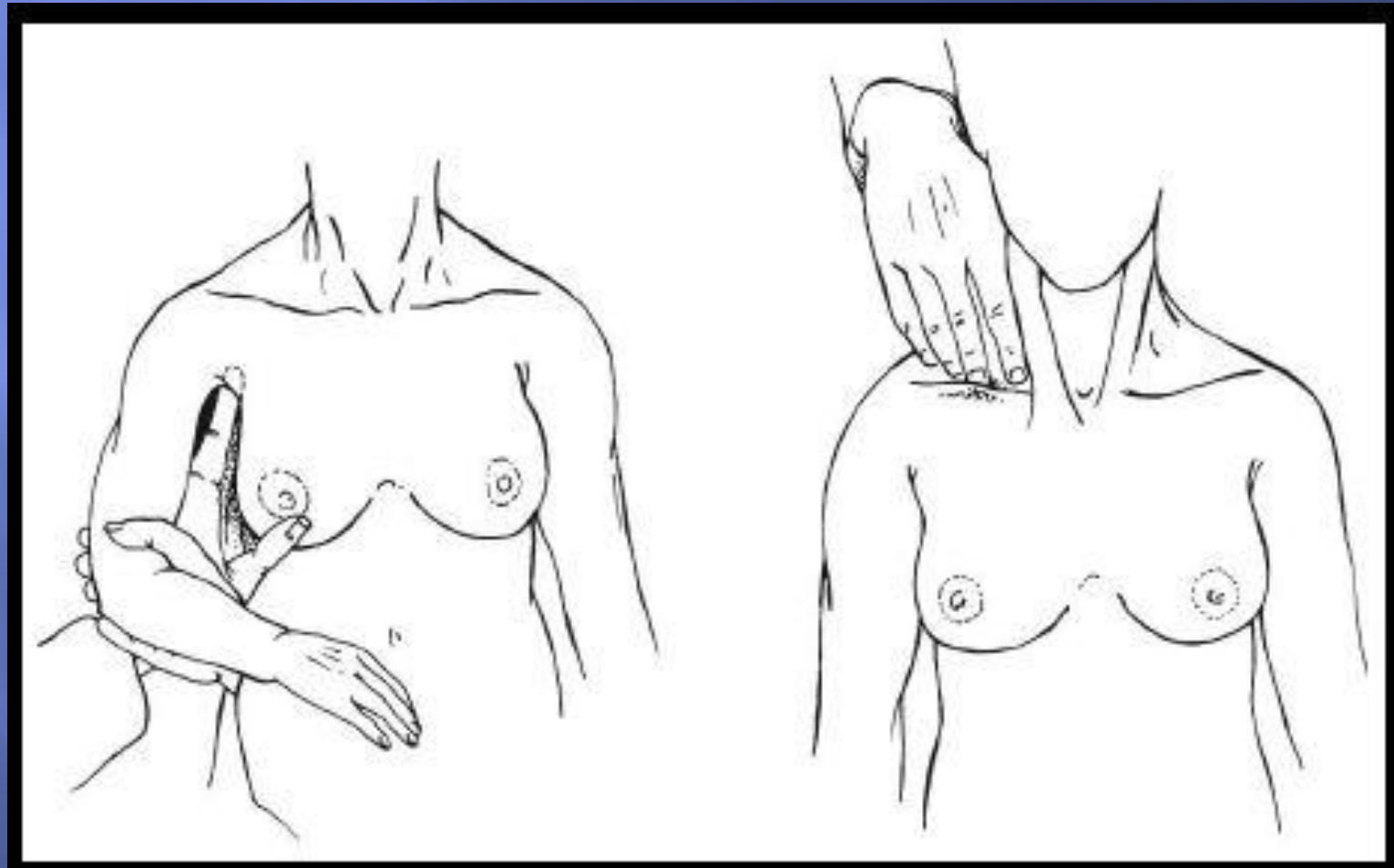
Breast Palpation



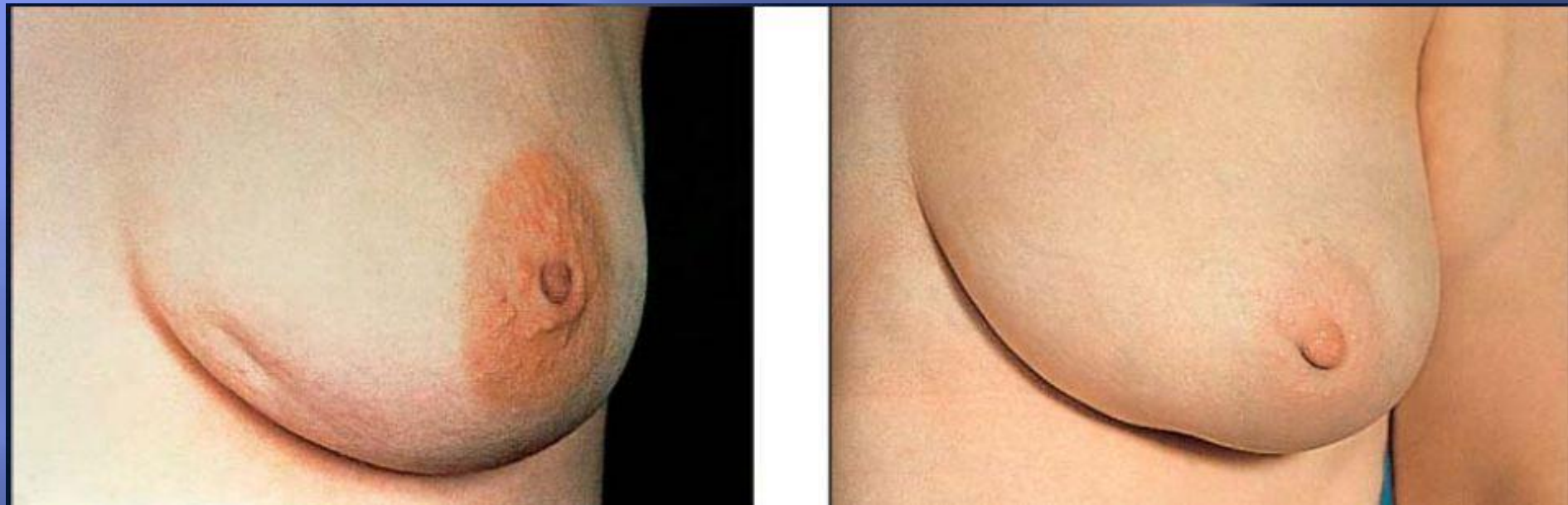
Inspect Both Breasts



Palpate Axilla and Clavicular Nodes



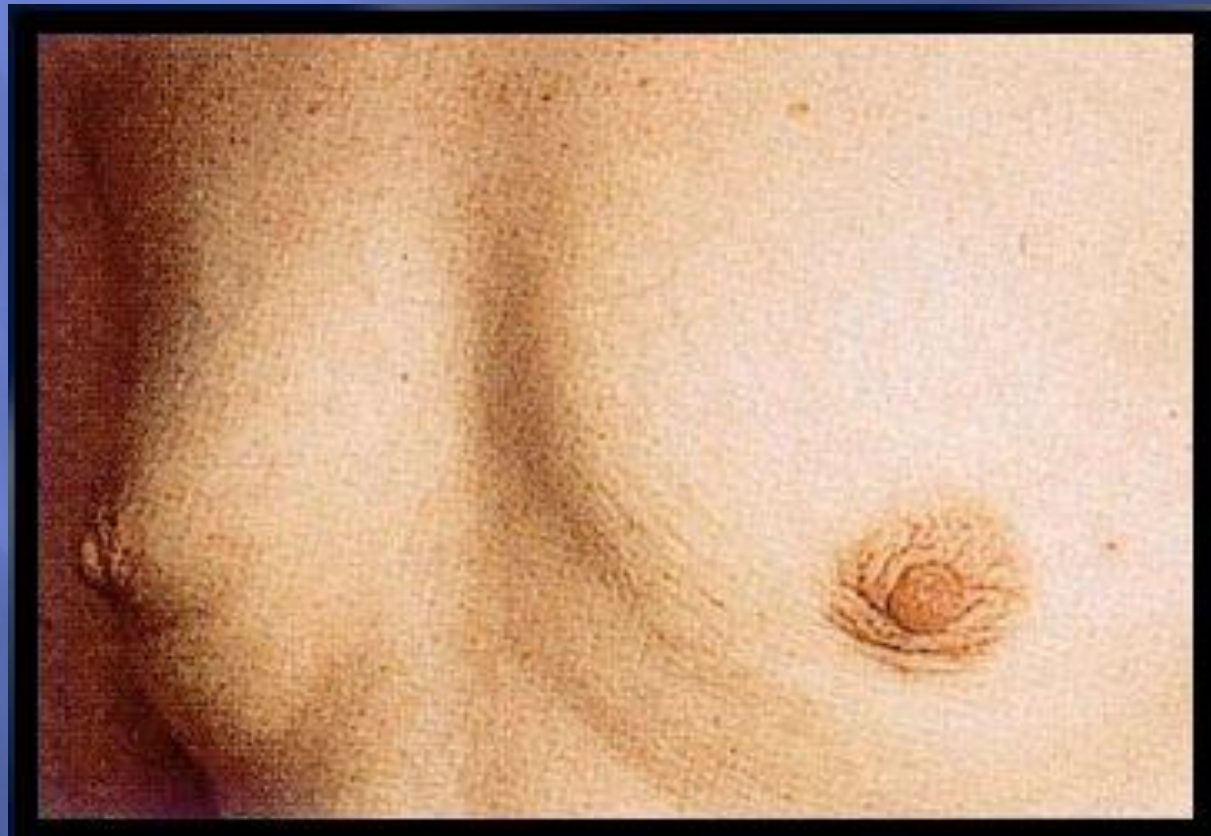
Skin Dimpling and Change in Contour



Dimpling due to
Carcinoma

Change in contour
due to carcinoma

Skin Dimpling Both Breasts Involution Due to Aging



Skin Dimpling Breast Infection



Skin Dimpling Previous Breast Surgery



Inverted Nipple Since Puberty



Common Benign Breast Disorders

Common Benign Breast Disorders

- ❖ Fibrocystic changes
- ❖ Fibroadenoma
- ❖ Intraductal papilloma
- ❖ Mammary duct ectasia
- ❖ Mastitis & abscess
- ❖ Fat necrosis
- ❖ Phylloides tumor
- ❖ Male gynecomastia

Benign breast disease

- Breast cyst can be 1-simple
- 2- complex and complicated cyst
- Breast adenoma

- Lipoma
- GALACTOCEAL
- **Fat necrosis**

- Sebaceous cyst

Common breast symptom

- 1- breast pain
- 2- breast mass
- 3- nipple discharge
- 4- abnormal skin or nipple appearance

Fibrocystic Changes

- ❖ Lumpy, bumpy breasts
- ❖ Pain is common complain
- ❖ Age 30-40
- ❖ Caused by hormonal changes prior to menses

Fibrocystic Disease

- Histology
 - Adenosis
 - Apocrine metaplasia
 - Fibrosis
 - Duct ectasia

Signs and Symptoms

- ❖ cysts with well-defined margins
- ❖ Singular or multiple
- ❖ May be symmetrical
- ❖ Upper outer quadrant or lower breast border

Signs and Symptoms

- ❖ Pain and tenderness
- ❖ Cysts may appear quickly and decrease in size
- ❖ Lasts half of a menstrual cycle
- ❖ Subside after menopause

Breast Pain

- Cyclical pain
 - Dull, diffuse and bilateral
 - Treatment: Reassurance,

NSAIDS,

- -advice to wear good supportive bra
- -Exercise to activate pectoralis muscle

Breast Mass

- Breast Cysts
 - Fluid-filled multiple and recurrent

ultrasound is diagnostic

Hormonally influenced

- Needle aspirated

Breast Mass



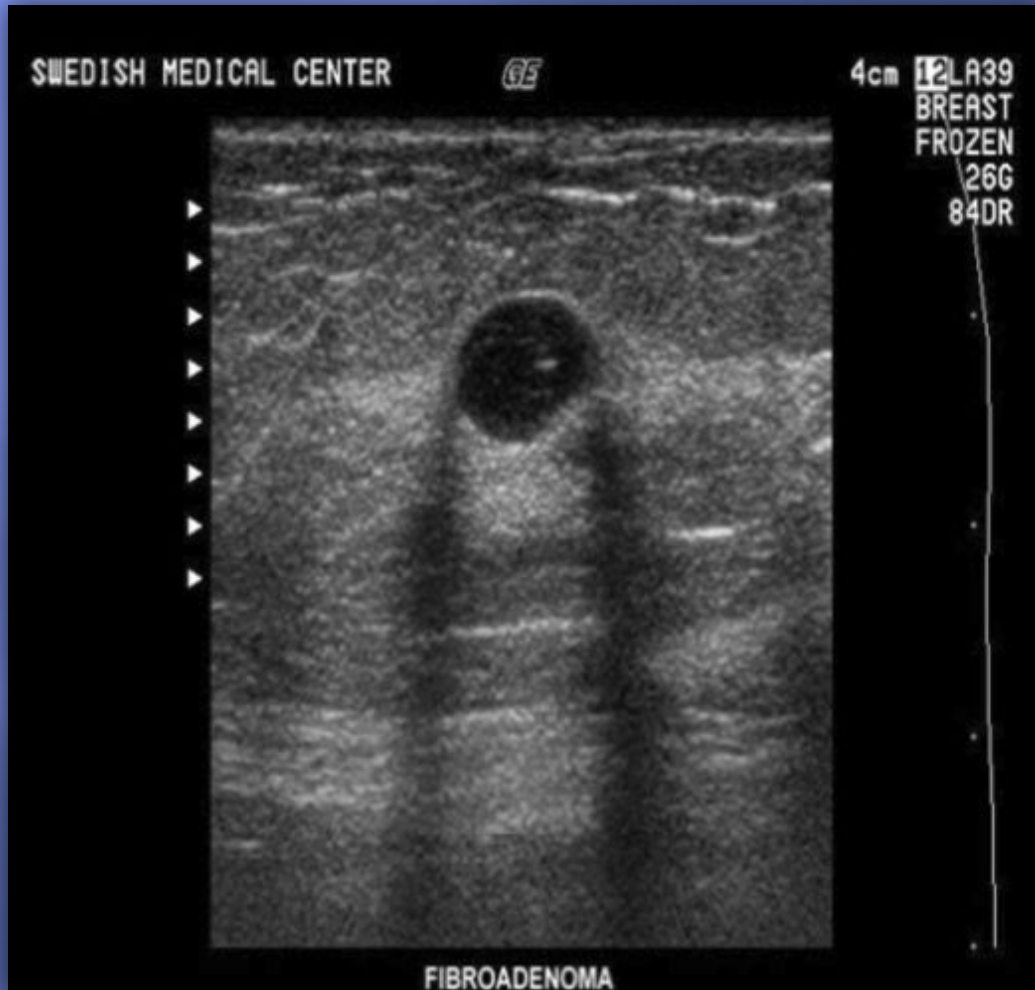
Treatment

- ❖ Aspirate cyst fluid
- ❖ Treatment based on symptoms
- ❖ Reassure

Fibroadenoma

- ❖ Second most common breast condition
- ❖ Late teens to early adulthood
- ❖ Rare after menopause

Fibroadenoma

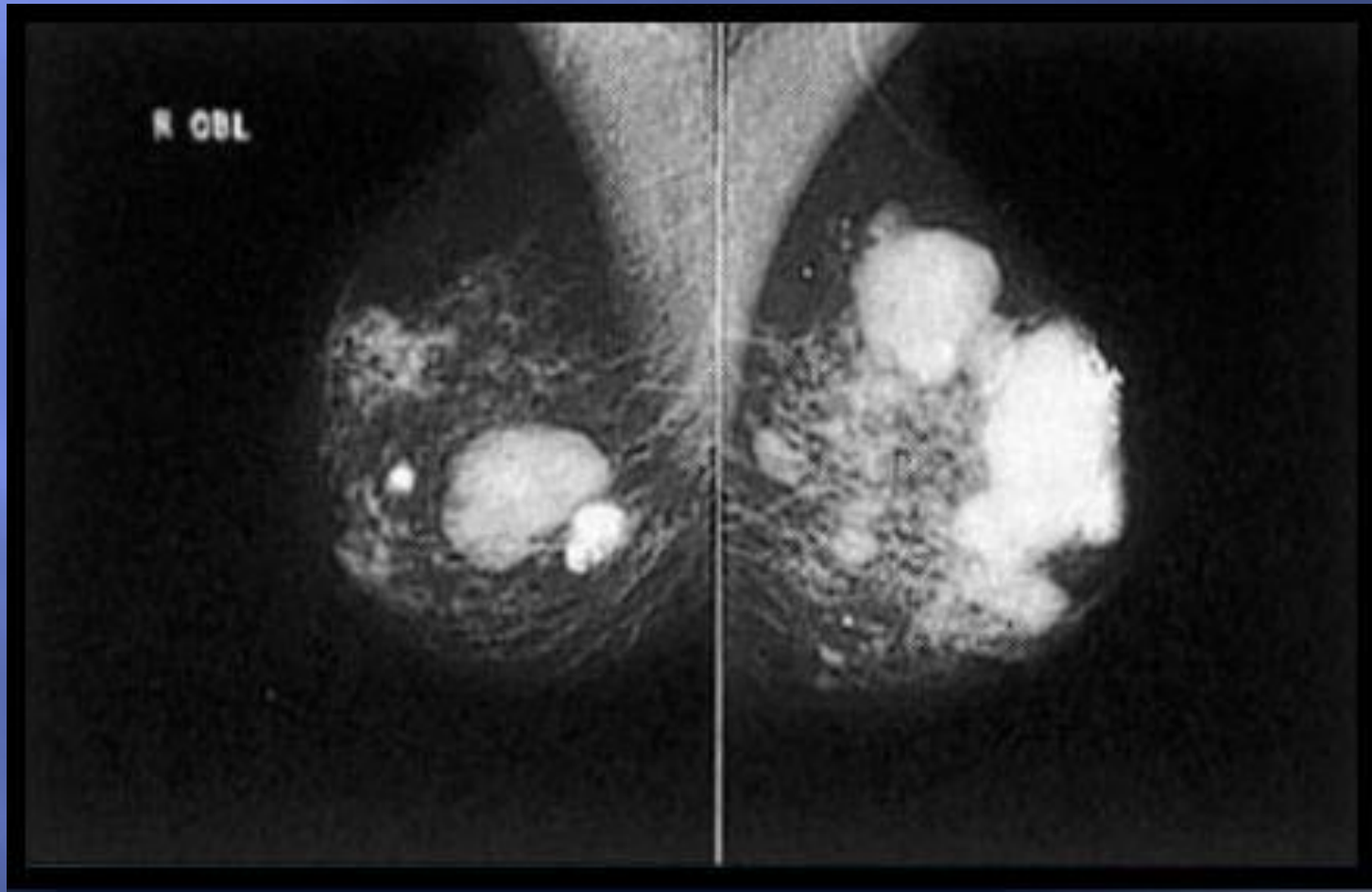


Signs and Symptoms

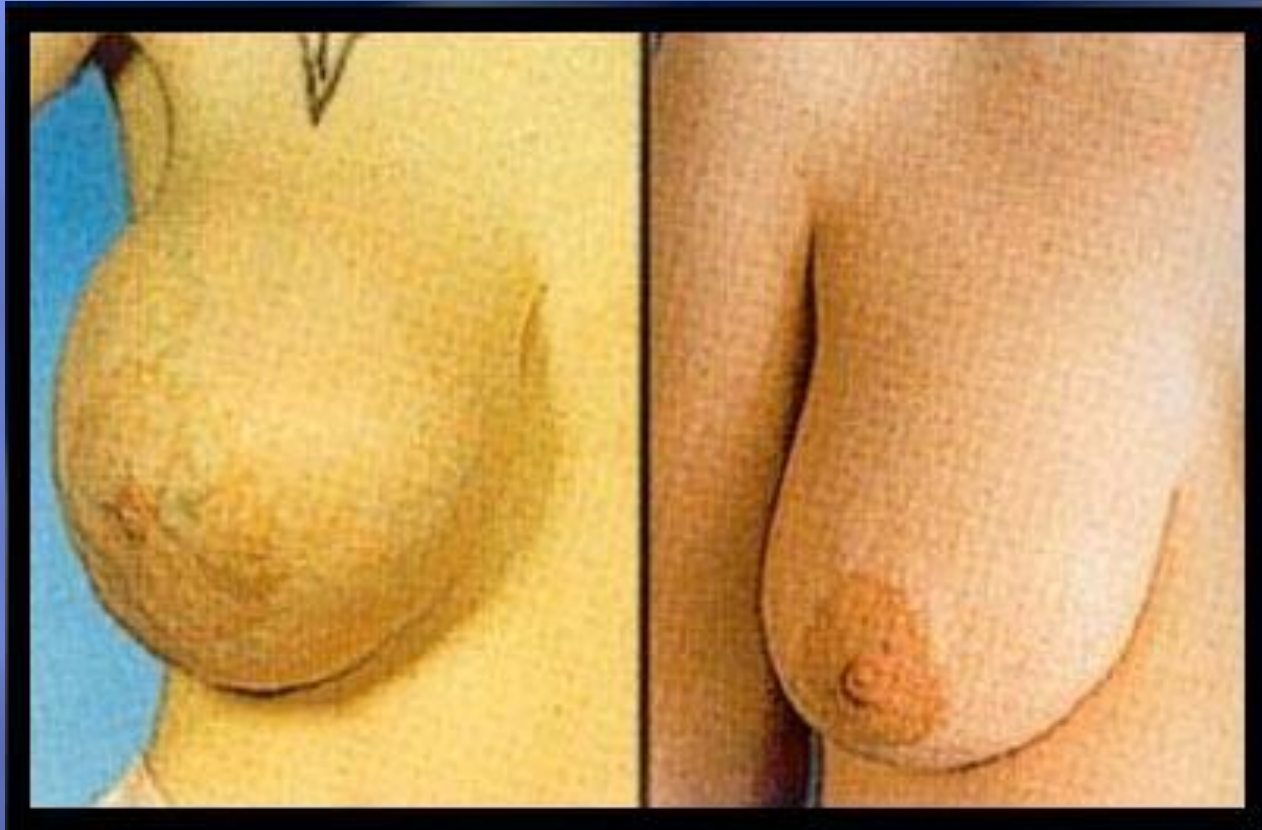
- ❖ Firm, rubbery, round, mobile mass
- ❖ Painless, non-tender
- ❖ Solitary or multiple
- ❖ Well circumscribed

Mammogram

Multiple Calcified Fibroadenomas



Giant Fibroadenoma



Before Surgery

After Surgery

Treatment

50% will resolve with time

Indication for surgery

Painful fibroadenoma

Size more than 4 cm

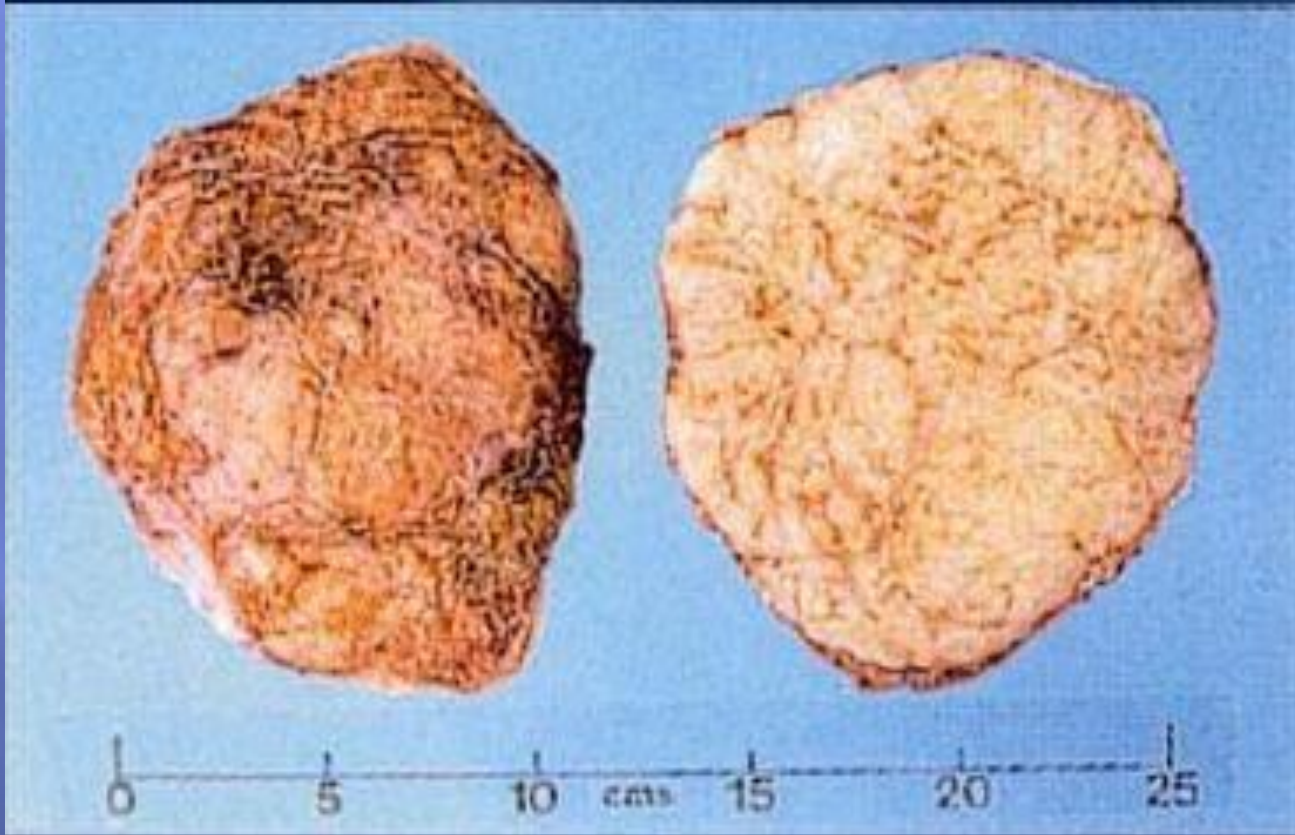
Rapid increase in size average 6/12 duration

Unusual age above 40

Unclear pathology or phyllodes variation

+ve family history of malignancy

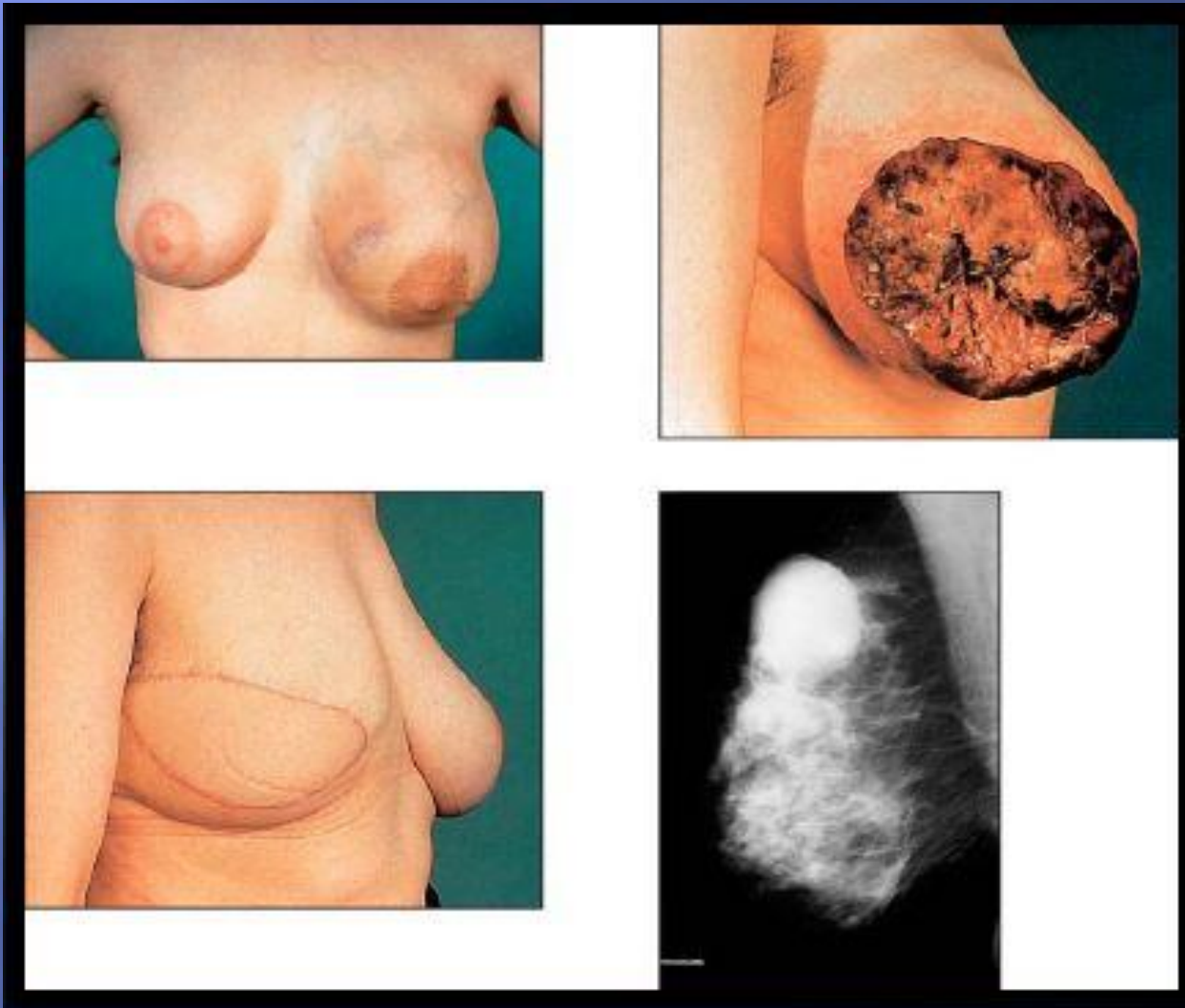
Cross Section of Giant Fibroadenoma



Phylloides Tumor

- ❖ Variation of fibroadenoma rapid growth
- ❖ Malignant potential
- ❖ Often occurs in women aged 40+
- ❖ Treatment
 - Excision

Malignant Phylloides Tumor



Spontaneous nipple discharge

Investigations:

- Mammography
- Clinical examination

Abnormal

Investigate as for mammographic abnormality or mass lesion

Normal

Single duct discharge

Suspicious* or troublesome

Surgery

Not suspicious or troublesome

Reassure

Multiple duct discharge

Troublesome

Surgery

Not troublesome

Reassure

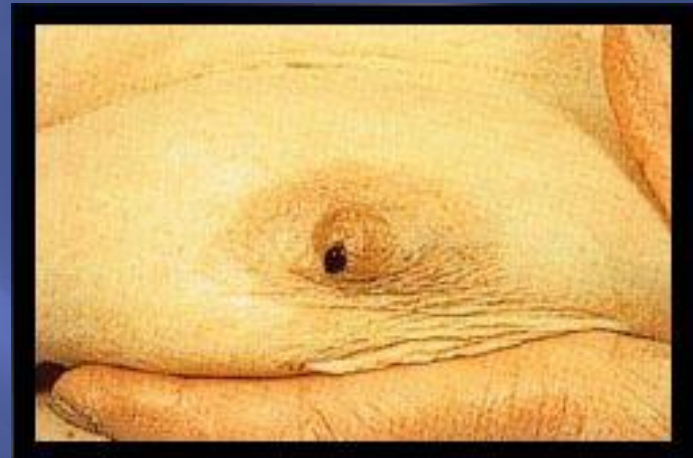
* Bloodstained, moderate or large amounts of blood on testing or persistent

Intraductal Papilloma

- ❖ Slow-growing
- ❖ Overgrowth of ductal epithelial tissue
- ❖ Usually not palpable
- ❖ Most common cause of bloody nipple discharge
- ❖ 40-50 years of age

Clinical Characteristic

- ❖ **Pathologic discharge**
 - Spontaneous
 - Unilateral
 - Single duct
 - Discolored discharge



Bloody discharge

Bloody Nipple Discharge



Signs and Symptoms

- ❖ Watery, serous, serosanguinous, or bloody discharge
- ❖ Spontaneous discharge
- ❖ Usually unilateral
- ❖ Often from single duct
 - Pressure elicits discharge from single duct
- ❖ 50% no mass palpated

Bloody Breast Discharge



Intraductal Papilloma



Treatment

- ❖ Test for occult blood
- ❖ Breast ultrasound / mammogram
- ❖ MRI breast
- ❖ Ductogram
- ❖ Biopsy if there is mass

Mammary Duct Ectasia versus Breast Cancer



- ❖ **Left breast** – slit-like nipple characteristic of mammary duct ectasia
- ❖ **Right breast** – nipple retraction from carcinoma

Signs and symptoms

- ❖ **Multi-colored discharge**
 - Thick, pasty (like toothpaste)
 - White, green, greenish-brown or serosanguinous
- ❖ **Intermittent, no pattern**
- ❖ **Bilaterally from multiple ducts**
- ❖ **Nipple itching**

Dried Secretions from Mammary Duct Ectasia



Yellow Breast Discharge Duct Ectasia



Multi-colored Breast Discharge



Mammary Duct Ectasia

- ❖ Inflammation and dilation of sub-areolar ducts behind nipples
- ❖ Etiology Unclear
 - Ducts become distended with cellular debris causing obstruction

May result in palpable mass

Galactorrhea



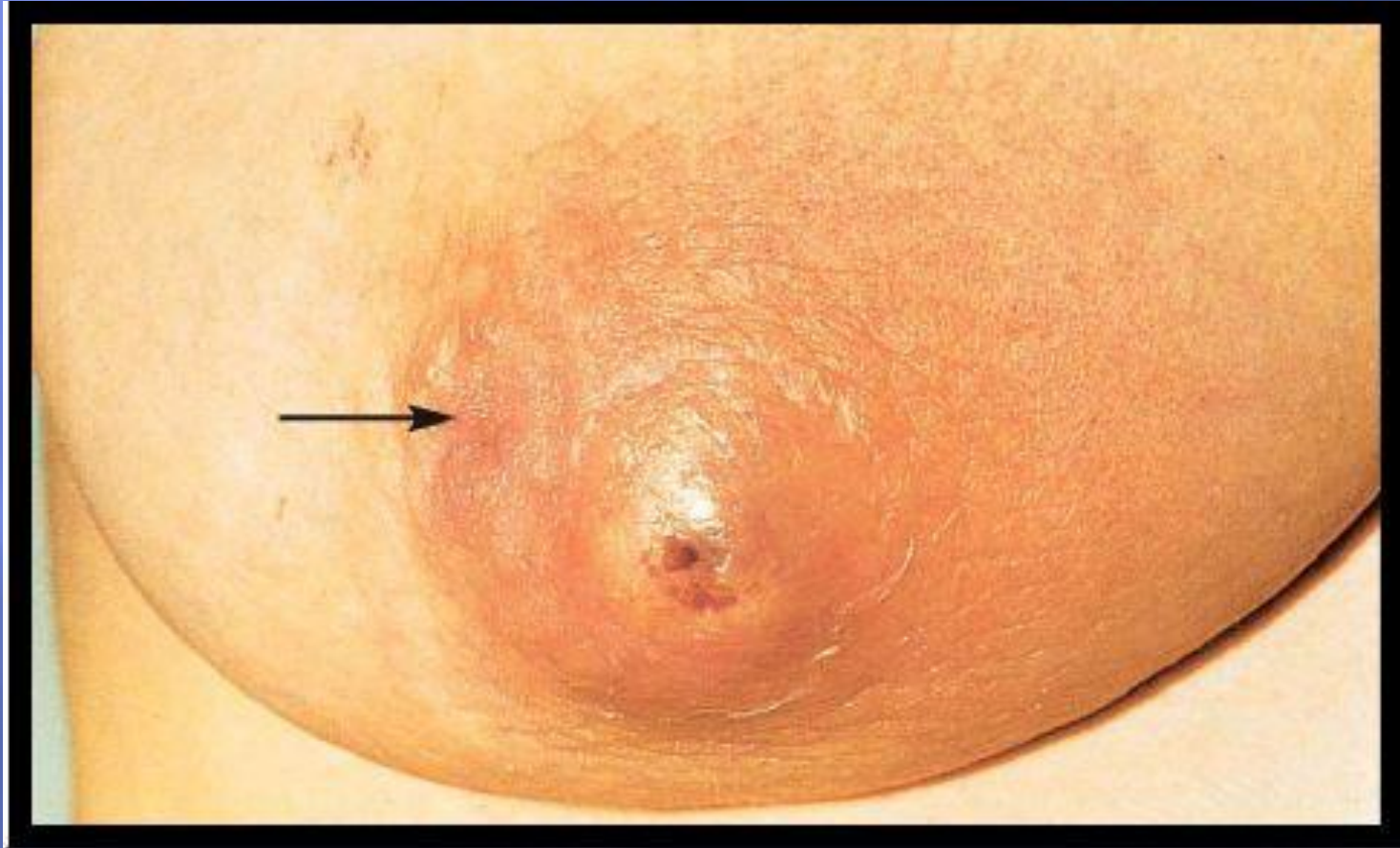
Differential Diagnosis of Nipple Discharge

- ❖ Common causes in non-pregnant women
 - Carcinoma
 - 1-Intraductal papilloma
 - Fibrocystic changes
 - 2-Duct ectasia
 - Hypothyroid
 - Pituitary adenoma

Treatment

- ❖ Test for occult blood & malignant cell
- ❖ Imaging
 - Mammogram
 - Sonogram
- ❖ Antibiotics if there is infection
- ❖ Close follow-up

Non-Lactating Breast Abscess



Arrow points to inverted nipple

Mastitis

- ❖ Breast infection when bacteria enter the breast via the nipple
- ❖ Ducts infected
- ❖ Fluid stagnates in lobules
- ❖ Usually during lactation
- ❖ *Staphylococcus aureus* common cause

Mastitis

- Treatment
 - Antibiotics
 - Continue breast feeding
 - Close follow-up

Puerperal Mastitis



Puerperal Mastitis Left Breast



Inflammatory Carcinoma



Erythema and peau d'orange

Signs and Symptoms of Mastitis

- ❖ Pain
- ❖ Nipple discharge
- ❖ Localized induration
- ❖ Fever



Breast Abscess

Breast Abscess

- Treatment

- Antibiotics if associated with fever and cellulitis
- Incision and drainage

Abscess Drained under Local Anesthesia





Galactocele



Puerperal Breast Abscess



Before treatment

Local anesthetic

After treatment

Abscess occurred during lactation

Breast Abscess



- ❖ Left – before management
- ❖ Right – after recurrent aspiration and antibiotics

Fat Necrosis

- ❖ **Cause**
 - Trauma to breast
 - Surgery
- ❖ **Necrosis of adipose tissue**
- ❖ **Pain or mass**
 - Usually non-mobile mass
 - Resolves over time without treatment

Fat Necrosis



Seat Belt Trauma

Breast Hematoma



Left-Sided Gynecomastia

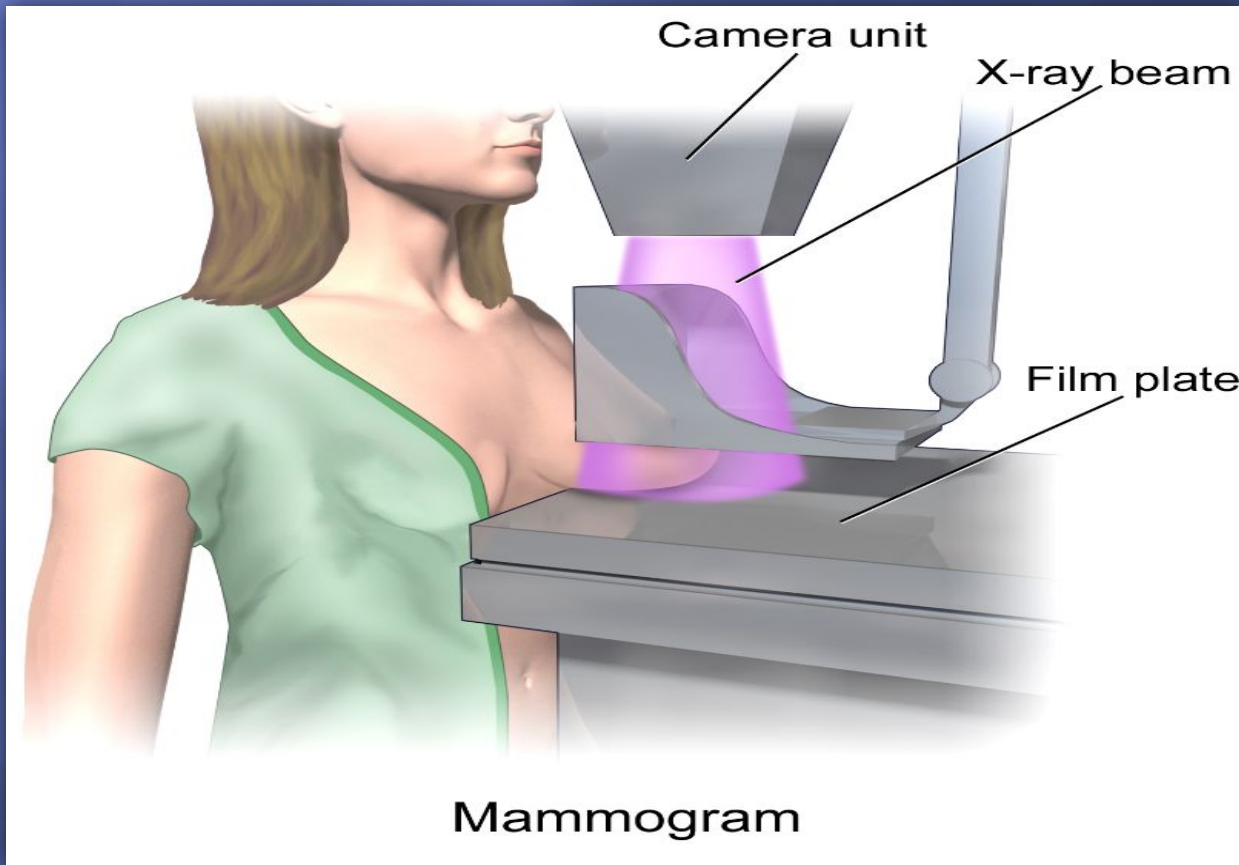


Treatment

- ❖ **If pre-puberty**
 - Wait to see if it resolves
- ❖ **Change medication**
- ❖ **Treat underlying illness**
- ❖ **Occurs in families with genetic mutation**
 - Colon, prostate cancer

Mammography

- ❖ Screening tool
 - Age of 40



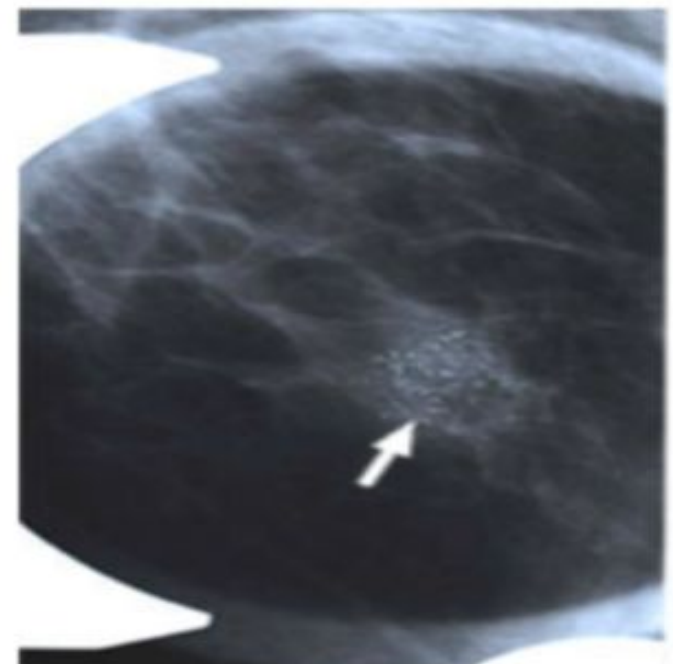
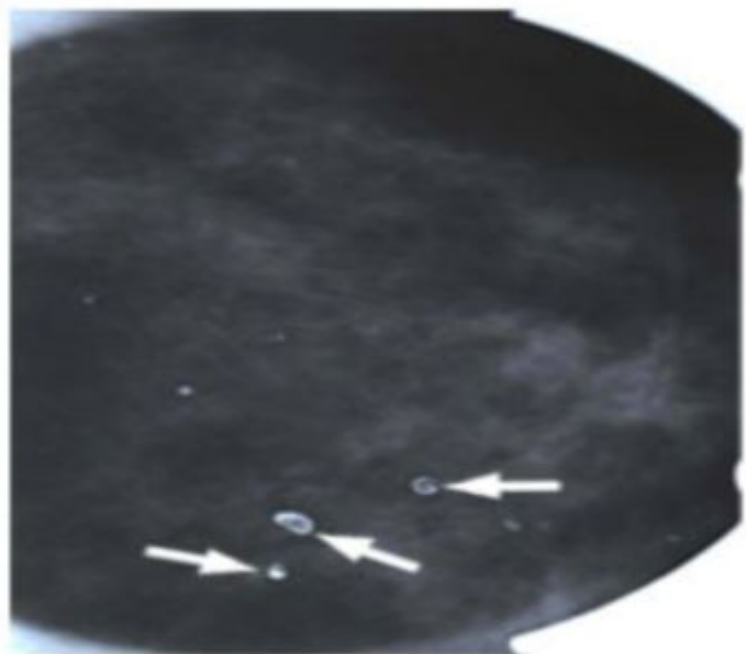
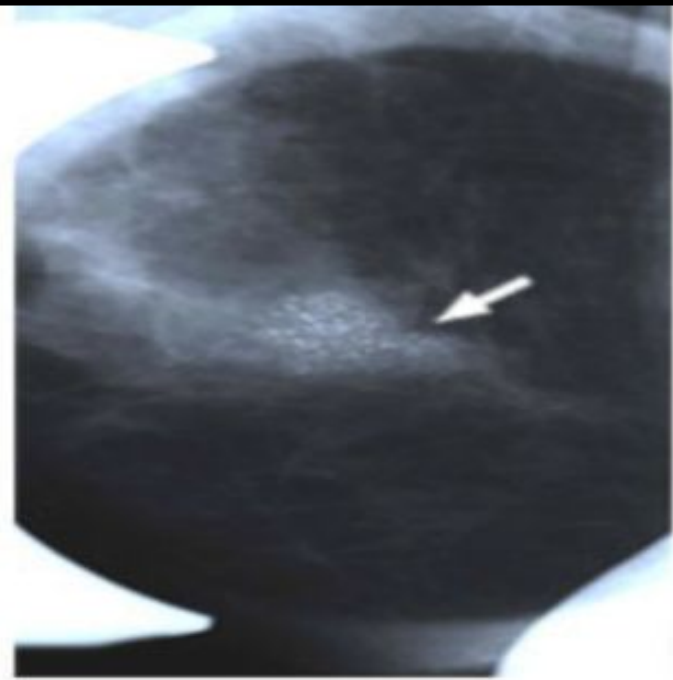
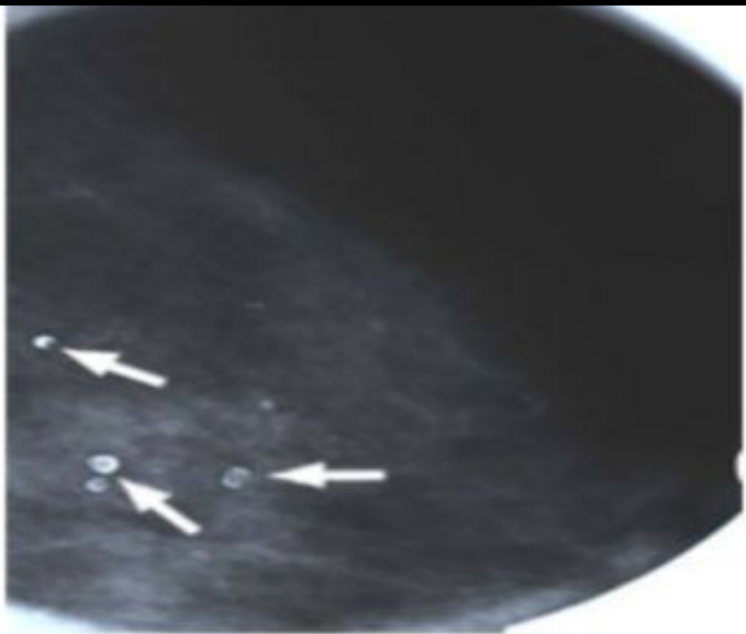
Calcification

❖ Macrocalcifications

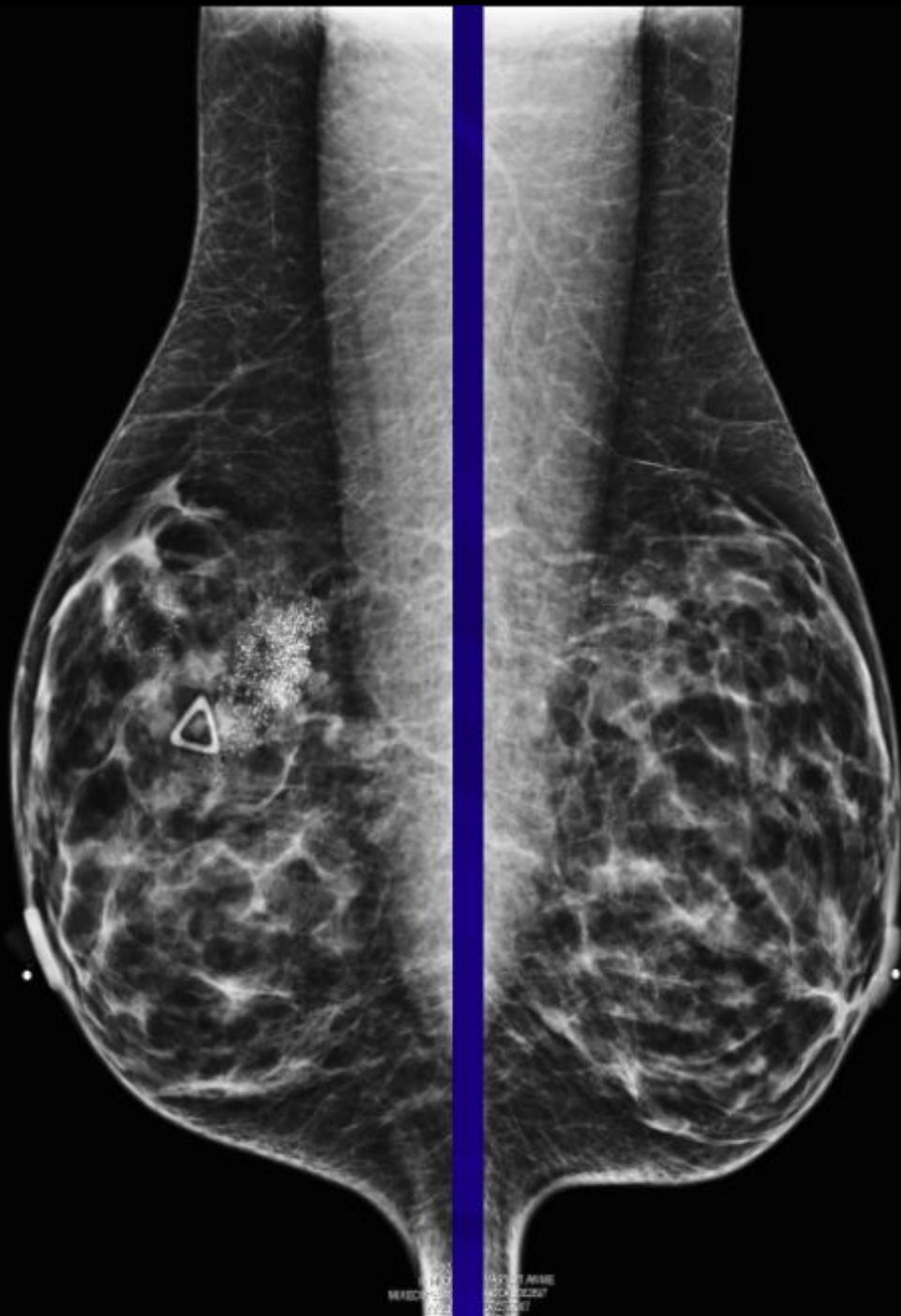
- Large white dots
- Almost always non-cancerous and require no further follow-up

❖ Microcalcifications

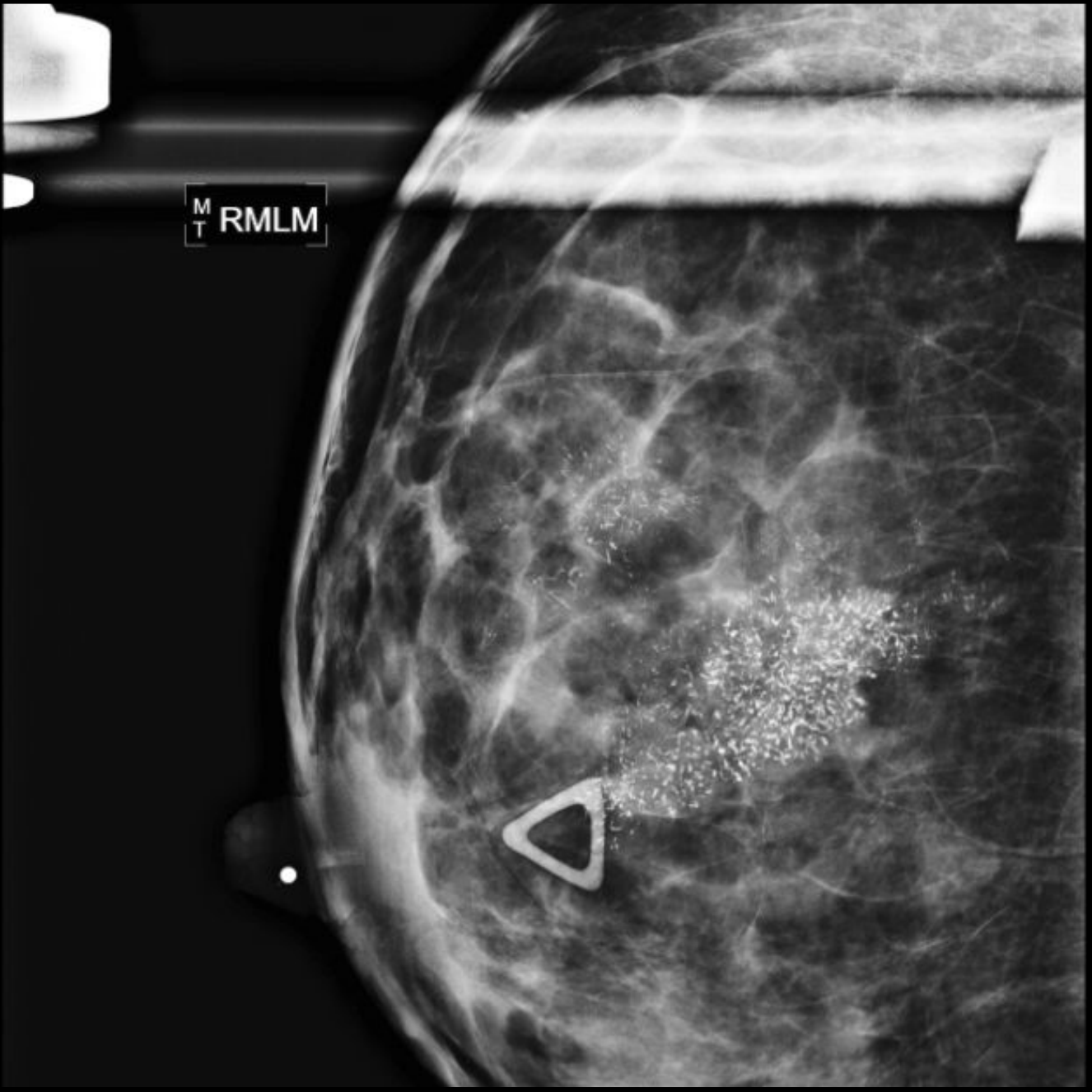
- Very fine white specks
- Usually non-cancerous but can sometimes be a sign of cancer
- Size, shape and pattern



M
T RMLO

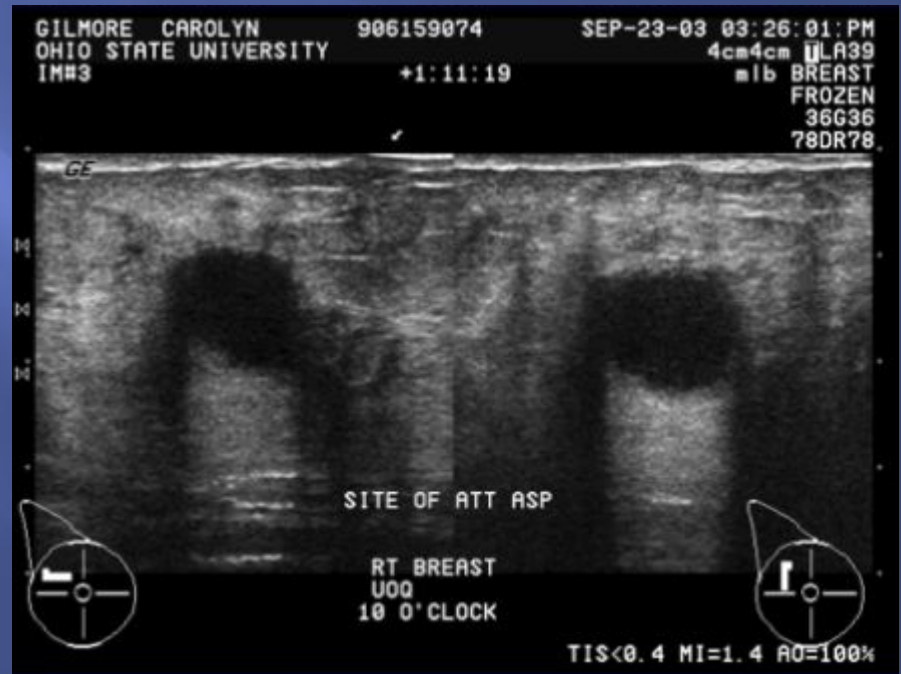
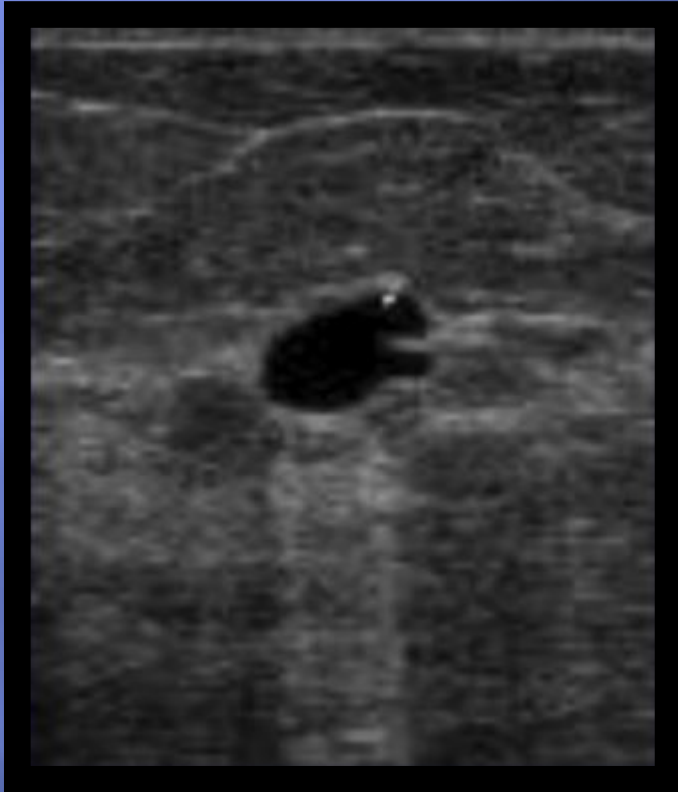


M
T LMLO



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Ultrasound

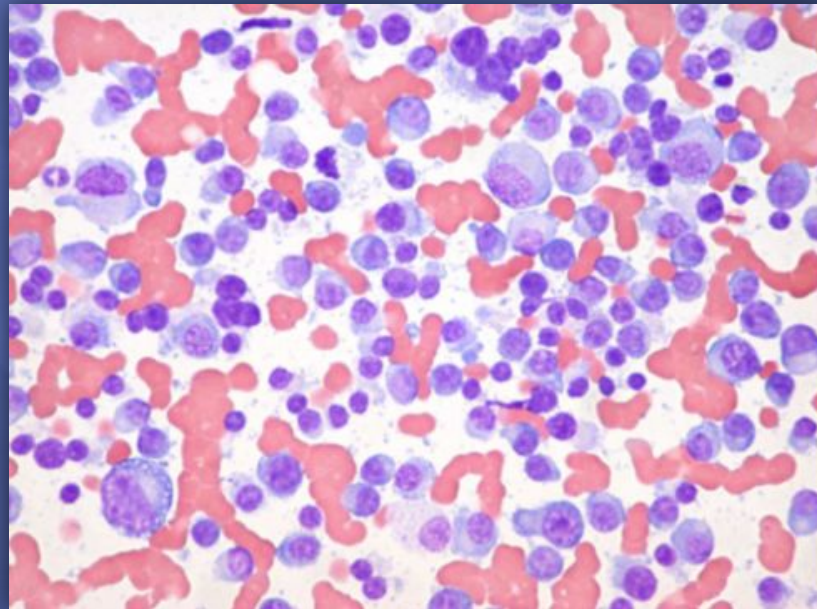


Diagnosis

- ❖ **Fine needle aspiration**
 - Cytology
- ❖ **Core biopsy**
 - Image guided
 - Stereotactic
- ❖ **Excisional biopsy**
 - Needle localization

Fine Needle Aspiration

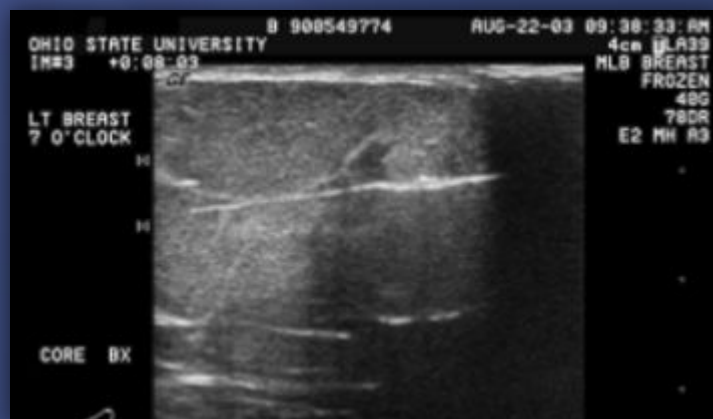
- ❖ Fast, inexpensive
- ❖ 96% accuracy
- ❖ Institution dependent
- ❖ Unable to differentiate between in-situ vs CA



Core Needle Biopsy

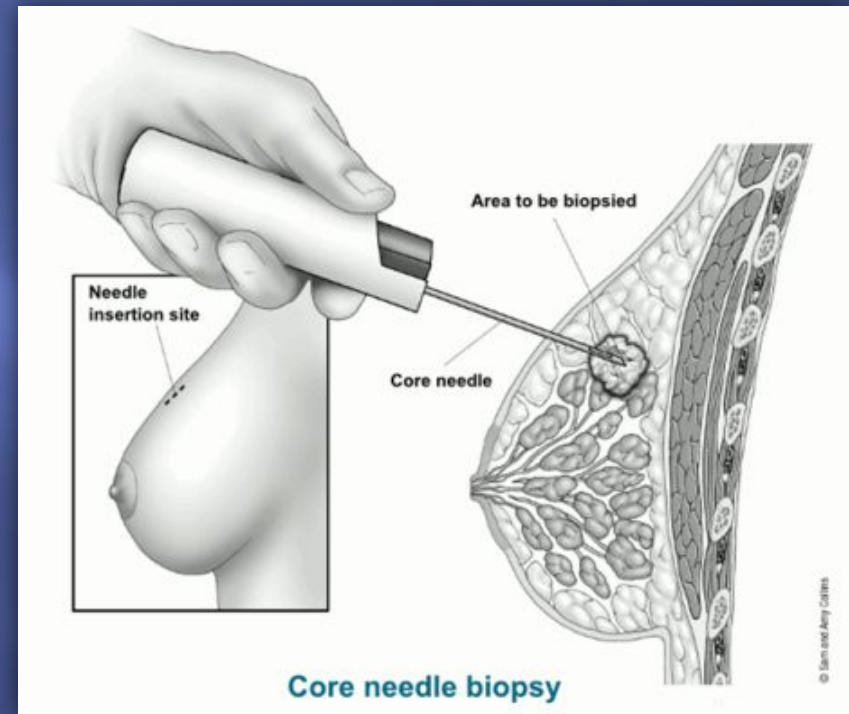
- ❖ 14 – 18 gauge spring loaded needle
- ❖ Tissue

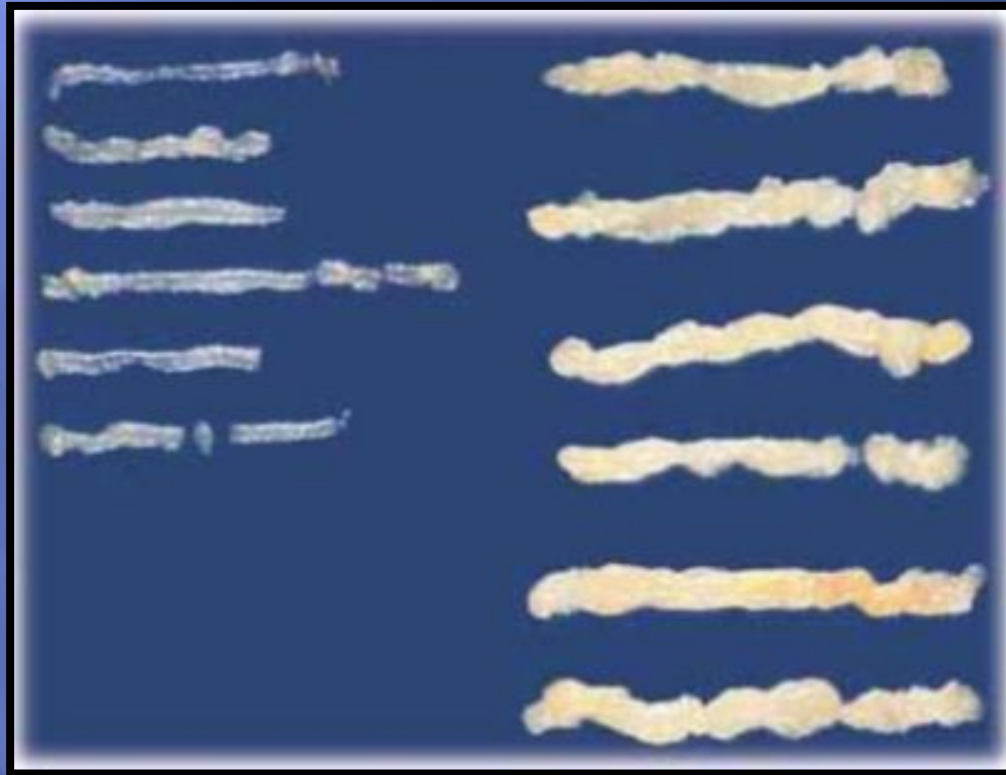




Large Core Biopsy

- ❖ 6 – 14 gauge core
- ❖ Large Samples
- ❖ Single insertion





Core Biopsy

Vacuum Assisted

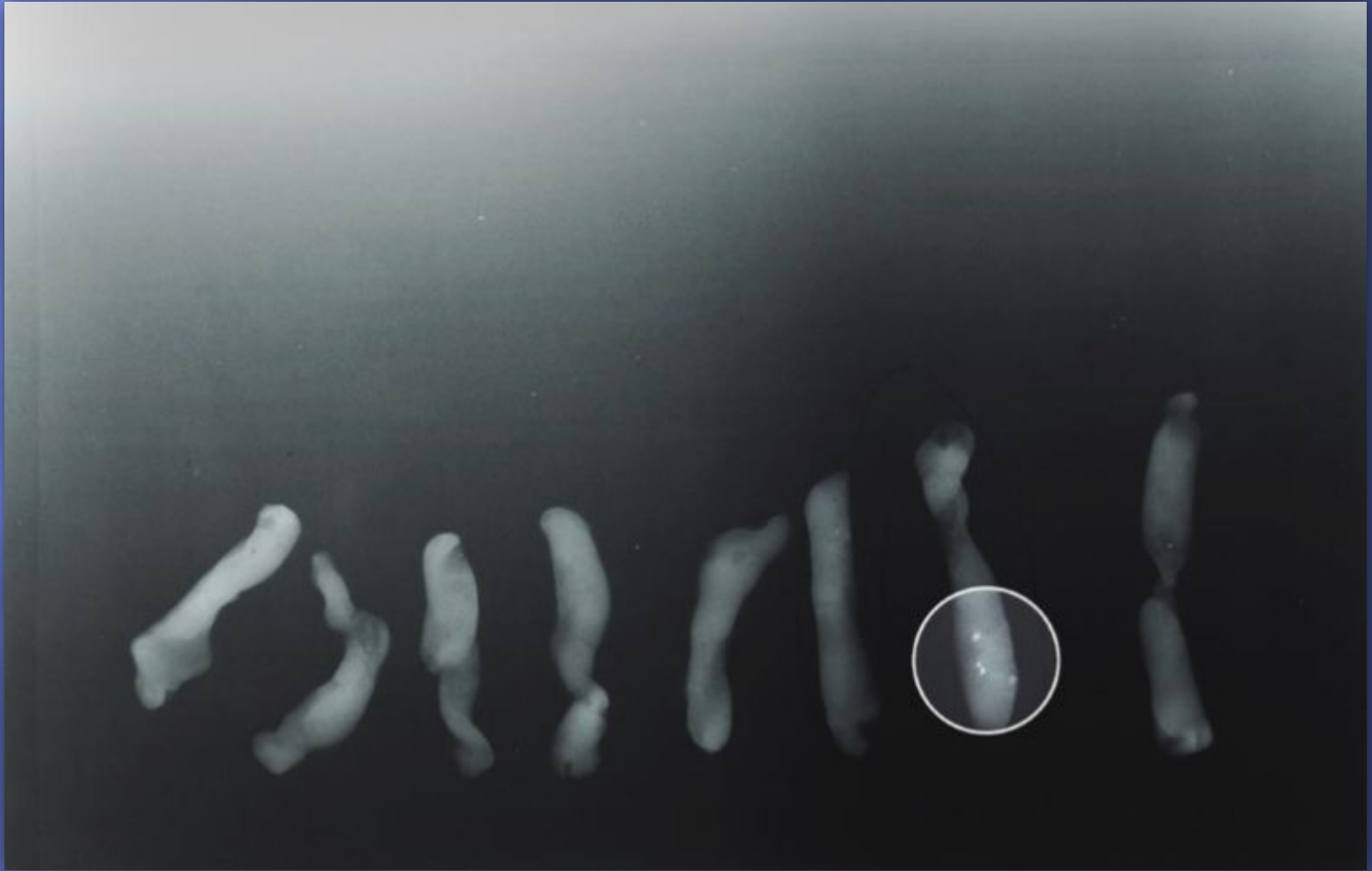
Stereotactic Biopsy

- ❖ Suspicious mammographic abnormalities
- ❖ Patients lay prone





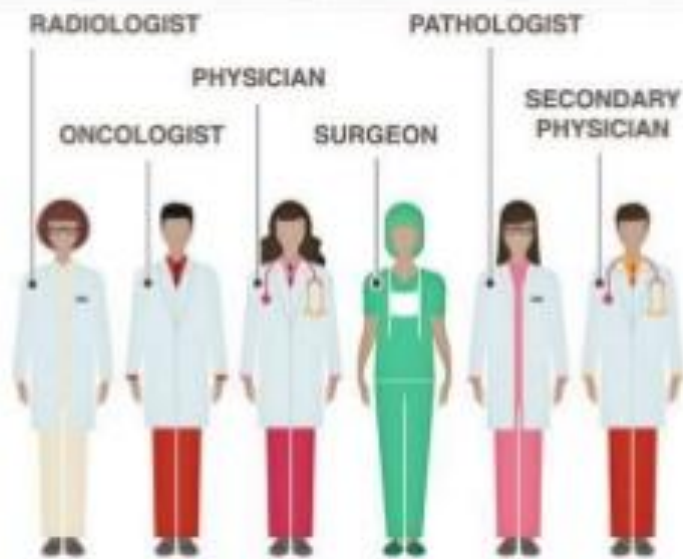
Mammotome
ETHICON ENDO



Management of Ca Breast

Options available;

- I. *Surgery*
- II. *Radiotherapy*
- III. *Hormone Therapy*
- IV. *Chemotherapy*



- Multi-pronged approach adopted
- Single approach ineffectual

Types of Breast Cancer

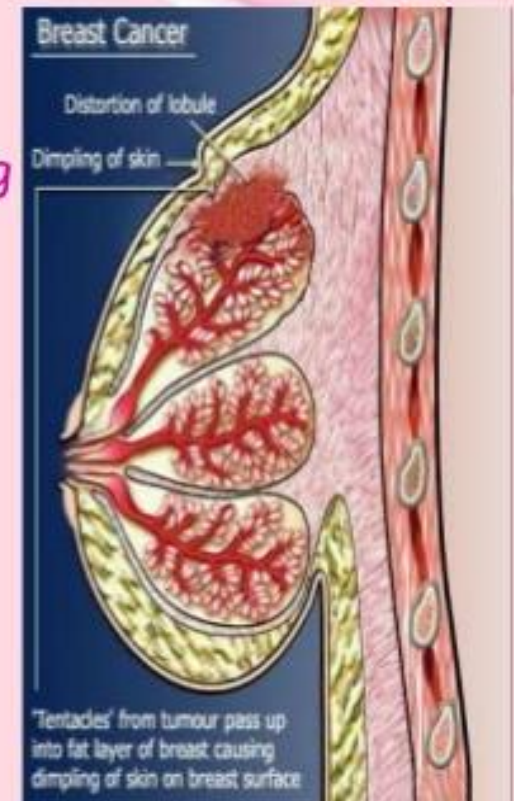


Ductal Carcinoma

- Originate in ducts that carry milk to nipples
- If cancer confined to duct = in situ (DCIS)
- Usually found on mammogram
- If moved beyond duct = invasive or infiltrating

Lobular Carcinoma

rare



Breast Cancer

```
graph TD; BC[Breast Cancer] --> I[Invasive]; BC --> NI[Non - Invasive]; I --> I1[□ Cancerous]; I --> I2[□ Malignant]; I --> I3[□ Spreads to other organs (metastasis)]; NI --> NI1[□ Pre - Cancerous]; NI --> NI2[□ Still in its original position]; NI --> NI3[□ Eventually develops into invasive breast cancer.]
```

Invasive

- Cancerous
- Malignant
- Spreads to other organs (metastasis)

Non - Invasive

- Pre - Cancerous
- Still in its original position
- Eventually develops into invasive breast cancer.

**non-
invasive
cells**

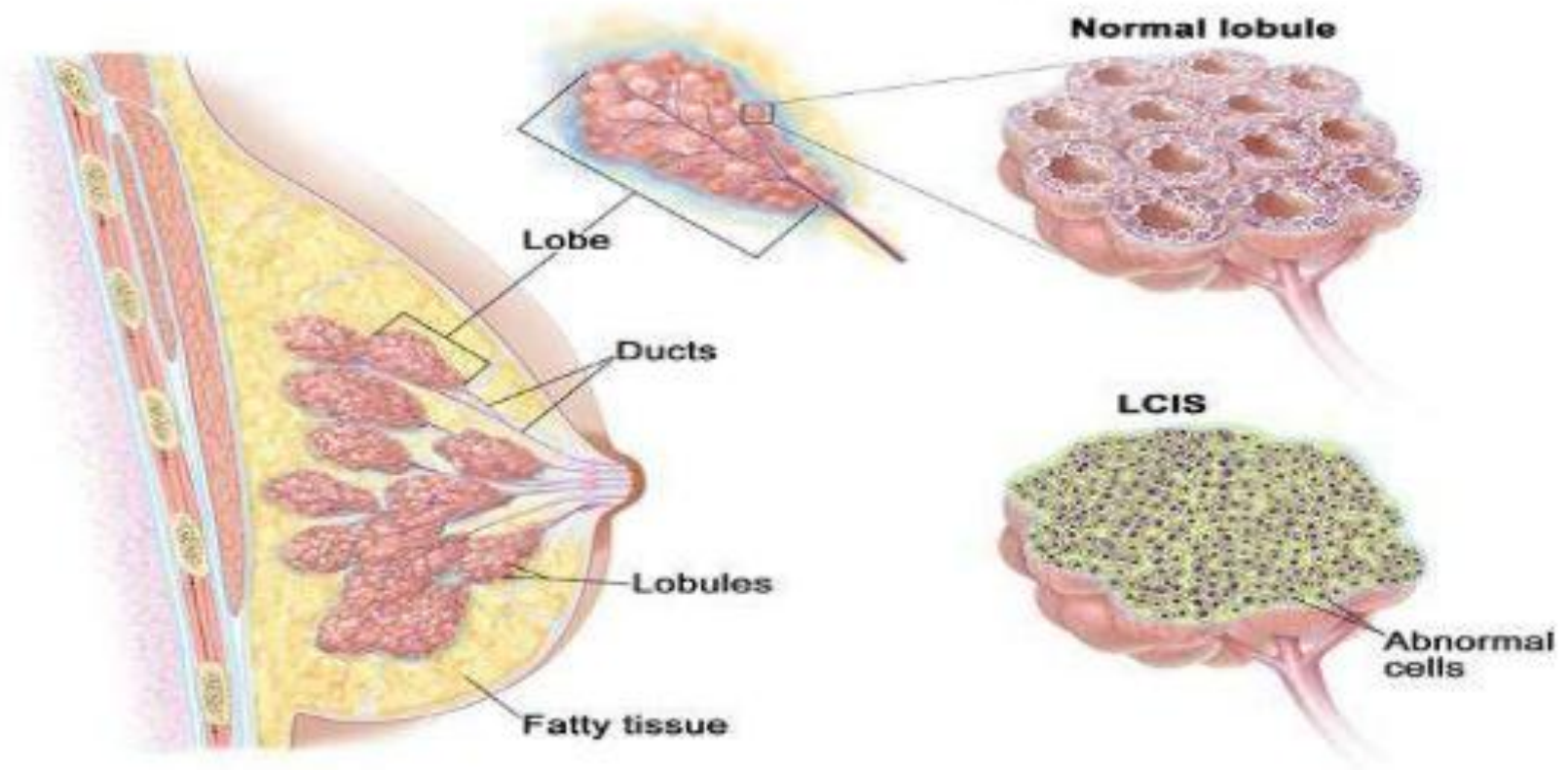


**invasive
cells**



LOBULAR CARCINOMA IN SITU (LCIS)

Lobular Carcinoma In Situ (LCIS)



SIGNS OF BREAST CANCER



Lump



Skin dimpling



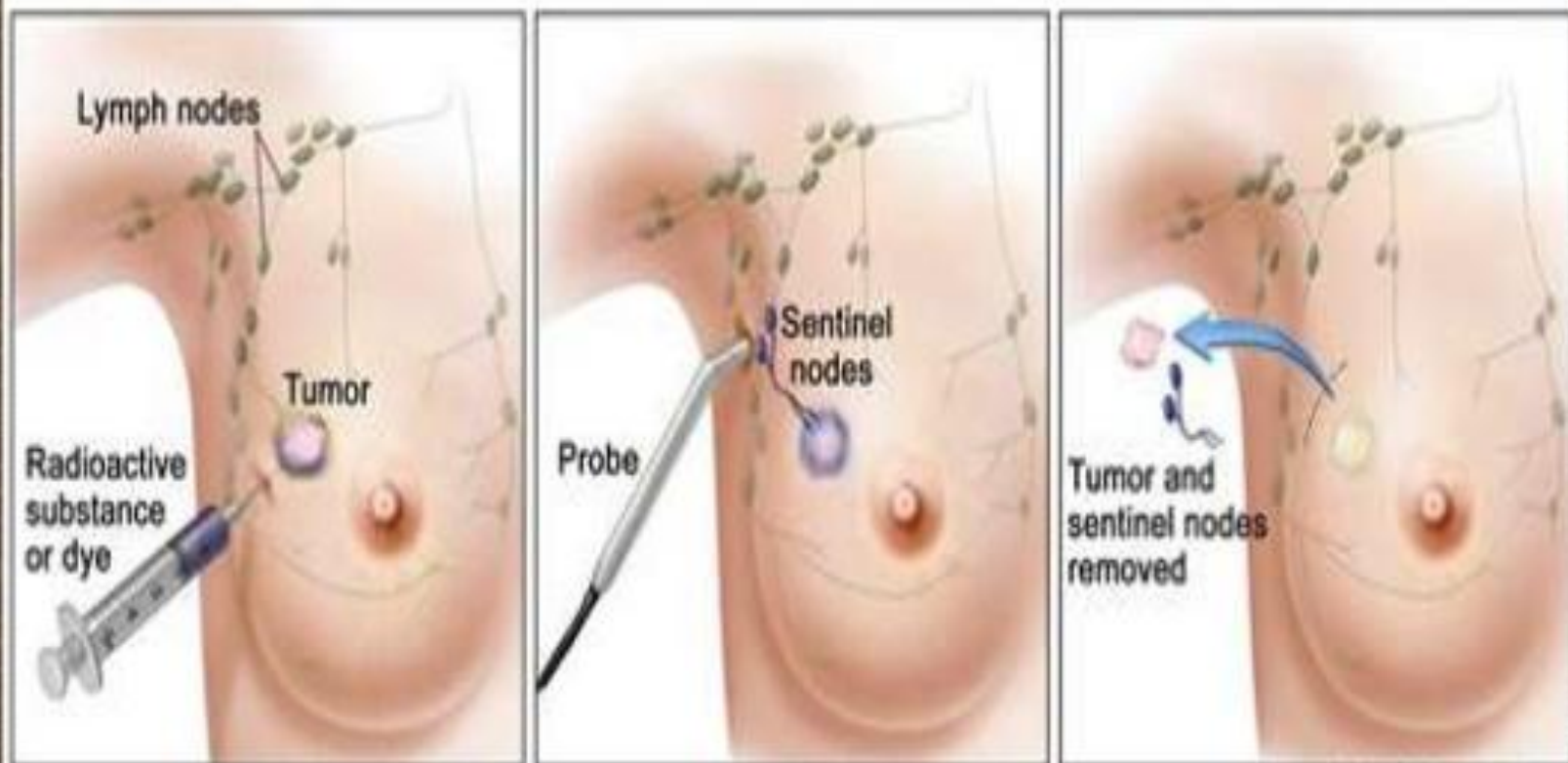
Change in skin color or texture



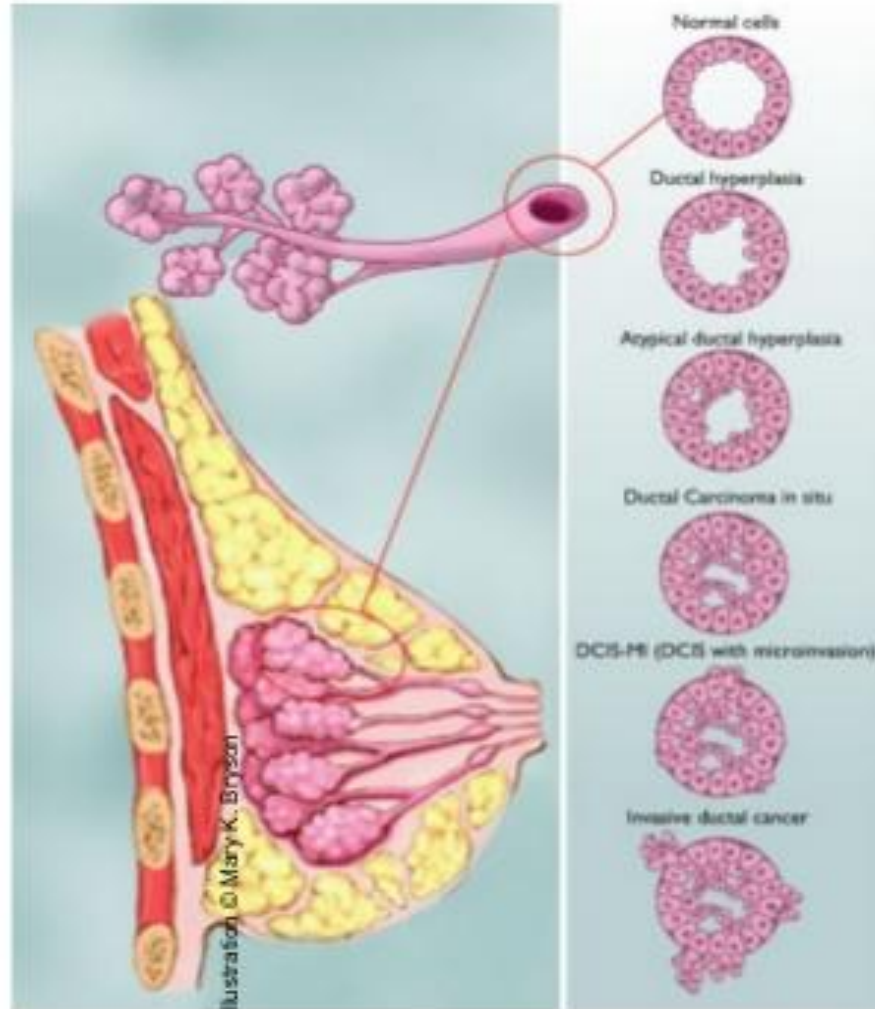
Change in how the nipple looks, like pulling in of the nipple.



Clear or bloody fluid that leaks out of the nipple



DUCTAL CARCINOMA IN SITU



Any Questions?

