

Common Breast Pathologies

Done by :

Eman AL Adly

Raneem shdaifat

Mohammad sbou

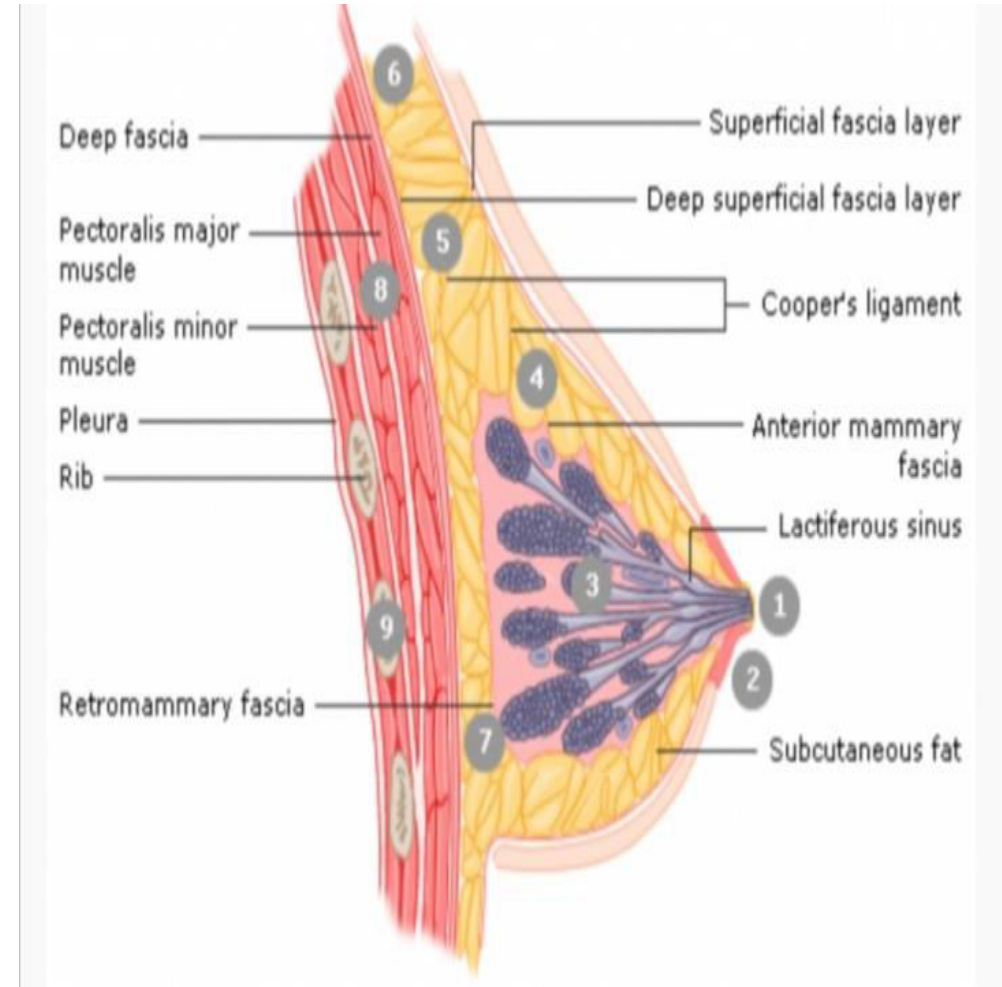
Supervised by :

Dr. Mahmoud

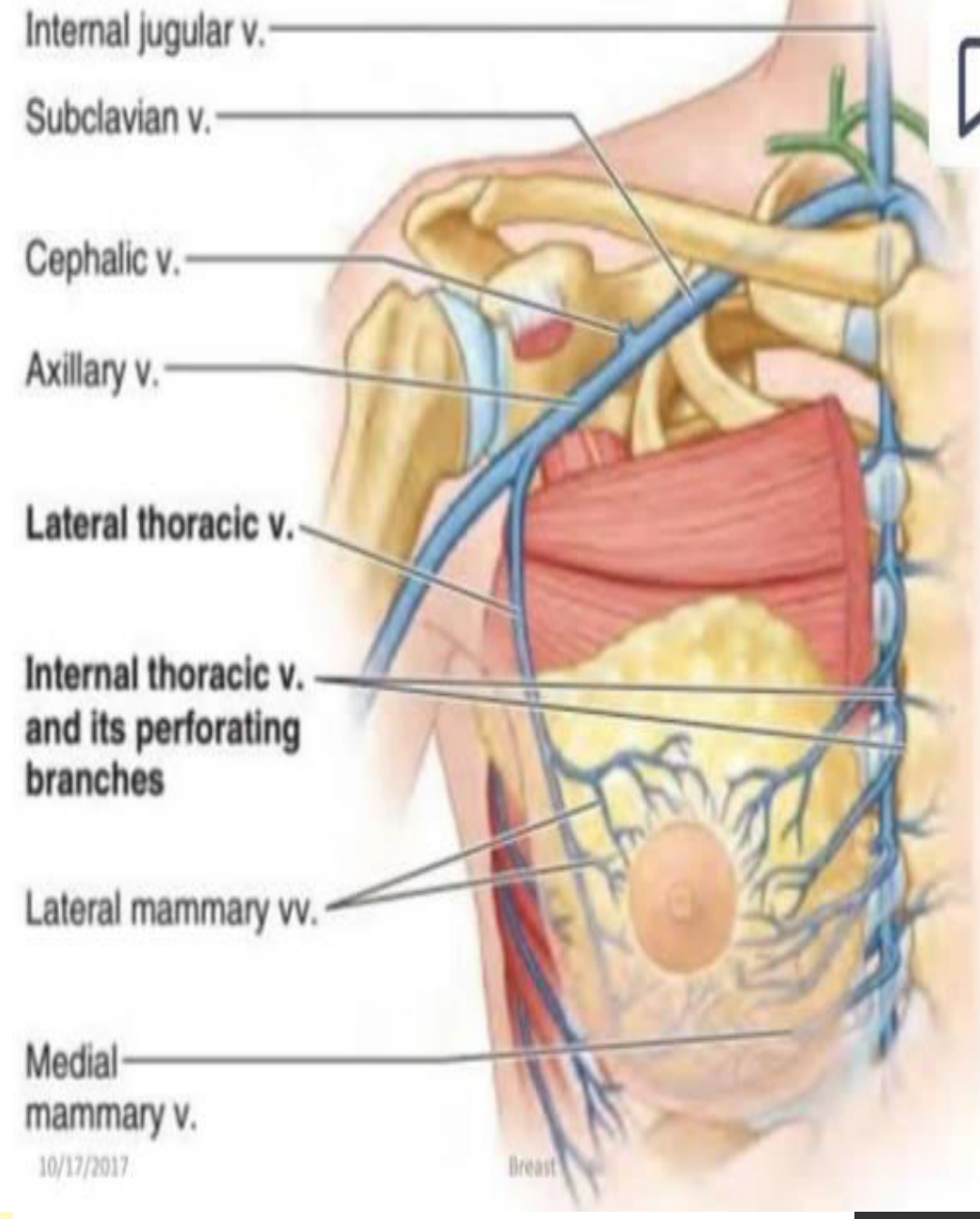
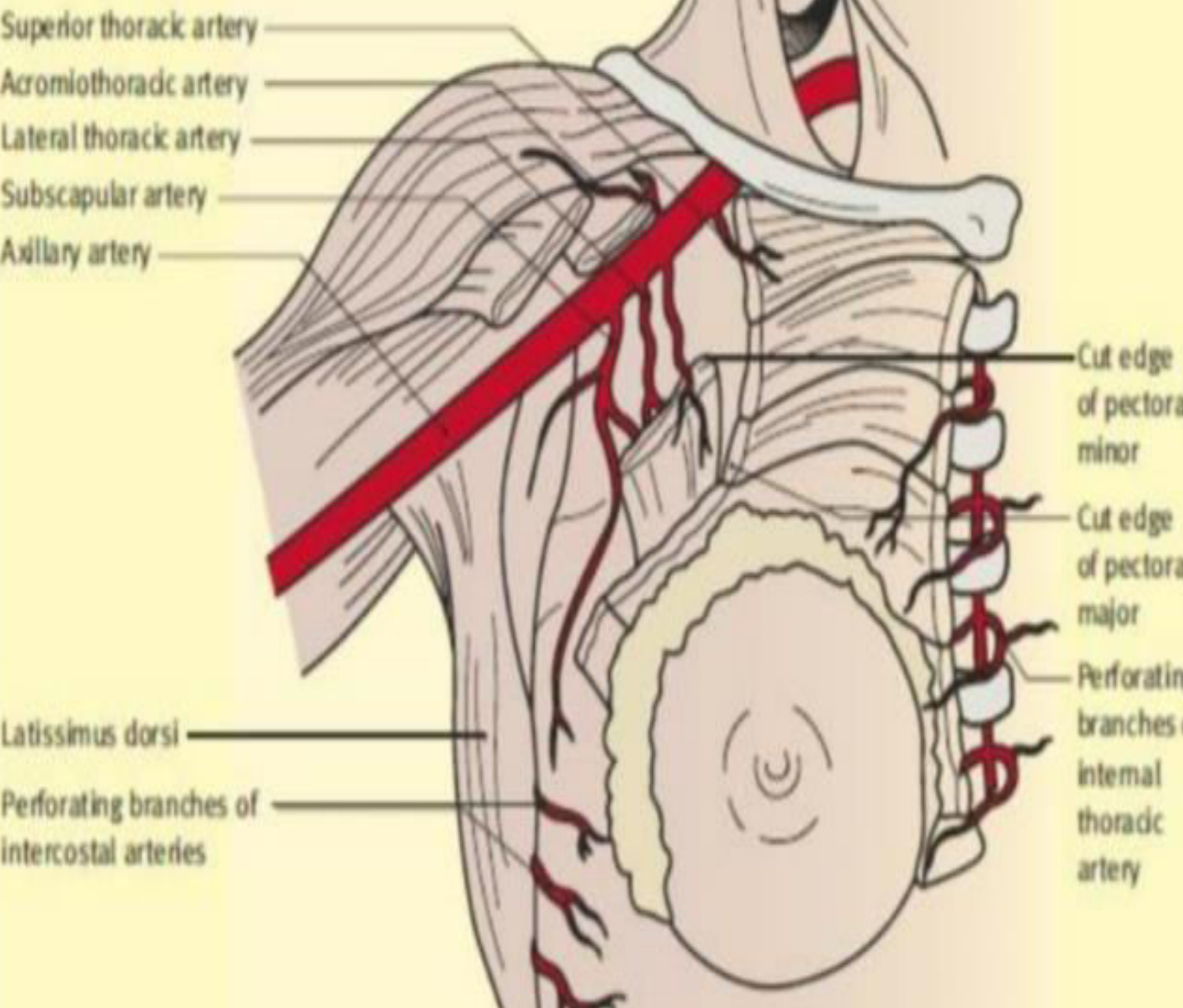
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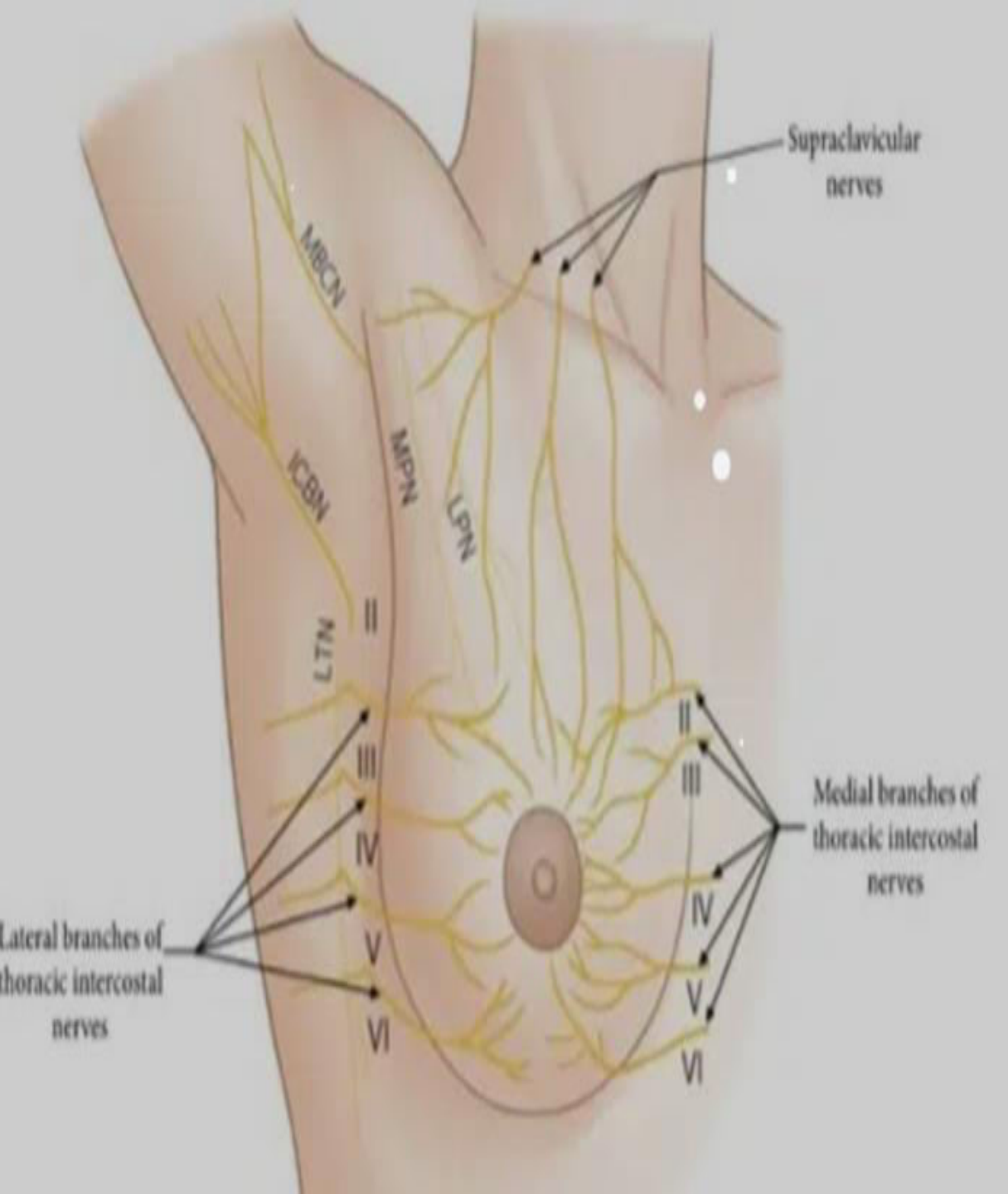
- Breast is the most prominent superficial structure of the anterior chest wall.
- It is composed of glandular and supportive structures embedded in fatty matrix.
- **Boundaries?** -
- Superior - from the second rib
- Inferior - sixth rib-inframammary fold-
- Medially - from lateral edge of the body of sternum.
- Laterally - mid axially line.
- **Quadrants? Most bulky quadrant is?**
- axillary tail of Spence : superolateral extremity, where the breast tissue projects
- Into the axilla along the lower border of the Pectoral's major
- **Base of breast?**
-

- **Anatomy**
- Nipple-mostly smooth muscle fibers .
- Usually located at level of 4th ICS .
- **15-20** lactiferous ducts open on to it.
- Areola.. Pigmented skin area around the nipple
- **Montgomery gland?** Sebaceous glands
- open as montgomery tubercle for lubrication.
- **Cooper's ligament:** Maintain breast shape
- , separate secretory lobules, secure breast to the
- Skin and underlying pectoralis fascia

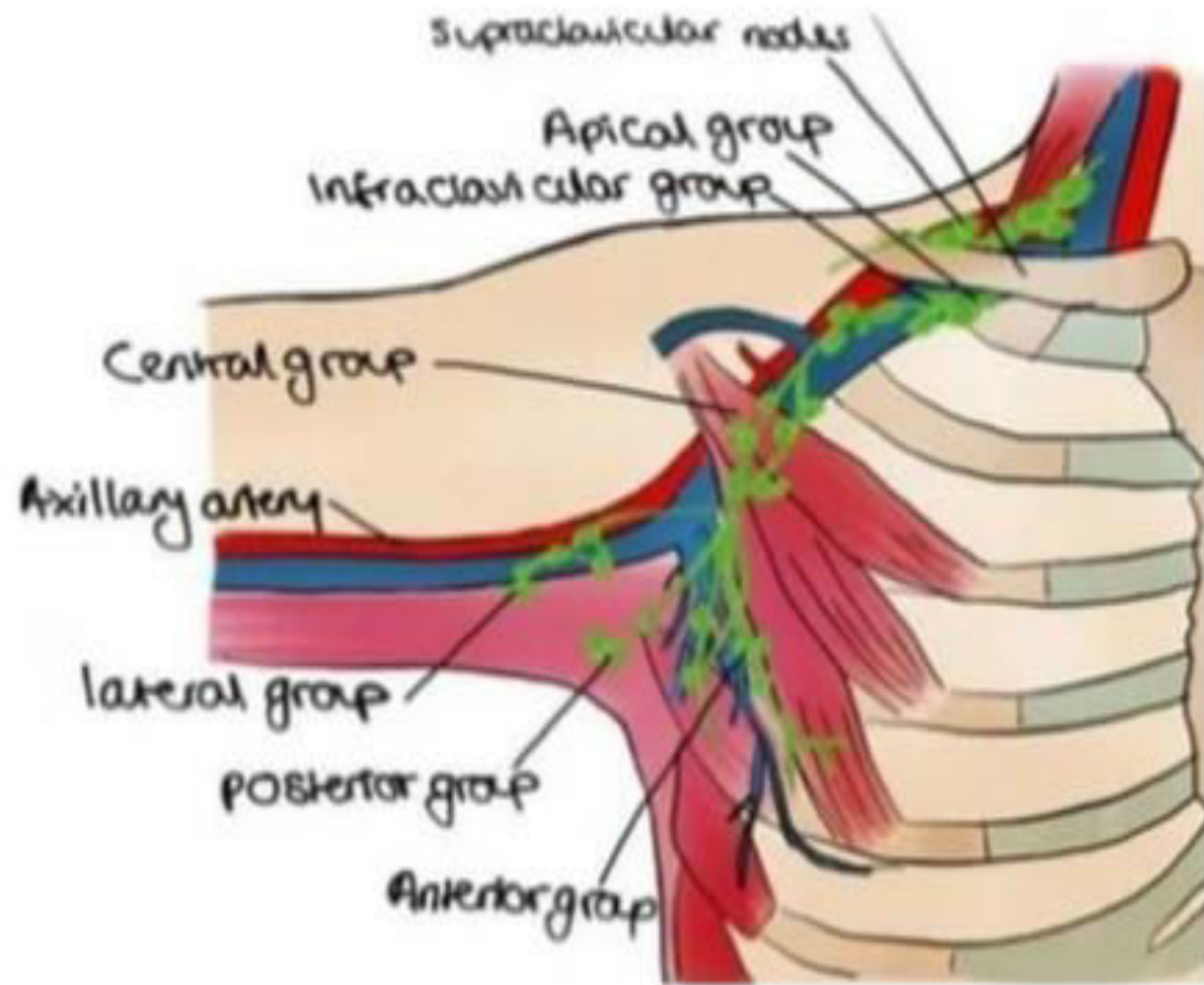


Arterial supply of the breast

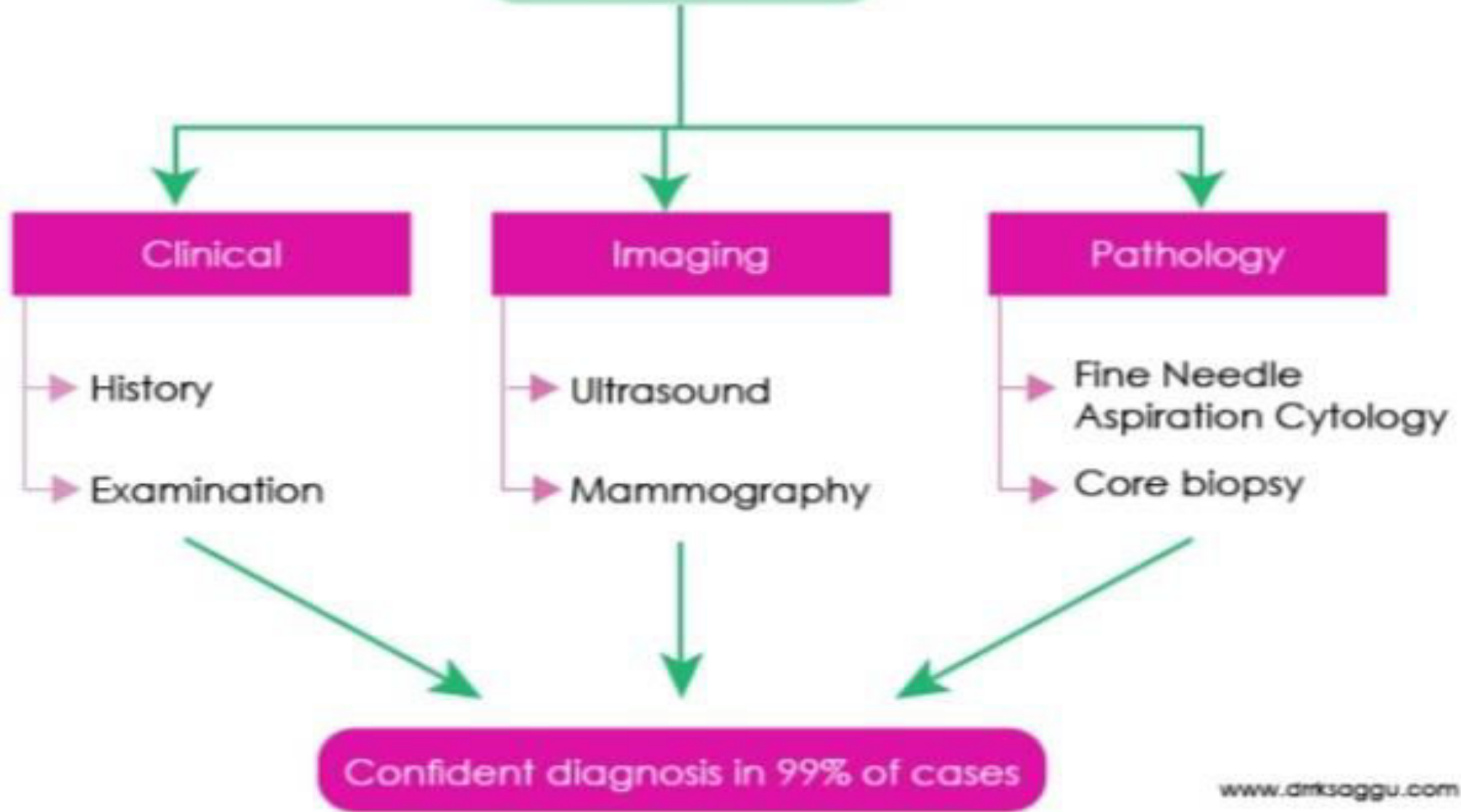




AXILLARY LYMPH NODES



TRIPLE ASSESSMENT



Patient profile

1. Name.2. Age.3. Marital status4. Occupation.5. Residency.6. Admission: date and time. And how (via ER, Referral ...)

2. C.C: chief complain and the duration

pain

SOCRATES

(site, Onset, character of the pain, radiation, associated symptoms, timing of the pain, exacerbating and relieving factors, Severity

Associated with?

Lump? Skin changes? Hotness? Skin discoloration?Nipple discharge or changes? Relation of pain to periods? Fever, fatigue, anorexia, weight loss?

Lump

When did you notice the lump and How?

What was the size of the lump when it was first noticed? Changed? disappear?

Have you ever had a similar lumps before?other lumps?

Nipple discharge

When? Color?

Spontaneously or induced? Unilateral or bilateral?

Uniductal or biductal?

Pregnant? Lactating?

Symptoms of prolactinoma? Symptoms of hyperthyroidism?

Nipple changes •

Discoloration.
destruction (change in its shape).
displacement (change in its site).
deviation (change in projection).
depression (retraction = inversion).

Areola changes

Pigmentations

Ulceration

Scales

Obstetrics and Gynecology

Menarche

Menopause

Parity

Last pregnancy

History of lactation

Hormonal treatment

Medical and Surgical History:

- Have you had a breast CA or benign tumors in the past? Do you have any other medical problems?
- Have you ever had any surgeries before?
- Do you take any drugs?
- Have you been exposed to any source of radiation?
- Have you ever had a mammogram before?
- Have you had any trauma recently?

Family history

-Do you have a family Hx of breast tumors? first degree? Number of members?

-FHx of uterine or ovarian tumors?

-FHx of other tumors? other illnesses?

Social Hx:

-Do you smoke?

-Do you drink alcohol?

How many Kgs do you weigh? -Do you eat a high fat diet?



TABLE 31-1

Risk Factors for Breast Cancer and Approximate Strength of Association

Reproductive	Hormonal	Nutritional/Lifestyle/Body Habitus	Other
Early menarche	OC use (current vs.	Obesity (>30 BMI vs. <25)	Family

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[+]	none) [+]	Premenopausal [-] Postmenopausal [+]	(mo siste
Age at first birth (>35 vs. <20) [++]	Estrogen replacement (10+ yr vs. none) [+]	Adult weight gain (postmenopausal) [++]	Family (firs rela
No. of births (0 vs. 1 child) [+]	Estrogen plus progesterone replacement (>5 yr vs. none) [++]	Alcohol (1 or more drink/day vs. none) [+]	Jewish (yes
Age at menopause (5-yr increment) [+]	High blood estrogens or androgens (postmenopause) [+++]	Height (>5 ft 7 in) [+]	Ionizir (yes
Breastfeeding (>1 yr vs. none) [-]	High blood prolactin [++]	Physical activity (>3 hr/wk) [-]	Benigi dise diag [++]
		Monounsaturated fat ^c (vs. saturated fat) [-]	Mamn den (high cate low
		Low intake of fruits and vegetables ^c (specifically for ER-breast cancer) [+]	

Gail model ??

<https://www.mdcalc.com/calc/3647/gail-model-breast-cancer-risk>

Physical Examination

- **Position:** upright and supine positions.
- **Exposure:**
- **Inspection:** upright position, examine with the patient's when arms relaxed
- and then raised, bend forward, push waist looking for shape asymmetry, deformity, skin changes
- (e.g., erythema, edema, dimpling), nipple changes or discharge, and
- lymphadenopathy (axillary, supraclavicular, and infraclavicular),
- **Palpation:** supine position examine the entire breast systematically with the patient's ipsilateral arm raised above and behind Head .

Palpation techniques of the examination:



Circular motions on all parts of each breast

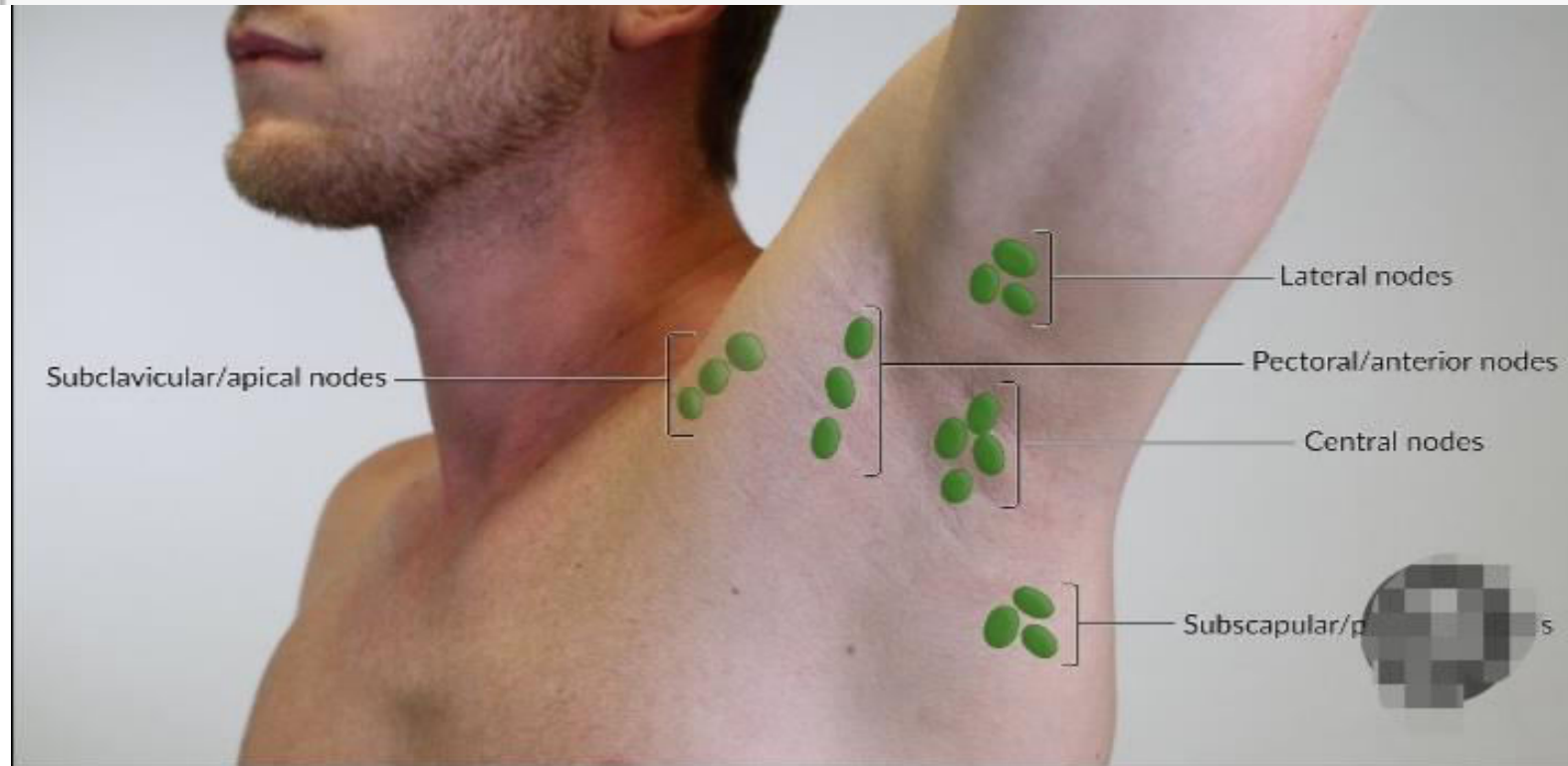


"Wedge" shaped movements from the outer breast to the nipple and back again



Up-and-down movements over the entire breast area

- Lymph node examination



Diagnostic Imaging

- **Mammograms :2 D image**
- are performed in the symptomatic patient or to follow-up an abnormality noted on a screening mammogram.
- ***Contrast-enhance digital mammography:** particularly useful in patients who cannot tolerate MRI due to the presence of medical devices or claustrophobia.
 - *Digital breast tomosynthesis: 3D image**

- **Ultrasound** can determine whether a lesion is solid or cystic and can define the size, contour, or internal texture of the lesion.

If used as an adjunct with mammography, US may improve diagnostic sensitivity to greater than 90% among Patients who mammo sensitivity is Lower due to denser breast tissue.

- * **B-mode** (grayscale) is one of the mc techniques.

- *3D - US, color Doppler, power Doppler, automated breast ultrasound.

MRI: 1- screening patients with a high risk of breast ca 2-Preoperative evaluation (lobular neoplasia, tumor extent) 3-postneoadjuvant chemotherapy 4- positive surgical margins.

Biopsies

- Palpable mass biopsy
- Fine-needle aspiration biopsy (FNAB)

can determine the presence of malignant cells and estrogen receptor (ER) and (PR) status . * Advantages :quick ,office procedure, non expensive , no incision ;less risk infections

*Disadvantages:does not give information tumor grade or the presence of invasion.

- Core needle biopsy

is preferred over FNAB. Same advantage as FNA ..It can distinguish between invasive and noninvasive cancer and provides information on tumor grade as well as receptor status

* Disadvantages: not used if lesion is near chest wall;or in presence of breast implants; may done in hospital if unpalatable lesion.

- **Excisional biopsy** should primarily be used when a core biopsy can't be done. Masses should be excised as a single specimen and labeled to preserve three dimensional orientations.
- ***Advantages: accurate and therapeutic**
- ***Disadvantages: expensive ;hospital procedure;incisional so risk for infection , pain**

Incisional biopsy: is indicated for the evaluation of a large breast mass suspicious for malignancy but for which a definitive diagnosis cannot be made by FNAB or core biopsy .

ex; **inflammatory breast cancer** with skin involvement, an incisional biopsy can consist of a **skin punch biopsy** .

- **Non palpable mass biopsy**

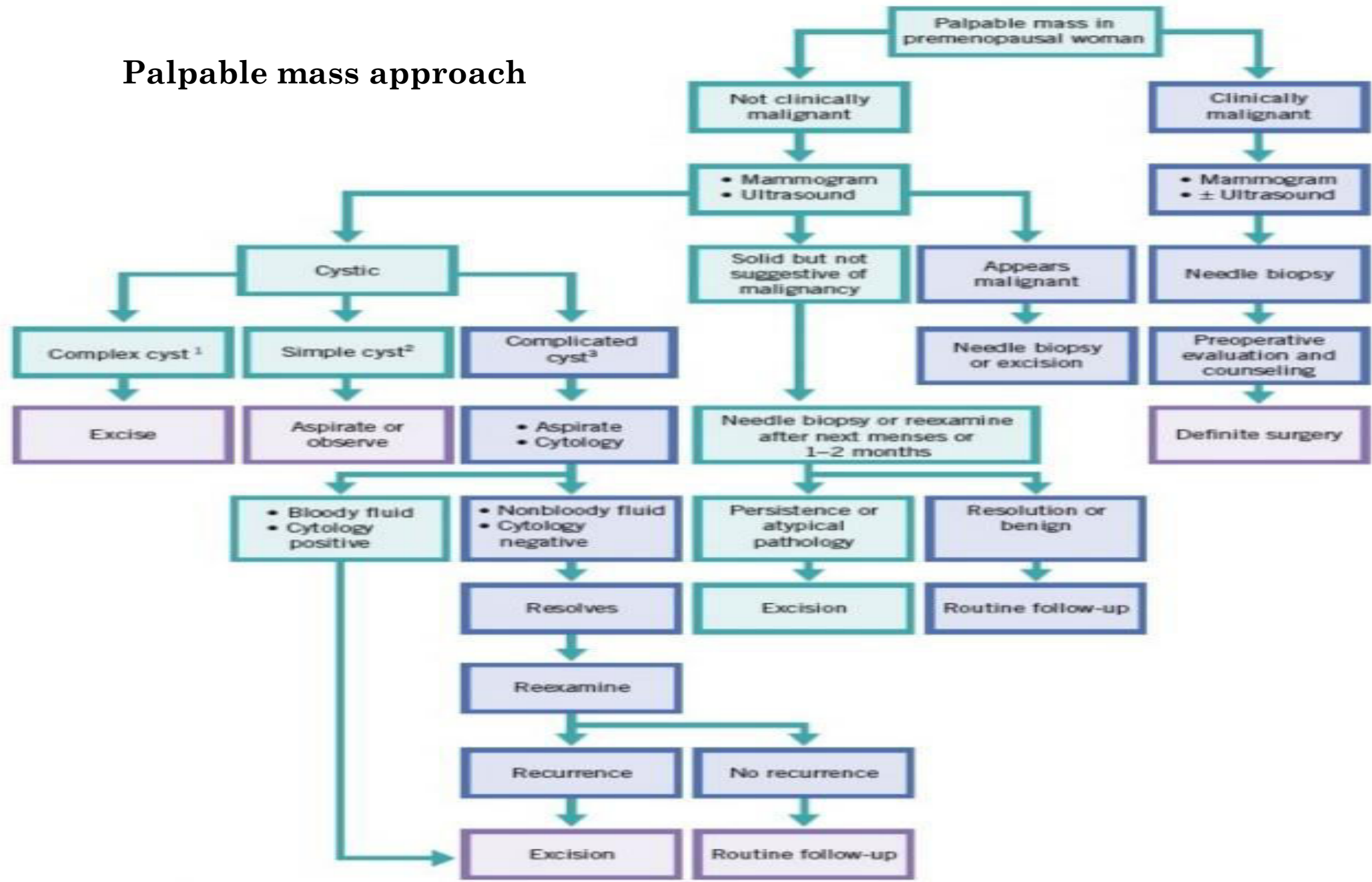
- **Stereotactic core biopsy**

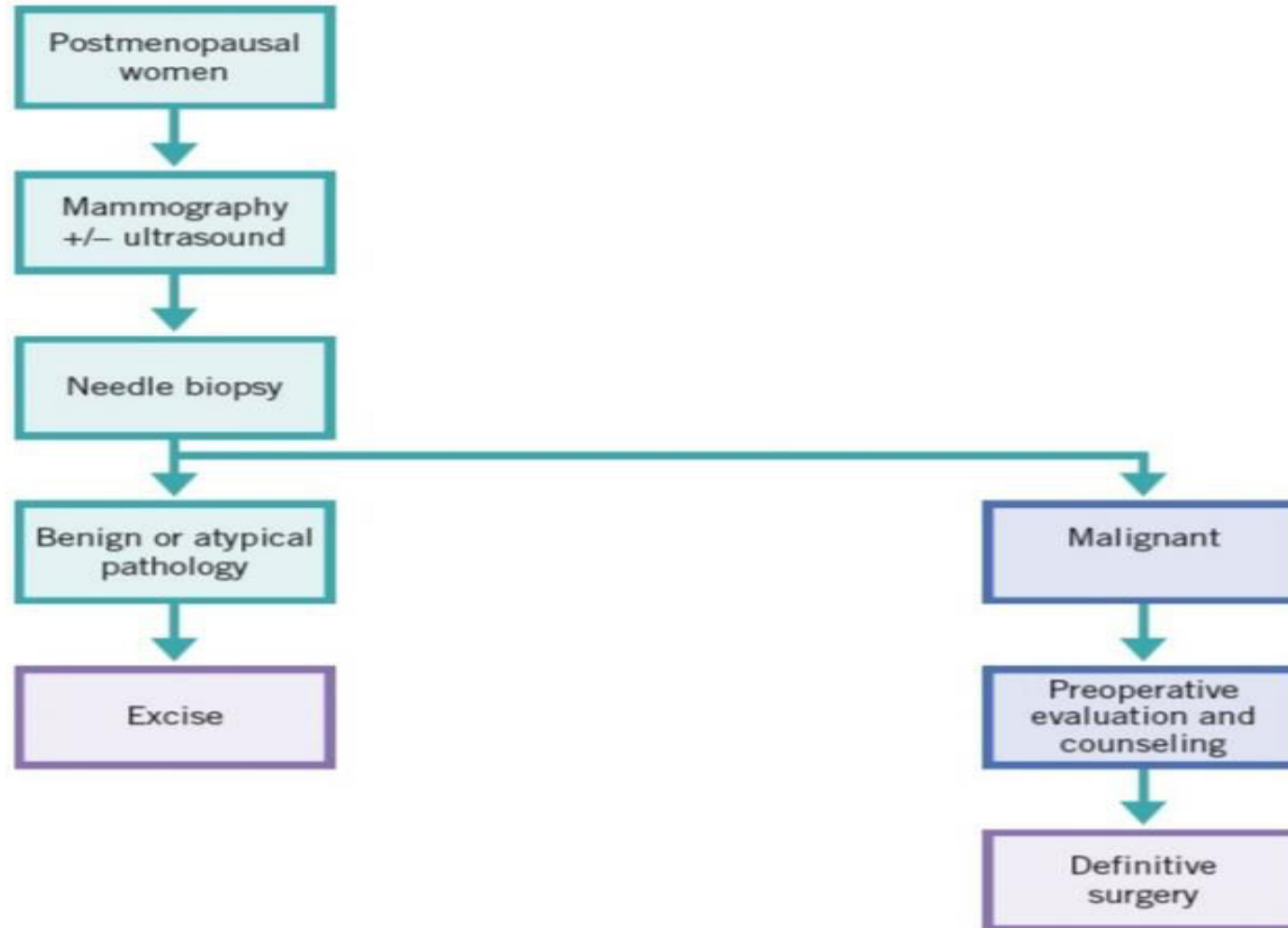
CI: *-1 lesions close to the chest wall or in axillary tail and thin breasts that may allow needle strikethrough into the thorax. 2Superficial lesions and lesions directly beneath the nipple–areolar complex

US-guided biopsy:preferred method for lesions with a cystic component, as it can be used to aspirate the cyst as well as provide core biopsy specimens.

NLB

Palpable mass approach



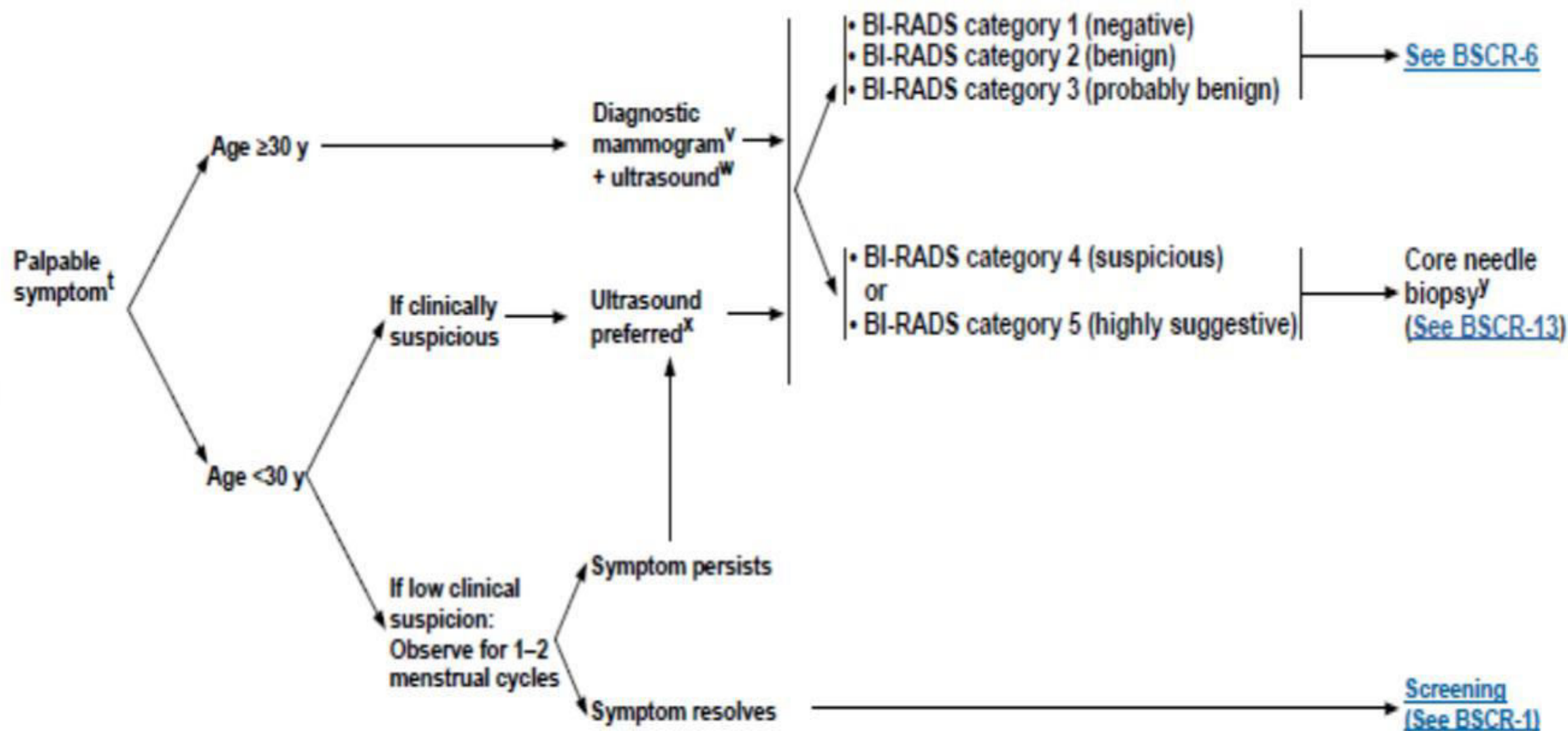


PRESENTING
SIGNS/SYMPTOMS

DIAGNOSTIC
EVALUATION

IMAGING FINDINGS
(Highest Imaging Category
by Mammogram and/or Ultrasound)

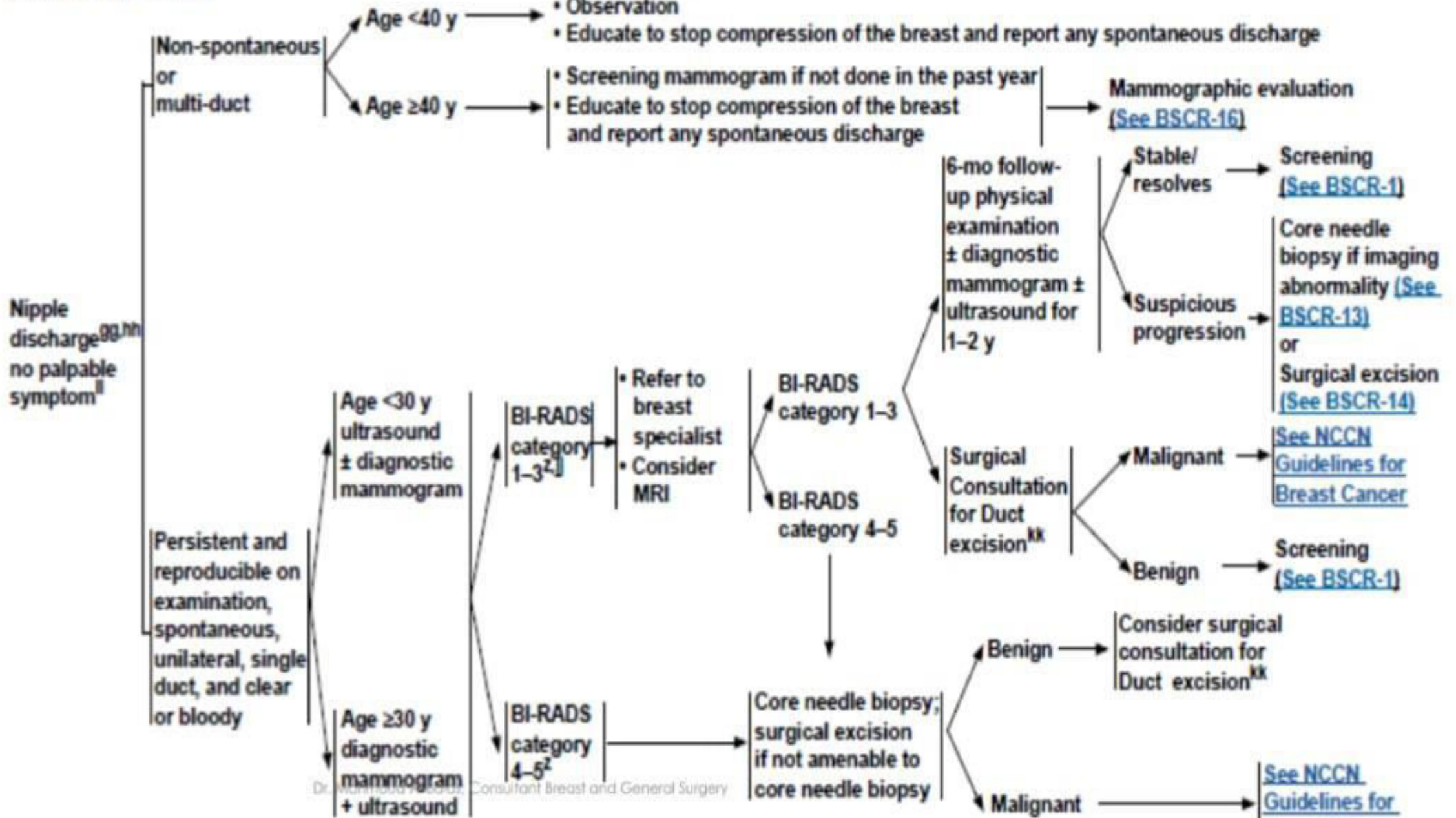
FOLLOW-UP



PRESENTING SIGNS/SYMPTOMS

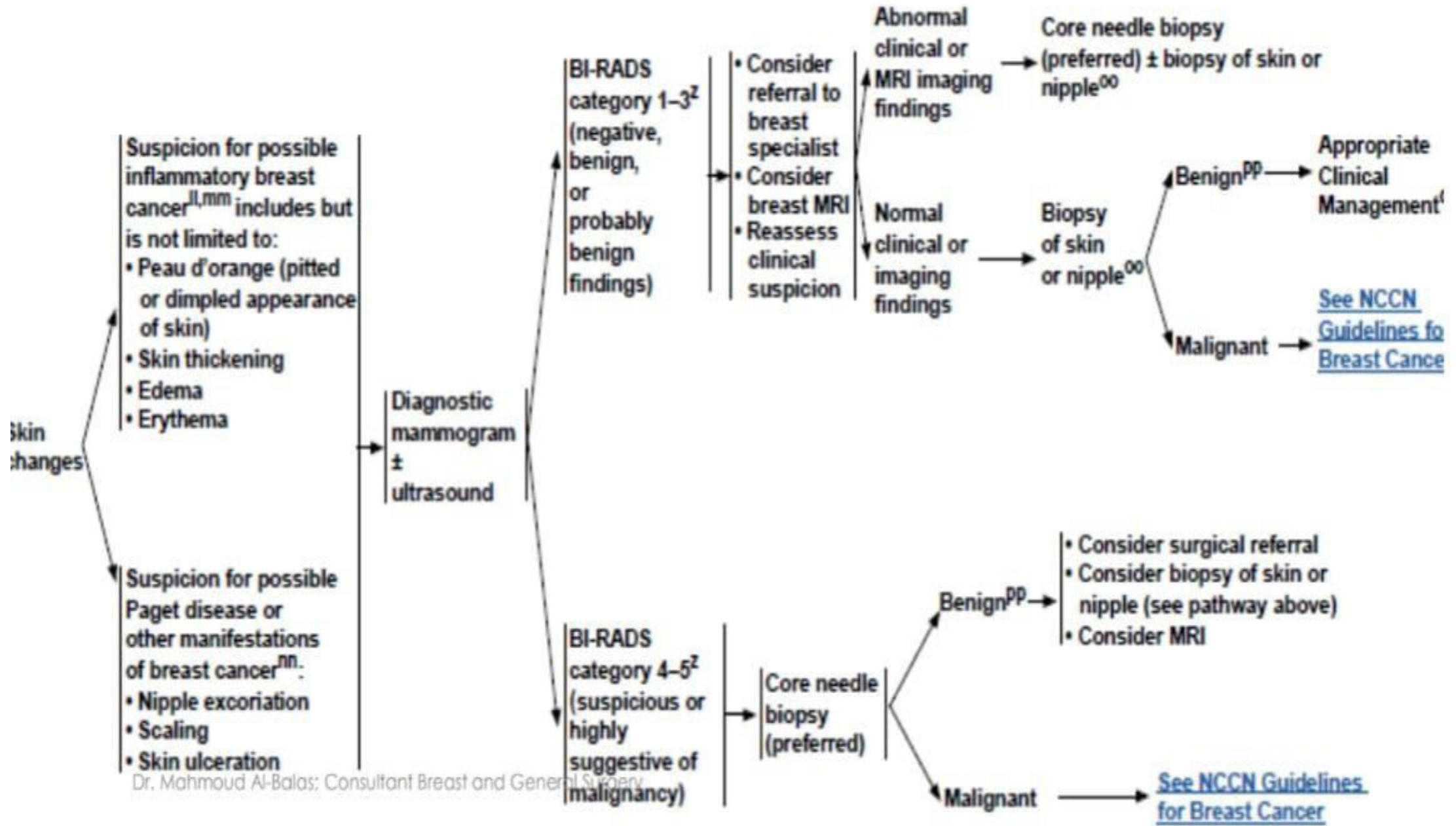
DIAGNOSTIC EVALUATION AND FOLLOW-UP

FOLLOW-UP AFTER IMAGING



PRESENTING SIGNS/SYMPTOMS

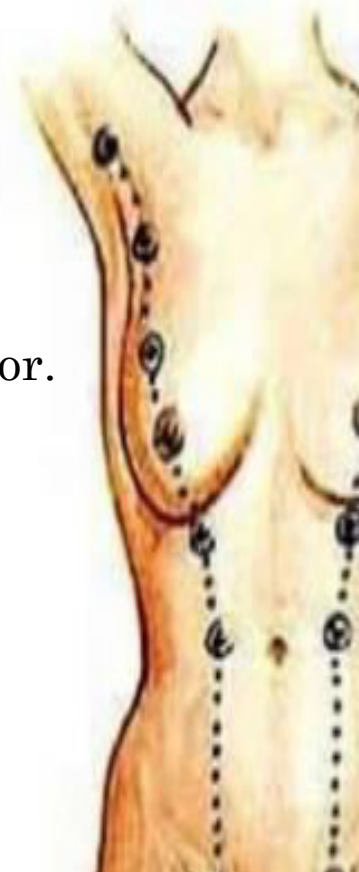
DIAGNOSTIC EVALUATION AND FOLLOW-UP



Breast pathologies

Category	Pathology / Disease	
Developmental Abnormalities	<ul style="list-style-type: none"> • Ectopic breast (mammary heterotopia) • Underdevelopment of the breast (hypoplasia) • Amastia (complete absence of both breast and nipple) • Amazia (presence of only nipple without breast tissue) 	<p>Nipple (polythelia), areola, glandular tissue (polymastia)</p> <p>Congenital Ulnar-mammary syndrome Poland's syndrome Turner's syndrome Congenital adrenal hyperplasia</p> <p>Acquired hypoplasia (iatrogenic) Trauma Radiotherapy</p>
Inflammatory and related lesions	<ul style="list-style-type: none"> • <u>Mastitis</u> • <u>Mammary Duct Ectasia</u> • <u>Fat Necrosis</u> 	<p>Acute mastitis Granulomatous mastitis Foreign body reactions Zuska's disease</p>
Fibrocystic Changes		
Breast Cysts		
Adenosis		

Developmental anomalies



- **1_Ectopic Breast**

- **Polymastia:** glandular tissue and areola

- Poly thalia:nipple.

- **Amastia:** Absence of breast , nipple,pectoral major.

- **Athelia:** absence of nipple.

- **2_breast hypoplasia**

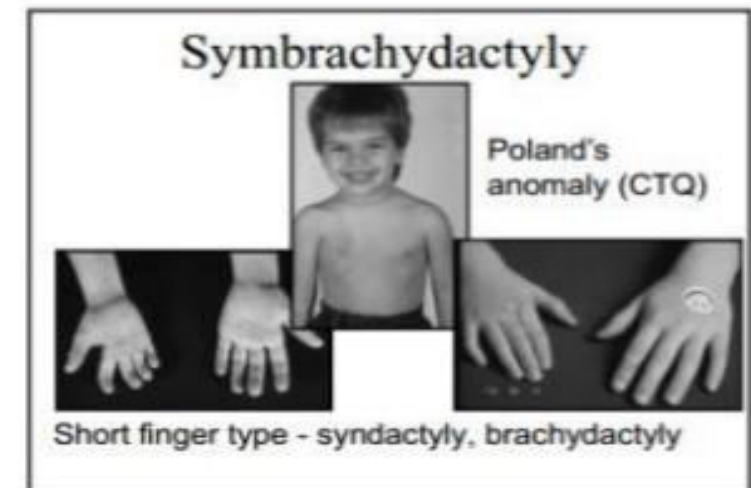
Polymastia



Polythelia



Amastia



Mastitis

- inflammation of the [breast](#) tissue and most commonly affects individuals who are lactating ([puerperal mastitis](#)). Nonlactational mastitis, although rare, can also occur.
- **Etiology**
- [Staphylococcus aureus](#) (most common infectious cause of [puerperal mastitis](#))
- Other pathogens (e.g., [Streptococcus](#), [Escherichia coli](#), [mycobacteria](#))
- **Pathophysiology**
- [Nipple](#) fissures facilitate the entry of bacteria located in the nostril and throat of the [infant](#) or on the [skin](#) of the mother into the milk ducts during [breastfeeding](#).
- Prolonged [breast engorgement](#) (due to overproduction of milk)
- or insufficient drainage of milk (e.g., due to infrequent feeding, quick weaning, illness in either the baby or mother) result in milk stasis, which creates favorable conditions for bacterial growth within the [lactiferous ducts](#).
- **Clinical features**
- Typically localized, tender, firm, swollen, [erythematous breast](#) (generally unilateral)
- Systemic symptoms ([malaise](#), [fever](#), and chills)
- [Pain](#) during [breastfeeding](#)

- Diagnosis is usually clinical.
- Diagnostic studies are indicated **to evaluate for complications or alternative diagnoses** in patients with atypical presentation or poor response to initial [empiric antibiotic therapy](#).
- **[Breast milk](#) culture**
- **Indications**
- Inadequate response to initial [empiric antibiotic therapy](#).
- Severe infection
- Recurrent mastitis

- **Imaging (not routinely required)**
- Poor response to [empiric antibiotic therapy](#) (e.g., within 48–72 hours)
- Evaluation for complications (e.g., [abscess](#))

- **Biopsy**
- [Core needle biopsy](#): may be preferable for patients with imaging features suspicious for [malignancy](#)
- [Punch biopsy](#): may be preferable for patients with features concerning for [inflammatory breast cancer](#)

- **Management**
- [Puerperal mastitis](#)
- Initiate supportive therapy : Rest, adequate hydration
- Warm and cold compresses
- [Pain management NSAIDs](#)
- [Breastfeeding](#) upon [infant](#) demand with alternate [breasts](#)
- [Referral](#) to [breast surgery](#) (e.g., for treatment of underlying [breast abscess](#) or [surgical drainage](#))
- Severe cases (e.g., [sepsis](#)): Admit to hospital and initiate IV [antibiotics](#).



Mammary duct ectasia

- a chronic inflammatory condition characterized by dilatation of the terminal (subareolar) [lactiferous ducts](#), with a peak [incidence](#) in women between 40–50 years of age
- **Pathophysiology**
- Inspissated luminal secretion → stasis → periductal inflammation → fibrous obliteration
- **Clinical features**
- Often asymptomatic
- Unilateral or bilateral non-milky gray, **greenish**, or bloody discharge
- [Nipple inversion](#)
- Firm, tender subareolar mass may be present (may mimic [breast cancer](#))
- [Noncyclic mastalgia](#)

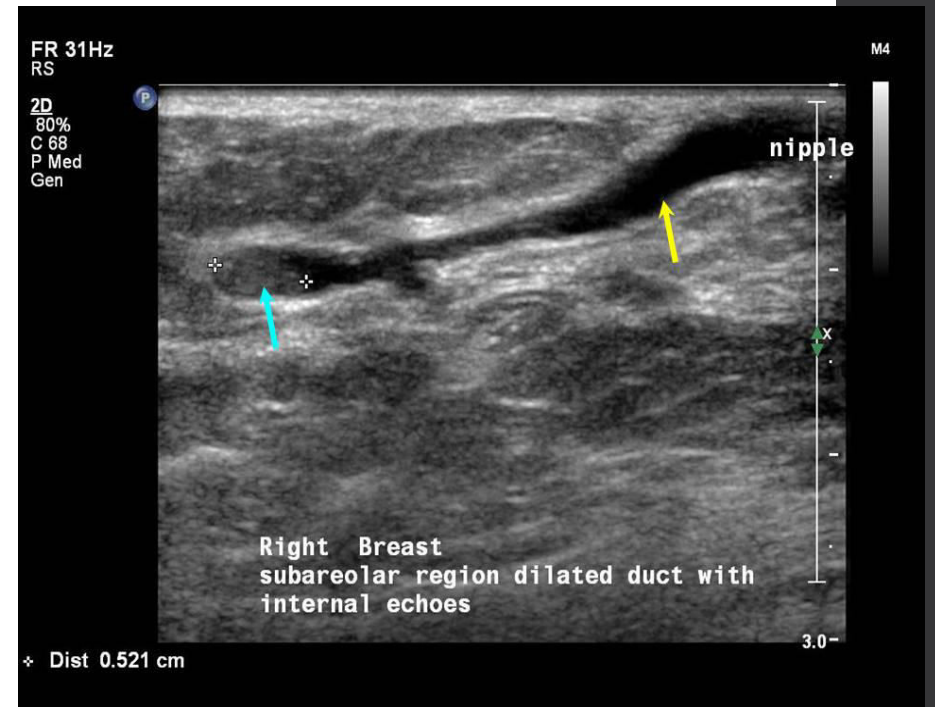
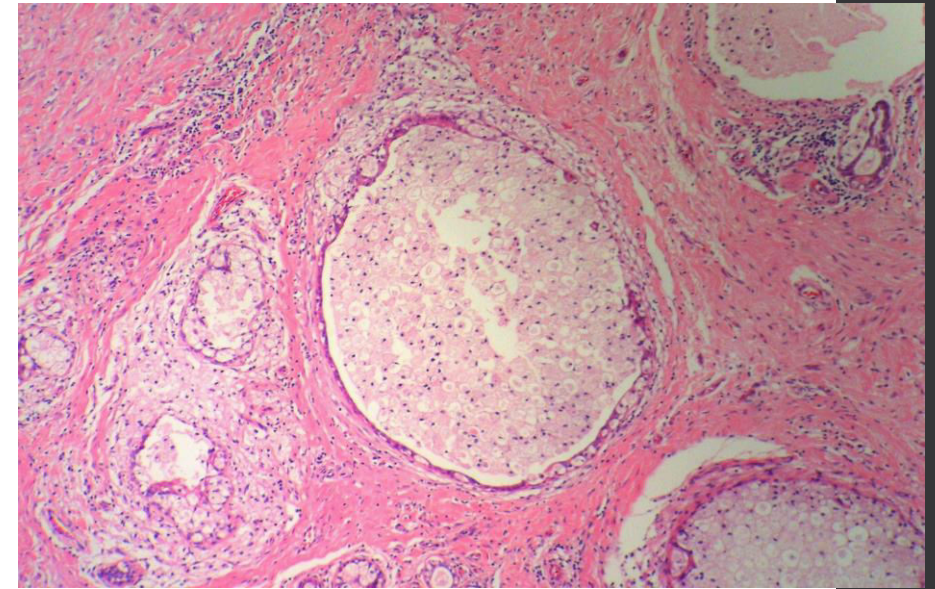
- **Imaging**
- [Breast ultrasound](#): dilated subareolar ducts
- [Mammography](#): dilated, tortuous subareolar ducts, branching calcifications
- **Biopsy**
- Periductal inflammation and/or [fibrosis](#)
- The ductal lumens may be obliterated or filled with inspissated secretions and inflammatory cells.
- Foamy histiocytes are characteristically present within the inflammatory infiltrate

Management

Expectant management is usually sufficient as most cases resolve spontaneously.

Consider surgical duct excision for patients with:

- [Nipple discharge](#)
- Other persistent symptoms
- Non-diagnostic biopsy



Granulomatous Mastitis

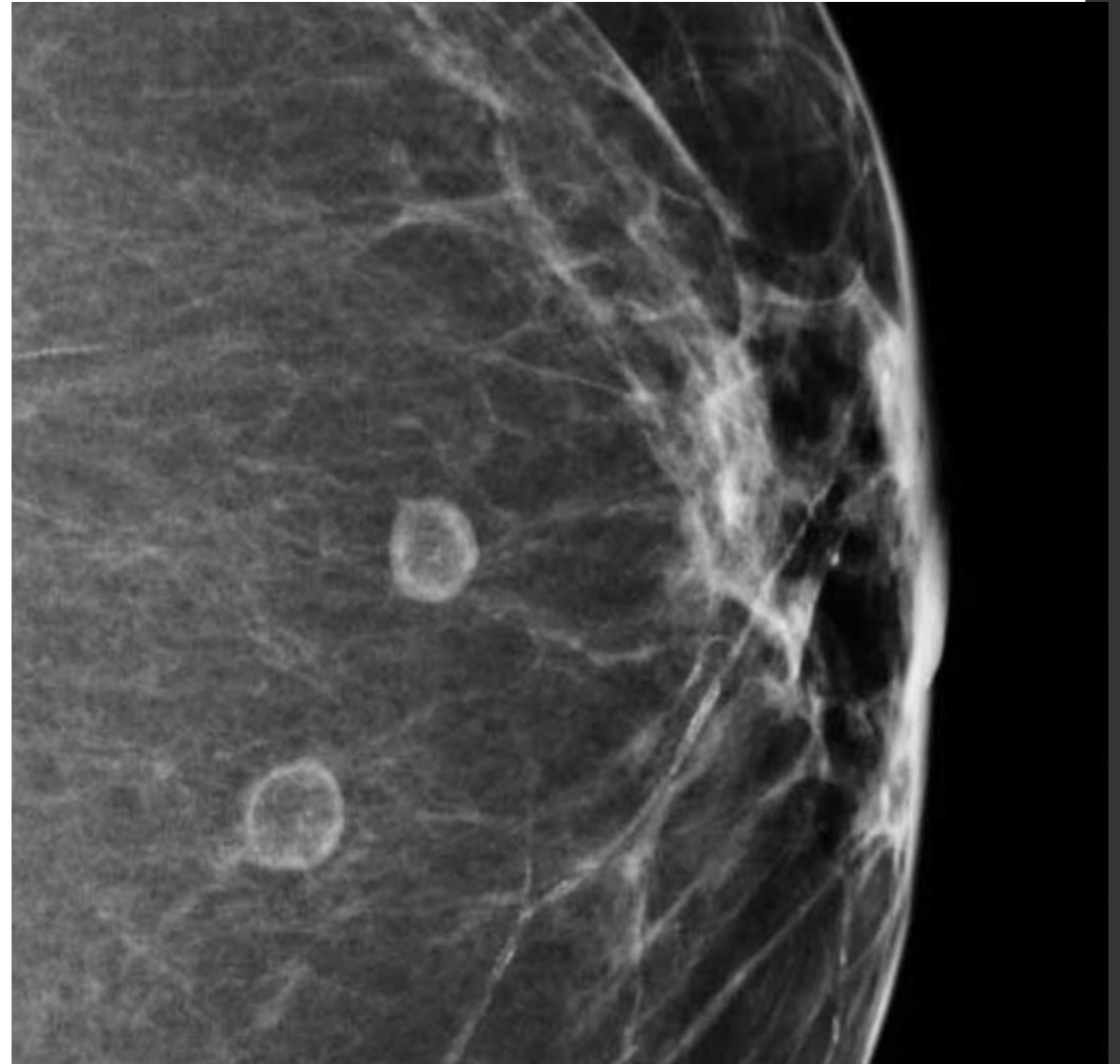
- It's a rare benign inflammatory breast disease of variable etiologies
- 1. Infection (e.g. TB)
- 2. Foreign material.
- 3. Systemic autoimmune diseases (e.g. sarcoidosis and Wegener's granulomatosis).
- 4. **Idiopathic** :
 - A non-caseating granulomatous lesions without an identifiable cause.
- Biopsy is typically needed to confirm the diagnosis as clinical and imaging findings of granulomatous mastitis closely resemble those of [inflammatory breast cancer](#)
- **Presentation**
 - Ill defined painful mass in the breast
 - Can involve any quadrant
 - Skin thickness, sinus and abscess formation
 - Axillary lymphadenopathy
 - Nipple retraction
 - May be mistaken with breast carcinoma



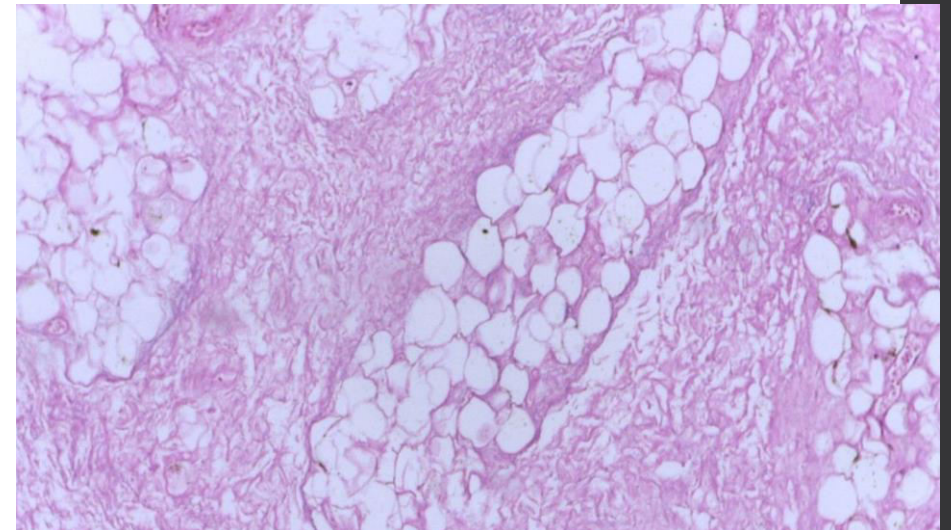
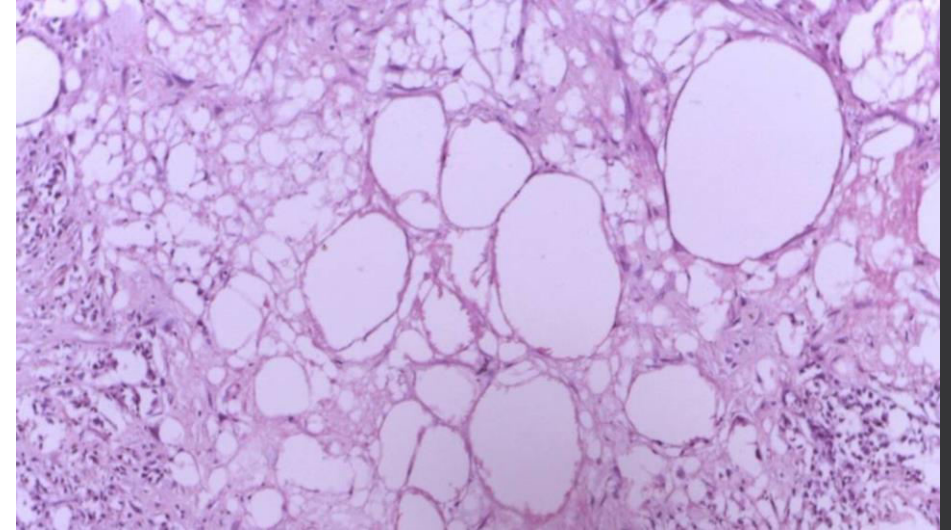
- Expectant management may be considered in asymptomatic patients.
- Complete surgical excision whenever possible plus steroid therapy
- Abscess I&D

Fat necrosis

- [Fat necrosis](#) of the [breast](#) is a benign nonsuppurative inflammatory lesion affecting the [adipose tissue](#)
- **Etiology**
 - Often associated with [soft tissue trauma](#)
 - [Surgery](#) or radiation
- **Clinical features**
 - Typically manifests as an ill-defined nontender [breast mass](#)
 - Often periareolar in location; can also occur peripherally
 - [Breast skin retraction](#), [erythema](#), and/or [ecchymosis](#) (may mimic breast cancer)
- **Imaging findings**
 - [Breast ultrasound](#): variable; may be solid or cystic and [anechoic](#) or [hyperechoic](#)
 - [Mammography](#)
 - Fluid-filled oil cyst
 - Coarse rim calcifications
 - Spiculated mass



- Image-guided **biopsy**
- **Indication:** clinical suspicion of [malignancy](#)
- **Findings**
 - [Foam cells](#) and [multinucleated giant cells](#)
 - [Necrotic](#) fat cells
 - [Hemosiderin](#) deposition and [chronic inflammation](#)
- **Treatment**
- [Expectant management](#) is usually sufficient.
- Appropriate surveillance for benign or probably benign lesions
- Consider surgical excision if:
 - [Malignancy](#) can not be excluded
 - Imaging and pathology findings are discordant



RECURRING SUBAREOLAR ABSCESS (ZUSKA'S DISEASE)

- Rare, benign bacterial infection of the breast.
- • 90% of patients are smokers
- • Triad:
 - 1. Cutaneous Fistula draining from the subareolar tissue
 - 2. Chronic thick pasty nipple discharge
 - 3. Recurrent mammary abscesses
- Treatment:
 - Surgical drainage.
 - Fistulectomy (Hadfield operation) and complete excision of the affected duct and sinus tract.
 - Smoking cessation.
 - Abscess may recur if the process develops in another duct.

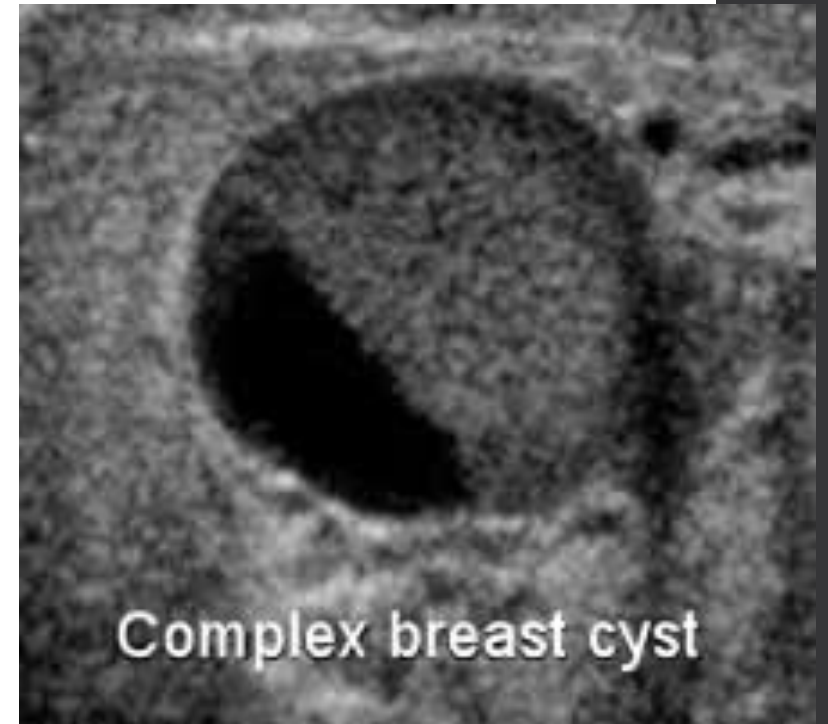
Fibrocystic changes


- a nonspecific term that includes a heterogeneous spectrum of [breast](#) conditions. Women between 20 and 50 years of age are most commonly affected. Histologically, fibrocystic changes are divided into [nonproliferative breast lesions](#) and [proliferative breast lesions](#)
- Most common benign lesion of the [breast](#)
- **Clinical features**
- **Premenstrual bilateral multifocal [breast pain](#) ([cyclic mastalgia](#))**
- Tender or nontender [breast nodules](#)
- Clear or slightly milky [nipple discharge](#)

Nonproliferative lesions	I. Cysts II. Papillary apocrine changes III. Epithelial-related calcifications IV. Mild epithelial hyperplasia V. Ductal ectasia VI. Nonsclerosing adenosis VII. Periductal fibrosis	<ul style="list-style-type: none"> • 70% of benign breast conditions • No increase in risk of BC development
Proliferative lesions <i>without atypia</i>	I. Moderate or florid ductal hyperplasia of the usual type II. Sclerosing adenosis III. Radial scar IV. Intraductal papilloma or papillomatosis	<ul style="list-style-type: none"> • BC RR increase 1.3-1.9 times
Proliferative lesions <i>with atypia</i> (atypical hyperplasia)	I. Atypical ductal hyperplasia (ADH) II. Atypical lobular	<ul style="list-style-type: none"> • BC RR increase 3.9-13 times • > 80% of patients with atypical hyperplasia do not develop

Breast cysts

- [Breast](#) cysts are circumscribed fluid collections that most commonly occur in [premenopausal](#) women
- [Simple breast cysts](#) are the most common cause of [nonproliferative breast lesions](#).
- **Clinical features**
 - Maybe asymptomatic (detected incidentally)
 - Single or multiple [breast](#) masses
 - May be tender
 - Variable size and texture (smooth, soft, firm)
 - Usually mobile



	Simple breast cyst 	Complicated breast cyst	Complex breast cyst
Characteristic features on <u>ultrasound</u>	<ul style="list-style-type: none"> • <u>Round or oval well-defined, anechoic</u> • <u>Posterior acoustic enhancement</u> • <u>Thin walls</u> • No mural thickening • No solid components • No internal septations 	<ul style="list-style-type: none"> • Round <u>hypoechoic</u> well-defined mass with internal echoes • May or may not have <u>posterior acoustic enhancement</u> • No solid components or intracystic mass • No internal septations • Avascular on <u>doppler ultrasound</u> 	<ul style="list-style-type: none"> • Round well-defined mass with any of the following: <ul style="list-style-type: none"> ◦ Internal septations ◦ Mural thickening ◦ Thick walls ◦ Solid and cystic components
Risk of <u>malignancy</u>	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Low (< 2%) ^{[2][8]} 	<ul style="list-style-type: none"> • High (up to 23%) ^[8]

Simple:

Asymptomatic cysts: no intervention required; most resolve spontaneously

Symptomatic cysts :
Consider ultrasound-guided fine needle aspiration.

Complex :

Perform an ultrasound-guided core needle biopsy or excisional biopsy in all patients.

Benign lesion on biopsy

Follow-up at 6 and/or 12 months for 1 year.

Indeterminate lesion : surgical excision

Atypical Hyperplasia

- The most common form of proliferative breast disease.
- Classified into:1. Ductal Hyperplasia.2. Lobular Hyperplasia.
- Ductal Hyperplasia : Epithelial [hyperplasia](#) of [terminal duct](#) cells and lobular [epithelium](#)

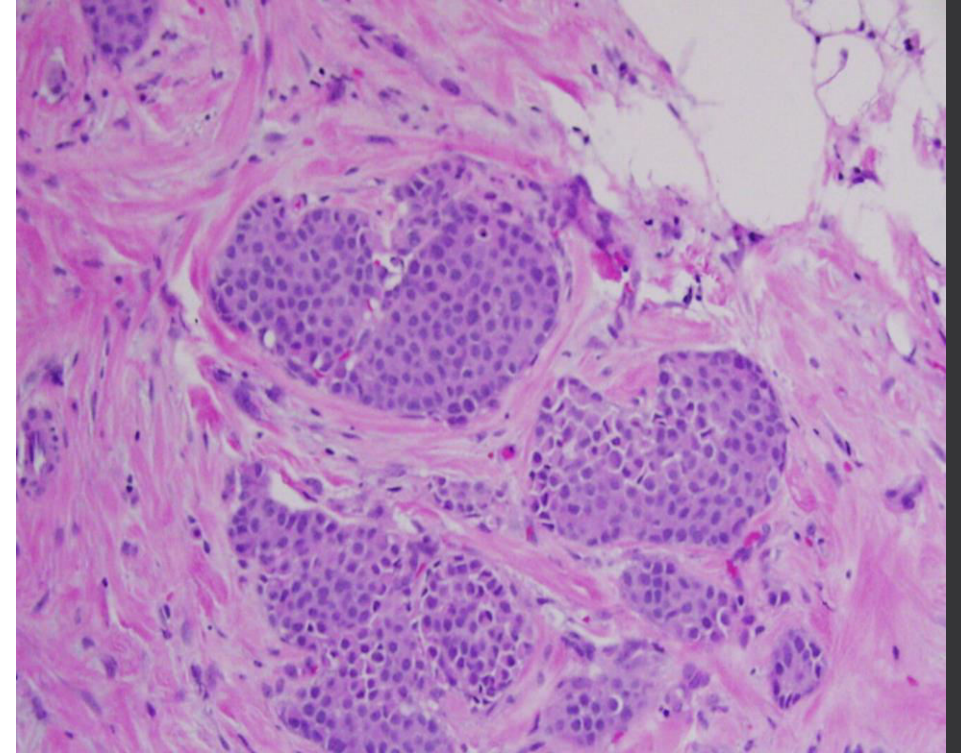
- **A- Usual** Ductal Hyperplasia
- No Atypia
- RR for BC increase slightly (1.5-2X)

- **B- Atypical** Ductal Hyperplasia
- Atypia
- RR increase by (4-5X) [associated with an increased risk of breast cancer in both the affected and contralateral breast.](#)
- Mimics low grade DCIS.
- Surgical excision, followed by close surveillance for breast cancer and imaging
- [Chemoprevention](#)

Lobular Hyperplasia

- Includes :
- Atypical Lobular Hyperplasia
- Lobular Carcinoma In Situ (LCIS) : is a noninvasive proliferative lesion of the [breast](#) that arises from the [terminal ductal lobular units](#). It is typically asymptomatic
- More common in premenopausal women.

- **Diagnosis**
- LCIS is usually detected **incidentally** during biopsy for another abnormality.
- Immunohistochemistry
 - E-cadherin: negative
- **Management:**
- ALH: follow-up and appropriate risk assessment.
- LCIS:
- **Close clinical surveillance**
- every 6–12 months
- Women \geq 30 years
 - Annual mammogram
- **Surgical excision**
- **Breast cancer risk-reduction options :**
- Chemoprevention , Bilateral prophylactic mastectomy



Benign Breast Tumors

Fibroadenoma

Intraductal Papilloma

Gynecomastia

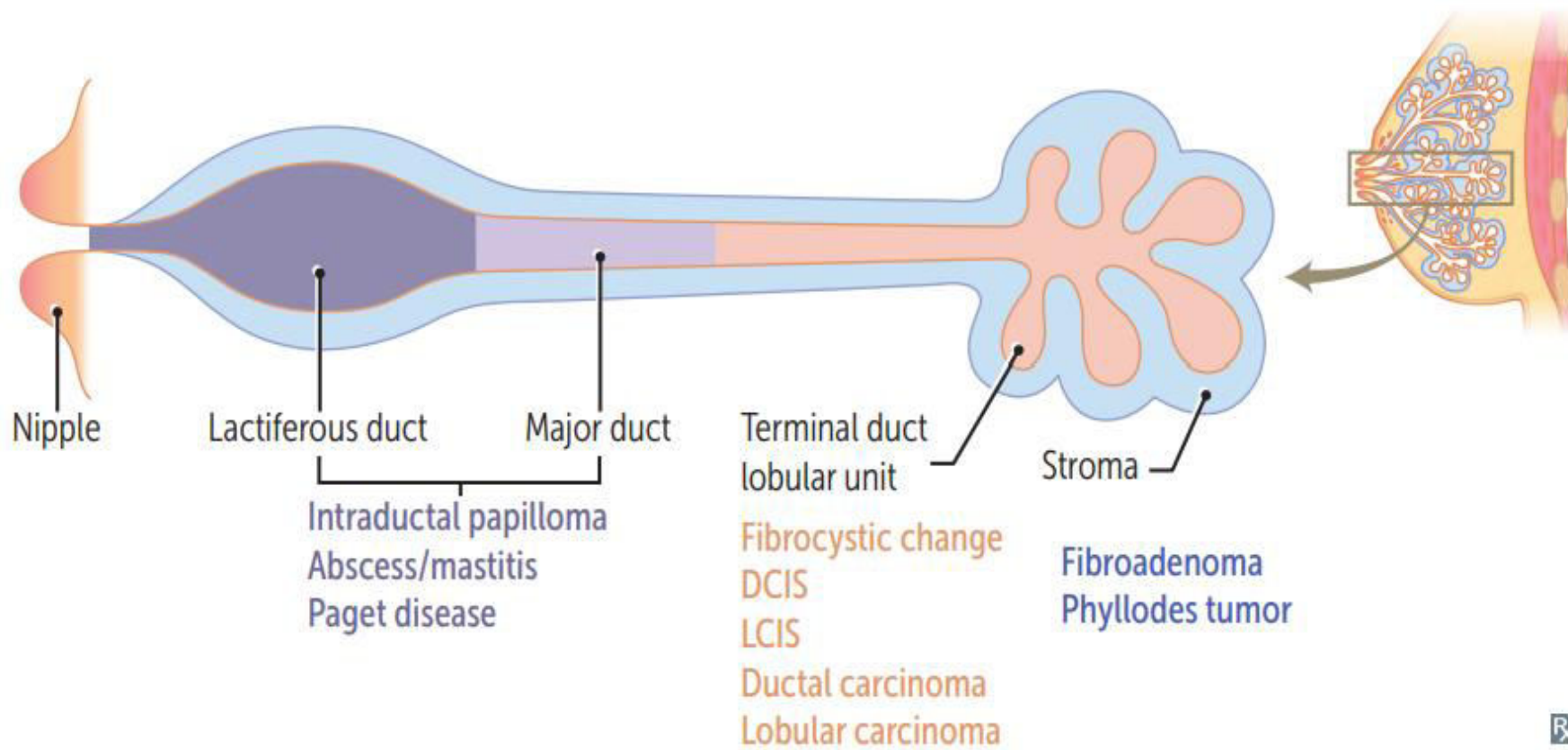
Phyllodes Tumor

Lipoma

Hamartoma

Granular Cell Tumor

Radial Scar



1-Fibroadenoma

- It is a benign tumor
- Fibroadenomas are the most common benign tumors in women under 35 years of age
- Peak incidence occurs mainly in 20 – 30 years; but can occur at any age
- The incidence of fibroadenomas decreases with age
- Composed of epithelial and stromal elements.



Etiology

- Idiopathic
- Hormonal factors (increased estrogen sensitivity or OCP in young age) are thought to contribute to fibroadenoma growth; as in pregnancy increased estrogen may stimulate growth thus fibroadenomas increase in size, and reverts after menopause.
- EBV in immunosuppressed women; data suggests that the infection is specifically localized to epithelial cells and plays a role in the pathogenesis of fibroadenomas.

How is it presented?

Clinical presentation

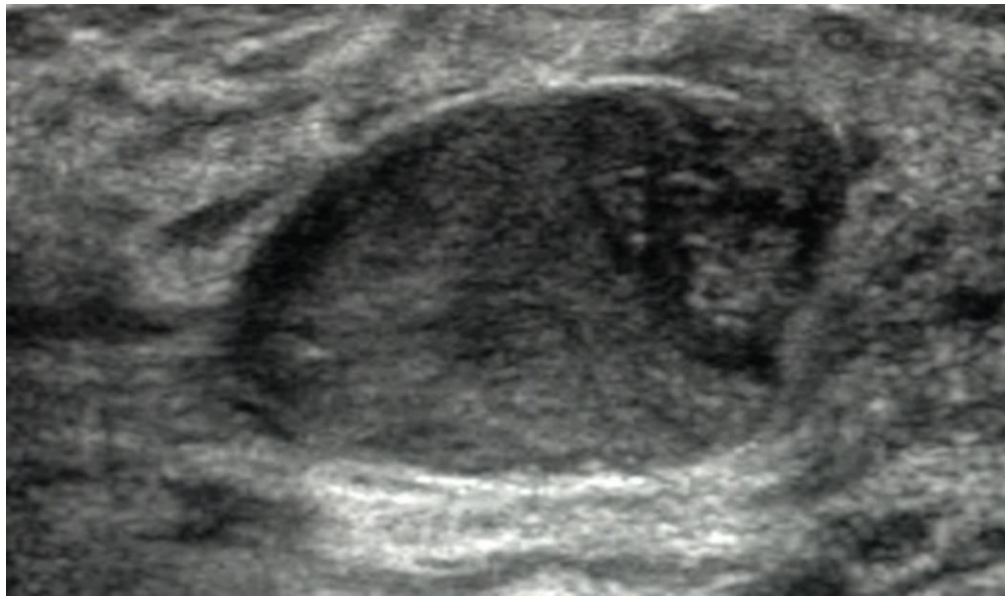
- **Mostly asymptomatic**
- **Symptomatic**
- Well-defined mobile mass.
- Non-tender
- Mostly solitary
- Located anywhere, but mostly in the upper outer quadrant

Red flags

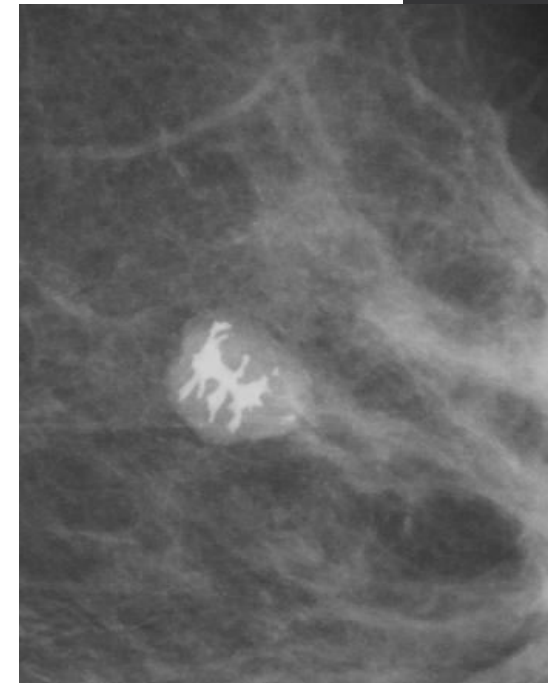
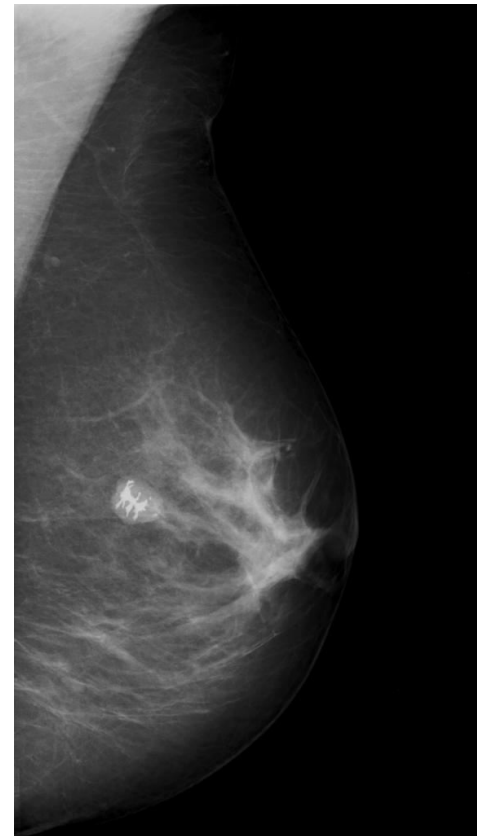
- Pain
- Rapid growth
- Cosmetic effect
- Fear of malignancy

Diagnosis?

- **Breast Ultrasound**



- **Mammography**



Pathologic Classification

Size

< 5 cm

> or equal 5 cm (Giant fibroadenoma or Juvenile giant fibroadenoma in young age)

Microscopic architecture of ductal elements

Pericanalicular.

Intracanalicular.

Simple Vs. Complex (i.e. with hyperplasia, metaplasia or sclerosing adenosis)

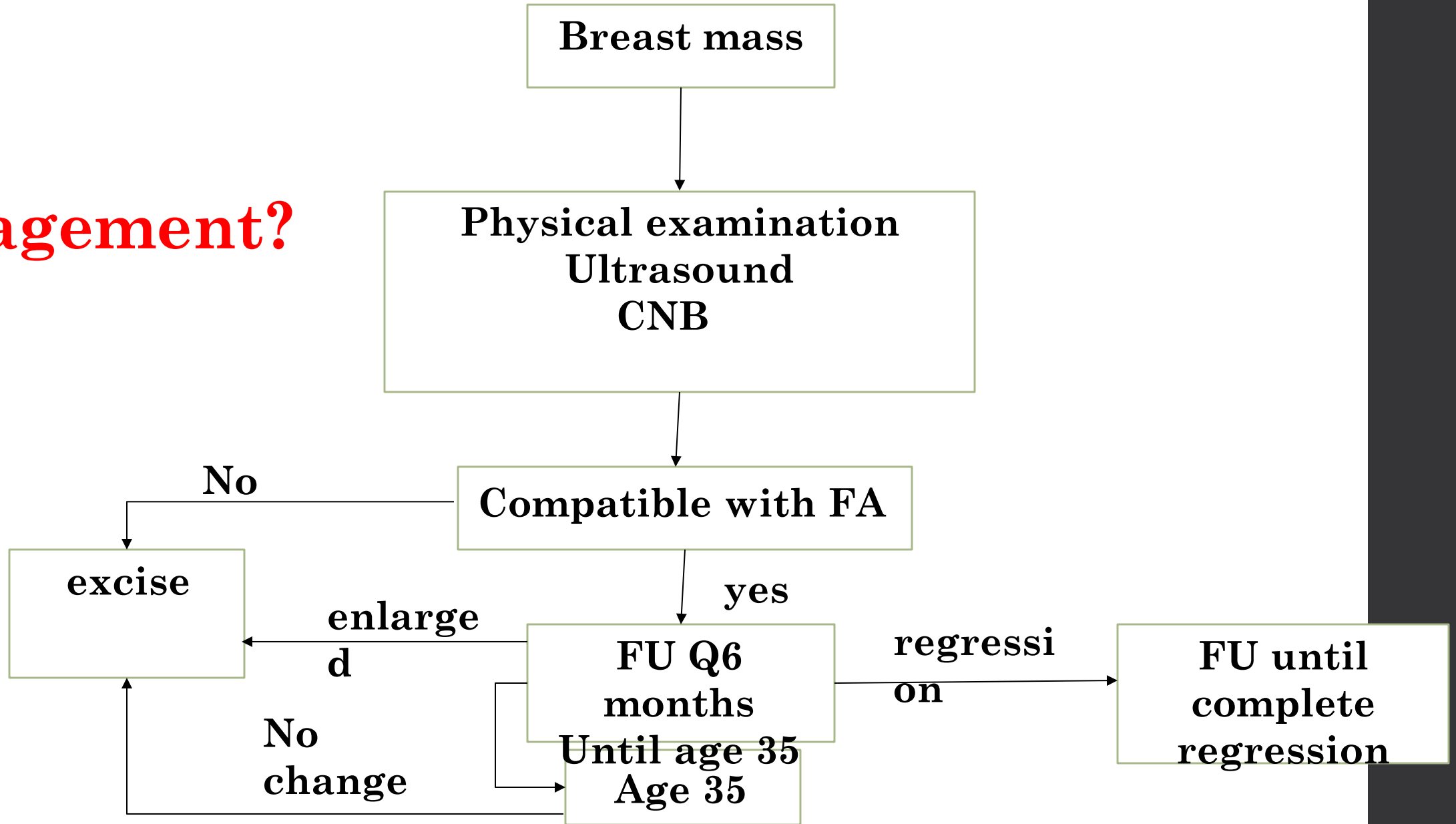
Rare types:

Tubular (pure) adenoma--- prominent adenosis with very little stroma

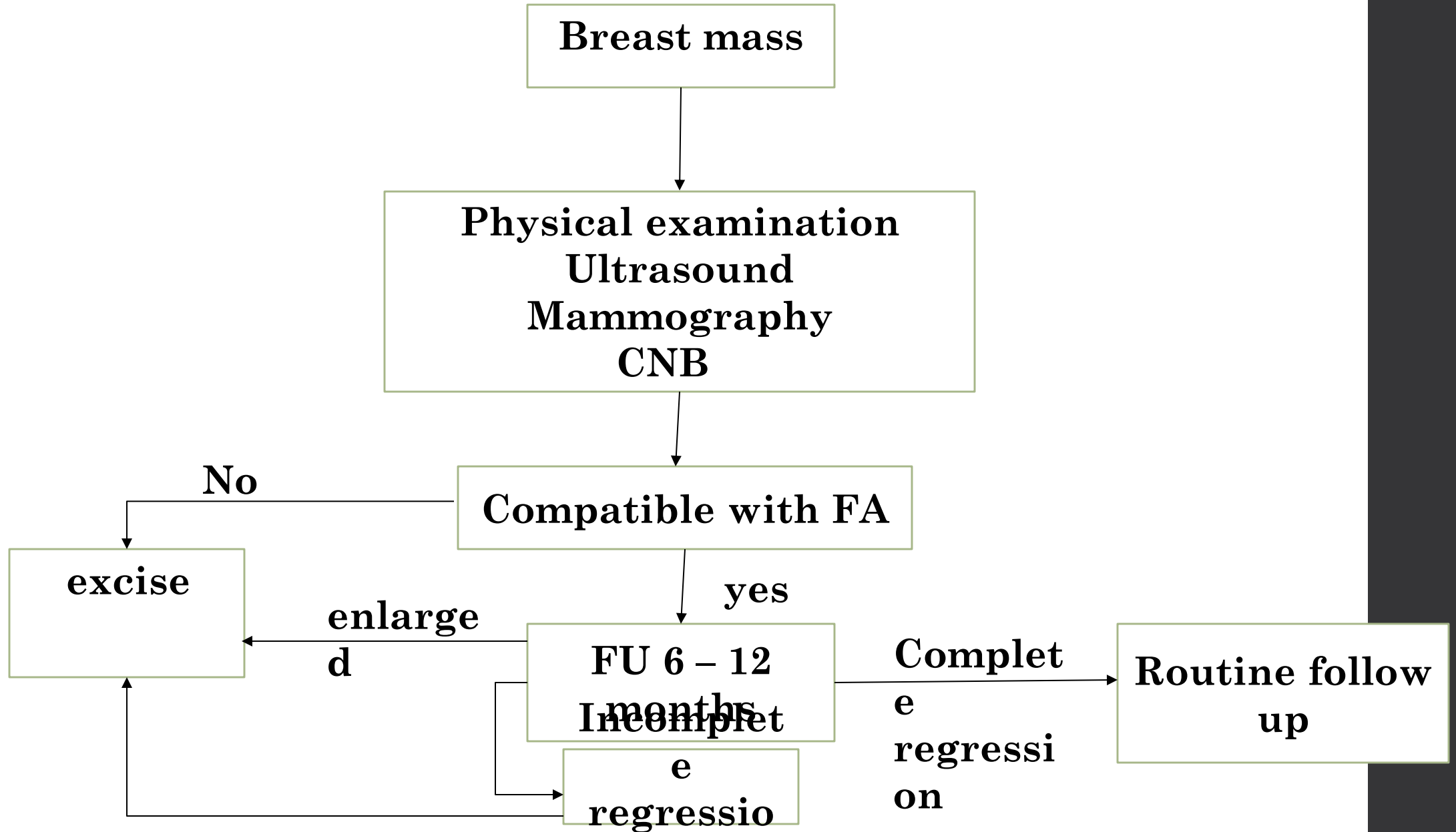
Lactational adenoma---- lactational changes in secretory glands in fibroadenoma of pregnant or breast feeding women.

Fibroadenoma Mx in women < 35 years old

Management?

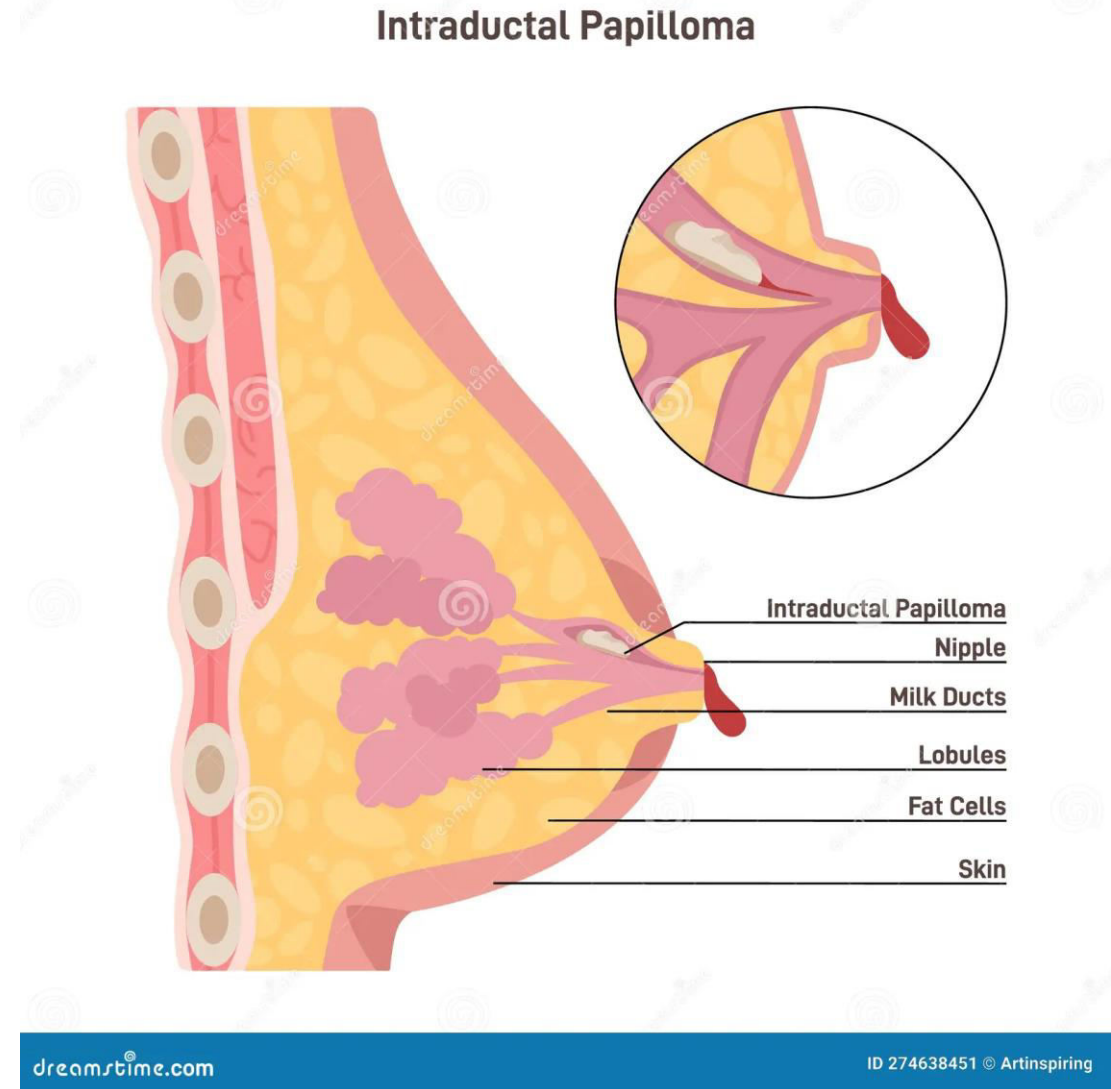


Fibroadenoma Mx in women > 35 years old



2-Intraductal Papilloma

- It is a rare benign tumor that arises from the epithelium of the lactiferous duct.
- peak incidence between 30 – 50 years of age
- It is the most common cause of bloody or serous nipple discharge



Classification:

Classified into:

1-Solitary or Multiple (papillomatosis).

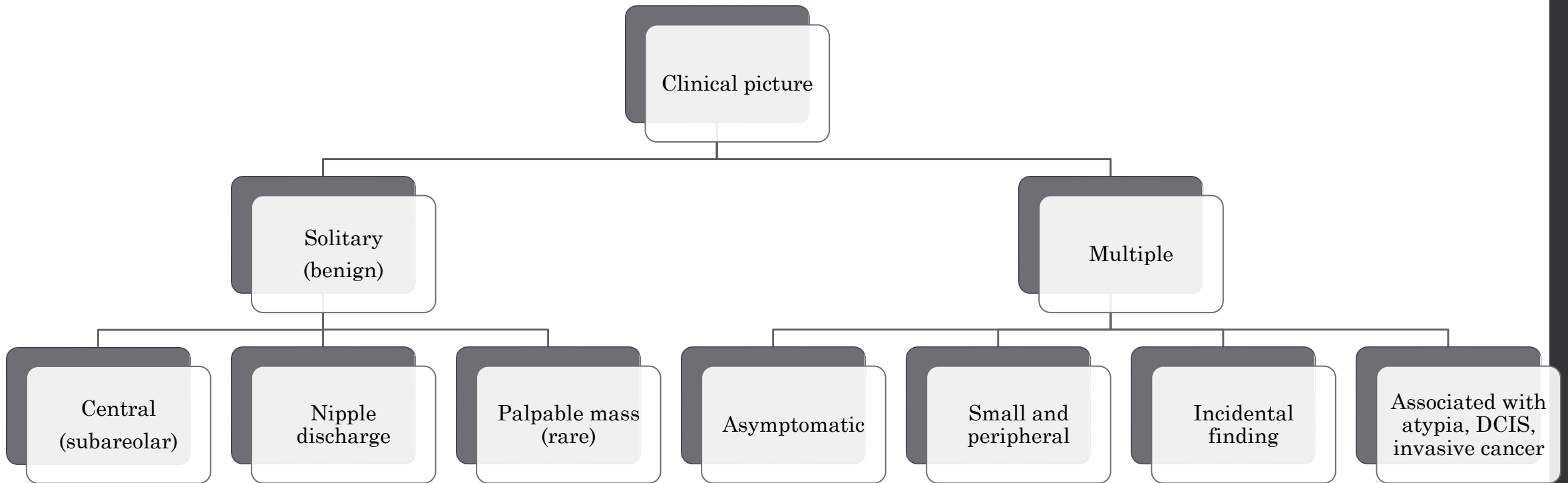
2-Central (subareolar) or peripheral.

Clinical presentation:

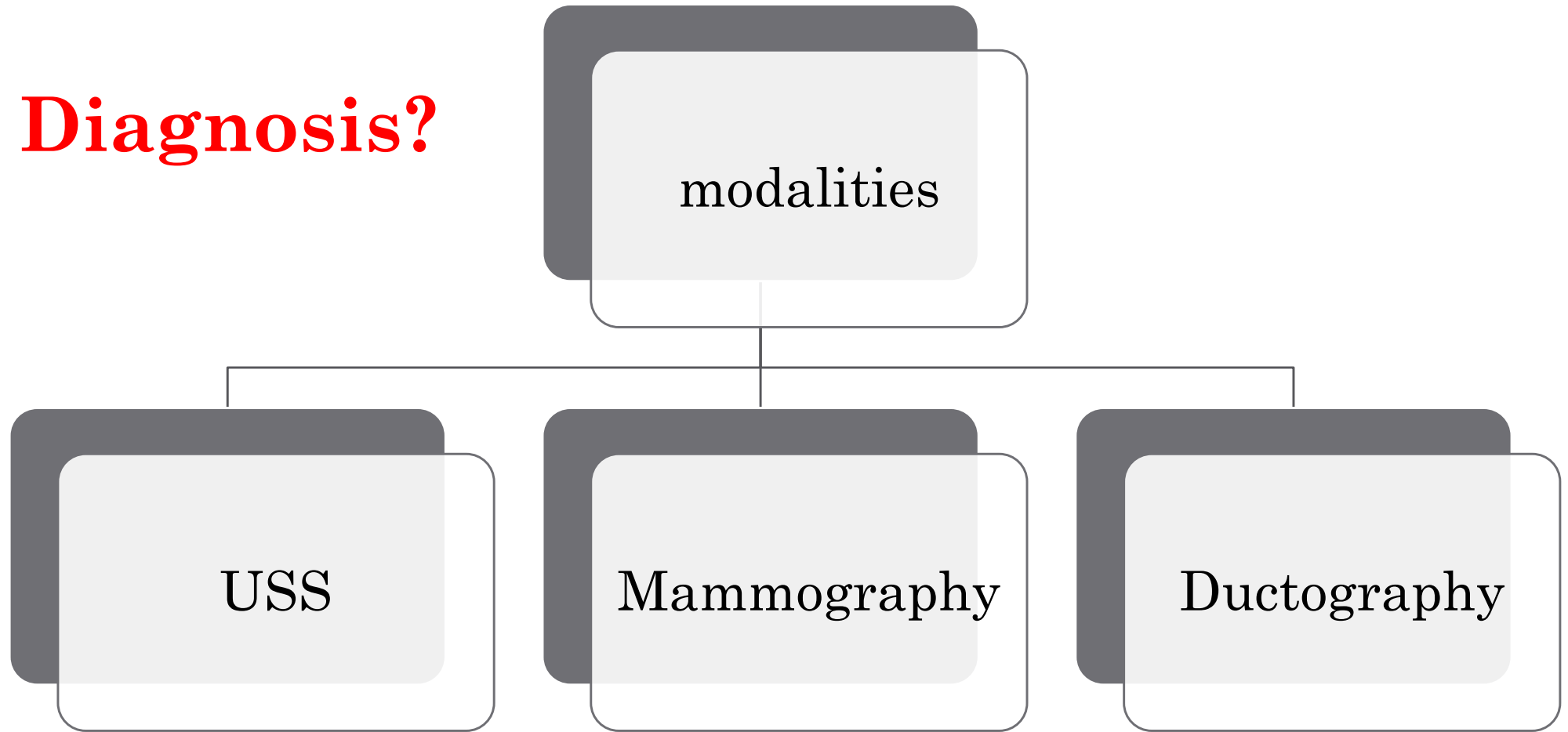
Central: spontaneous bloody, greenish, or serous nipple discharge / Rarely a mass.

Peripheral: Asymptomatic / incidentally discovered on imaging / associated with malignancy (especially when atypia is found).

Presentation?



Diagnosis?



Well-defined, solid nodule or mass within the dilated lactiferous duct

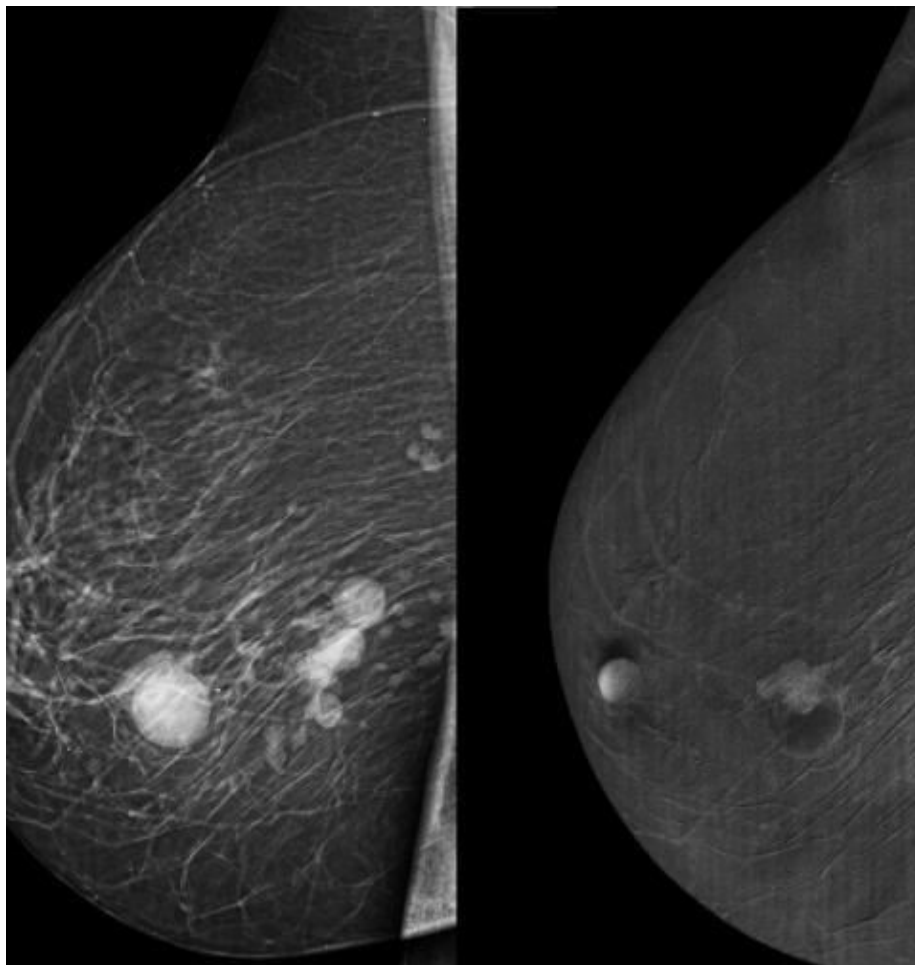
May be normal or show a well-defined mass with calcifications

filling defect(s) within the lactiferous duct, duct ectasia or obstruction, duct wall deformity

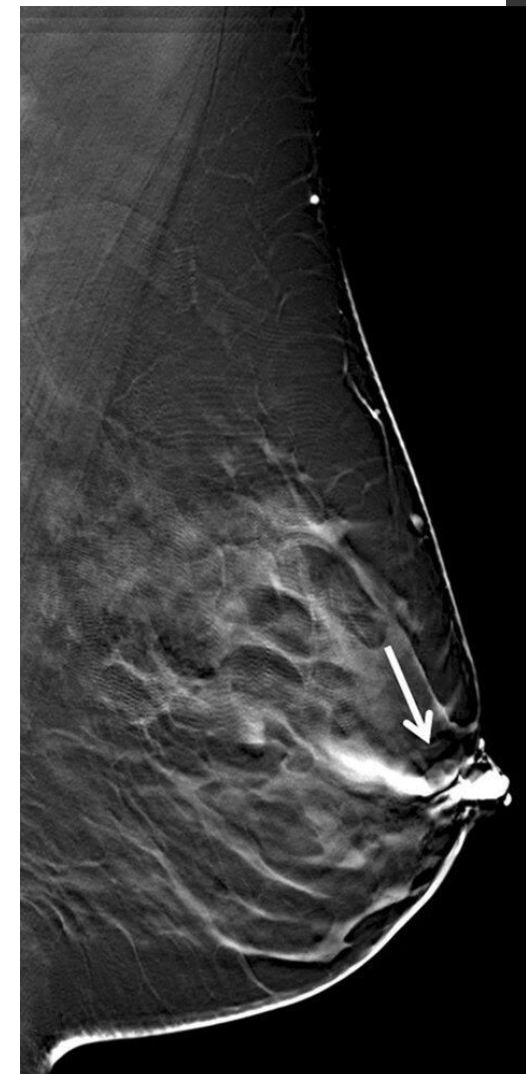
- **Ultrasound**



- **Mammography**



- **Ductography**

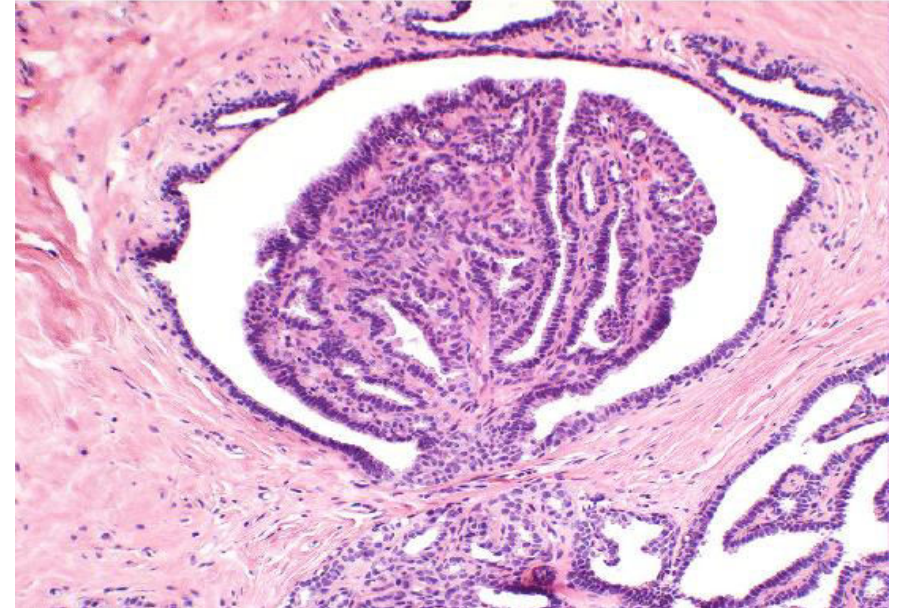


- **Core needle biopsy**

- Indication: all patients with suspected intraductal papilloma; for diagnostic confirmation and to determine if cellular atypia is present.

- Findings

- Papillary structure with fibrovascular core covered by both epithelial and myoepithelial cells
- Peripheral papillomas may be associated with Cellular atypia, DCIS, or invasive breast cancer



Treatment

- **Intraductal papilloma without atypia**
 - Surveillance
 - Excision may be considered for symptomatic control.
- **Intraductal papilloma with atypia**
 - Surgical excision of the affected duct(s)
- **Prognosis:**
 - Intraductal papilloma without atypia: good prognosis
 - Intraductal papillomas with atypia: associated with an increased risk of breast cancer

3-Phyllodes Tumor

(*osteosarcoma phyllodes*)

- It is a rare fibroepithelial breast tumor
- Can be benign, borderline or malignant
- Accounts for <1% of breast lesions
- Peak incidence: 40 – 50 years; but can also occur in younger women
- More prevalent in Latin American, white, and Asian populations



Presentation?

It usually presents as a rapidly growing but clinically benign breast lump. In some patients, a lesion may have been apparent for several years, with Clinical presentation precipitated by a sudden increase in size

More commonly found in the upper outer quadrant with an equal propensity to occur in either breast.

Rarely bilaterally

The median size is around 4 cm. 20% of tumors grow larger than 10 cm (giant phyllodes tumor).

nipple retraction is rare, the skin over large tumors may have dilated veins and a blue discoloration

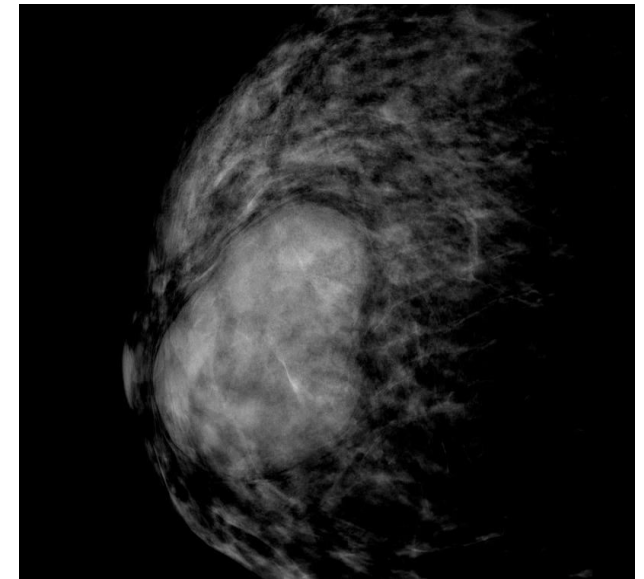
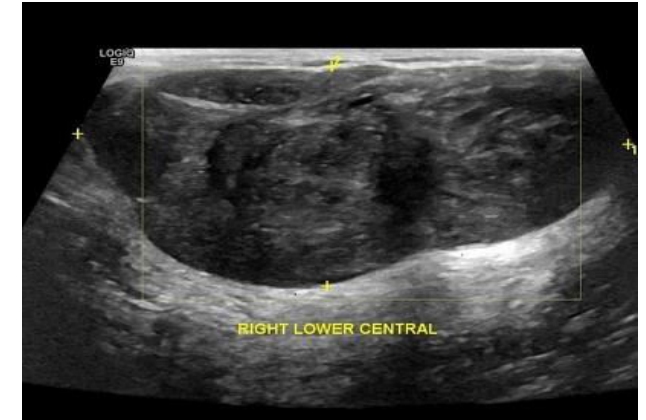
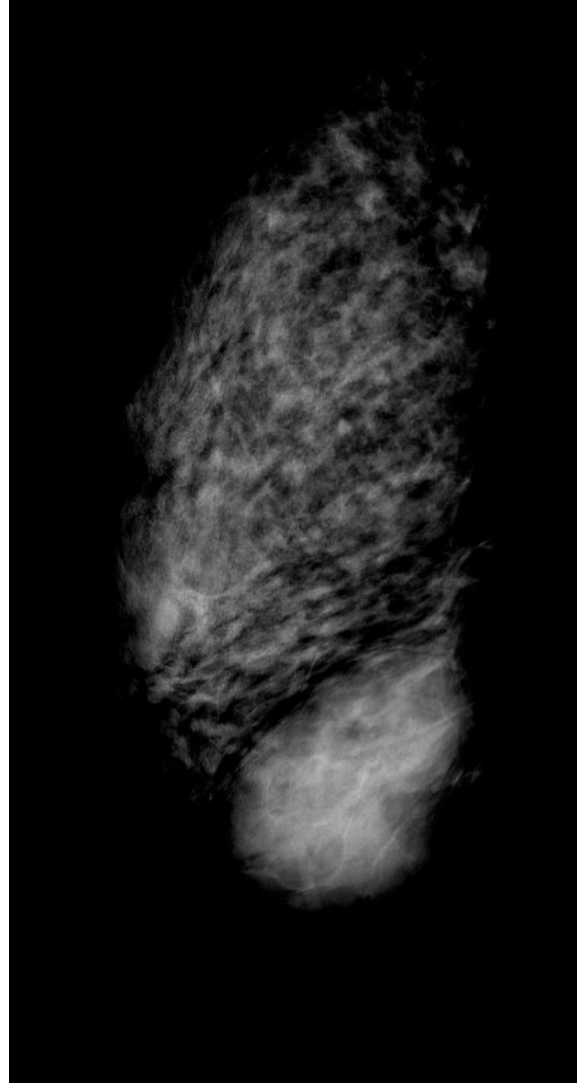
Diagnostics

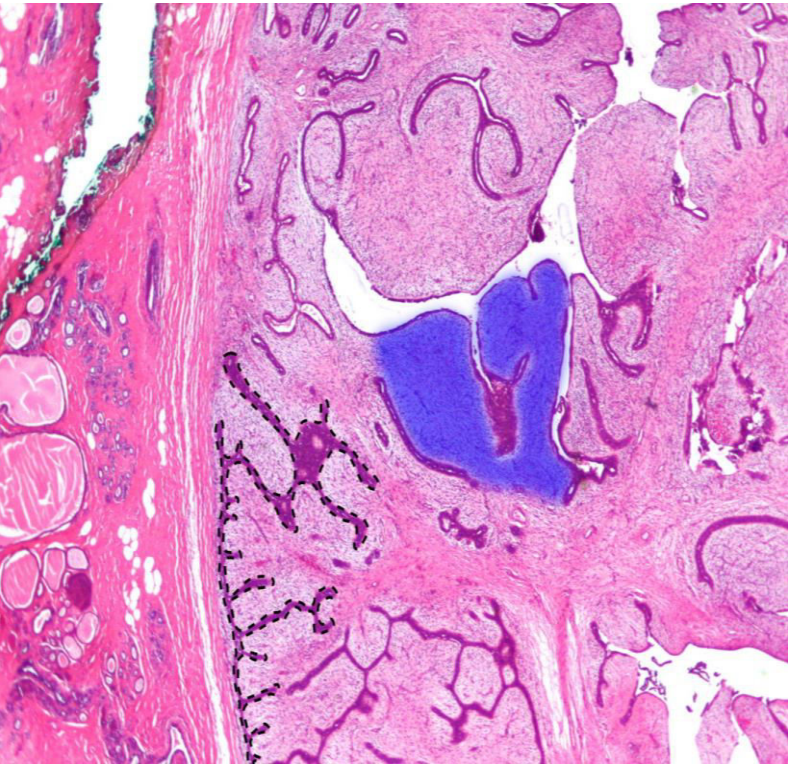
- **Ultrasound**

Hypoechoic solid mass that may contain cysts

- **Mammography**

Hyperdense mass





- **Biopsy**

- Indication:

As phyllodes tumors and fibroadenomas have similar clinical presentations and imaging features. If a phyllodes tumor is suspected, a biopsy is indicated to confirm the diagnosis.

- Modalities: core needle biopsy, or excisional biopsy

- Findings:

- **Leaf-like architecture** with papillary projections of epithelium-lined stroma (connective tissue)

- Phyllodes tumors are histologically categorized as benign, borderline, or malignant.

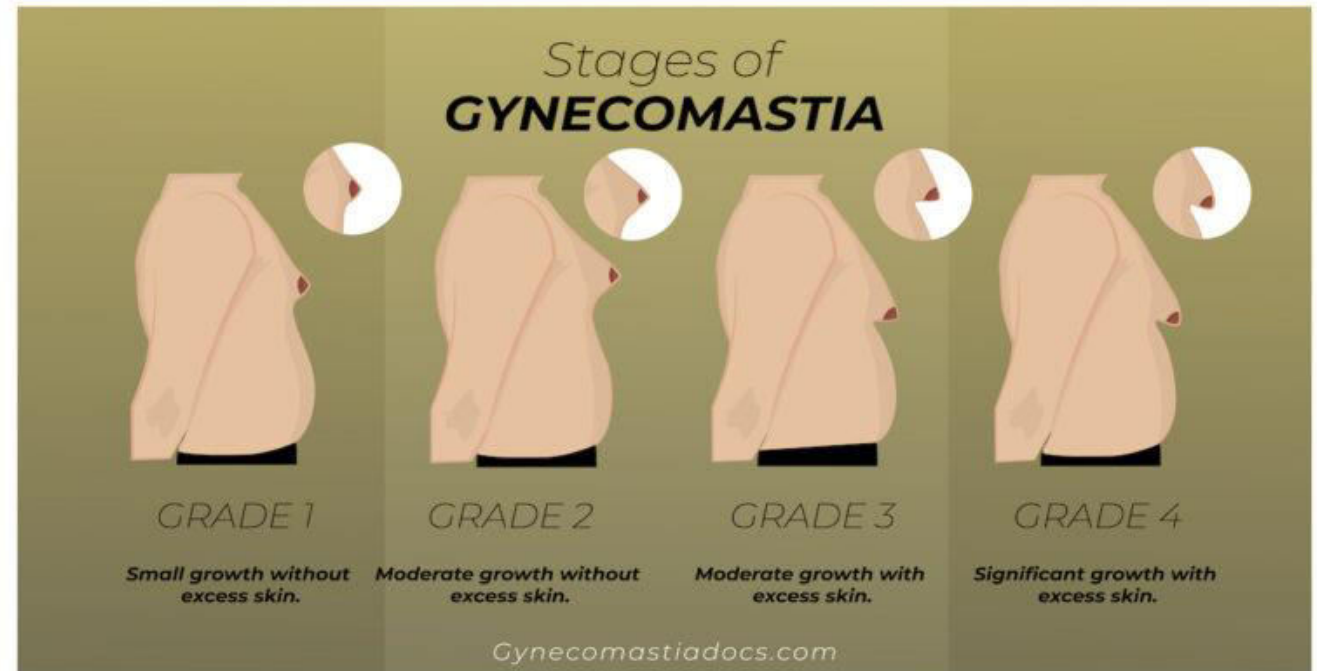
Management

- While phyllodes tumors are typically benign, some are malignant and have the potential to metastasize. Phyllodes tumors should be considered malignant until proven otherwise.
- Borderline or malignant tumors can metastasize hematogenously.
- If a breast mass was confirmed to be a phyllodes tumor then it should be resected with a wide excision (≥ 1 cm) margins especially in the borderline and malignant tumors.
- **benign phyllodes tumor:** surgical excision
- **Borderline or malignant phyllodes tumor**
 - Nonmetastatic disease:
 - Wide excision
 - Metastatic disease:
 - Palliative surgery

- Chemotherapy and pharmacotherapy can be used but it is still not definitive as it is yet to be extensively studied.
- Thus the role of adjuvant therapy remains uncertain.
- High recurrence rate after excision.

4-Gynecomastia

- Gynecomastia is the proliferation of mammary gland tissue in males, caused by an increased estrogen/testosterone ratio
- It is classified as physiological or pathological gynecomastia
- It is the most common male breast abnormality
- Pseudogynecomastia refers to an increase in fat but not concomitant ductal proliferation.



- **Idiopathic**
- **Physiological**
 - Also called senile gynecomastia
 - Due to decreased levels of circulating androgens either to decreased production or increased peripheral conversion to estrogen
- **Medication-related**
- **Chronic diseases** (liver failure, renal failure, testicular tumors, adrenocortical tumors, pituitary adenoma, hypogonadism, hyperthyroidism, obesity, ectopic hormone release, etc.)

TABLE 2

Drugs associated with gynecomastia⁵

Antiandrogens	Bicalutamide, flutamide, finasteride, spironolactone
Antibiotics	Isoniazid, ketoconazole, metronidazole
Antihypertensive agents	Amlodipine, diltiazem, nifedipine, verapamil, captopril, enalapril
GI agents	Cimetidine, ranitidine, omeprazole
Hormones	Anabolic steroids, estrogens, hCG, growth hormone, GnRH agonists
Illicit drugs, alcohol	Marijuana, methadone
Psychiatric drugs	Psychotropic agents, tricyclic antidepressants
Other	Antiretroviral agents, digitalis, fibrates, methotrexate, statins

GI, gastrointestinal; GnRH, gonadotropin-releasing hormone; hCG, human chorionic gonadotropin.

Gynecomastia Pathology

Florid Phase (reversible)

- In 1st year of onset
- Proliferation of ductal epithelium and stromal elements
- Periductal inflammation and edema
- No fibrosis
- Mx: Non surgical treatment might be successful

Fibrotic Phase (irreversible)

- Start after 6 months
- Minimal ductal proliferation
- Hyalinized periductal tissue
- Mx: Only surgical treatment

Gynecomastia Stages

Nodular Pattern	<ul style="list-style-type: none">• Recent onset < 1 year• Fan shaped subareolar density• Appear as hypoechoic subareolar mass with fat tissue surrounding	Reversible stage / no fibrosis established
Dendritic Pattern	<ul style="list-style-type: none">• In more chronic stage• Flame (or cone) shaped density infiltrate deeper, surround fat	Irreversible fibrosis
Diffuse Glandular Pattern	<ul style="list-style-type: none">• US / Mammogram similar to female breast• In patient treated with high doses of estrogen	

Clinical valuation and Workup

Clinical history and Physical exam

Assessment of regional lymph nodes

Distinguishing clinical feature is >> concentric enlargement

Frequently bilateral

Labs workup:

LFT, KFT, TSH, Prolactin, Beta-HCG, LH, Testosterone

Imaging studies: mammogram (sensitivity :92%/
specificity:90% in men)

Red Flags

- Unilateral
- Eccentric growth pattern
- Skin or nipple changes
- Nipple discharge
- Lymphadenopathy
- FHx of breast cancer

Treatment

- Look for underlying causes and treat it
- Surgery
- Mainstay of treatment in long-standing cases
- Subcutaneous mastectomy
- Liposuction
- Management of high-risk patients (prostate cancer)
- Radiotherapy
- Pharmacotherapy such as Tamoxifen is not yet FDA-approved.

5-Lipoma

- It is a benign tumor composed of adipose tissue, that is encapsulated with a connective tissue membrane
- It is the most common form of benign soft tissue tumor, but may be pedunculated
- Usually present in people aged 40-60 years
- Causes of lipoma is not necessarily hereditary, although some hereditary diseases such as familial lipomatosis can increase the risk of lipomas
- Some cases of lipomas were found after minor trauma “post-traumatic lipomas”

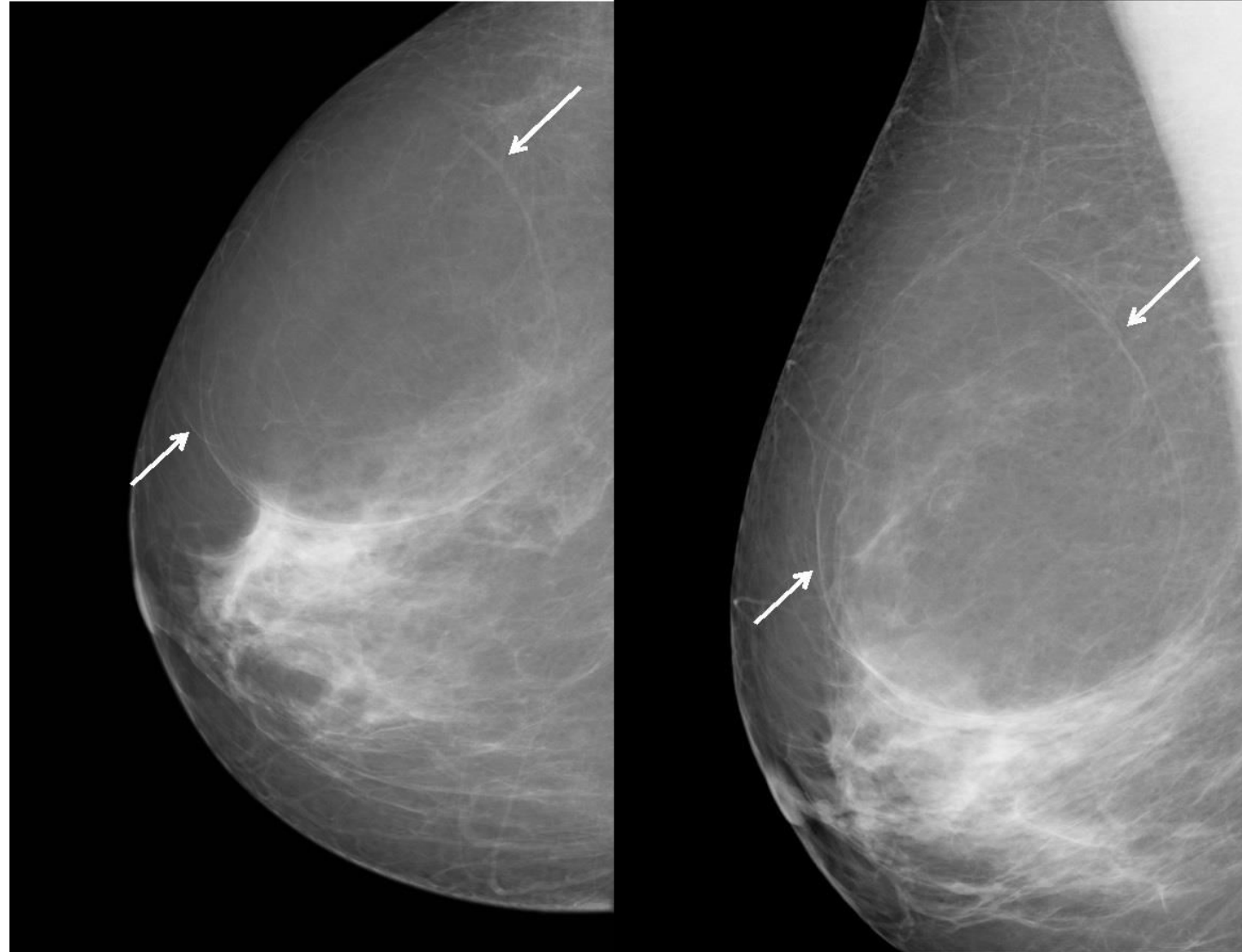
Clinical features

- Localized
- Fluctuant
- Mobile
- Soft
- Painless and non-tender



Diagnosis

- Clinically by history & examination
- Imaging:
 - Mammogram: show on a mammogram as a translucent gray mass
 - US: mass parallel to the skin surface that is hyperechoic relative to adjacent muscle and that contains linear echogenic lines

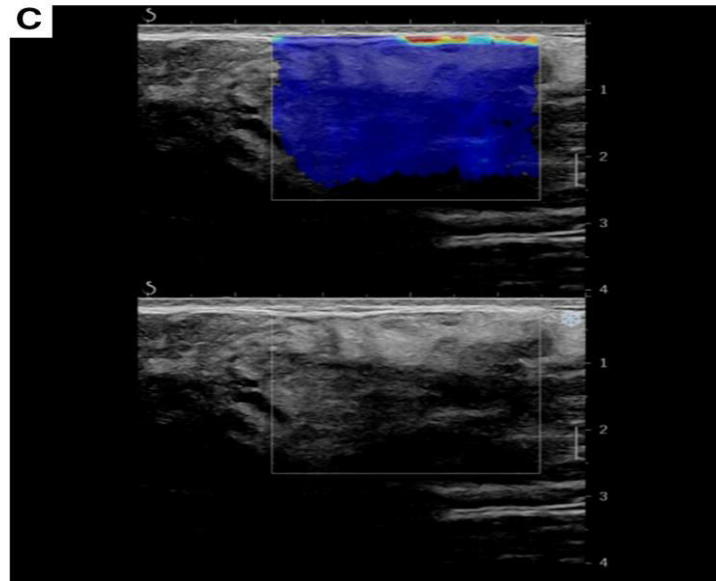
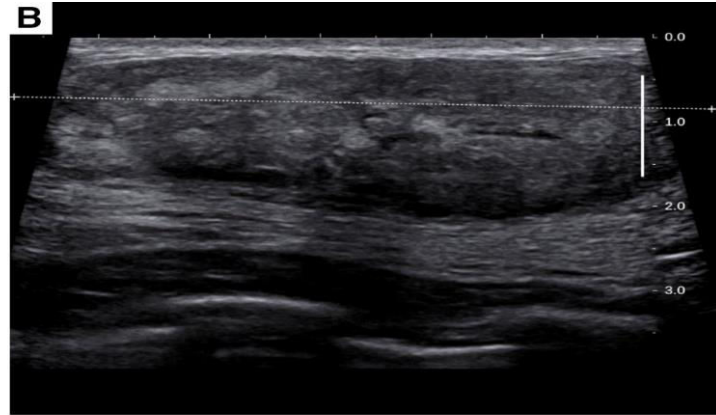
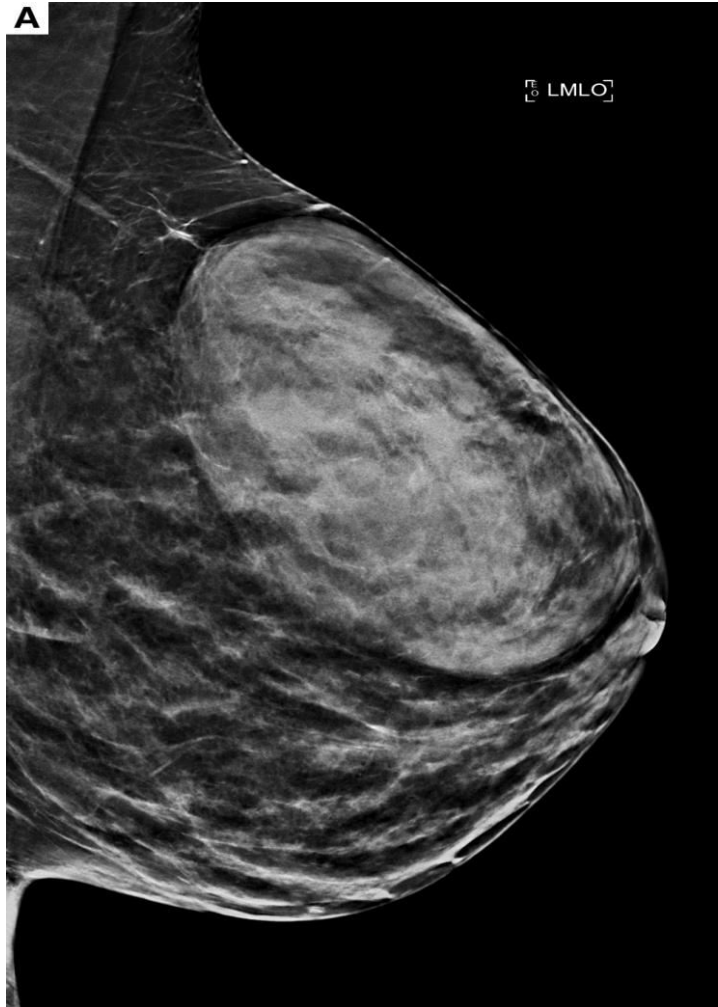


Treatment

- Treatment is usually *not indicated unless*: large tumor, patient desire, pain or signs of malignancy “liposarcoma”
- Signs of malignancy: tumor starts growing, large >5cm & deep tumor
- Treatment: surgical removal

Hamartoma

- A breast [hamartoma](#) (fibroadenolipoma) is a rare, benign mass composed of well-encapsulated fatty, fibrous, and adenomatous elements
- **Clinical features & Diagnosis**
 - Breast [hamartomas](#) often present as a prominent palpable mass or as gross breast asymmetry; they vary in size from 1 and 20 cm, with a mean size of 6 cm.
 - The mammographic appearance of hamartomas is usually diagnostic, The lesion is circumscribed and contains both fat and [soft tissue](#) density surrounded by a thin radiopaque capsule, which is visible when fat is identified on both sides



Treatment

- Eradicating the lesion with a robust surgical margin is also essential because of the potential for recurrence and, rarely, possible malignancy foci within the lesion

Thank you