

General Surgery



Subject: Approach to Breast symptoms

Group no: D12

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Approach and Assessment of Breast Symptoms

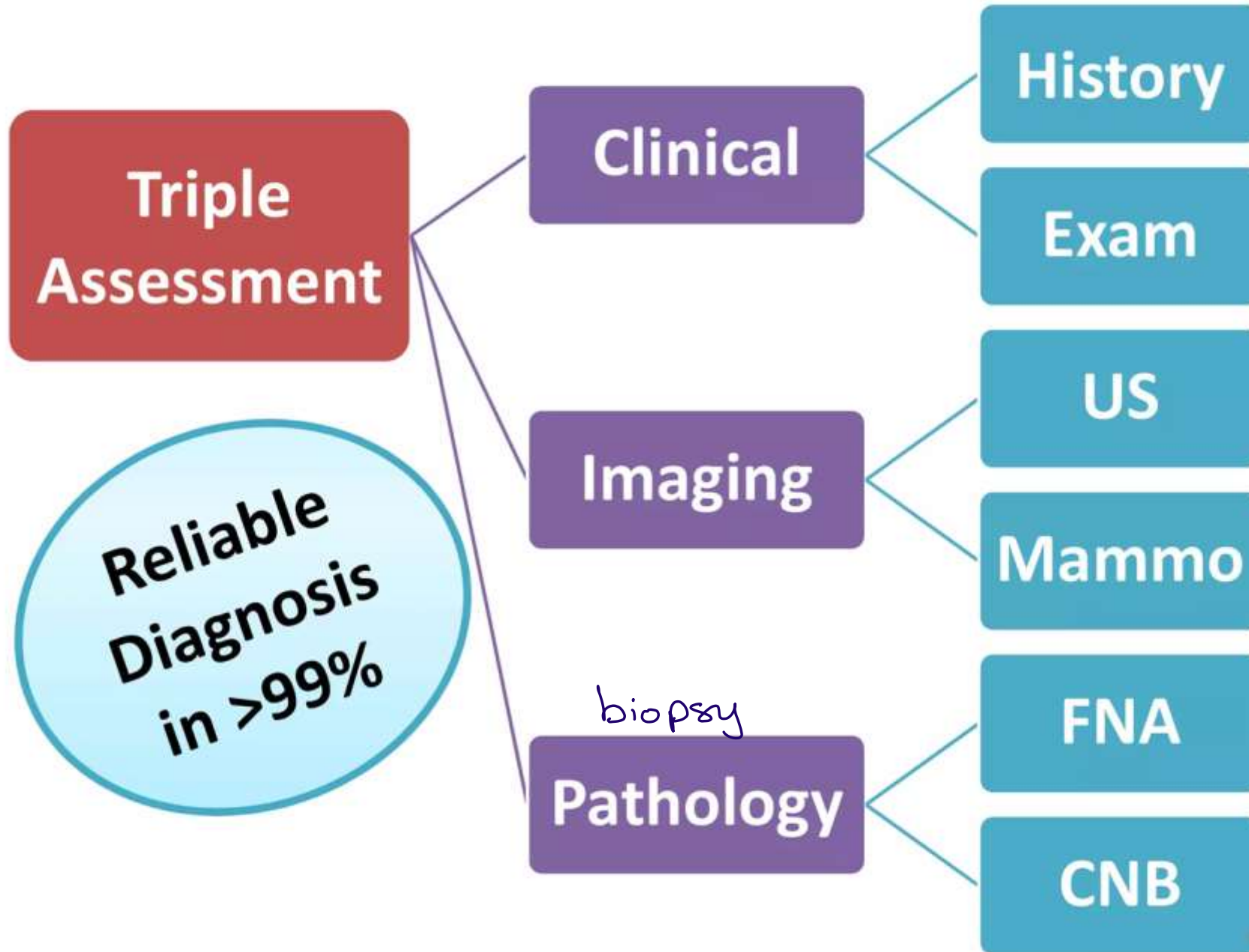
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**Triple
Assessment**



***How to
Approach a
Mass in the
Breast?***



HISTORY TAKING

LUMP

1. Duration since lump first noted
2. Consistency of lump presence
3. Change in size
4. Location
5. Shape
6. mobility
7. Association with menses
8. Associated with pain or not

غالبًا يجوا يشكوا من وحدة أو أكثر
من هائي الأعراض :

1. lump (45%)
2. Pain (40%)
3. Nipple discharge (5%)
4. Skin changes

PAIN / DISCOMFORT SOCRATES

1. Onset, duration, intermittent?
2. Association with menses – timing and severity
3. Character of pain
4. Associated symptoms – lump or/and discharge
5. Contributing factors - trauma, strenuous activity

HISTORY TAKING

NIPPLE DISCHARGE

- 1. Color** bloody, serous, clear → suspicious / Green, brown → usually benign (ectasia, cyst)
- 2. Unilateral / Bilateral**
- 3. Single duct / multiductal** Uniductal → one drop on nipple / multiductal → multiple drops
- 4. Spontaneous / manipulation** (with squeezing)

Bloody, Unilateral, Uniductal, Spontaneous → suspicious

Nipple or Areola Deformity or Retraction

Skin changes (Ulceration, Redness, dimpling)

HISTORY TAKING

OTHER SYMPTOMS Related to systems → to know if there is any mets

Fever, Bone pain, dyspnea, jaundice, abdominal pain / distension
neurological symptoms

metastases of breast cancer → usually to Bone (vertebra) due to direct communication between breast venous plexus and paravertebral veins

Identify risk factors for breast cancer :

Uniparous at risk more than multiparous ←

○ Marital status, Menstrual and Pregnancy History

○ History of breast trauma

First pregnancy above 35 years

○ Use of hormones, oral contraceptives

○ Family history of Breast or ovarian cancer

○ History of breast disease, biopsy, or surgery

○ Alcohol consumption, Exposure to radiation,

* Smoking → low risk, usually related to benign condition, cause mastalgia

* early menarch & late menopause → ↑estrogen exposure → ↑ Risk for Cancer

mets : 1. Bone → most common
2. Lung
3. Liver
4. Brain

also Trauma ↓

fat necrosis of breast

Differential

diagnosis for cancer

BRCA1 → ↑ Risk for Breast cancer (60-80%)
↳ ↑ Risk for Ovary cancer (40-60%)

BRCA2 → ↑ Risk for Breast cancer (40-60%)
↳ ↑ Risk for Ovary cancer (10-20%)
↳ ↑ Risk for colorectal, pancreas cancer

Safest

Treatment → **Bilateral mastectomy + Bilateral Oophorectomy** → must
for pt with or close follow up (each 6 months) or tamoxifen
BRCA +
↓

PHYSICAL EXAMINATION

POSITIONS Exposure from waist and above

- Ask for chaperon
- Privacy
- Wash hand



نظرة على ال Symmetry

وإذا في lump نظرة على
size, shape, skin over it

إذا في edema, Peau d'orange
deformity, skin changes
nipple discharge, ulcer
skin retraction, dimpling



← تضيق على ال hip
Contraction of
Pectoralis major
وإذا hidden mass
obvious

INSPECTION

MAJOR POINTS TO BE NOTED

1. **Breast** – symmetry, size, shape, oedema (peau d'orange), any visible lump
2. **Skin** – retraction, erythema, ulceration
3. **Nipple** – retraction, erythema, ulceration, discharge

Lump in lower inner, around 2 cm
normal skin over it, smooth surface



ال dimpling في ال breast بصير لأنه ال skin مربوط بالأنسجة العميقة عن طريق أربطة اسمها **Cooper's ligaments**. لما يصير في tumor (خصوصاً carcinoma) أو fibrosis, بصير في traction / shortening لهاي ال ligaments, فيتسحب ال skin تحت بدل ما يكون smooth, ويهيك بتظهر ال dimpling.

skin Retraction , Dimpling

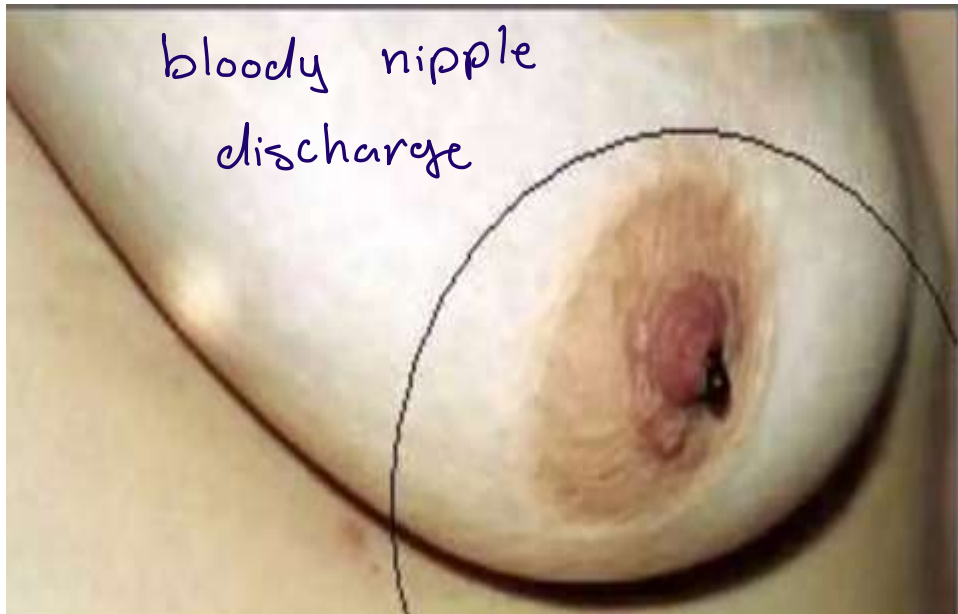




Nipple
Inversion



Peau d' orange edema due to
lymphatic obstruction
by cancer



bloody nipple
discharge



Ulceration

PALPATION OF THE BREASTS



Circles



Wedges



Lines

Bimanual Breast Palpation

- For pendulous breasts
- Patient sitting, leaning forward
- Support inferior part of breast with one hand.
- Use other hand to palpate breast tissue against supporting hand.

If there is a lump ask about
↓



a. Local temperature and tenderness: warm and tender in inflammatory, acute mastitis carcinomatosa

Painful & tenderness → usually benign

b. Site and extent: carcinoma(mostly UO quadrant), fibroadenoma (lower half>upper half)

c. Number (multiple on fibroadenosis, most other breast lesion solitary)

d. Size and shape (globular in fibroadenoma, irregular in carcinoma)

e. Surface (smooth in benign, irregular in carcinoma)

f. Consistency (cystic, firm, hard, stony-hard)

fibroadenosis (firm, shotty), fibroadenoma (firm), carcinoma (stony-hard), sarcoma (variable from place to place)

g. Margin:

Ill-defined in fibroadenosis

Fibroadenoma : well-defined

Carcinoma: Irregular and doesn't slip-off

h. Fluctuation

Present in cystic swelling

i. Fixity

- **Skin fixity:** infiltration by malignant tumour (puckering and tethering)
- **Breast tissue:** In-fibroadenoma; lump is easily movable within breast tissue; in carcinoma, lump is fixed to the breast tissue and breast tissue moves along with the lump
- **Underlying fascia and muscle:** (testing fixity on pectoralis major muscle and serratus anterior)

PALPATION

MALIGNANT VS BENIGN LUMP

Malignant lump	Benign lump
Hard consistency	Smooth and rubbery
Painless (pain in 1/1000)	Often painful
Irregular edge	Well-defined
Fixation to skin or chest wall	Easily moves under skin
Can cause dimpling of the skin	Skin dimpling is unlikely
May have unilateral, bloody nipple discharge	May have green / yellow coloured nipple discharge
Can have nipple retraction	No nipple retraction



Examine
Lymph nodes for;

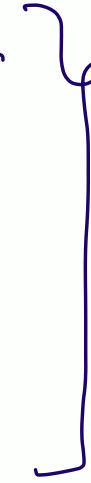
- Size
- Consistence
- Fixation



Axillary Lymph Nodes



Anterior
Posterior
Medial
lateral
Apical
Central



Number of nodes
tenderness
Size

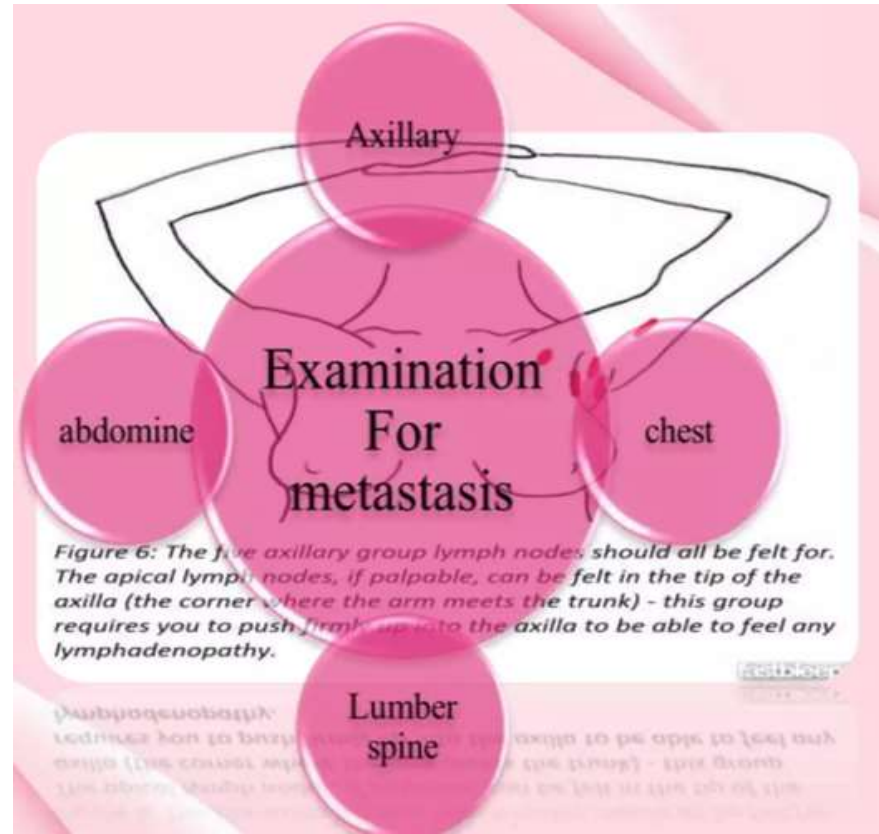
Axillary Lymph Nodes

Lateral
Axillary
Subscapular
(Posterior
axillary)
Pectoral
(Anterior
axillary)
Central
Axillary
Apical
Axillary

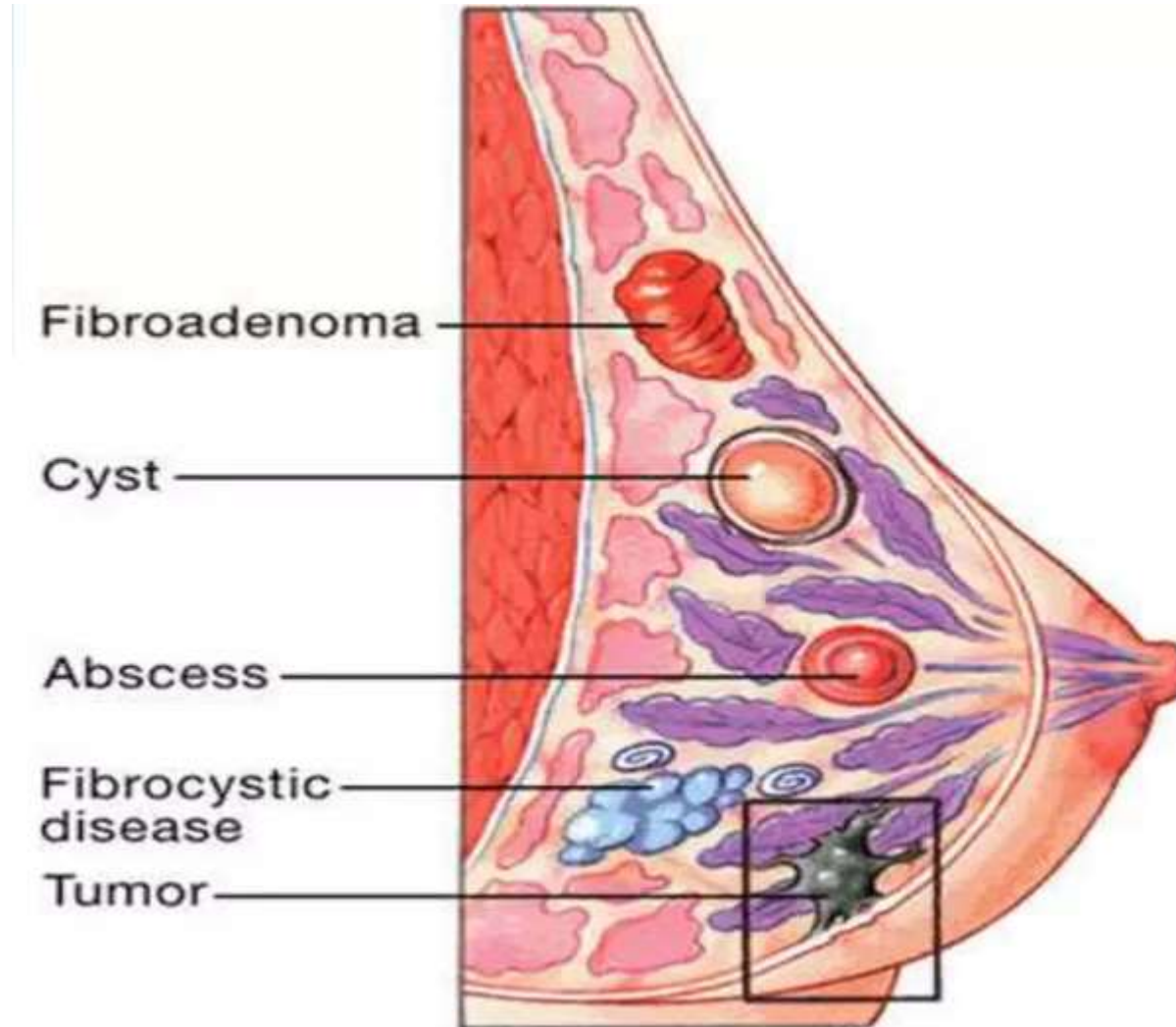


For completion;

- *Respiratory exam; ?mets*
- *Abdomen exam; palpate liver (if hepatomegaly think mets)*
- *Spinal exam; tenderness ? Mets*



Differential diagnosis for breast lump



Fat necrosis

Galactoceles → collection of milk cysts due to obstruction
Hematoma of mammary duct

Lipoma

Investigations: Radiological Imaging

1. Mammography → ↑ fat

Best for women => 40 years of age
+ for 35 years if there is any risk factor

Screening mammography

Diagnostic mammography (for breast lump)

Views (cranio-caudal and mediolateral oblique)

Mammography guided biopsy

Right to left views يميني mammogram ل

CC , Unilateral
findings



- FEATURES OF MALIGNANCY ON MAMMOGRAM

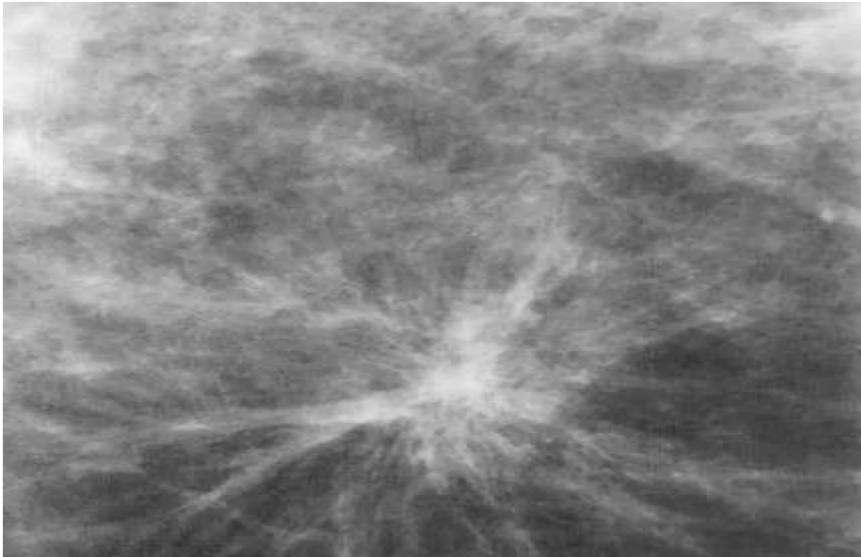
1. Solid mass with/without stellate features
2. Asymmetric thickening of the breast mass
3. Clustered micro-calcifications
4. Spiculations
5. Duct extension



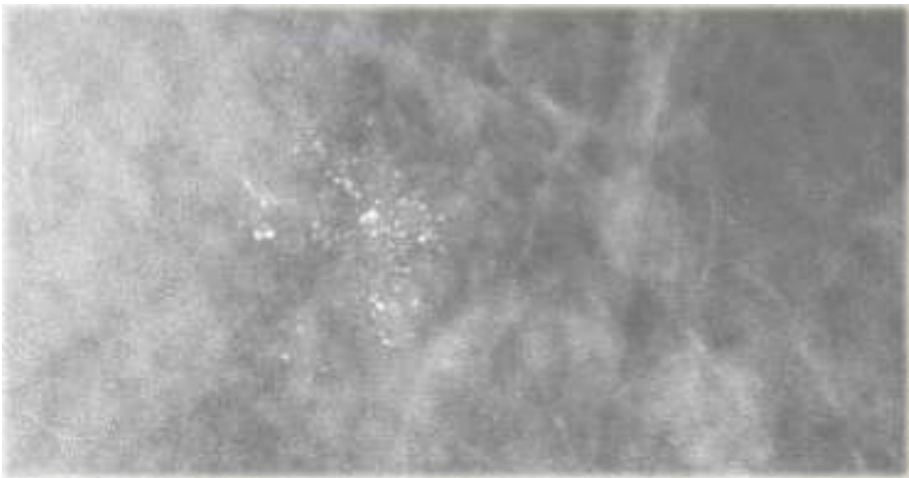
Spiculated mass



Suspicious



Architectural Distortion



A cluster of amorphous and fine pleomorphic calcifications

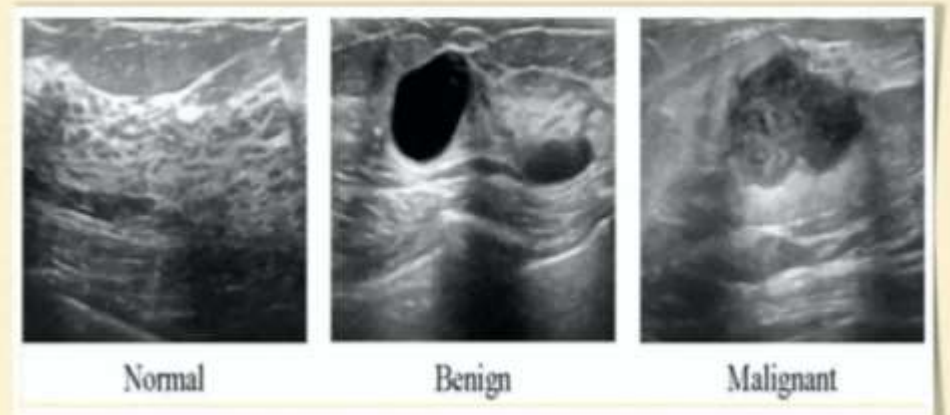
Suspicious

 BI- RADS ASSESSMENT CATEGORIES

	Category	Recommended Action	Likelihood of Cancer
0	Incomplete	Need additional views / imaging to further evaluate <i>بحيد الصورة أو بحد other modality</i>	N/A
1	Negative	Continue routine annual screening	Essentially 0%
2	Benign	Continue routine annual screening	Essentially 0%
3	Probably Benign	Short interval follow-up suggested (6 months)	<2% probability of malignancy
4	Suspicious for malignancy	Biopsy should be considered	* 4A: low suspicion for malignancy (2-9%) * 4B: moderate suspicion for malignancy (10-49%) * 4C: high suspicion for malignancy (50-94%)
5	Highly suggestive of malignancy	Biopsy required	>95% probability of malignancy
6	Known biopsy-proven malignancy	Confirmed biopsy and treatment planning	Proven malignancy

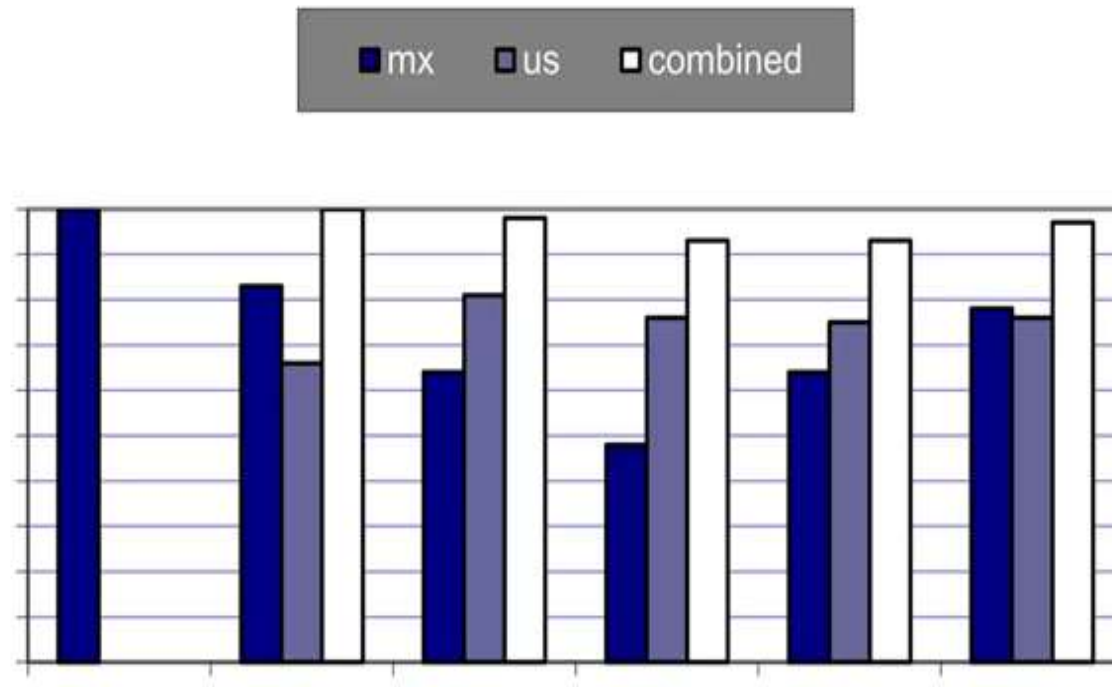
2. BREAST ULTRASOUND

- It can differentiate cystic from solid masses
- Best initial treatment for women less than 35 years of age with breast lump.
↑ density of breasts
- Malignant lesions appear as Elongated, hypoechoic masses with irregular margins.
- Duplex ultrasound may detect the vascularity of the gland.
- Evaluate axilla for metastatic disease
- Guidance of needle biopsy or localisation
- The augmented breast (together with MRI)



Combined Mammography and Ultrasound

Screening Study 11,130 patients, 221 patients w/cancer



Mammography 78%

Mammography +
Ultrasound 97%

Breast MRI: Indications

- Screening of High-Risk Women BRCA +ve
- Contralateral Breast Cancer in Newly Diagnosed Breast Cancer
- Lobular Cancer
- Occult Breast Cancer
- Close or Positive Surgical Margins
- Post-operative Scar vs. Tumor Recurrence
- Implants and Known or Suspected Cancer
- Problematic Mammogram Cancer with biopsy risks BIRAD3 or V

* Invasive ductal → most common type of breast cancer



Breast biopsy

Fine-needle aspiration cytology(FNAC)

↳ Cytology to know is it malignant or not

- 22- to 26-gauge needle into the breast mass and extracting cells
- Cells can be placed on a slide or made into a cell block
- Advantages
 - fast and easy to perform and it can be done in the OPD
 - distinguish benign from malignant lesions
 - for evaluating axillary lymph nodes
- Disadvantages
 - does not show histological architecture
 - Cannot differentiate ductal carcinoma in situ from invasive malignancy



For targeted
therapy

ER, PR
HER2

Core needle biopsy The Best

↳ tissue (type of cancer)

- Using an 8- to 14-gauge needle
- Provides a larger tissue sample than FNAC
- Fast and easy to perform, and allows histological diagnosis
- Performed by palpation, under stereotactic control, or by ultrasound guidance
- Method of choice for histological diagnosis



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إذا كانت BI-RADS

وعلى الأقل biopsy أكثر من مرة

تكون benign بنوعه Excisional biopsy

Excisional biopsy

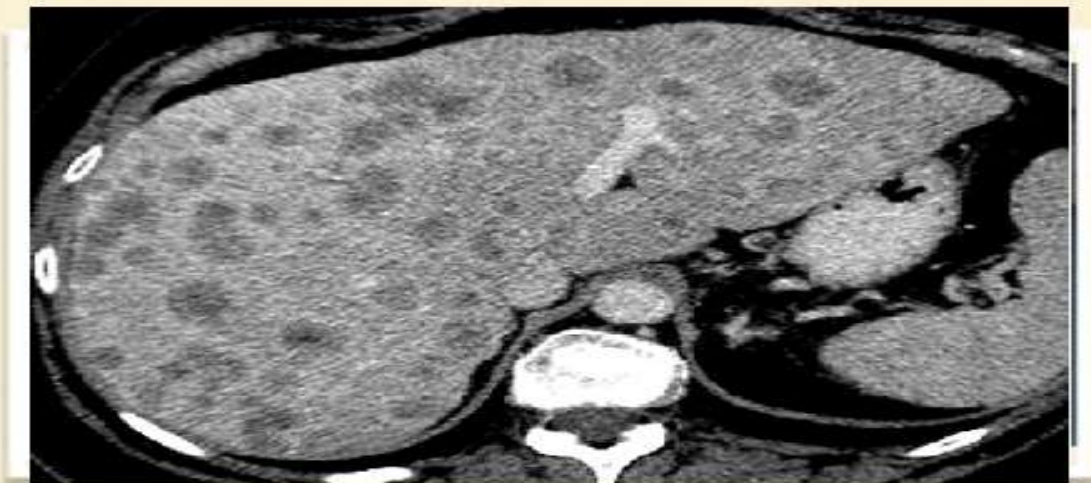
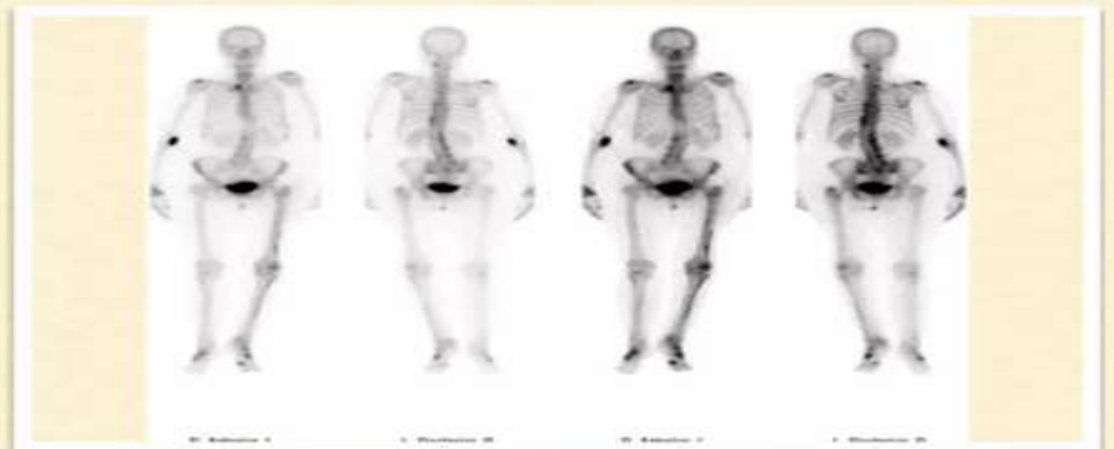
- Removing the entire breast mass-accurate histological diagnosis
- Invasive technique
- Benign asymptomatic mass, may be unnecessary
- Malignant mass, it may not obviate the need for a second procedure to treat



Staging



Isotope scan



Chest & Abdomen CT



في تصنيف انتشار العقد اللمفاوية في Breast Cancer بنستخدم نظام اسمه **TNM staging**

و **N** = مدى انتشار الورم في الـ **lymph nodes** ← لازم ناخذ أقلأشي lymph nodes ١٥ حتى نعرف أي *stage*

كم تقسيم الـ lymph node involvement؟ 📌

عادةً:

- **N0** → ما في إصابة
- **N1** → 1–3 nodes
- **N2** → 4–9 nodes
- **N3** → ≥ 10 nodes

كل ما الرقم يزيـد:

➡ الانتشار أوسع

➡ المرحلة أخطر

➡ prognosis أسوأ

➡ والعلاج يكون أقوى (systemic therapy غالبًا)

Most common cancer in female → Breast

Second common cancer in female & male → Breast

Invasive ductal → hard mass, bloody discharge, irregular edge
breast cancer Painless

- "1 in 8 women" ($\approx 12\%$) refers to the **lifetime risk** of developing Breast cancer, not the yearly incidence.
- The **annual incidence** is much lower and is expressed as the number of new cases per year, typically around 1 in 1,000–1,500 women (or ~ 70 –150 per 100,000 women per year, depending on population).

* Poland syndrome → absence of breast, pectoralis major, minor
and part of ribs

* breast abscess → Pain, redness, swelling, fever, on physical: hot, tender
treatment → Flucloxacillin, if there is pus → Aspiration, incision and
drainage if recurrence

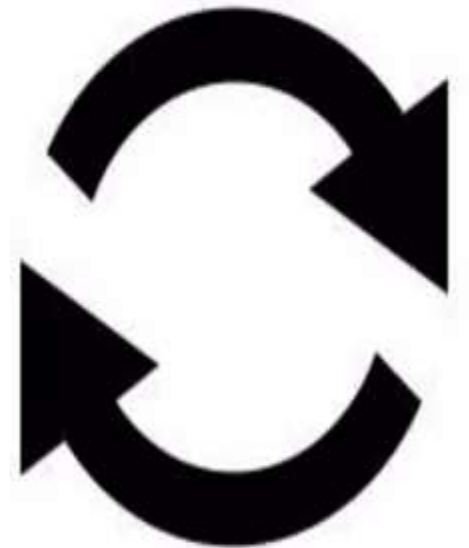
BREAST PAIN

- Evaluation of breast pain (mastalgia) is important to determine whether the pain is due to normal physiological changes related to hormonal fluctuation or to a pathologic process such as breast cancer.
- Breast pain is usually mild, affect approximately 11 percent women.
- Breast pain may be cyclical (two-thirds) or noncyclical (one-third).
- 47% of all breast related visits
- 69% in premenstrual women
- 2.7% cases of breast pain have carcinoma

بأخضر الحاضرة الدكتور حكي عن Anatomy of breast

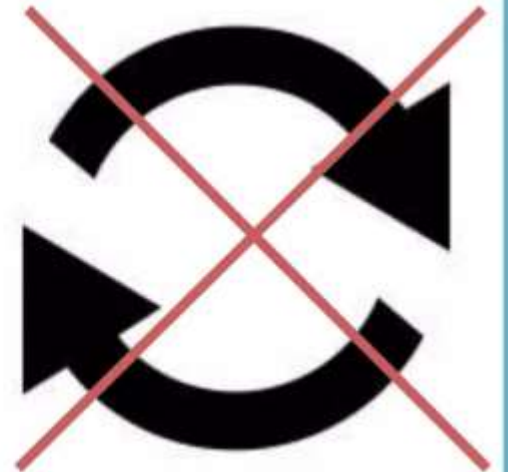
وهو جوديه بسلالات د. محمود البلاء أو شية الكنة

- Cyclical pain associated with hormonal changes of the menstrual cycle, usually presenting in the week prior to onset of menses, bilateral, and most severe in the upper outer quadrant of the breasts.
- For many women, cyclical breast pain can cause problems with their activities of daily living. This interfered with:
 - Physical activity
 - Social activity
 - Sexual activity



NONCYCLICAL PAIN

- Noncyclical pain is more likely related to a breast or chest wall lesion and may be constant or intermittent. Solitary cysts, when the presentation is abrupt, are frequently painful.
- Noncyclical breast pain does not follow the usual menstrual pattern and is more likely to be unilateral and variable in its location in the breast. Multiple etiologies can cause noncyclical breast pain.



- Etiology

- Idiopathic
- Tender cyst
- Periductal mastitis
- Stretching of coopers ligament
- Trauma
- Sclerosing adenosis
- Mondors disease
- Cancer

TREATMENT



- Role of diet and lifestyle:
 - ✓ A low fat, high complex carbohydrate diet has been effective in some observational studies.
 - ✓ Elimination of caffeine has not been effective in controlled trials, although it seems to be helpful in some women.
- Symptomatic relief:
 - ✓ Support garments: A well-fitting brassiere to better support breast.
 - ✓ The use of support bra with steel underwire tends to reduce mastalgia in women with pendulous breasts.
 - ✓ Use of a "sports bra" during exercise has been shown to reduce pain related to breast movement.
 - ✓ Compresses: Some women obtain relief from application of warm compresses or ice or gentle massage.

CONT...



- Medical therapy:
 - ✓ Acetaminophen or NSAID, or both can be used to relieve breast pain. Topical NSAIDs may also be useful.
 - ✓ Postmenopausal hormone therapy can cause breast pain and should be decreased discontinued.
 - ✓ Oral contraceptives can reduce breast pain severity and duration in some women cyclical symptoms.
 - ✓ Progestogens also improve breast pain symptoms in some women.
 - ✓ Danazol is effective at relieving breast pain and tenderness but it causes significant androgenic effects.
 - ✓ For patients with more severe mastalgia, tamoxifen 10 mg can provide breast pain relief. Tamoxifen also increases the risk of blood clots, strokes, uterine cancer, and cataracts. Tamoxifen is infrequently used for this indication.

NIPPLE DISCHARGE

- Nipple discharge is the one of the most commonly encountered breast complaints.
- Most nipple discharge is benign origin.
- The clinical history is most helpful in distinguishing benign from suspicious or pathologic nipple discharge.
- Benign nipple discharge is usually bilateral, multiductal, and occurs with breast manipulation.
- Conversely, the risk of cancer is higher when the discharge is spontaneous, bloody, unilateral, uniductal, associated with a breast mass, and/or occurs in a woman over 40 years of age.

PHYSIOLOGIC DISCHARGE

- Bilateral milky nipple discharge is appropriate during pregnancy and lactation, and may persist for up to one year postpartum or after cessation of breastfeeding.
- Usually bilateral, involves multiple ducts, and is associated with nipple stimulation or breast compression.
- Bilateral nonpathologic milky white discharge in persons who are not pregnant or lactating is called galactorrhea; a human chorionic gonadotropin pregnancy test should be performed in patients with galactorrhea to rule out pregnancy.
- If negative, prolactin and thyroid-stimulating hormone levels should be obtained to determine the presence of an endocrinopathy.

CONT...

- Stresses such as trauma, surgical procedures, and anesthesia may also inhibit dopamine release, thereby causing hyperprolactinemia and inducing galactorrhea.
- Purulent nipple discharge can be seen in association with periductal mastitis.
- Neurogenic stimulation represses the secretion of hypothalamic prolactin inhibitory factor, resulting in hyperprolactinemia and galactorrhea.
- Decreases in nipple stimulation and breast compression expedite the resolution of physiologic discharge.

Table 3. Medications That Can Cause Nipple Discharge

Antihypertensive agents

Methyldopa, reserpine, verapamil

Gastrointestinal agents

Cimetidine (Tagamet), metoclopramide (Reglan)

Hormones

Estrogen, oral contraceptives

Opiates

Codeine, heroin, methadone, morphine

Psychotropic agents

Antipsychotics, monoamine oxidase inhibitors,
neuroleptics, selective serotonin reuptake inhibitors,
tricyclic antidepressants

PATHOLOGIC DISCHARGE

- Secretory production of fluids other than milk may be due to a pathological process in the breast.
- It is spontaneous, unilateral, localized to a single duct and persistent
- The most common cause is intraductal papilloma.
- The discharge associated with a papilloma can be clear or grossly bloody.
- Mammography and subareolar ultrasonography should be performed in patients with nipple discharge that is unilateral, spontaneous, clear, serous, bloody, or associated with a mass.

STRAW-COLORED OR CLEAR TRANSPARENT DISCHARGE

- It is typically due to a papilloma but may be associated with a malignancy.
- This discharge is typically a straw-colored, transparent, sticky fluid.
- It is very much like plasma.
- Unilateral spontaneous serous discharge is considered suspicious and requires a full workup.



BLOODY DISCHARGE



- Grossly bloody nipple discharge simply means that a lesion in the duct is bleeding.
- The bleeding can be caused by an intraductal carcinoma (in-situ or invasive), a bleeding papilloma, or benign fibrocystic changes with an active intraductal component (eg, plasma cell mastitis, ductal ectasia, intraductal hyperplasia, or papillomatosis).
- The cause of bloody nipple discharge in women during pregnancy and lactation is usually hypervascularity of developing breast tissue, which is benign and requires no treatment.

BREAST DISCHARGE

Discharge from the surface

- Paget's disease
- Skin diseases (eczema, psoriasis)
- Rare causes (e.g. chancre)

Discharge from a single duct

Blood-stained:

- Intraduct papilloma
- Intraduct carcinoma
- Duct ectasia

Serous (any colour):

- Fibrocystic disease
- Duct ectasia
- Carcinoma

Discharge from more than one duct

Blood-stained:

- Carcinoma
- Ectasia
- Fibrocystic disease

Black or green:

- Duct ectasia

Purulent:

- Infection

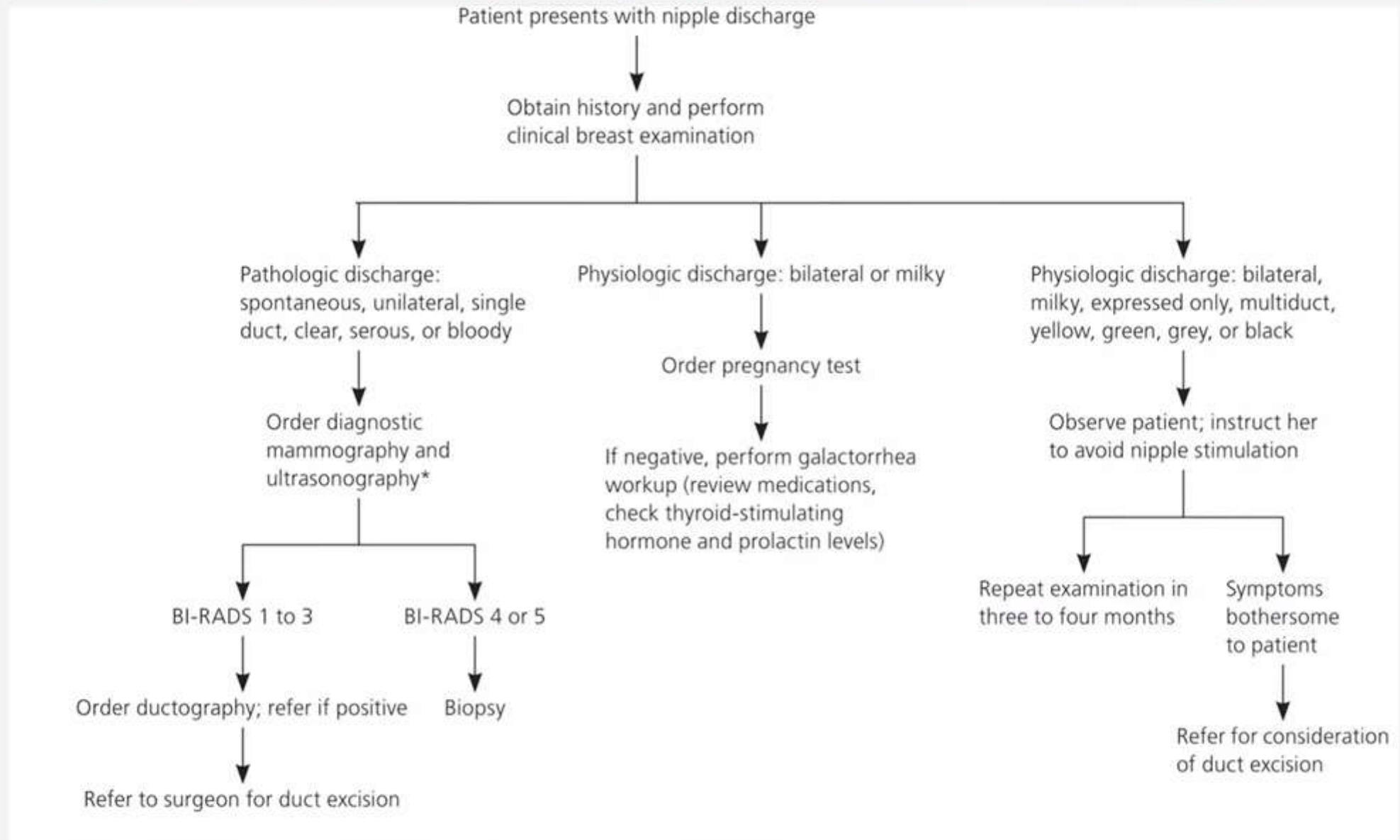
Serous:

- Fibrocystic disease
- Duct ectasia
- Carcinoma

Milk:

- Lactation
- Rare causes (hypothyroidism, pituitary tumour)

APPROACH TO THE PATIENT WITH NIPPLE DISCHARGE



*—Mammography should be ordered if patient is 40 years or older and her most recent mammoqram was obtained more than one year ago.

Thank YOU

