Breast Diseases: Part 1

Objectives:

1- To know the common benign breast disease (signs & symptoms & diagnosis & treatment)
2- Breast cancer:
   a-types
   b- clinical presentation
   c-diagnosis
   d- staging
   e- surgical treatment
   f-roles of Radiation therapy, Chemotherapy , hormonal and biological therapy
3- Nipple discharge,and nipple abnormalities
4- Breast infection and treatment
5- Breast pain causes and management

Resources:

- Davidson's (Chapter 19 pg 326).
- 436 doctors slides.
- 435's teamwork.
- Surgical Recall.

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Color Index:

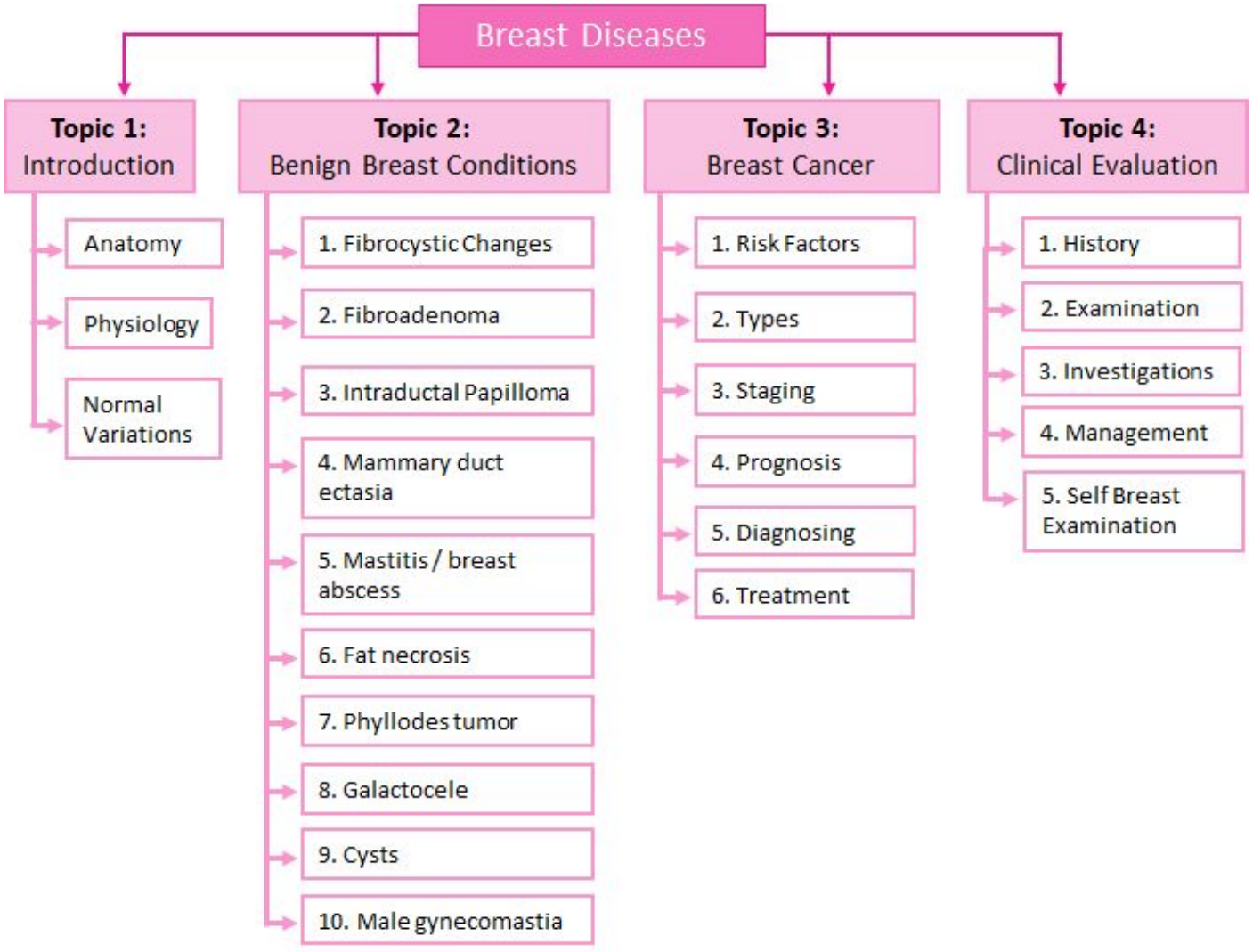
Notes , Important , Extra , Davidson's

Editing File

Feedback

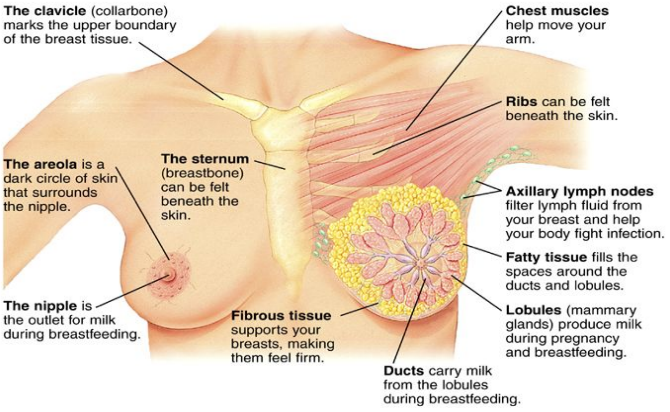
Outline

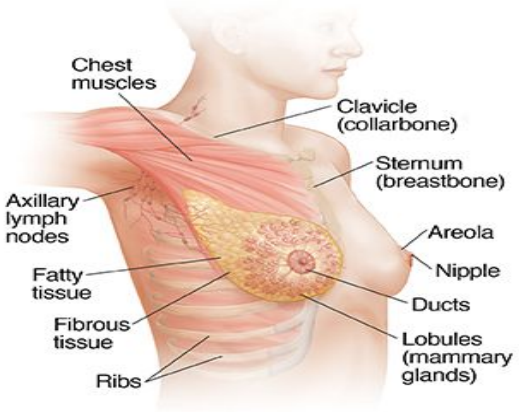
Important note: To make things easier (because this is a long lecture), we divided it into **4 topics**:
1- Introductory part (Anatomy, Physiology, Normal variations).
2- Benign breast conditions.
3- Breast cancer.
4- Clinical Evaluation (History, Examination, Investigations, Management, Self Breast Examination)
Topics 3 and 4 will be covered in Part 2.



We recommend you study the summary (click here) first (it contains all the key points according to the objectives) then go through the lecture (which will help you with the OSCE).

Topic 1: Introduction
Anatomy





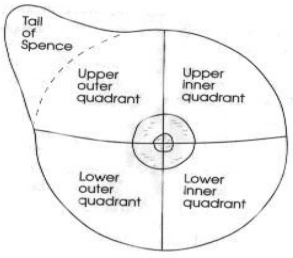
- Breasts (Mammary glands) are **modified sweat/sebaceous glands** (they love to ask this in MCQ).
- Both males and females have breast tissue: in males it is rudimentary while in females it is functional (so BOTH males and females can get breast cancer but the percentage is higher in females 99%).

Borders:

Upper border	**Lower** border	**Inner** border	**Outer** border
Clavicle (collar bone)	6th or 7th rib (extends from 2nd to 6th rib)	Edge (side) of sternum	Mid-axillary line

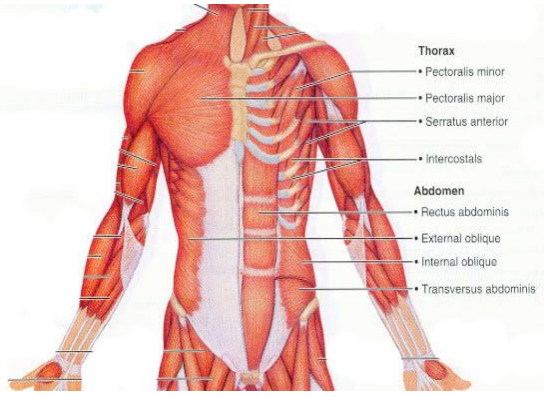
Divisions: each breast is divided into 5 segments:

- 4 quadrants: by horizontal and vertical lines intersecting at the nipple.
  - 2 inner: upper inner and lower inner.
  - 2 outer: upper outer[1] & lower outer.
- Tail of spence (the axillary tail): An additional lateral extension of the breast tissue toward the axilla.



Related Musculature:

- The breast lies over (sets on) the muscles that encase the chest wall:
- The involved muscles are:
  - Pectoralis major (60%) (the **majority** of the breast lies on pectoralis **major**).
  - Serratus anterior (30%).
  - Rectus abdominis fascia (rectus sheath) (10%).
  - Also rests on: pectoralis minor, external oblique, latissimus dorsi, subscapularis.



Nerves:

Long thoracic nerve:	Thoracodorsal nerve:	Intercostalbrachial nerve:
serratus anterior	latissimus dorsi	Lateral cutaneous, sensory to medial arm & axilla.

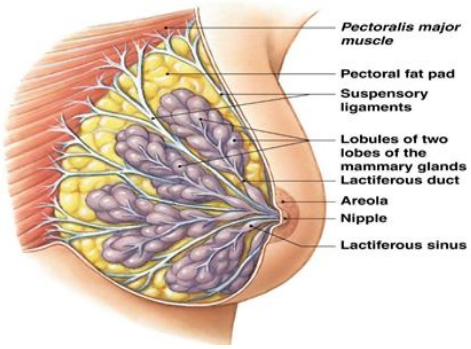
(they run below the breast so you should know them to understand the possible complications of breast surgery if one of them is injured)

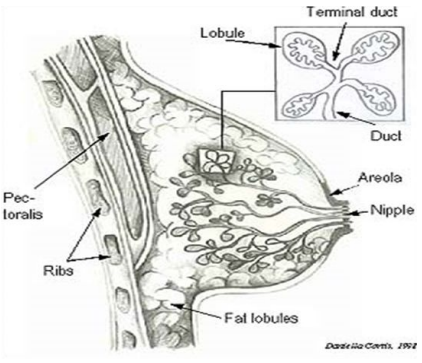
[1] Majority of benign or malignant tumors in the Upper Outer Quadrant

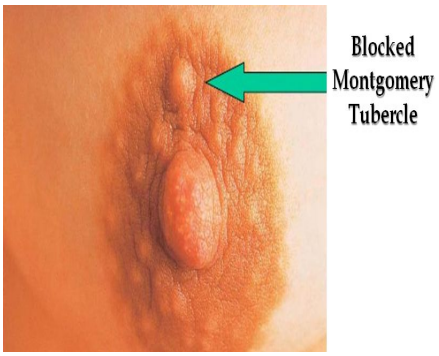
Breast Parts:

I. External Anatomy:

- **Nipple**: pigmented and cylindrical, lies at the 4th intercostal space at age 18.
- **Areola**: pigmented area surrounding the nipple.
- **Glands of Montgomery (Montgomery's tubercles)**:
  Sebaceous glands within the areola, which act to lubricate the nipple during lactation. Frequently you will see pathology in these glands, but it's normal changes and not significant. You need to reassure the pt + local cleaning + if infected with cellulitis use Antibiotic.





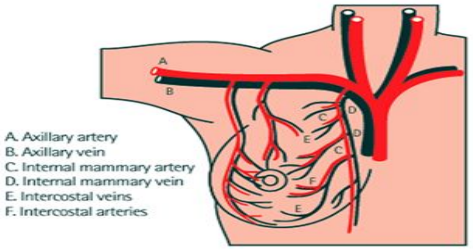


II. Internal Anatomy: the breast is composed of 3 different types of tissues:

Glandular tissue	**Fibrous** (supporting tissue)*	**Fatty** tissue*
• Milk producing tissue. • Each mammary gland consists of 15-20 lobes. • The mammary glands consist of a series of **ducts** and secretory **lobules**. Cancer can arise from either one of these components.	• Suspensory ligaments of the breast (**cooper's ligaments**[2]) extend through the breast to the underlying muscle separating the breast's lobes. • Responsible for skin retraction and dimpling. (Peau d'orange) • Benign or malignant lesions may affect these ligaments.	• Subcutaneous and retromammary fat. It gives the bulk of the breast. • There is NO fat beneath the areola and the nipple. *They form the bulk of the breast, so size and shape depend on them.

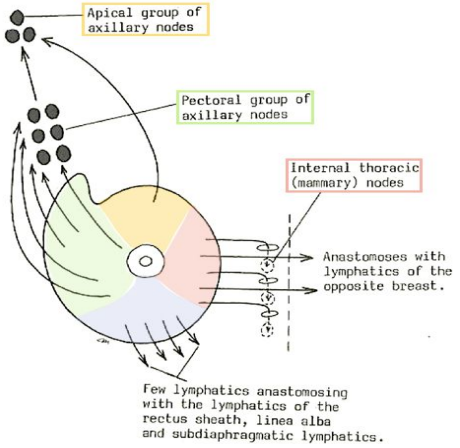
Blood supply:

- Lateral thoracic and acromiothoracic branch of axillary artery.
- Internal mammary artery
- Intercostal aa.



Lymphatic drainage: Video(04:59)

- The lymphatic drainage of the breast is of great clinical importance due to its role in the metastasis of breast cancer cells.
- **Most of the lymph drain towards axilla (90%).**
- **Superficial** lymphatic nodes: drain the skin
- **Deep** lymphatic node: drain the mammary lobules.
- There are three groups of lymph nodes that receive lymph from breast tissue:
  - Axillary nodes (drains the majority of the breast)
  - Internal mammary nodes
  - Supraclavicular nodes



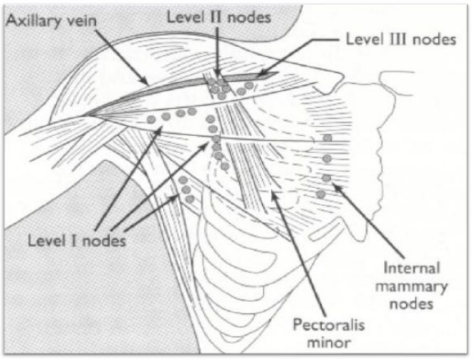
[2] Strands of connective tissue (fibrous septa)

Axillary lymph nodes: Video(06:23)

- Anatomically the can be classified into:

Anterior (pectoral) group:	Posterior (subscapular) group:	Lateral (brachial or humeral) group:	Central group:	Apical group:
Deep to pectoralis major.	Along subscapular vessels.	Along the axillary vein.	Within the axillary pad of fat.	which drains all of the other groups, lies behind the clavicle at the apex of axilla

- Clinically:
  - This surgical classification is used in axillary dissection.
  - It is based on the relationship of the lymph nodes to **pectoralis minor.**



Level 1	Level 2	Level 3
Lateral = **below** pectoralis minor tendon. (80 - 90 %) of axillary nodes are here	Posterior = **behind** pectoralis minor tendon.	Medial = **above** pectoralis minor tendon.

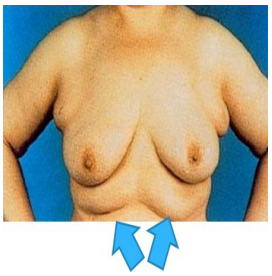
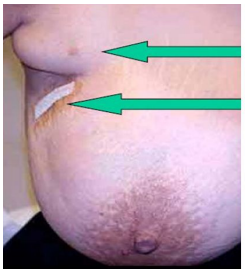
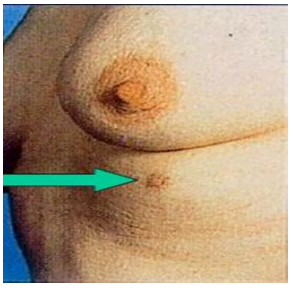
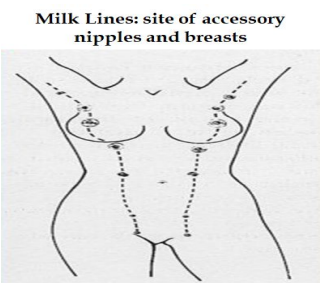
You should always palpate all nodes! (axillary[3], supraclavicular, infraclavicular)

Physiology

Puberty:	Menses:	Pregnancy and lactation:	Aging:
• Need estrogen and progesterone: • **Estrogen**→ growth and appearance, milk-producing system. • **Progesterone**→ lobes & alveoli, alveolar cells become secretory. • Breast Asymmetry is common.	• Progesterone: 3-7 days prior to menses, engorgement. • Physiologic nodularity: retained fluid. • Mastalgia= Breast pain	• **Glandular tissue** displaces connective tissue. • Increase in size. • Nipples prominent and darker. • Mammary vascularization increases. • Colostrum present. • Attain Tanner stage V with birth.	• **Perimenopause:** decrease in glandular tissue, loss of lobular and alveolar tissue. • Fatten, elongate, pendulous. • Infra-mammary ridge thickens. • Suspensory ligaments relax. • Nipples flatten. • Tissue feels “grainy”.

[3] you can’t usually feel the LN here, you detect it by scanning

Normal Variations

Accessory Breast tissue	Supernumerary (accessory) nipples
  • Increase production of fatty+connective tissue in response to hormone, present as swelling. • Most of the time comes to the axilla in stages of life; during puberty, pregnancy and lactation. • Most of the time comes as tissue with NO nipple. • If it's big you may remove it for cosmetic purposes, otherwise it does nothing.	  Come along the milk line of the breast: from midaxillary line > crossing to nipples > down to mid-inguinal area. It usually mistaken as nevi.
Breast asymmetry	**Breast hair**
  Pic1: asymmetry in Teenage Pic 2: asymmetry in elderly Usually present normally in puberty, and you have to investigate to exclude underlying pathology > US If it significantly disfiguring you may reduce the big or augment the small one, but **after completing the puberty age**, don't touch the breast before puberty. In opposite to teenage, asymmetry in elderly usually means pathology. So if she is: <40 age → just US >40 age → US + Mammogram	

Topic 2: Benign Breast Disorders

I. Presentation:

The breast presentation[4] never come out of 4: **Pain, mass, discharge or skin appearance changes[5].**
(commonest presentation of breast problem: Breast **Pain** or Mastalgia)

[4] Benign and malignant
[5] It is from the most to the least common.

1- Breast Pain (mastalgia):

- **Cyclical pain:** Hormonal, dull, diffuse and bilateral Treatment: Reassurance, NSAIDS,
- **Non-cyclical pain:** non-breast vs breast, **Imaging*.** Treatment: Reassurance, NSAIDS,
  *If the pain is persistently localized in one area YOU HAVE to investigate.

2- Breast Mass

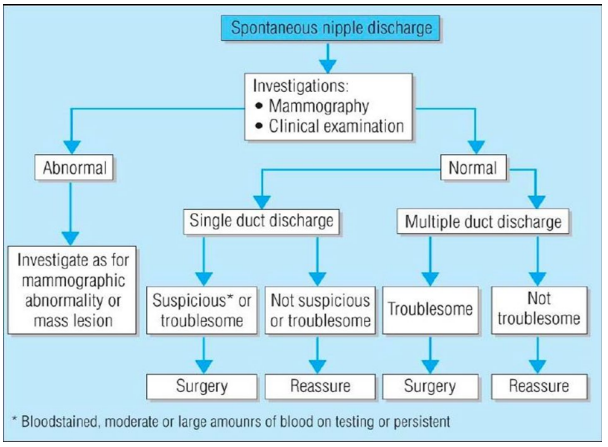
3- Nipple discharge:

- There is a minimal normal nipple discharge, the only significant one is fresh red bright blood which needs to be further investigated because it may be intraductal papilloma.
- 5% of women coming to clinic & 95% of them are benign
- Most important points in history are: Is it spontaneous or on pressure?" Is it coming from single or multiple?
- **Colors**: Serous, serosanguinous (blood with serous), bloody, clear, milky, green, blue-black.
- **Differentials** (common causes in non pregnant women):
  - Carcinoma
  - Intraductal **papilloma**
  - Fibrocystic changes
  - **Duct ectasia**
  - Hypothyroid
  - Pituitary adenoma
  - Cyst communicating with duct system

Commonest cause of Nipple discharge: MILK (lactation or galactorrhea)

- **Clinical characteristic:**

Physiological:	**Pathological:**
○ Usually bilateral ○ Multiple ducts ○ By squeezing the nipple	○ Spontaneous ○ Unilateral ○ Single duct ○ Discolored discharge



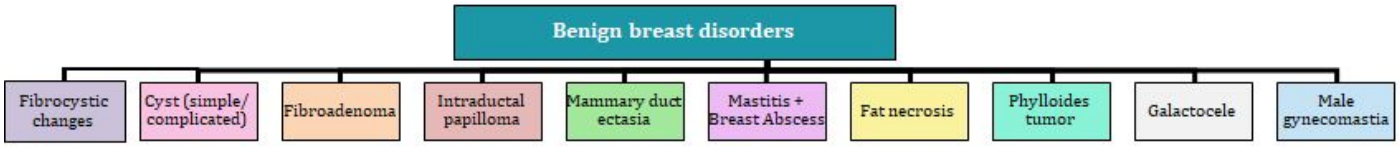
- **Investigation:**
  - H&P + R/O (rule out) mass by exam and mammogram.
  - Identify source of discharge.
  - Consider ductography (not usually done these days).
- **Management:** Observation or Single duct excision or Total duct excision

4- Skin Changes.

II. Benign Breast Diseases:

Breast adenoma	**Lipoma**	**Sebaceous cyst**	**Skin papilloma**
• simple lump, • painless or painful, • no discharge or skin changes. • Diagnosed by US+biopsy, • and if its adenoma better to take it out because it may grow in size.	• commonest swelling in human body, present in breast. • US+biopsy. • If big excise it.	• non breast pathology but present in the skin area. • Get blocked and infected, present as **mass with punctum *black spot* and pain**, these features are diagnostic.	• commonly around the nipple areola, infection caused by Papillomavirus, you can take it out.

III. Benign Breast Conditions (more common than malignant!):



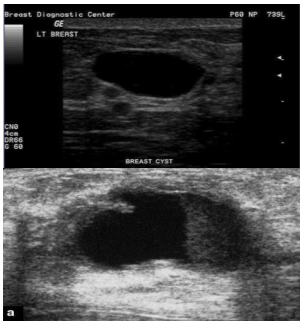
1. Fibrocystic changes: Most common benign breast pathology

(In the past it was considered Fibrocystic diseases, now it is just Fibrocystic changes not diseases)

General Characteristics	• 50-80% of all menstruating women • Caused by: hormonal changes prior to menses • Age: 30-40 middle age group (10% in women less than 21) • Relationship to breast cancer: doubtful • Histology: adenosis, apocrine metaplasia, fibrosis, duct ectasia.
Signs & Symptoms	Commonly they present with **cyclic pain** in the upper outer border of the breast, tenderness, palpable lump, heaviness, discomfort, nipple discharge and rarely change in shape. • Pain is common complain • Lumpy, bumpy breasts
Investigations	In clinical examination you may feel small nodule or you may not. Do **US** if she is less than 30 age, there will be multiple tiny small cyst in **absence** of solid mass.If above 40 age do mammogram to rule out underlying pathology.
Management	**Reassure the pt** that this is normal changes, no worry, it **doesn't** carry any risk of malignant changes; she needs good bra + painkillers + to reduce things lead to increase fluid retention like tea and coffee.

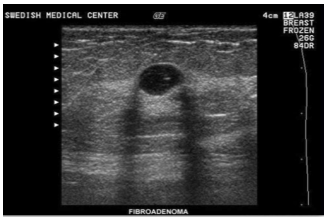
*Note: when we say **cyst** (simple or complicated we mean one cyst) while in **fibrocystic changes** it is many multiple small cysts (just like a sponge). In fibrocystic changes one of the cysts may become prominent and large then it will be managed as a cyst.

2. Simple or complicated cyst:

General Characteristics	Breast Cysts: • Fluid-filled • 1 out of every 14 women • 50% multiple and recurrent • Hormonally influence Simple (first image) → cyst with layer with simple epithelial tissue and contains clear fluid. Complicated (second image) → **solid** + cystic component, *complicated cyst doesn't mean infection*. 
Signs & Symptoms	Cysts can present as a palpable mass (painful swelling "lump") or a focal tender area within the breast. • Pain and tenderness. • Mobile cysts with well-defined margins • Singular or multiple • May be symmetrical • Upper outer quadrant or lower breast border • Cysts may appear quickly and decrease in size • Lasts half of a menstrual cycle • Subside after menopause, If no HRT

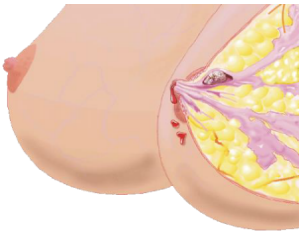
Investigations	Diagnosis → US, if simple reassure the pt + there is no risk of malignancy. If complicated has to be investigated → do biopsy of the solid part for the risk of malignancy, the management depend on the results for e.g. there is severe hyperplasia or atypia you have to take it out because of risk of malignancy. ● Imaging for questionable cysts → U\S. ● Aspirate cyst fluid ○ If **bloody** go for surgical biopsy. ○ If non-bloody: ■ disappear completely → observe (you don't even need to analyse the fluid). ■ doesn't resolve → surgical biopsy.
Management	● Treatment is based on symptoms ● **Reassure** ● ''Atypical Hyperplasia'' on pathology report indicates increased risk of breast cancer

3. Fibroadenoma:

Characteristics	● Second most **common** breast condition (most common lump). ● It is the commonest pathology in the younger age from puberty till early twenty. ● Late teens to early adulthood (15-30 years old of age). ● More commonly seen in women from certain African countries. ● Mammogram shows Multiple Calcified Fibroadenomas ● Rare after menopause. ● Benign lesion → a carcinoma arising in a fibroadenoma is extremely rare. Patients with simple fibroadenomas are not at significantly increased risk of developing breast cancer.
Signs & Symptoms	● They usually present with a **mobile lump**, sometimes associated with breaking pain, most of the time no discharge. ● Firm, rubbery, round, well circumscribed, mobile mass. ● Pain**less**, non-tender. ● Solitary, can be multiple. ● Mostly located in upper-outer quadrant of the breast. ● Size:1-5 cm or larger (if more than 5 cm → giant fibroadenoma).
Investigations	Diagnosis → by US we find well-circumscribed mass with no other changes with acoustic shadow, and by **biopsy** you diagnose it as fibroadenoma. **Don't** assure the pt based on clinical Ex, you need biopsy. ● Triple assessment(explained in the clinical approach section) ● Imaging: ○ U/S: mostly used because it is more common in young. ○ Mammogram. If above 40. ● Biopsy to make sure it is not phyllodes and we are not missing a malignancy. 
Treatment	Reassure the pt + follow up, 50% it will reduce by itself, the other 50% either stay the same, getting smaller or getting bigger in size, and **when it gets bigger** we take it out. **Indication for surgery:** 1. More than 4 cm 2. Phylloides** 3. Painful 4. Unusual age like 40s age or >35 5. Unclear or abnormal pathology* 6. +ve family history *** 7. No access for medical follow up. 8. Giant fibroadenoma

*E.g in core biopsy we find fibroadenoma with increased vascularity or proliferation or increased cellularity.
** Variation of fibroadenoma with 1% potential of malignant transformation and chance of local recurrence.
Note: Fibroadenoma never transform into malignant but sometimes it mistaken with Phyllodes tumor
*** In +family Hx of malignancy it is indicated to be removed, although it have no potential of malignancy it better to be removed to relieve pt anxiety.

4. Intraductal papilloma:

Characteristics	There are 20 breast ducts, the major duct size about 2mm, and there is small tiny growth in this small duct → so it will present with persistent nipple bloody • Slow-growing • Overgrowth of ductal epithelial tissue • Usually not palpable • Cauliflower-like lesion, length of involved duct • Most **common** cause of persistent bloody nipple discharge. • 40-50 years of age 
Signs & Symptoms	• Nipple discharge: Watery, serous, serosanguinous, or fresh **bloody** discharge • **Spontaneous** discharge without squeezing • Usually unilateral & • Often from single duct (pressure elicits discharge from single duct) • 50% no mass palpated (sometimes they present with lump "the duct get blocked by blood so it increases in size", sometimes pain and **no skin changes.)** 
Investigations	• Test for occult blood • US if the pt younger than 40; to rule out other pathology and to check If there is dilated duct, when it > 2mm it can be detected by US. Ultrasound or Mammogram: >40 • Ductogram • Biopsy
Treatment	• Usually it **resolves** by itself, but if it persists → excision of involved duct surgically. Intraductal papilloma alone totally benign, but when there is multiple defect in ductogram it called **papillomatosis** and it carry a malignant risk so you have to take the whole ductal system out. 

5. Mammary duct ectasia:



Characteristics	• Inflammation and **dilation** of sub-areolar ducts behind nipples. • Age. It's common, affects female in 35 years of age and above. • May result in palpable mass because of ductal rupture. • Greatest incidence after menopause. • Unclear etiology: Ducts become distended with cellular debris causing obstruction

Signs & Symptoms	• **Multi-colored discharge**:
	  ○ Thick, pasty (like toothpaste)
	  ○ White, green, greenish-brown, cheesy or serosanguinous discharge
	• Intermittent, no pattern
	• Bilaterally from multiple ducts
	• Nipple itching with drawing or pulling (burning) sensation.
	• Slit-like nipple. ---------->
	 
	They present with **multiple discharge**, thick, greenish, milk, serous, blood and all kind of discharge. Also they present with inverted nipple, breast abscess or inflammation "periductal mastitis, periductal abscess". The abscess is around not peripheral.
	The only problem is that they have an increase risk of breast infection.

Investigations	• Test for occult blood • Imaging: Mammogram and sonogram • Biopsy. It is important to differentiate it from malignancy.
Treatment	Assure the pt, if infection treat with Antibiotics, if abscess than drain it. • Excision of ducts if mass present • Antibiotics: if there is an infection • Close follow-up

6. Mastitis:

Characteristics	• Diffuse bacterial infection of the breast without pus, usually affect lactating woman. • Breast infection when bacteria enter the breast via the nipple. • Ducts infected. • Fluid stagnates in lobules. • Usually **during lactation**. • Staphylococcus common cause.
Signs & Symptoms	• Pain and diffuse not localized tenderness, red breast. • Nipple discharge: -Pus -Serum -Blood • **Fever and rigor**
Investigations	Clinically diagnosed.
Treatment	• Antibiotics + analgesia. • **Continue** breastfeeding **No need to stop lactation** if the mother has mastitis or abscess unless the baby develop abdominal pain or diarrhea ...etc. • Close follow up

If you catch mastitis early they respond well to treatment, if late it become localized and form **an abscess**.

^^The organism in lactating woman usually → Staph. aureus, from oral cavity of the baby. Abscess in lactating big and in the peripheral.
The organism in non-lactating woman → mixed organism; Gram+, Gram- or Anaerobic. Treat with broad spectrum Ab. Abscess in non-lactating small and close to nipple.

Puerperal Mastitis (Left Breast)

Inflammatory Carcinoma
(Erythema and peau d'orange)

Breast Abscess

7. Breast abscess:

Signs & Symptoms	Localized tenderness, pain, fever, localized induration, nipple discharge.
Investigations	You may need US to detect the abscess.
Treatment	• Incision & drainage. • Antibiotics. • Needle aspiration. Small abscess → aspirate it under US guide Large abscess → drain it surgically + Antibiotic

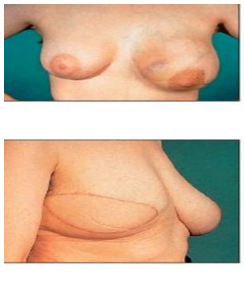
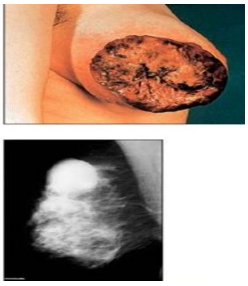
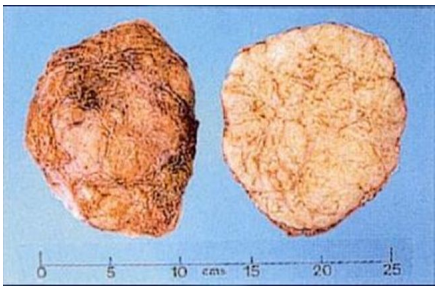
8. Fat necrosis:

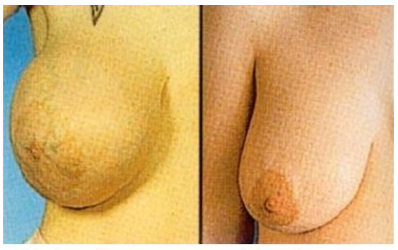
Pic 1: seat belt trauma
Pic 2: breast hematoma

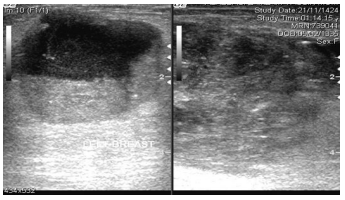
Characteristics	• It is necrosis of adipose tissue (crushing of fatty tissue and destruction of blood supply).
	• Causes:
	  ○ **Trauma*** to breast (e.g. seat belt trauma in car accidents, or falling)
	  ○ Surgery
	*Most of the time pt forget about the trauma, so always keep it in your mind.

Signs & Symptoms	• Pain or firm + irregular **mass** (Usually non-mobile mass)
Investigations	• Hard to differentiate it from malignancy even by US and mammogram, we diagnose it by core **Biopsy.**
Treatment	• Assure the pt → Resolves over time without treatment but may be excised

9. Phyllodes tumor


Before Surgery After Surgery

Characteristics	• Phyllodes tumor is a variation of fibroadenoma with more fibrous tissue. • Giant fibroadenoma (a variant of fibroadenoma) with **rapid** growth (patient presents with a history of a rapidly growing mass) Locally destructive disease. • Often occurs in women aged 40+ • Carry a potential risk of less than 1% of total malignancy + chance of local recurrence if not completely excised. • Benign with a Malignant potential, lesions > 3 cm are more likely to be malignant.
Investigations	• Imaging: ○ both mammography and ultrasound, they present as well-defined masses that are very similar to a benign fibroadenoma. ○ The malignant forms are more likely to have cystic spaces on U/S (see image). 
Treatment	• Excision (any phyllodes has to be excised).

10. Galactocele:

Characteristics	• **A cyst containing milk.**
Sign & Symptom	• Pain but **no** fever. We see it only in **lactating** woman. Present with breast pain and sometimes mass. To differentiate between Galactocele and abscess > here no fever.
Investigations	• **Ultrasound** is diagnostic (you find cyst containing fluid w/ the density of milk).
Treatment	• It may disappear or you may need to aspirate if it big. • **Needle aspiration**: is diagnostic **and** therapeutic, it should be completely under aseptic technique because you may introduce an infection and turn it into abscess.

11. Male gynecomastia:

Characteristics	• Caused by: imbalance of estrogen/testosterone • May be associated with genetic cancer families: Colon, prostate cancer • Must exclude testicular, liver, and adrenal malignancies (hormone producing) or medication. 
Treatment	• If pre-puberty: wait to see if it resolves. • Change medication. • Treat underlying illness.

Recall: (EXTRA)

What is the most common cause of bloody nipple discharge in a young woman?
Intraductal papilloma.
What is the most common cause of green, straw-colored, or brown nipple discharge?
Fibrocystic disease.
What is the most common cause of breast mass after breast trauma?
Breast necrosis.
What must be ruled out with spontaneous galactorrhea (+/- amenorrhea)?
Prolactinoma (check pregnancy test and prolactin level).
What is a fibroadenoma?
Benign tumor of the breast consisting of stromal overgrowth, collagen arranged in “swirls”.
What is the clinical presentation of a fibroadenoma?
Solid, mobile, well-circumscribed round breast mass, usually <40 years of age.
How is fibroadenoma diagnosed?
Negative needle aspiration looking for fluid; ultrasound; core biopsy.
What is the treatment?
Surgical resection for large or growing lesions; small fibroadenoma can be observed closely.
What is fibrocystic disease?
Common benign breast condition consisting of fibrous (rubbery) and cystic changes in the breast.
What are the signs/symptoms of fibrocystic disease?
Breast pain or tenderness that varies with the menstrual cycle; cysts; and fibrous (“nodular”) fullness.
How is it diagnosed?
Through breast exam, history, and aspirated cysts (usually straw-colored or green fluid).
What is the treatment for symptomatic fibrocystic disease?
Stop caffeine, pain medication (NSAIDs). Vitamin E, evening primrose oil (danazol and OCP as last resort).
What is done if a patient has a breast cyst?
Needle drainage: if aspirate is bloody or a palpable mass remains after aspiration, an open biopsy is performed. If aspirate is straw colored or green, the patient is followed closely; then, if there is recurrence, a second aspiration is performed. Re-recurrence usually requires open biopsy.
What is mastitis?
Superficial infection of the breast (cellulitis).
In what circumstances does it most often occur?
Breastfeeding.
What bacteria are most commonly the cause?
Staphylococcus aureus.
Why must the patient with mastitis have close follow up?
To make sure that she does not have inflammatory breast cancer!
What are the causes of breast abscess?
Mammary ductal ectasia (stenosis of breast duct) and mastitis.
What is the treatment of breast abscess?
Antibiotics (e.g., dicloxacillin), needle or open drainage with cultures taken. Resection of involved ducts if recurrent.
What is male gynecomastia?
Enlargement of the male breast.
What are the causes?
Medications, drugs (marijuana), liver failure, increased estrogen, decreased testosterone.

Summary

- **Axillary lymph nodes clinically: level 1: Below** pectoralis minor tendon, Level 2: **Behind** pectoralis minor tendon, Level 3: **Above** pectoralis minor tendon.
- The breast presentation never come out of 4: **Pain, mass, discharge or skin appearance changes.**
- **Benign Breast Diseases :** 1-Breast adenoma, 2-Lipoma, 3-Sebaceous cyst (**mass with punctum *black spot* and pain**), 4-Skin papilloma

Benign Breast Conditions	Characteristics	signs/symptoms	Investigations	Management
Fibrocystic changes	• Caused by hormonal changes prior to menses. • Age: 30-40 "middle age". • Fluid-filled cysts.	• **Cyclic pain.** • Mobile cysts, well-defined margins.	**US** (best), and if age >40 do mammogram (to rule out pathology)	**Reassurance.**
Simple or complicated cyst	Can be simple or complicated (solid + cystic component)	Present with swelling and or localised tenderness.	Ultrasound + Aspirate fluid, if **bloody:** surgical biopsy	• If simple: reassure • If complicated: **biopsy** and excision
Fibroadenoma	• Age: 15-30 • Mammogram shows Multiple Calcified Fibroadenomas	Firm, rubbery, round, well circumscribed, mobile mass,painless	• **Triple assessment** • **U/S-Mammogram** • **biopsy**	**Same size: reassure** **Increasing or other indication: surgery**
Intraductal papilloma	Most **common** cause of persistent bloody nipple discharge	• **Spontaneous** discharge • sometimes pain	• Test for occult blood • Ductogram • Biopsy	**resolves** by itself
Mammary duct ectasia	• Inflammation and **dilation** of sub-areolar ducts behind nipples. • Age: **35** and above	• **Multi-colored discharge** • Nipple itching	• Test for occult blood • Mammogram • Biopsy	• **Infection: antibiotic** • **Abscess: drainage**
Mastitis	• Diffuse bacterial infection of the breast <u>without</u> pus • Staphylococcus	• Pain and diffuse not localized tenderness • **Fever and rigor**	Clinically diagnosed.	Antibiotics + analgesia no need to stop breastfeeding
Breast abscess	-----	pain, fever, localized induration, nipple discharge	US to detect the abscess	• Incision & drainage. • Antibiotics. • Needle aspiration.
Fat necrosis	**Trauma** to breast	Pain or firm + irregular **mass**	**BIOPSY**	Assure the patient
Phyllodes tumor	• Giant fibroadenoma • Rapid growth	-----	mammography and ultrasound	Excision
Galactocele	• **A cyst containing milk** • only in **lactating** woman	• Pain but **no** fever.	• **Ultrasound**	• **reassurance** • **Needle aspiration**
Male gynecomastia	• Must exclude testicular, liver, and adrenal malignancies	-----	-----	• **Pre-puberty: wait** • **Change meds** • **Treat underlying illness**

Questions

1- A 30 year old woman presented to your clinic complaining of mastalgia that and discomfort. She reports that her symptoms become worse before her menstrual period. What is the first investigation will you order?

A. Mammogram
B. Biopsy
C. Ultrasound
D. CXR

2- A 20 year old female presented to your clinic with a firm non-mobile mass. She reported being in a car accident 10 days ago. How will you manage the patient?

A. Advice her to have mastectomy
B. Needle aspiration of the mass
C. Give her analgesics and antibiotics
D. Order a biopsy and reassure the patient

3- Which of the following will help you differentiate between an abscess and a galactocele?

A. Fever
B. Tenderness
C. Have to do biopsy
D. Mobile mass

4- A patient presented with fever, diffuse pain in her breasts, with redness. She recently gave birth to a baby girl and is currently breastfeeding. How will you manage the patient?

A. Give antibiotics and stop breastfeeding
B. Give antibiotics and continue breastfeeding
C. Give analgesics only and reassure the patient
D. Order MRI and treat according to result

5- Which group of axillary nodes lie posterior to pectoralis minor?

A. Level 1
B. Level 2
C. Level 3
D. Level 4

6- A female patient presented to the clinic with a breast mass. On examination the mass had a black spot in the middle and the breasts were tender. Which of the following is the most likely diagnosis?

A. Fibroadenoma
B. Lipoma
C. Sebaceous cyst
D. Papilloma

7- A 45 year old lady complains of bloody discharge from her left nipple that comes out suddenly without squeezing. She denies any pain or mass. Which of the following is the most likely diagnosis?

A. Intraductal papilloma
B. Mammary duct ectasia
C. Mastitis
D. Fibrocystic changes

Answers: 1-C / 2-D / 3-A / 4-B / 5-B / 6-C / 7-A