Benign breast disease

* The Breast Cancer is the Commonest cancer in Females...

* 90% of Breast complian are Bengin...

* 6-10% of Breast complian are malignant...

E J Arteen
FRCSI

* Types of sweat glands:-

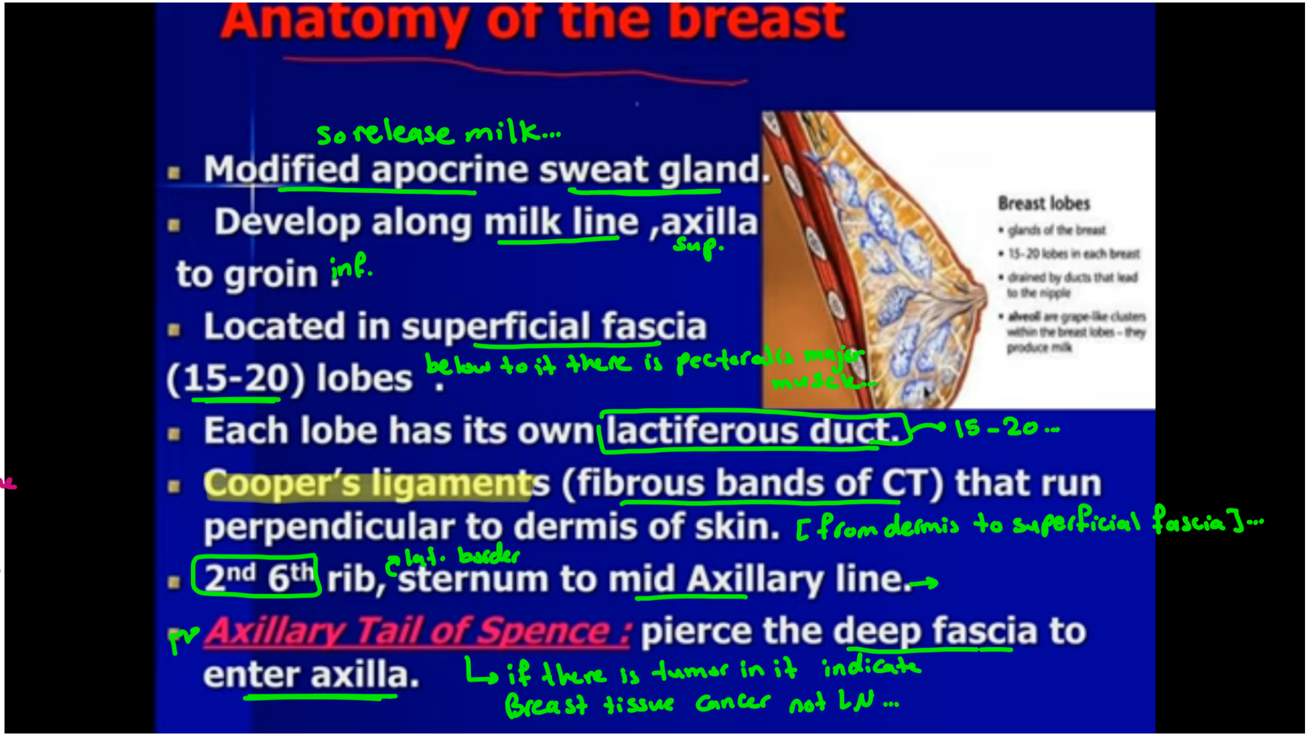
1- Apocrine sweat gland...
↳ غدد عرقية جنسية

2- ecrine sweat gland...
↳ release sweat...

← الغدد العرقية يلي فيها ريحة موجودة
في :-
1- axilla...
2- anal region...
3. inguinal region...

* inflammation in the apocrine sweat glands called:-
Hidradenitis suppurativa...

* There is space behind the Breast [the persa of pectoralis major give the Breast mobility charachter → to easy in Breast feeding...



Anatomy of the breast

so release milk...

- Modified apocrine sweat gland.
- Develop along milk line ,axilla (sup.) to groin (inf.).
- Located in superficial fascia (15-20) lobes . below to it there is pectoralis major muscle...
- Each lobe has its own lactiferous duct. → 15-20...
- Cooper's ligaments (fibrous bands of CT) that run perpendicular to dermis of skin. [from dermis to superficial fascia]...
- 2nd 6th rib, lat. border sternum to mid Axillary line. →
- Axillary Tail of Spence : pierce the deep fascia to enter axilla. ↳ if there is tumor in it indicate Breast tissue cancer not LN...

Breast lobes
- glands of the breast
- 15-20 lobes in each breast
- drained by ducts that lead to the nipple
- alveoli are grape-like clusters within the breast lobes – they produce milk

* Anterior axillary line:-
Ant. border of ما تحت ال
pectoralis major

* Mid axillary line:-
apex of the ما تحت ال
...نص ف axilla

* Post. axillary line:-
latissmus dorsi ما تحت ال

* There is cancer affect the Breast lobes called:- lobular Carcinoma → insitu / invasive...
↓
25%

* There is cancer affect the Breast ducts called:- Ductal Carcinoma → insitu / invasive...
↓
75%

* The ducts and lobules open in the nippels..
↳ There is 16-20 opening...

The Breast Boundres:-

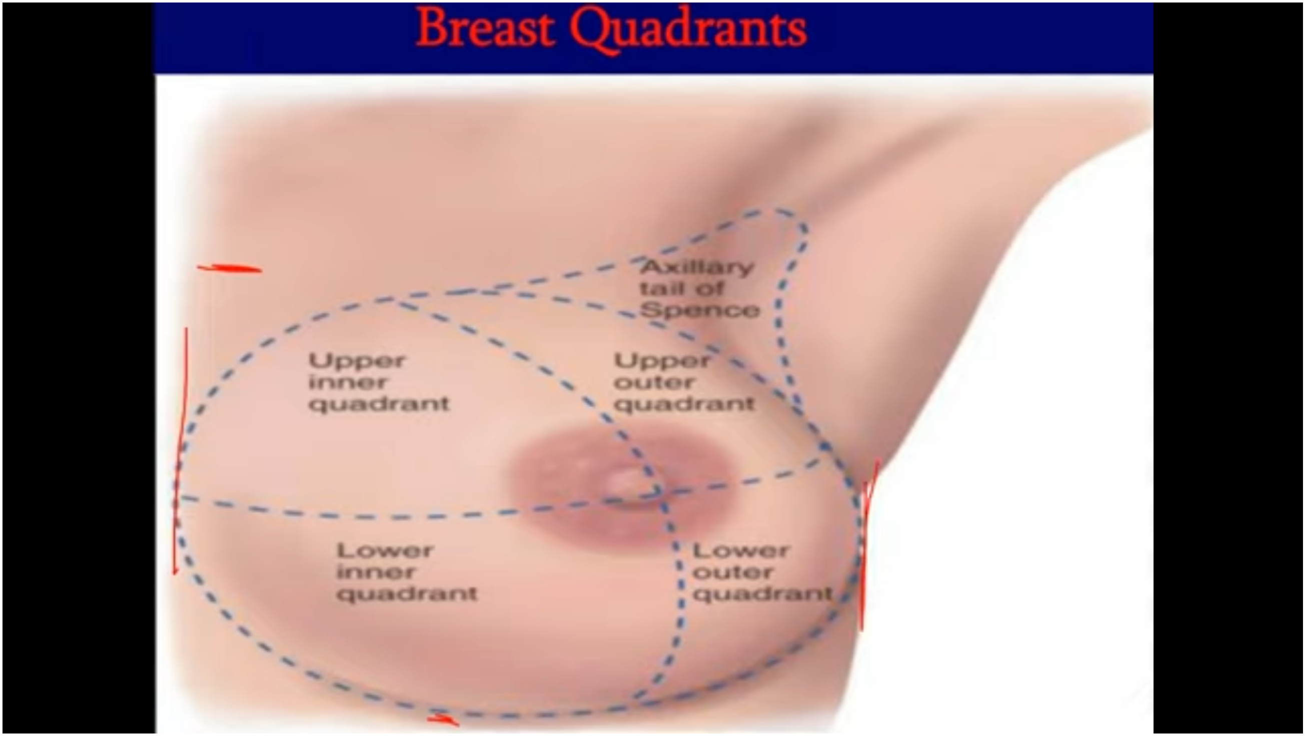
* superiorly :- 2nd rib to the clavicle...
* inferiorly :- inferior mamary fold [preserved :- مش لازم تخترقها]
* lateral Border :- latissmus dorsi... [post.].
* medial Border :- sternum...

*The Breast Quadrant:-

1- upper outer...
2- upper inner...
3- lower outer...
4- lower inner...
5- nipple areola complex...
+ axillary tail of spence...

***The most important quadrant is upper outer:-**
حيث أن معظم ال grandular
So the tissue موجودة فيه
cancer Breast more here...

→ The mastalgia [Breast pain] commonly occur in the upper outer quadrant and radiate to the axilla...
[This called physiological pain]



Breast Quadrants

* Hx for mastalgia:-

① unilateral or Bilateral
② cyclic or not...
③ position of pain...

Multicentric يسمى quadrant لو كان من أكثر]
ولكن أكثر points في نفس
الـ quadrant يسمى multi-
focal]...

* The Breast tissues:-

① nipple areola complex
② glandular tissue...
③ surrounding skin...

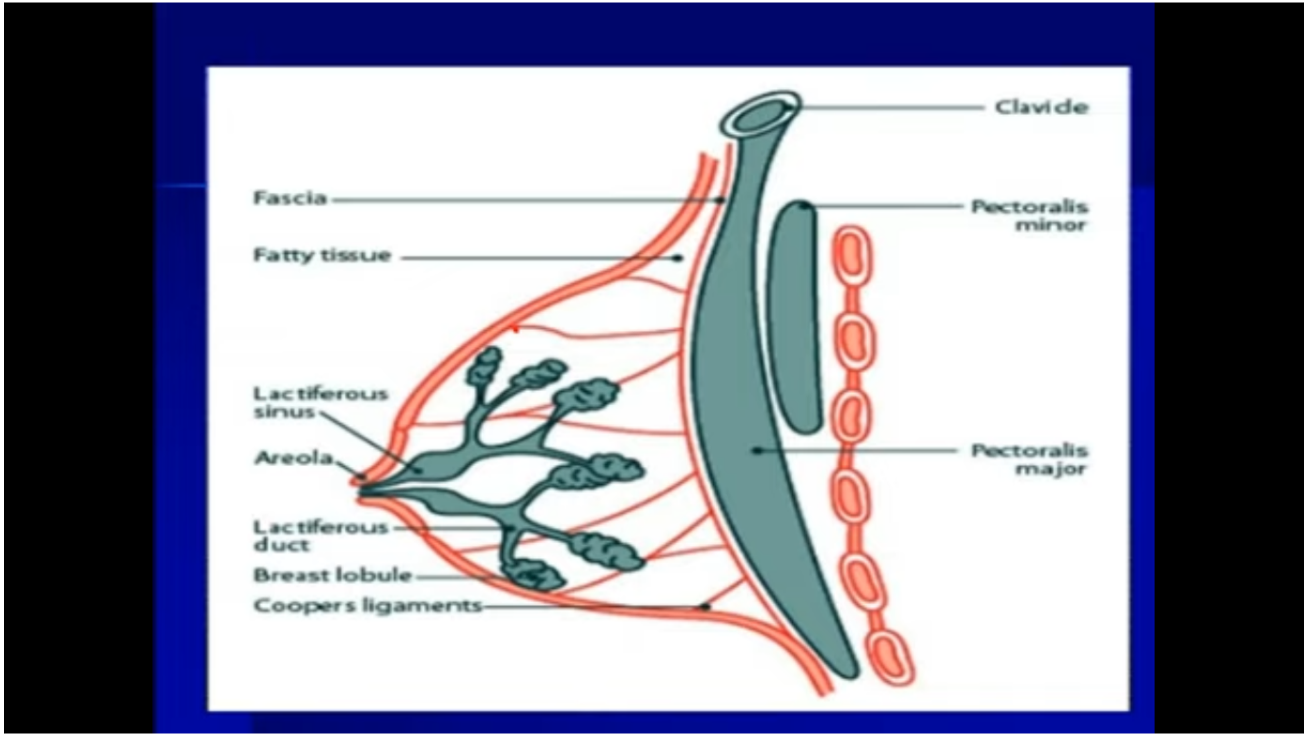
* Tripple assesment for Breast:-

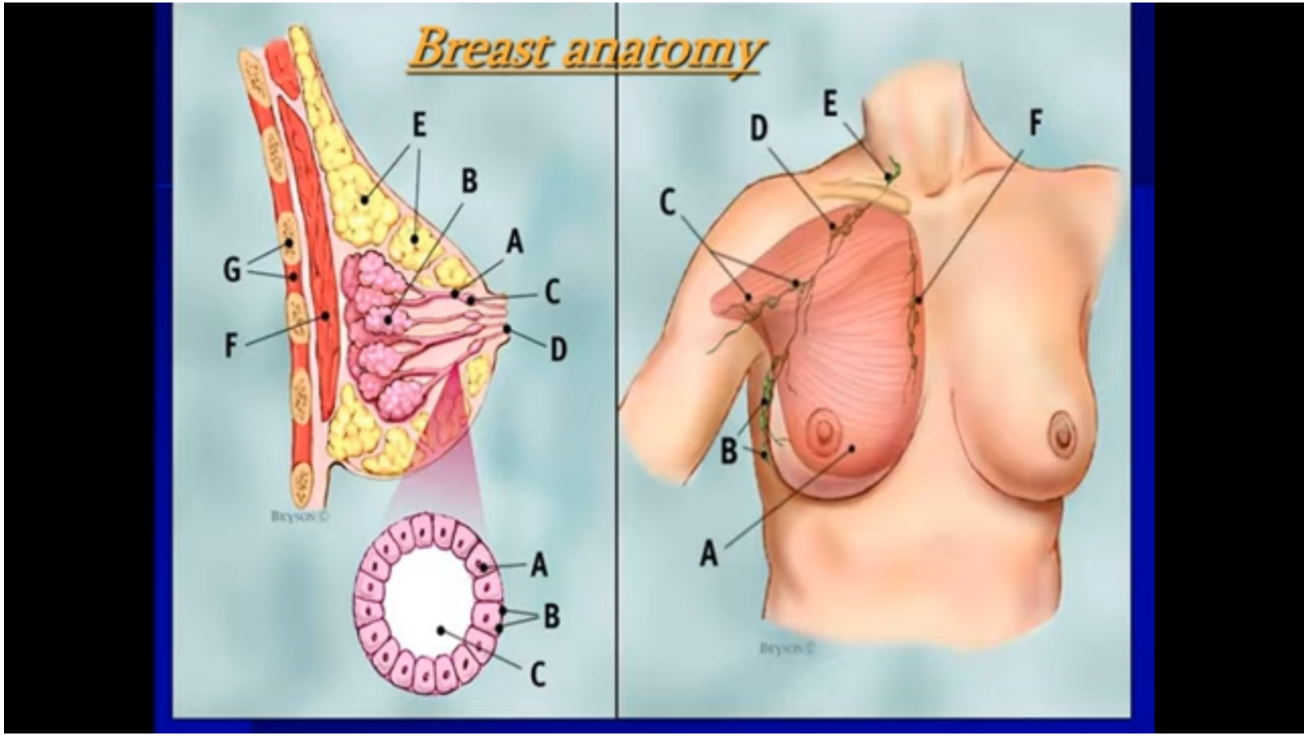
① history - exam...
② imaging [mamogram]
③ cytology [true cut - FNA]

* The advantage of true cut Biopsy :- [tissue not cells انه بناخد FNA اصلا عند]

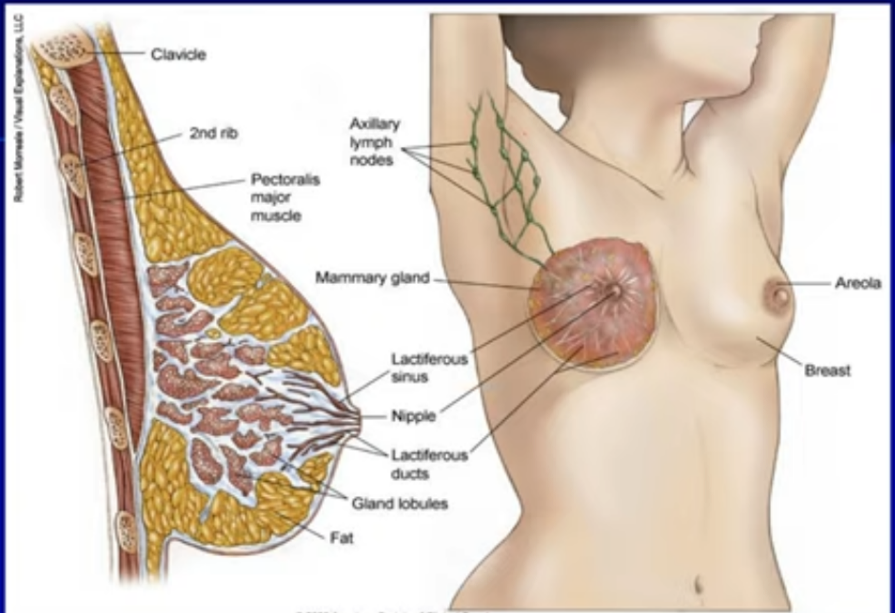
1- diff. the insitu from invasive malignant cells...
2- " the fibroadenoma from [illegible]... **phylloides tumor**
3- to know the receptor status
  - estrogen [if it +ve indicate good prognosis]
  - progesterone [if it +ve indicate good prognosis]
  - HER 2 neoreceptor [Human epidarmal growth factor 2]
    - if it -ve indicate good prognosis

* لو ال tumor طلع برا ال Basement membrane become invasive tumor...





Breast anatomy



Robert Morreale / Visual Explanations, LLC

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* There is 2 sets of LN drainage of the Breast:-

① axillary [3 level] → most important... [92% of Breast LN drain into axillary LN]..
- below and lateral to the pectoralis minor [Ant.-post - lateral group of LN]
- Behind the pectoralis minor...
- above and medial to the pectoralis minor...

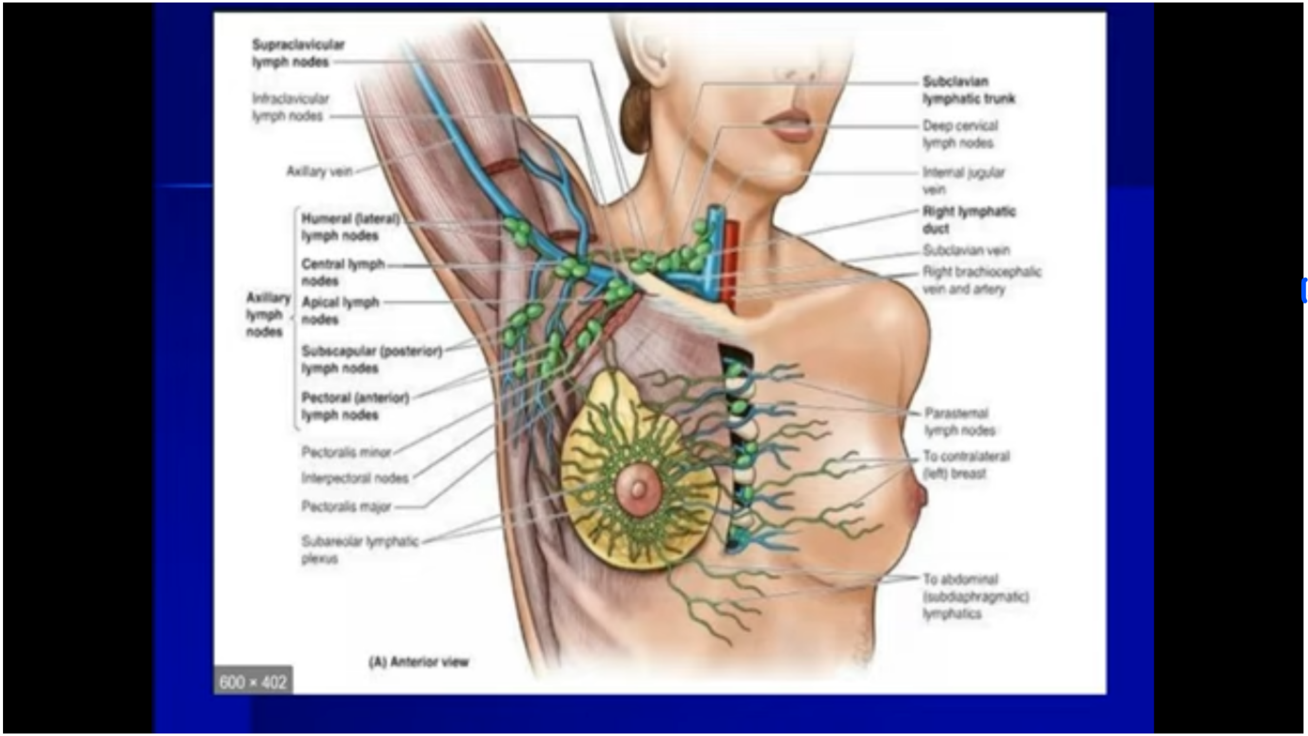
② internal mamary [from medial part of the Breast]...
8%

* The Ant. group of axillary LN called:- pectoral LN...

* The post. group of axillary LN called subscapular...

* The lateral group of axillary LN called Humeral LN...
ماشية عند ال axillary vein...

لذلك أهم LN ممكن تخليها هي ال
لأنه lateral lymph node
معظم ال LN لي بتجيه بيكون
من ال upper limbs فلو
شلناها راح يصيب edema in
the arm which called
Lymphedema start
pitting then became non-
pitting...


Supraclavicular lymph nodes
Infraclavicular lymph nodes
Axillary vein
Axillary lymph nodes
Humeral (lateral) lymph nodes
Central lymph nodes
Apical lymph nodes
Subscapular (posterior) lymph nodes
Pectoral (anterior) lymph nodes
Pectoralis minor
Interpectoral nodes
Pectoralis major
Subareolar lymphatic plexus
Subclavian lymphatic trunk
Deep cervical lymph nodes
Internal jugular vein
Right lymphatic duct
Subclavian vein
Right brachiocephalic vein and artery
Parasternal lymph nodes
To contralateral (left) breast
To abdominal (subdiaphragmatic) lymphatics
600 × 402

(A) Anterior view

[at level 2]

* posterior to the pectoralis minor muscle there is central group of LN...

* Between the 2 pectoral muscle there is inter-pectoral lymph node...

[at level 3]

* apical LN and called subcalivcular LN...

← مافي tumor بيروح ع level
3 قبل يروح ع level 1
فلو كان level 1 سليم راح
يكون باقي ال LN سليمة
في 99% من الحالات..

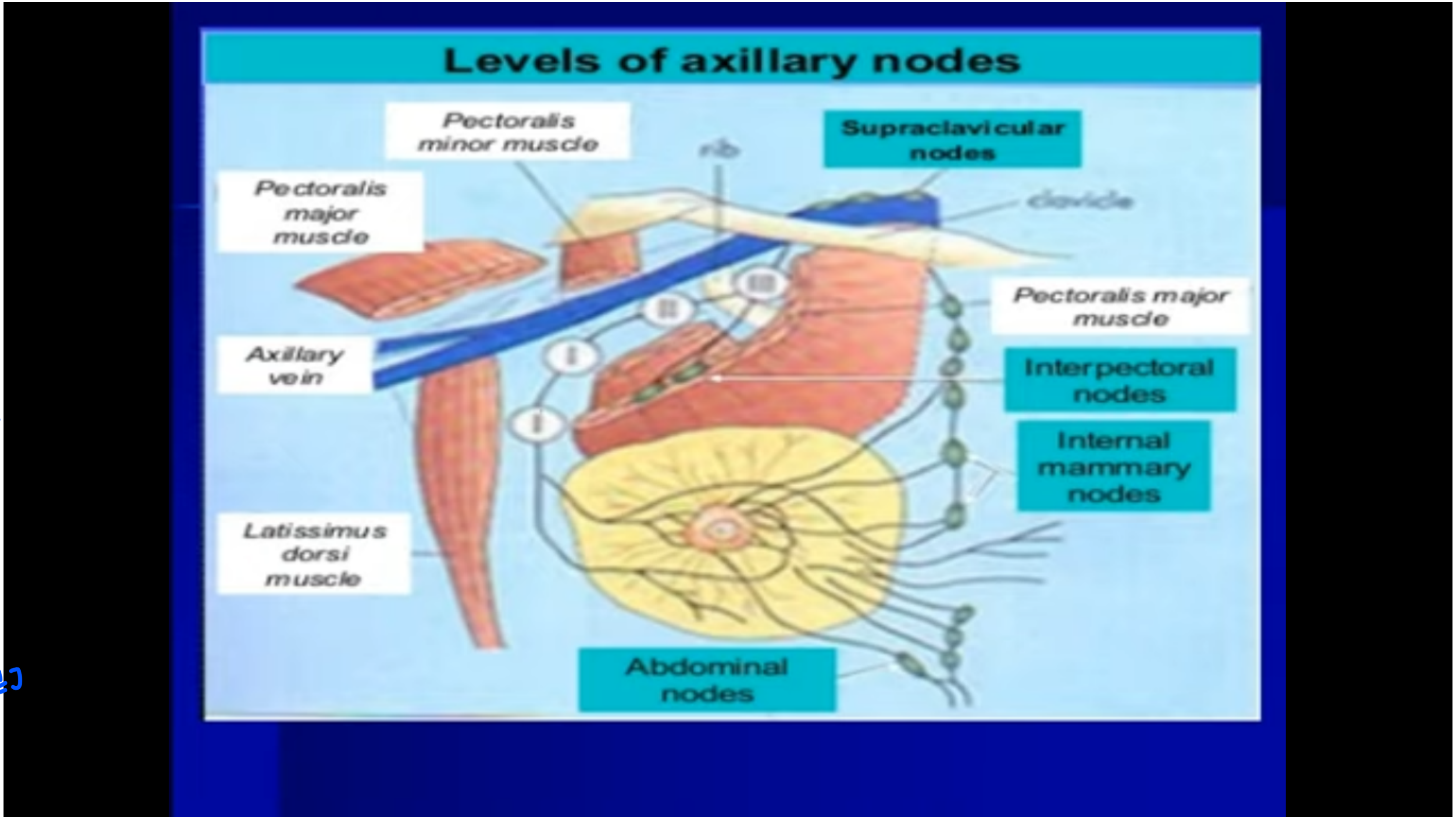
لذلك بنعمل sentenel Biopsy
to level 1 LN

* pectoralis minor [at level of L3-4-5 and inserted to the crocoid processes]...
* The Acromium is the highest point of the shoulder...

← بنخاف منا ال lymphedema حيث ممكن تؤدي إلى infection [spread quikly] لتفادي ذلك ما بنشيل كل ال LN تحت ال Breast بالأخص ال postrolateral LN

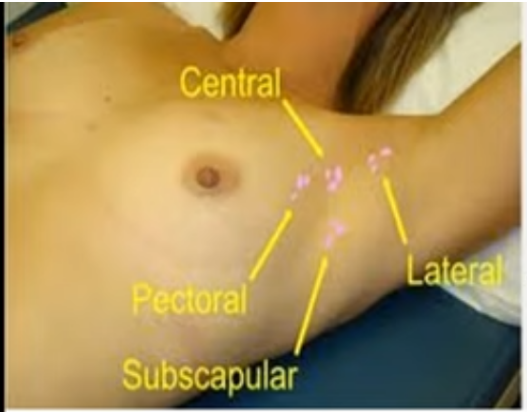
+ لما بدنا ناخذ Biopsy
بنعمل sentenal LN
Biopsy : بناخذ one
or two LN if it
-ve ما في داعي نشيل
الباقي، وبكده نحافظ على
ال LN وما يصير :-
lymphedema...

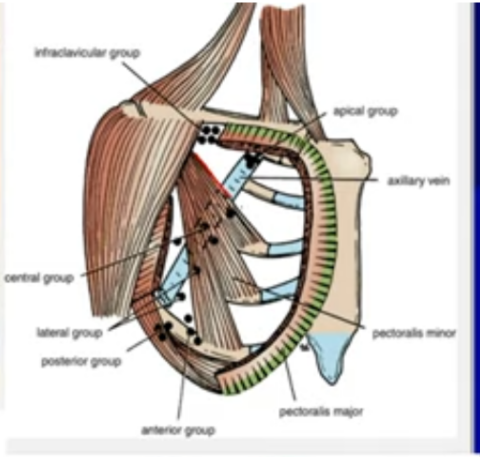
* if the LN are
palpable we take
Biopsy but if they
not palpable we
do sentenal Biopsy
بناخذ one or 2 LN
from Anterior [level I]
لو كانوا -ve يعني كل
الباقي -ve...

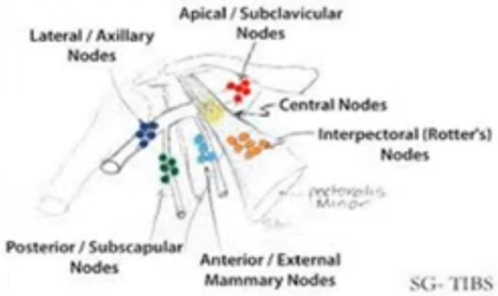


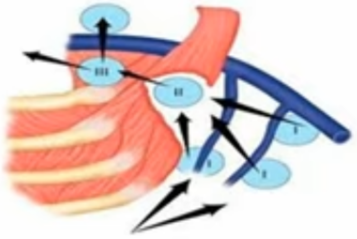
Levels of axillary nodes

* The sentenal LN Biopsy it's only done for non-palpable LN...






Apical / Subclavicular Nodes
Lateral / Axillary Nodes
Central Nodes
Interpectoral (Rotter's) Nodes
pectoralis Minor
Posterior / Subscapular Nodes
Anterior / External Mammary Nodes
SG- TIBS



Source: Brunicardi FC, Andersen DK, Billiar TR, Dunn DL, Hunter JG, Matthews JB, Pollock RE: Schwartz's Principles of Surgery, 9th Edition: http://www.accessmedicine.com
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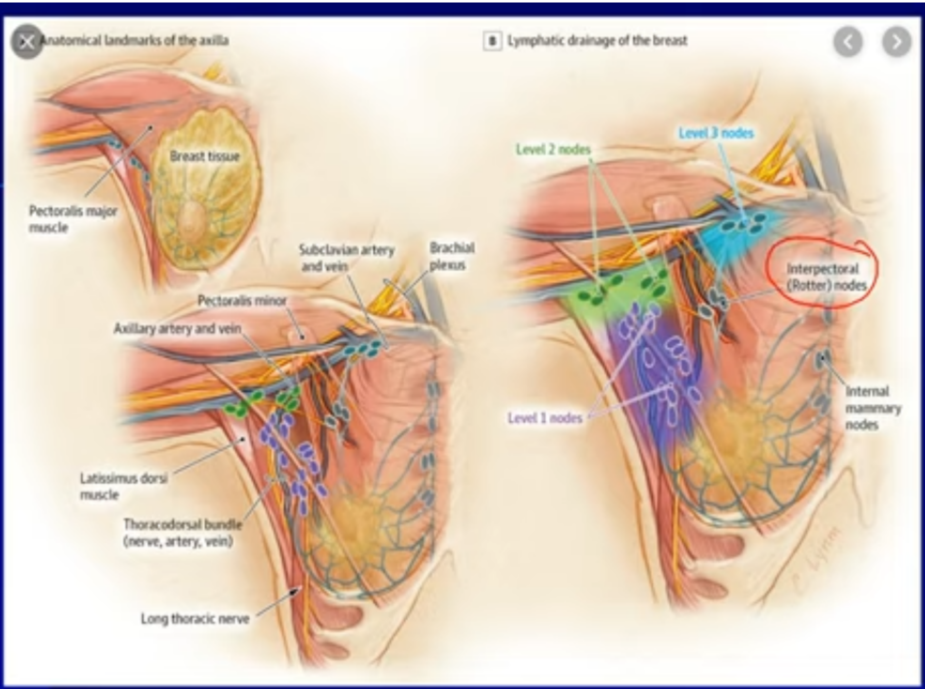
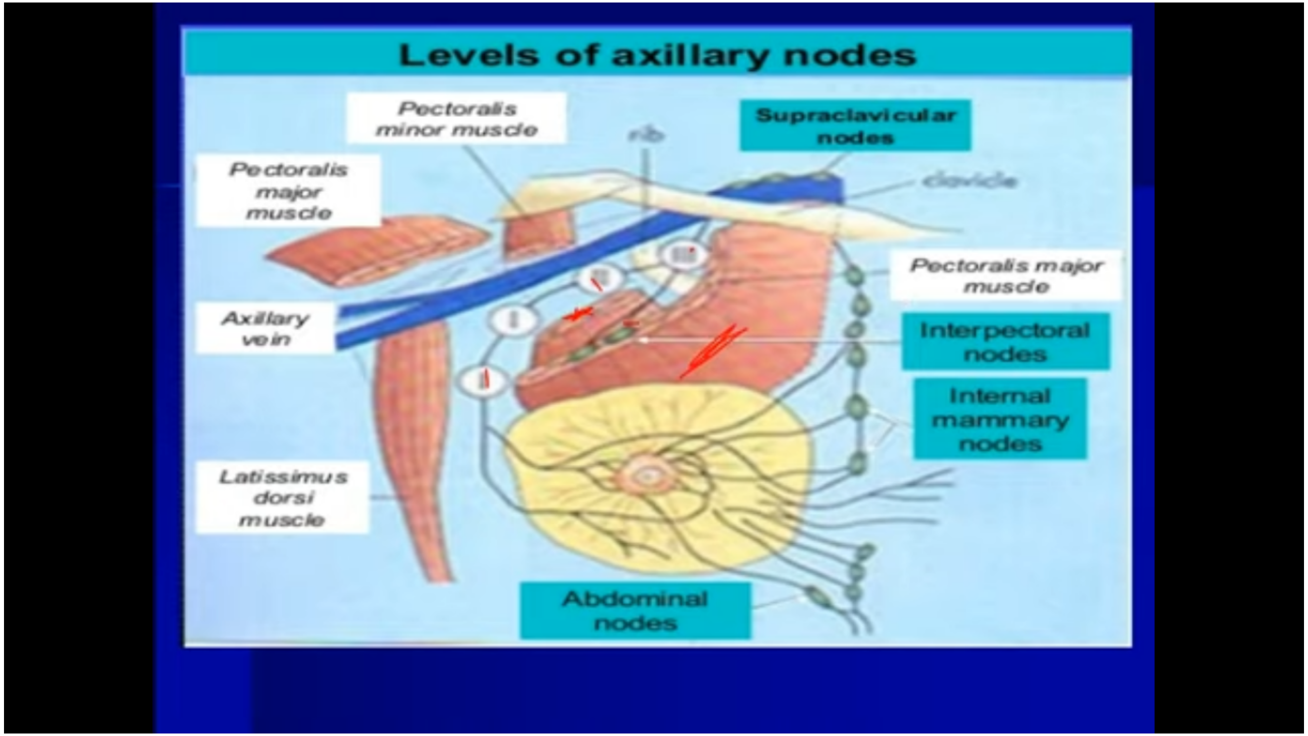

Anatomical landmarks of the axilla

B Lymphatic drainage of the breast

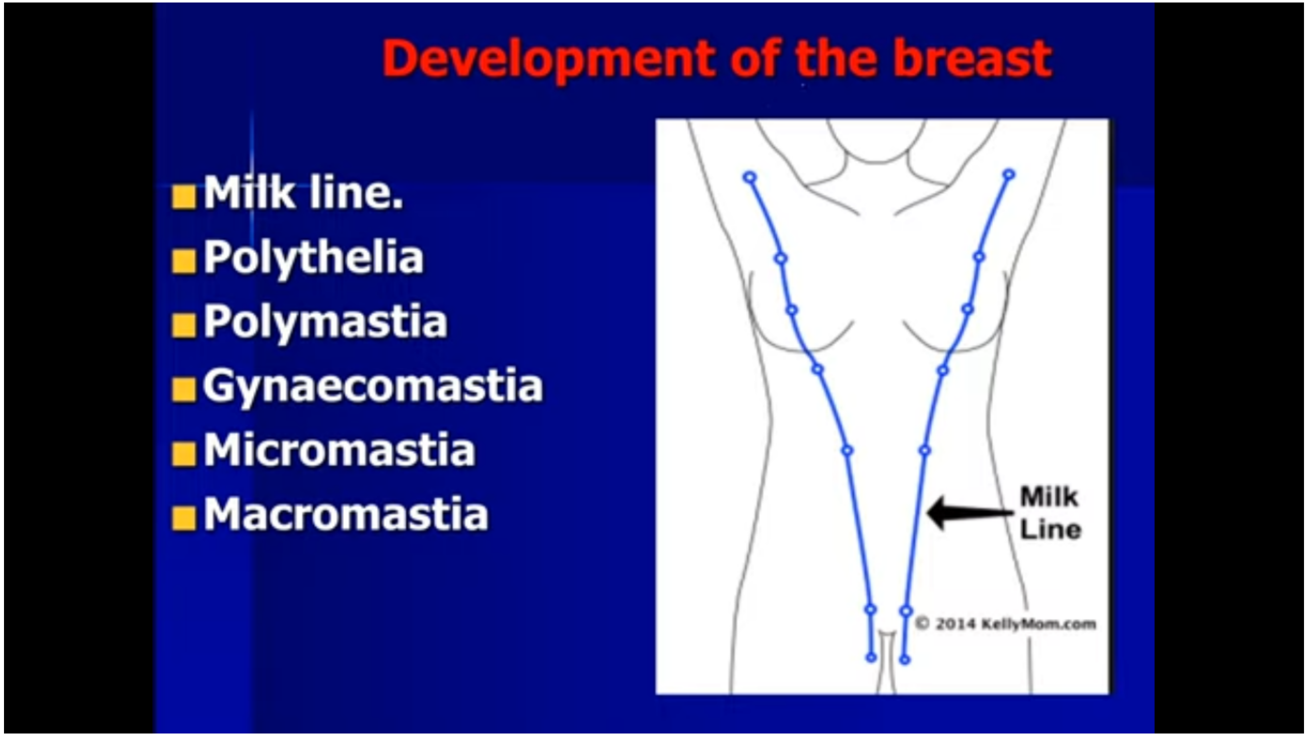
← كل ال LN بنفحصها بال exam من قدام ماعدا ال posterior subscapular group بنحسها من ورا المريض ...



Levels of axillary nodes

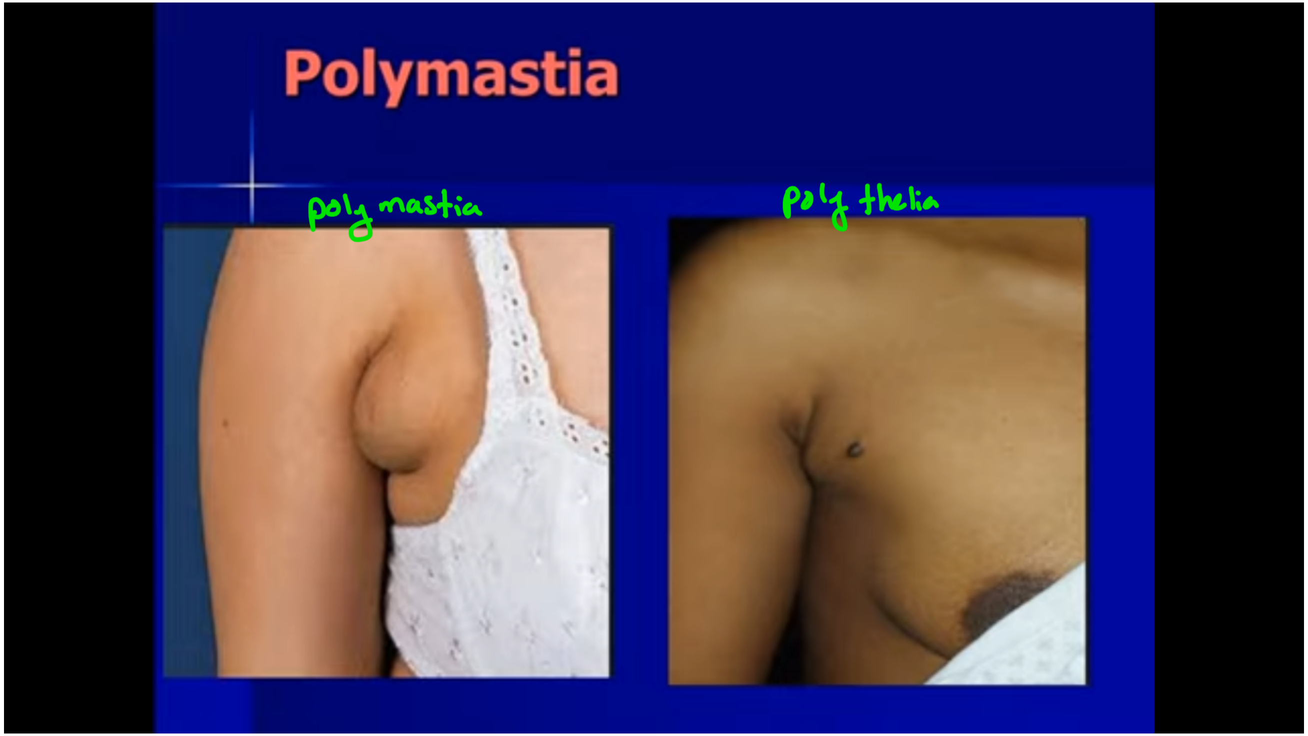
← كل ال بينقطع ال milk line عبارة عن Breasts بال Human كلهم بيروحوا وبس بيضلوا 2Breasts، لكن لو صار في عنا accessory Breast بيسمى :- poly mastia...

ولو كان في كتير nipple aorela complex بيسموا :: poly thelia بيختفوا تلقائياً



Development of the breast

- Milk line.
- Polythelia
- Polymastia
- Gynaecomastia
- Micromastia
- Macromastia



Polymastia

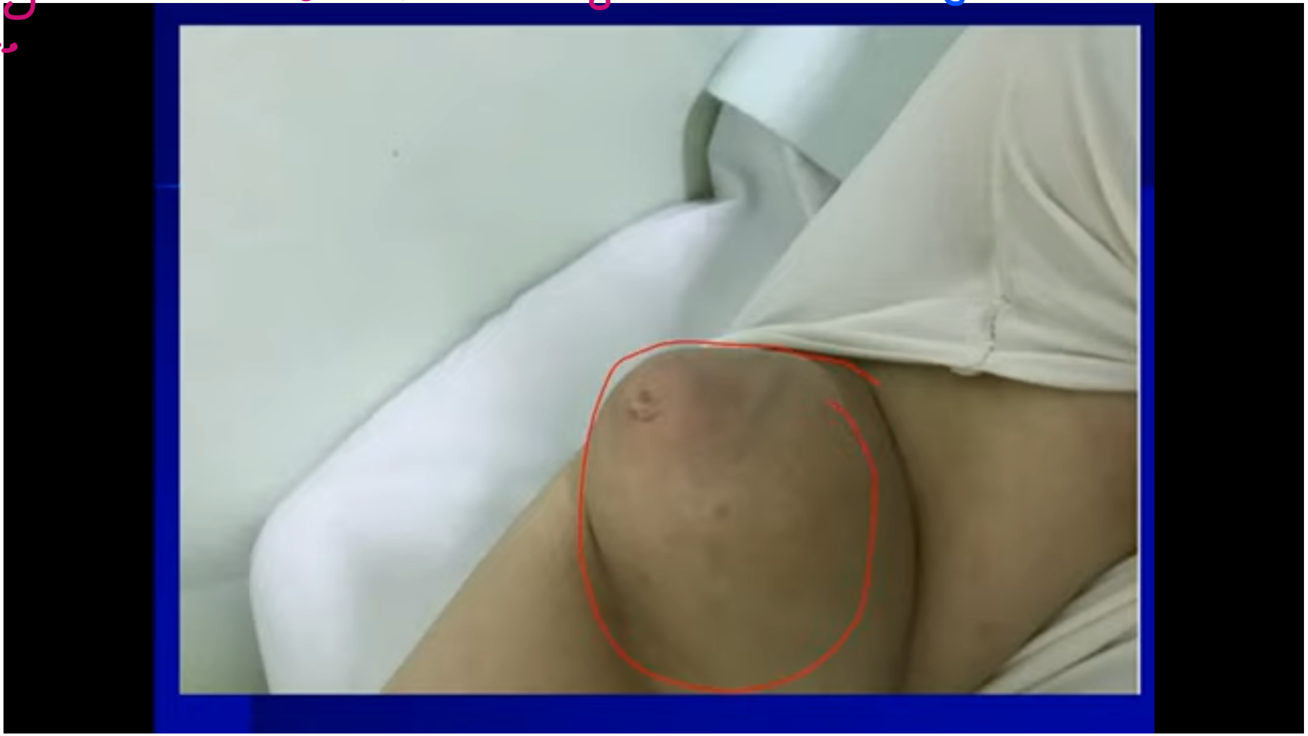
poly mastia

poly thelia

Accessory Breast

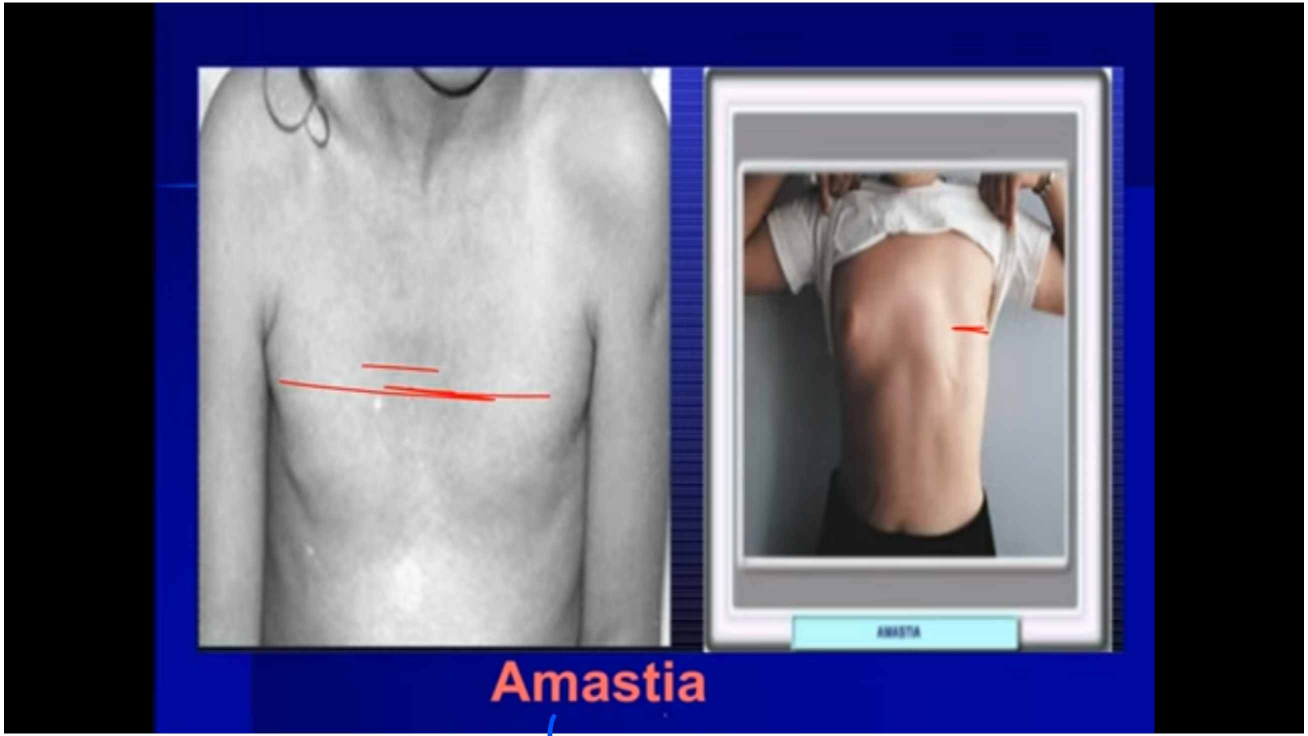
- usualy above the origin Breast [in the axilla]
- treated by excision for cosmotic cases and it may become cancer as the origin Breast...

بيكون مخفية كل الاشي وبتكبر during pregnancy وبيوجعها
وبيظهر شكل الثدي بعد ال pregnancy
or lactation لأنه بيكبر وبعدها
بيرجع يصغر...
أما وهي single مابيكون ظاهر
بشكل كتير...



← ال Breast لما يطلع لبنت عمرها 8-9 y/o بيسموه Breast Bud وبيكون unilateral في البداية فلازم نشتبه انه Breast مش دُمل فما بنفتح نعمله incision

حتى ما يصير فيه Atrophy لأنه بيصير distraction of glandular tissue ...



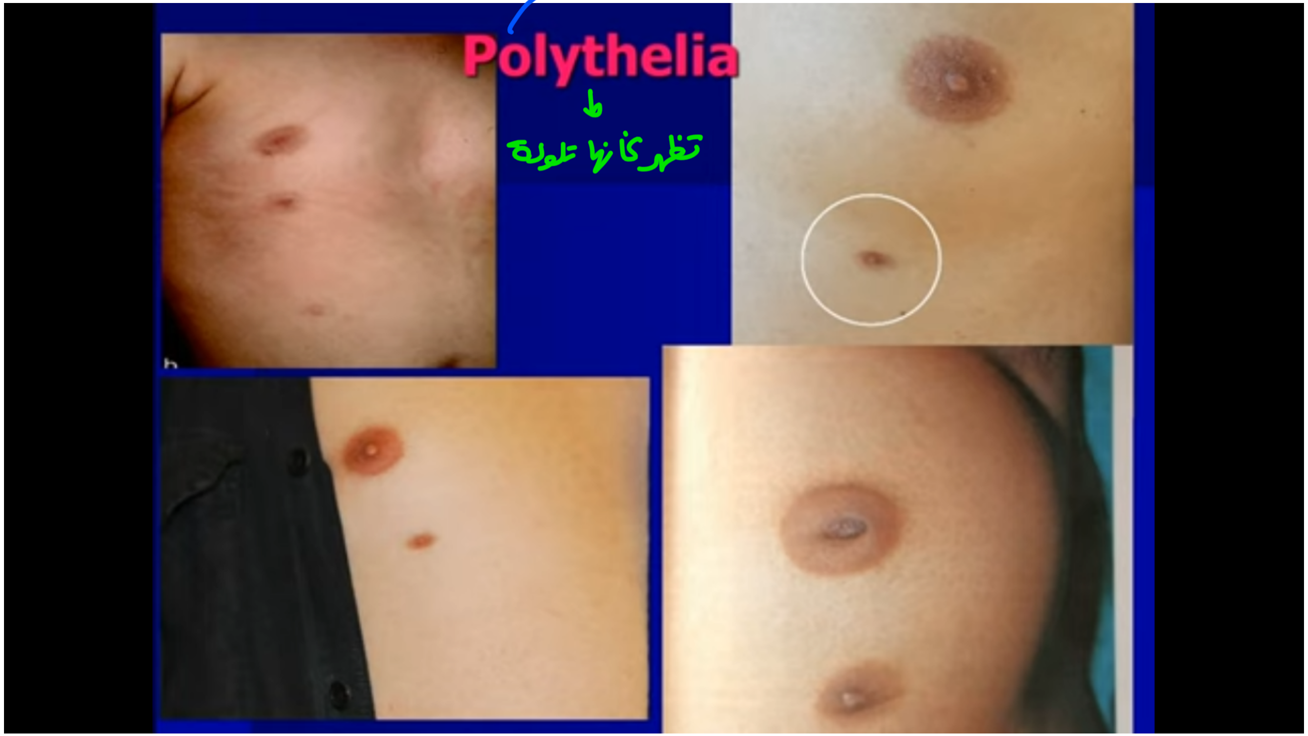
Amastia

absent of Breast...

* The nevus:- Bengin prolifration of the melanocyte...

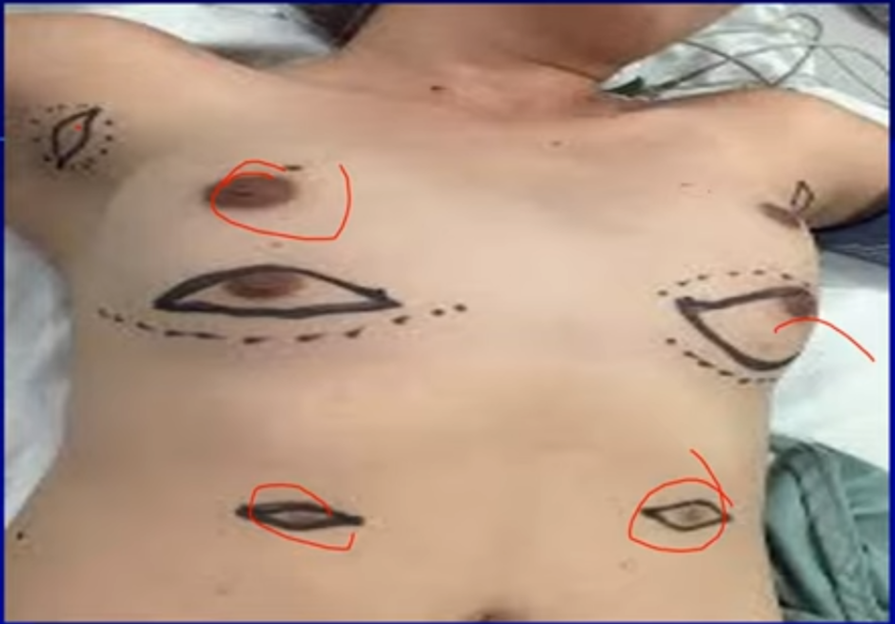
تلولة

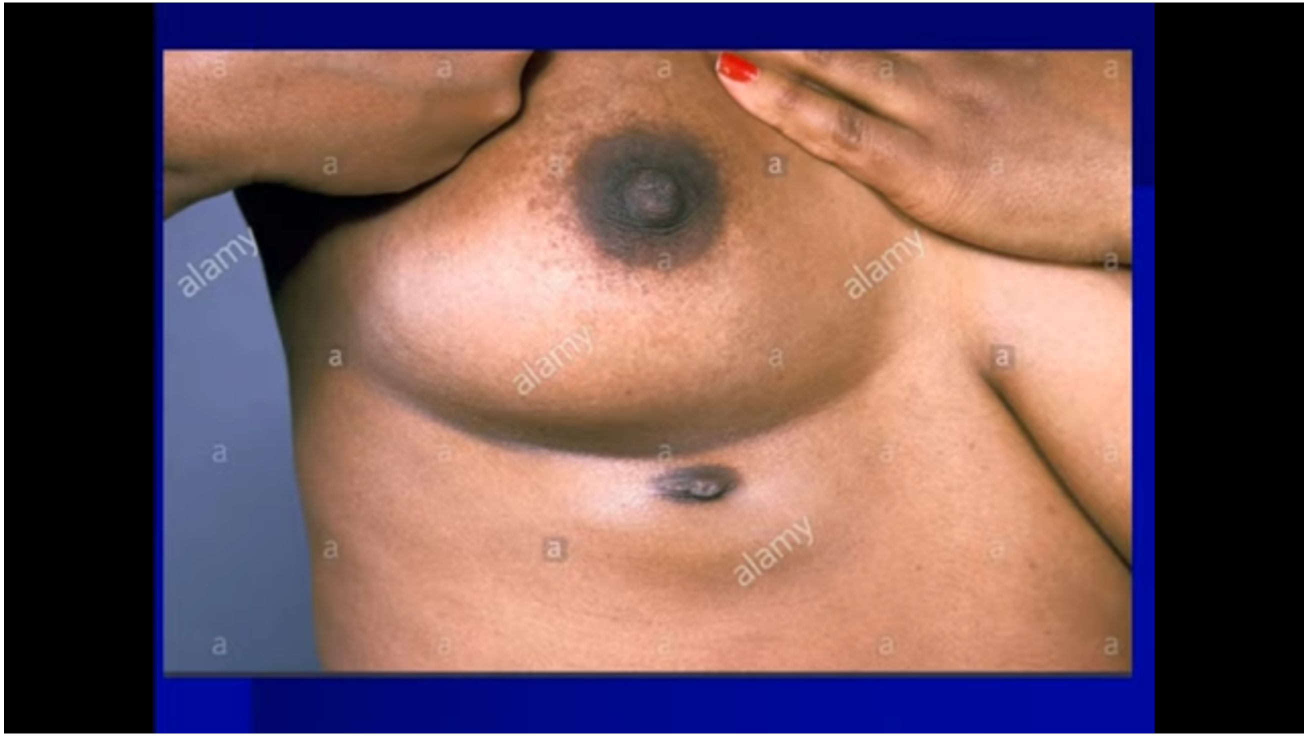
usually below the origin Breast



Polythelia

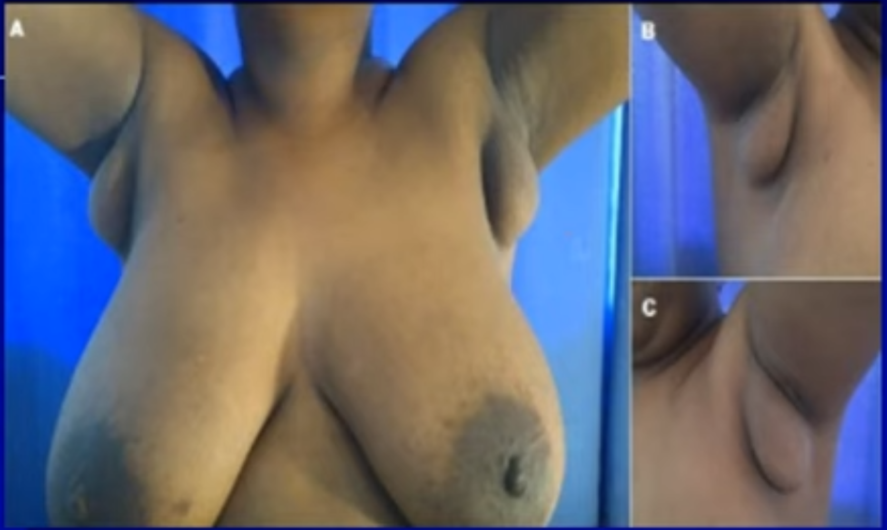
تظهر كأنها تلولة

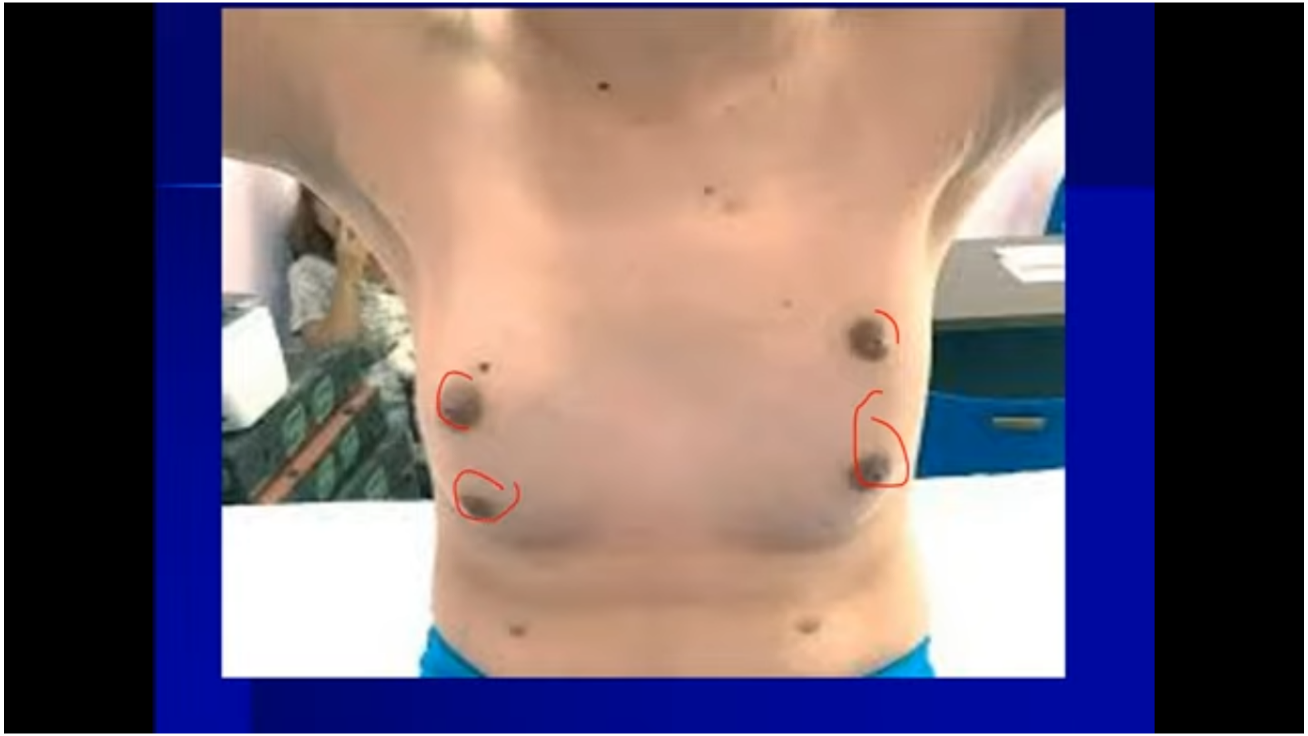




alamy

Polymastia





← يسموا الـ Bengin Breast condition ⇐ Abarretion وليس disease لأنه بتصيب كل السيدات...

* The Histological component of the Breast:-
  ① grandular tissue...
  ② fibrous tissue...
  ③ fat...

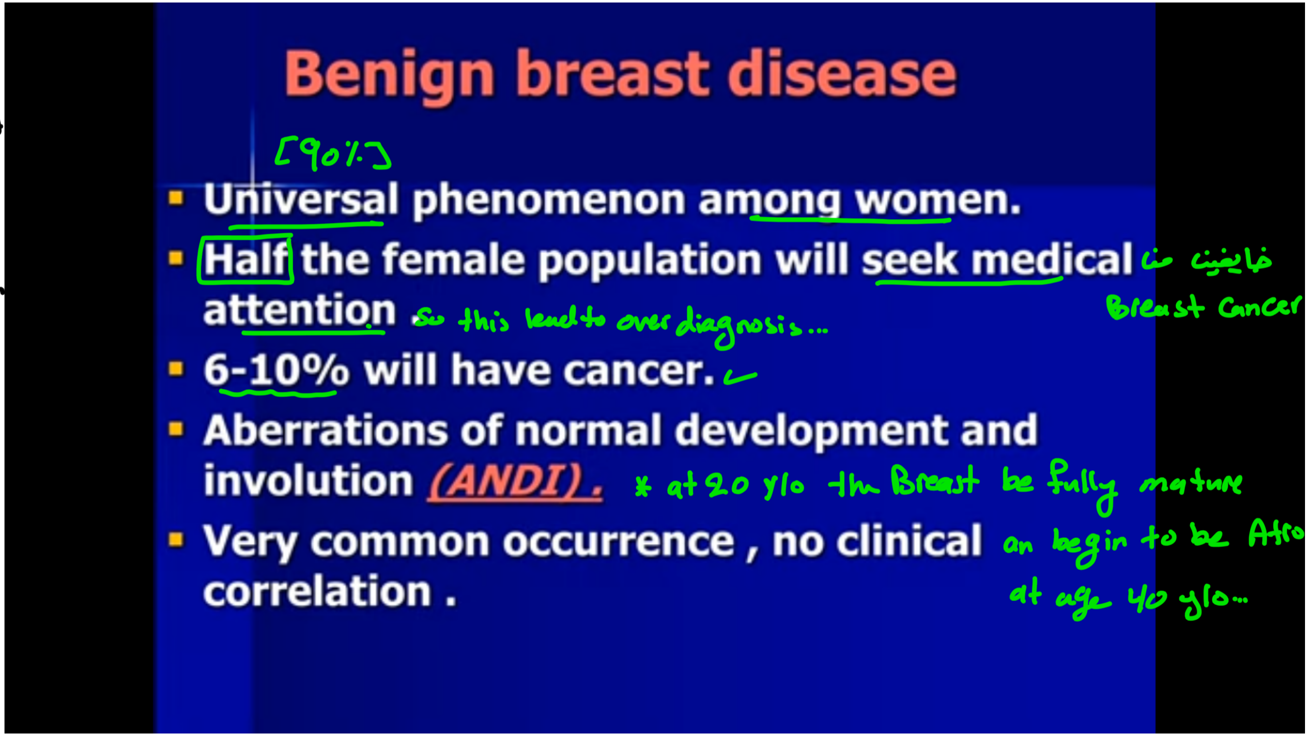
← في السن الصغير بيكون الـ Breast غالبا fibrous-grandular

← بعد سن الـ 40 راح يبدأ تكون الـ fat..

So the sensivity of mamogram أكثر في عمر الـ 40 سنة..

← لما نعمل mamogram لبنت عمرها 20 سنة حتلاقي الـ Breast كله أبيض لذلك أفضل U/S نعمل US ولو شاكين أكثر ممكن نعمل MRI...

* if there is family hx of Breast cancer we begin mamogram at age 30



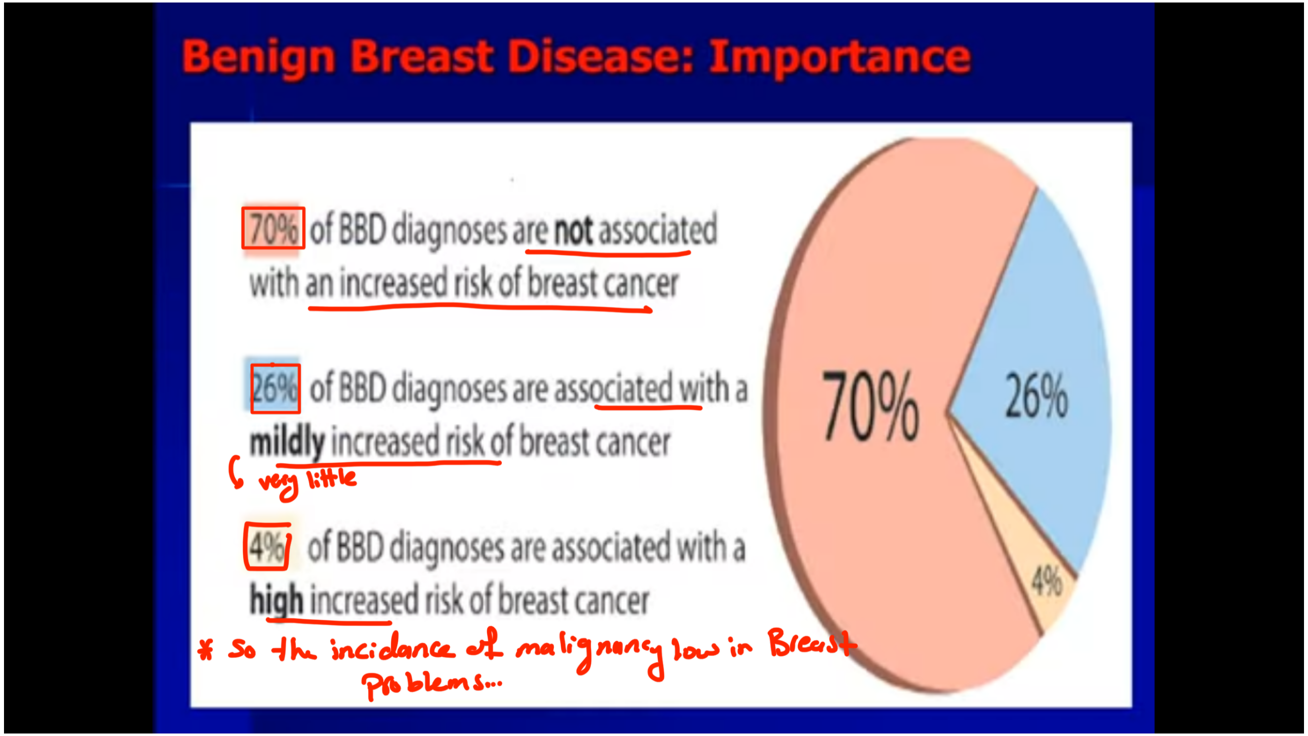
Benign breast disease

[90%]

- Universal phenomenon among women.
- Half the female population will seek medical attention. so this lead to over diagnosis... خايفين من Breast Cancer
- 6-10% will have cancer.
- Aberrations of normal development and involution (ANDI). * at 20 y/o the Breast be fully mature an begin to be Atrophid... at age 40 y/o...
- Very common occurrence, no clinical correlation.

* Female pt has hereditary Breast cancer we do MRI
  - has high sensitivity 95-96% → detect the pathology [true -ve]... ↳ so lead to over diagnosis
  - has low specifity [false +ve]...

* at age 20 Y/o → fibroadenoma more likely in this age...



Benign Breast Disease: Importance

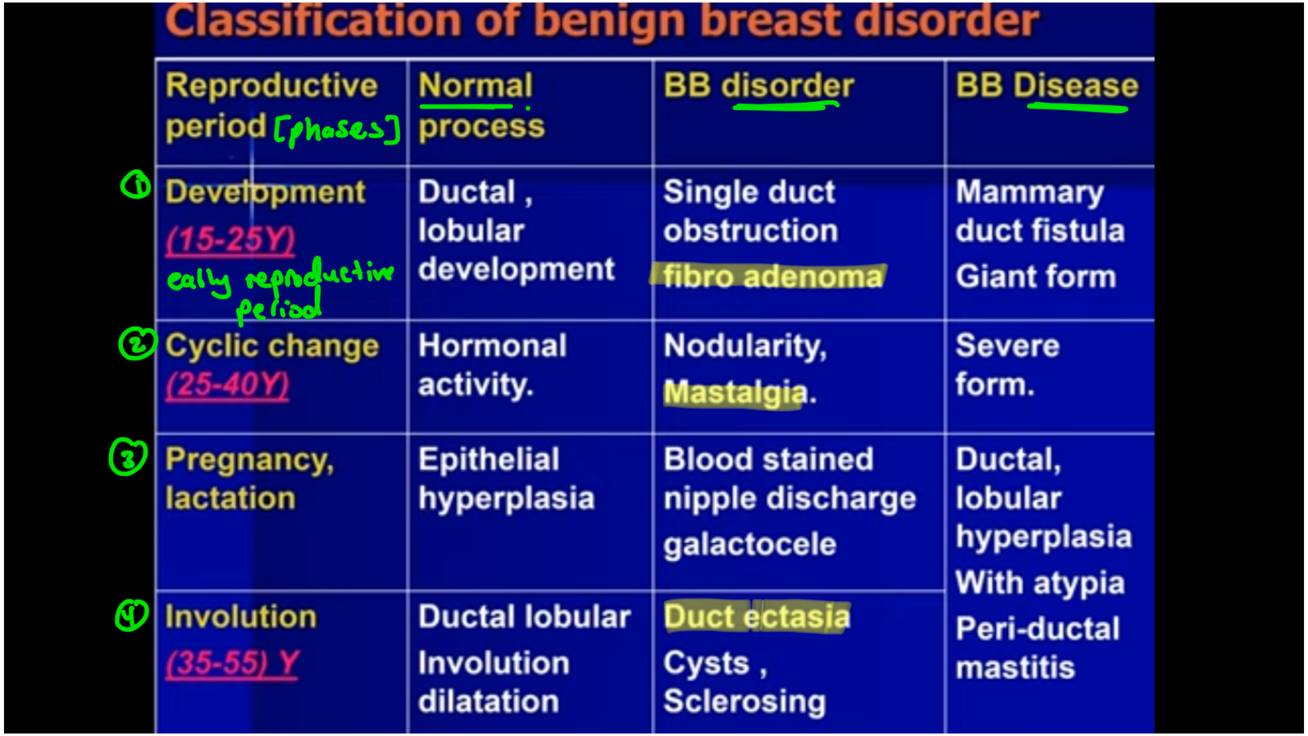
70% of BBD diagnoses are **not** associated with an increased risk of breast cancer

26% of BBD diagnoses are associated with a **mildly** increased risk of breast cancer

(very little

4% of BBD diagnoses are associated with a **high** increased risk of breast cancer

* So the incidance of malignancy low in Breast problems...



Classification of benign breast disorder

Reproductive period [phases]	Normal process	BB disorder	BB Disease
① Development (15-25Y) eally reproductive period	Ductal , lobular development	Single duct obstruction fibro adenoma	Mammary duct fistula Giant form
② Cyclic change (25-40Y)	Hormonal activity.	Nodularity, Mastalgia.	Severe form.
③ Pregnancy, lactation	Epithelial hyperplasia	Blood stained nipple discharge galactocele	Ductal, lobular hyperplasia With atypia Peri-ductal mastitis
④ Involution (35-55) Y	Ductal lobular Involution dilatation	Duct ectasia Cysts , Sclerosing	

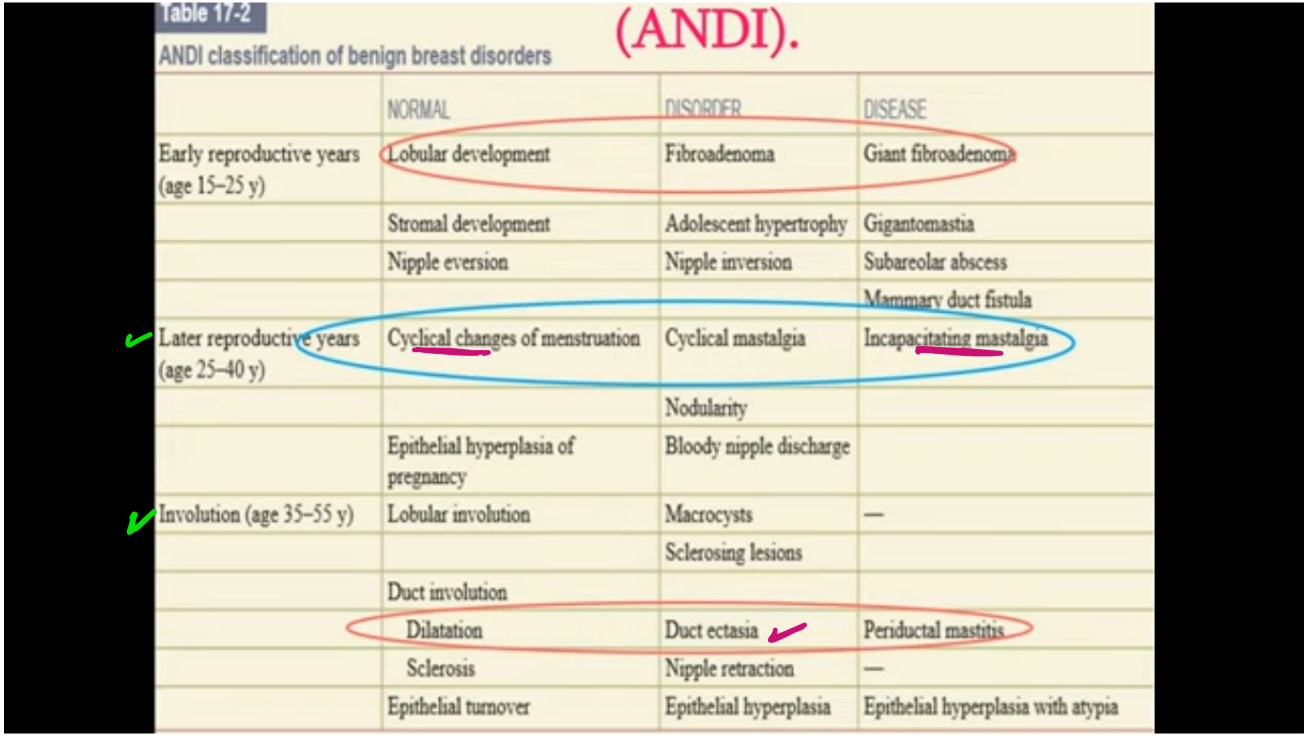


Table 17-2

ANDI classification of benign breast disorders

(ANDI).

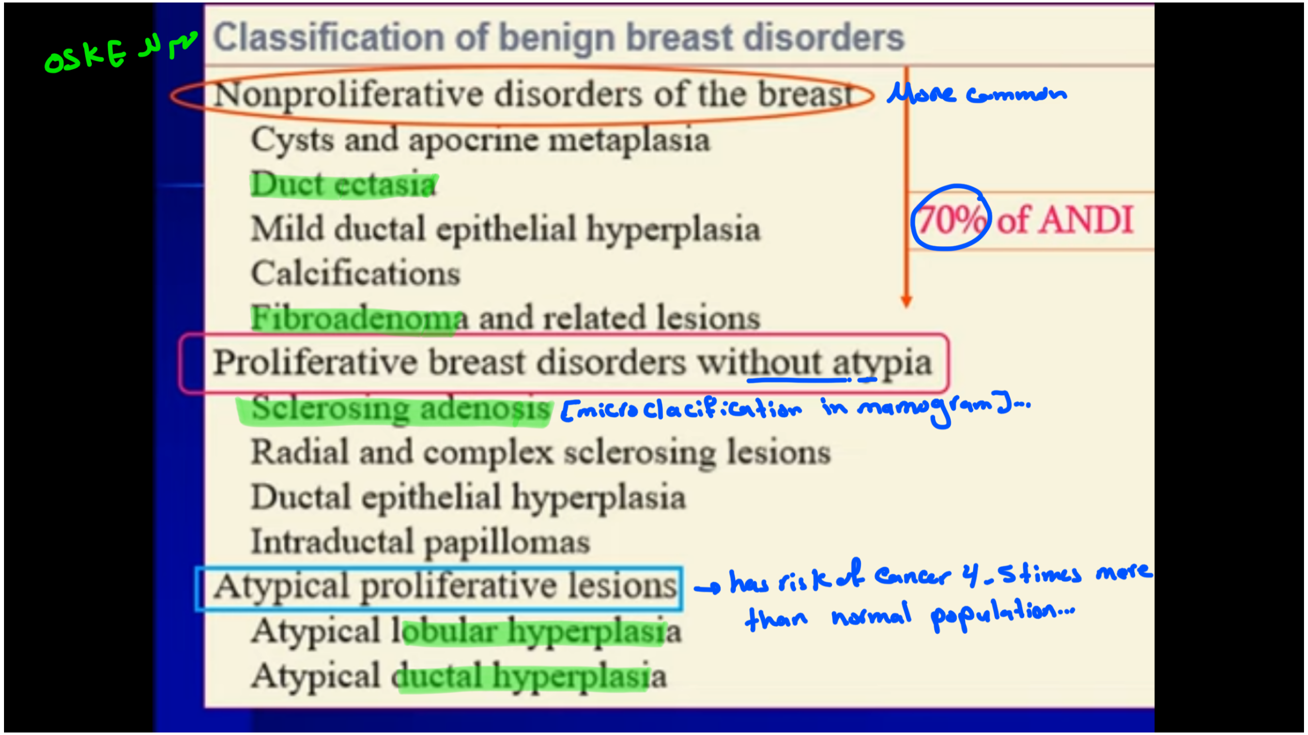
	NORMAL	DISORDER	DISEASE
Early reproductive years (age 15–25 y)	Lobular development	Fibroadenoma	Giant fibroadenoma
	Stromal development	Adolescent hypertrophy	Gigantomastia
	Nipple eversion	Nipple inversion	Subareolar abscess
			Mammary duct fistula
Later reproductive years (age 25–40 y)	Cyclical changes of menstruation	Cyclical mastalgia	Incapacitating mastalgia
		Nodularity	
	Epithelial hyperplasia of pregnancy	Bloody nipple discharge	
Involution (age 35–55 y)	Lobular involution	Macrocysts	—
		Sclerosing lesions	
	Duct involution		
	Dilatation	Duct ectasia	Periductal mastitis
	Sclerosis	Nipple retraction	—
	Epithelial turnover	Epithelial hyperplasia	Epithelial hyperplasia with atypia

* Ductectasia:- discharge from the nippels..

↳ if it lead to abcesses called:- periductal mastitis [disease]...

* The Sclerosing adenosis :- if we do sterotactic needle biopsy [we do it if we see micro clacification or 3-4mL lesion in mamogram and not seen in the US so we do sclerotactic Biopsy...
ل شاكينا انا بات Breast cancer

↓ 80% of this micro calcification are sclerosing adenosis...
← اما لو كانوا ظاهرين بال US بنعمل US guided Biopsy...



مهم لل OSKE

Classification of benign breast disorders

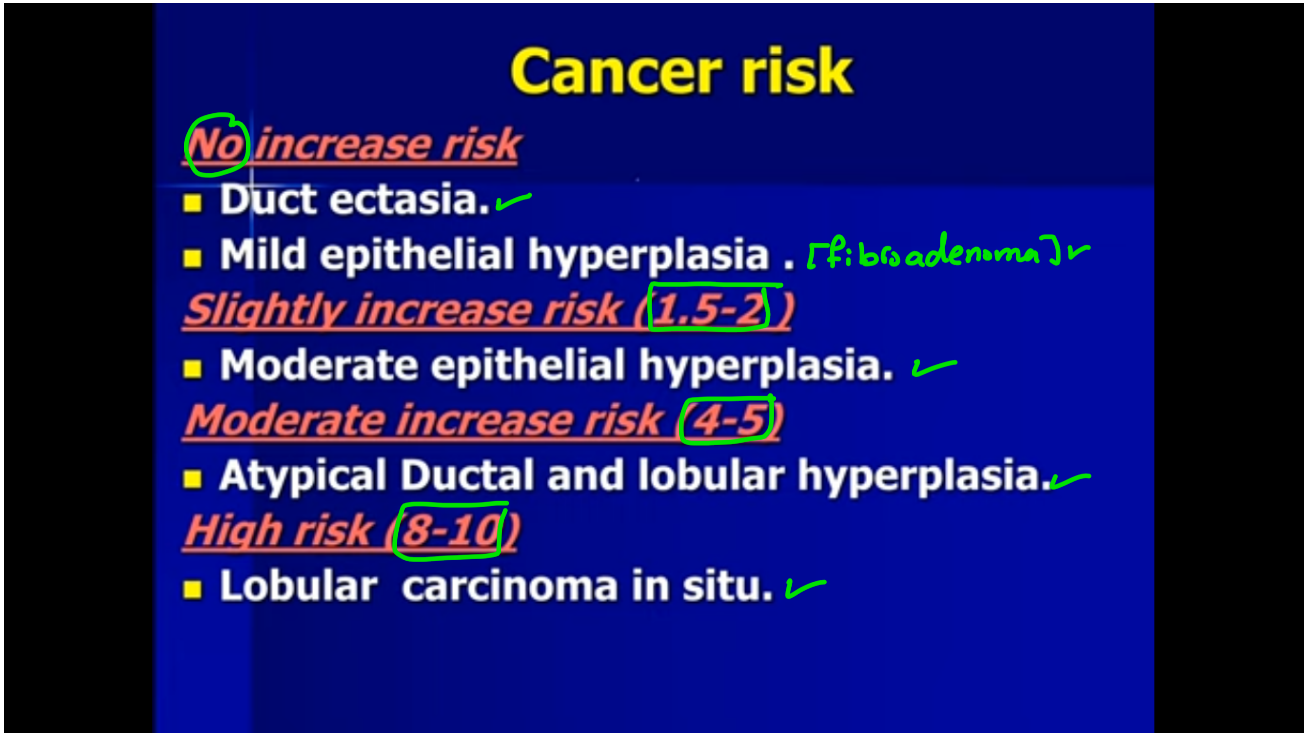
Nonproliferative disorders of the breast — More common
- Cysts and apocrine metaplasia
- Duct ectasia
- Mild ductal epithelial hyperplasia
- Calcifications
- Fibroadenoma and related lesions

70% of ANDI

Proliferative breast disorders without atypia
- Sclerosing adenosis [micro clacification in mamogram]...
- Radial and complex sclerosing lesions
- Ductal epithelial hyperplasia
- Intraductal papillomas

Atypical proliferative lesions → has risk of cancer 4-5 times more than normal population...
- Atypical lobular hyperplasia
- Atypical ductal hyperplasia

* The Atypical lobular hyperplasia become → lobular Carcinoma in situ...
(increase the risk of Breast cancer 8-10 times...
يعني ما نعتبرها Cancer...
we don't need to do more than follow up and conservative treatment...



Cancer risk

No increase risk

- Duct ectasia. ✓
- Mild epithelial hyperplasia . [fibroadenoma] ✓

Slightly increase risk (1.5-2)

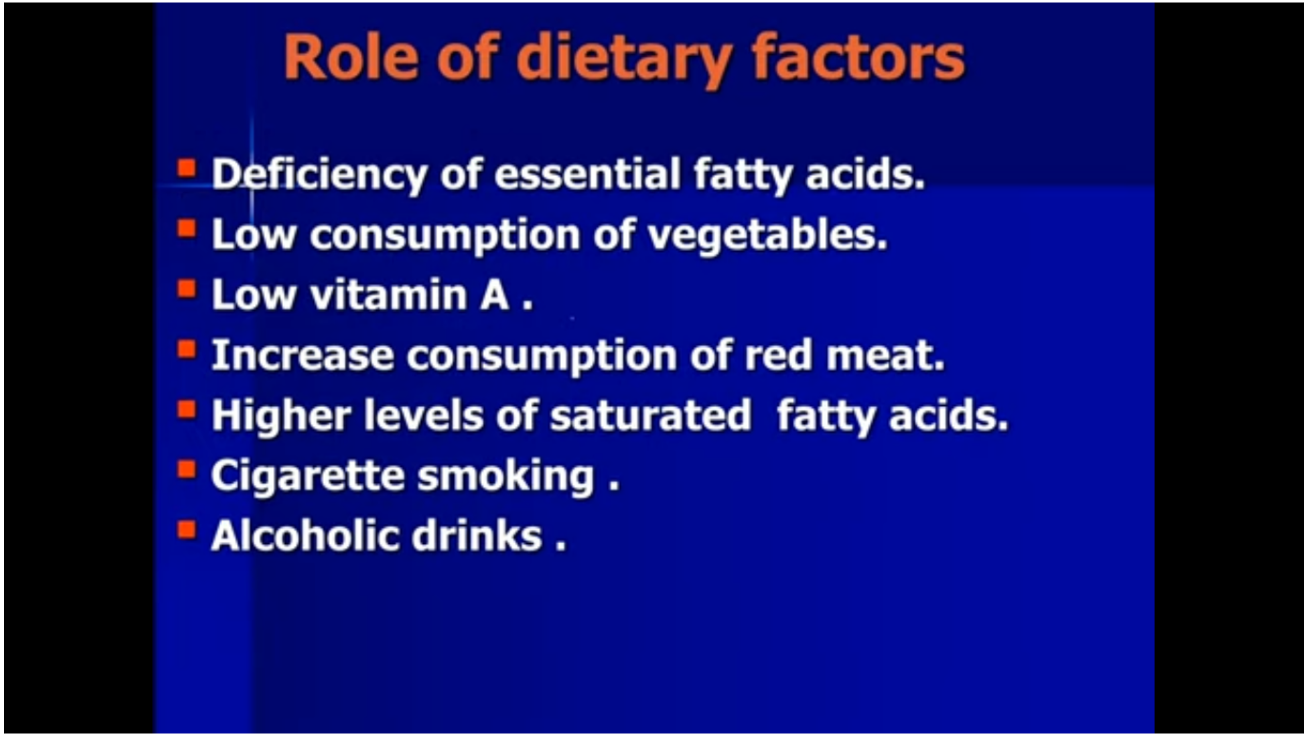
- Moderate epithelial hyperplasia. ✓

Moderate increase risk (4-5)

- Atypical Ductal and lobular hyperplasia. ✓

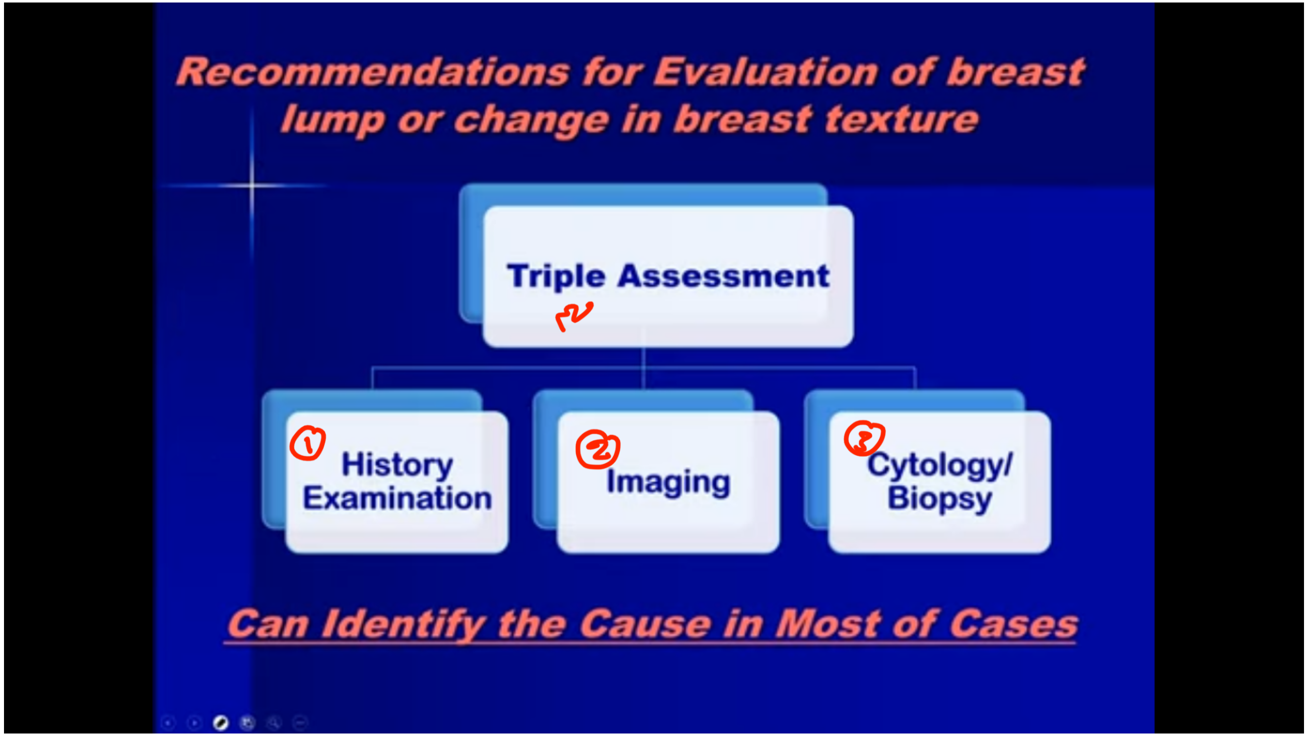
High risk (8-10)

- Lobular carcinoma in situ. ✓



Role of dietary factors

- Deficiency of essential fatty acids.
- Low consumption of vegetables.
- Low vitamin A .
- Increase consumption of red meat.
- Higher levels of saturated fatty acids.
- Cigarette smoking .
- Alcoholic drinks .



Recommendations for Evaluation of breast lump or change in breast texture

Triple Assessment

① History Examination

② Imaging

③ Cytology/ Biopsy

Can Identify the Cause in Most of Cases

← بتعمله بال 3 middle fingers وبتلف circles حول ال Breast من عند ال nipple areola complex وتطلع لبرا تدريجياً

- light pressure
- moderate pressure
- severe pressure

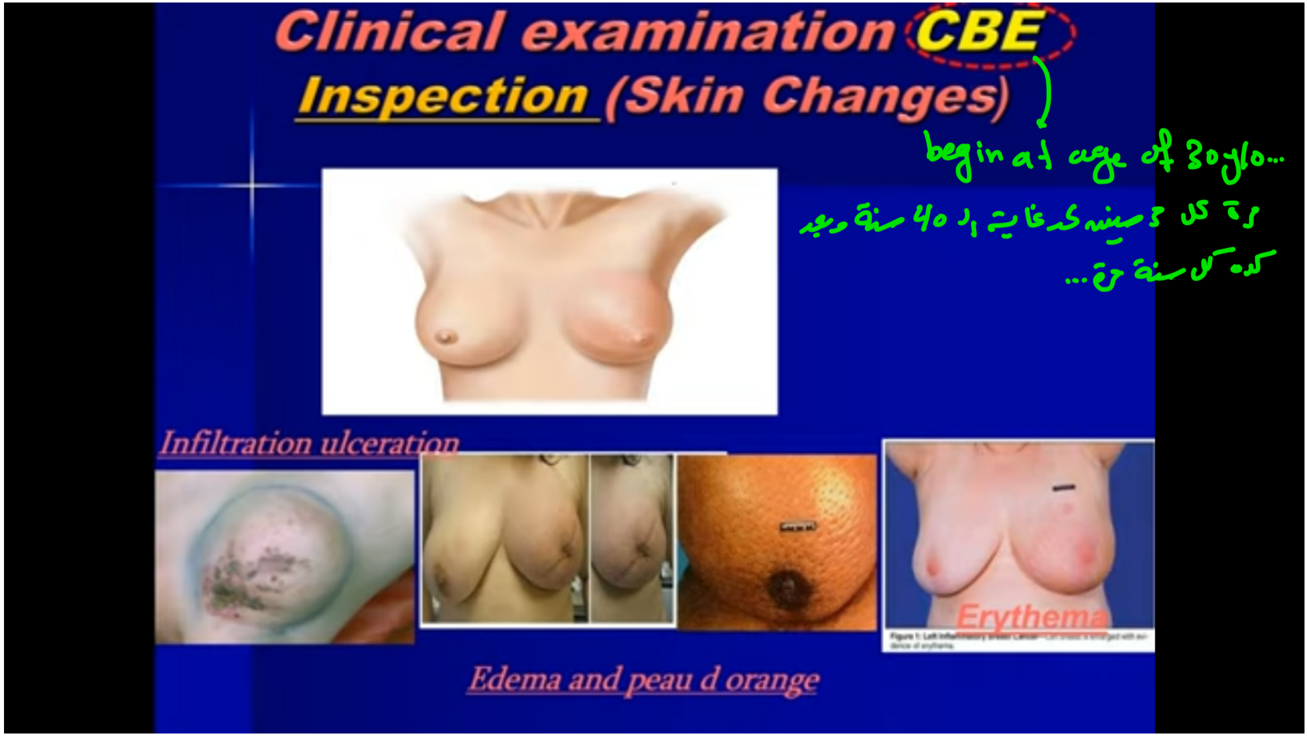
وهي واقفة وهي نايمة وهي بتاخد شاور

* The self Breast awarness → SBE مش زي ال ... محكيه تعمله بأي وقت

self breast exam
بتعملها ال F ع اليوم ال 5
بعد ما تخلص ال period لانو
بيكون ال water - edema
in the breast low
وبهيك بتقدر تحس ال small lesion

premenopause or at mid cycle... يلي ما بتحسوا

* in any cancer there is → Hereditary 5-10%
→ sporadic



Clinical examination CBE

Inspection (Skin Changes)

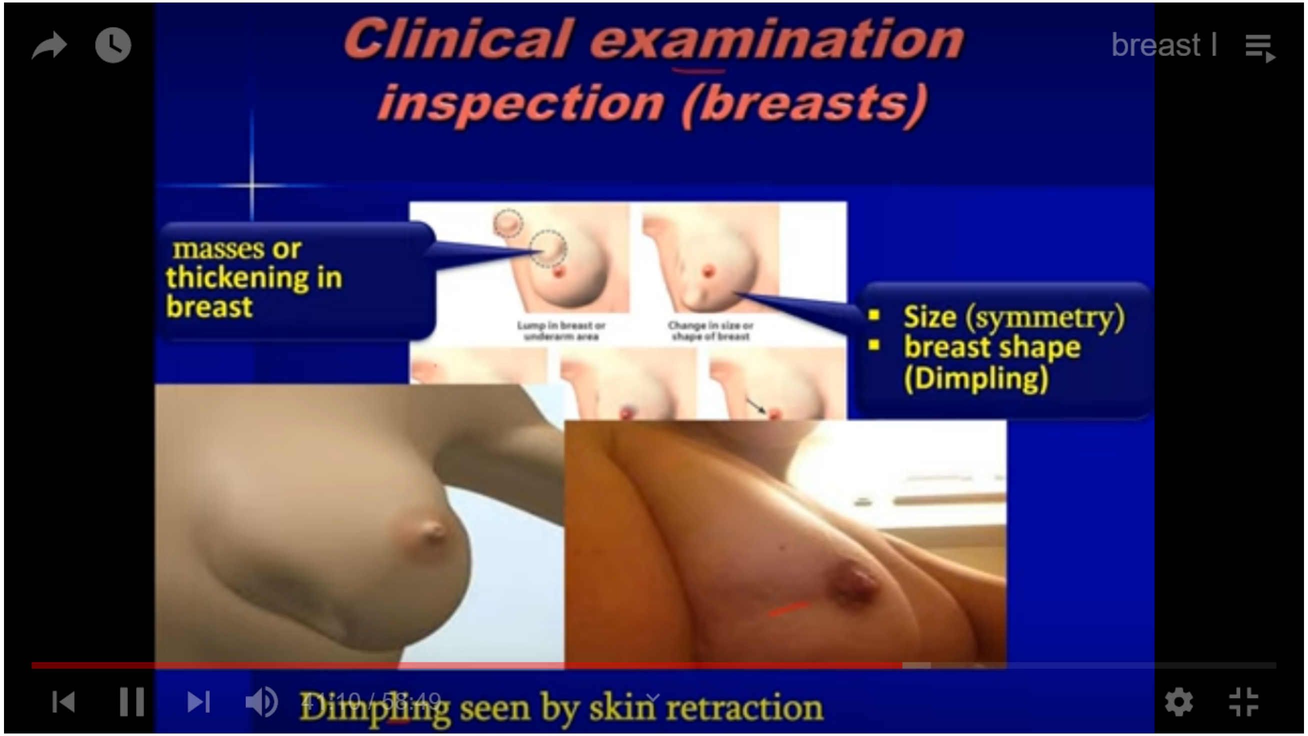
begin at age of 30 y/o...

ومرة كل 3 سنين لحد غاية الـ 40 سنة وبعد كده كل سنة مرة...

→ The sporadic cases بختلف لو عندها family history...

Infiltration ulceration

Edema and peau d orange

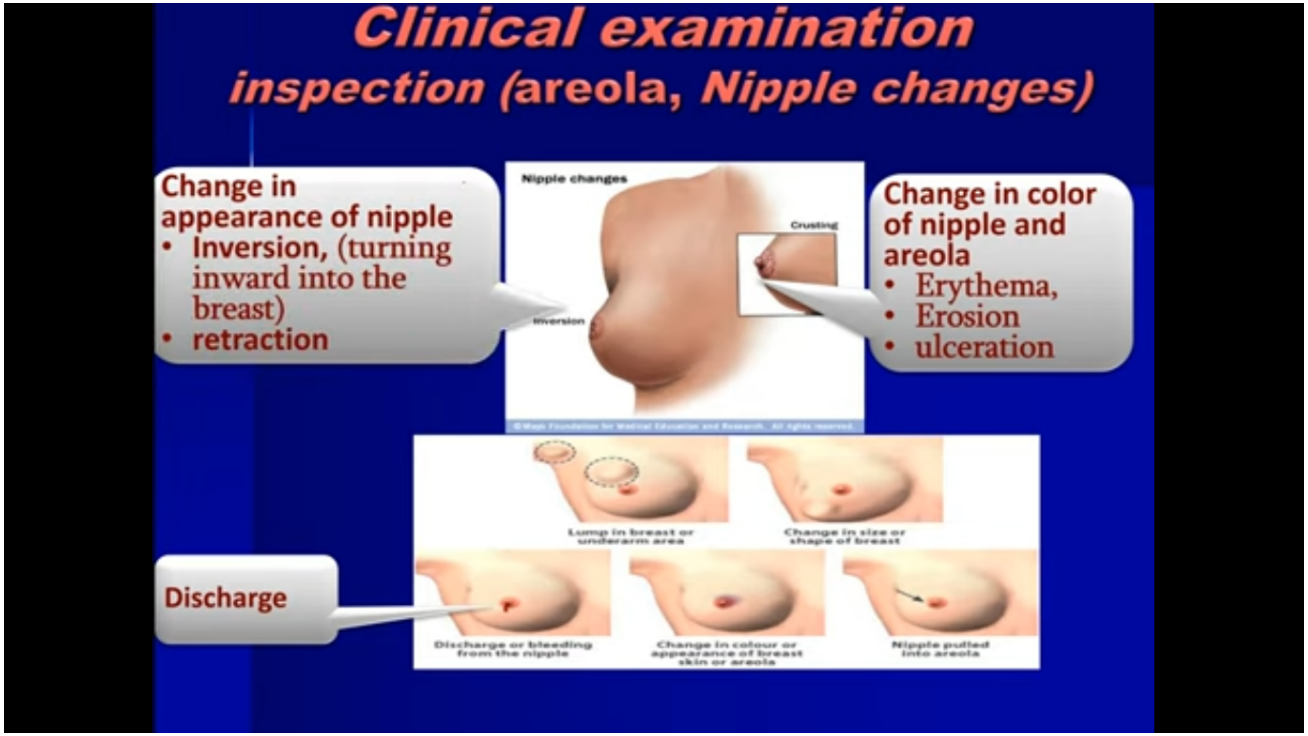

breast l
41:10 / 58:49
Lump in breast or underarm area
Change in size or shape of breast

Clinical examination inspection (breasts)

masses or thickening in breast

- Size (symmetry)
- breast shape (Dimpling)

Dimpling seen by skin retraction



Clinical examination

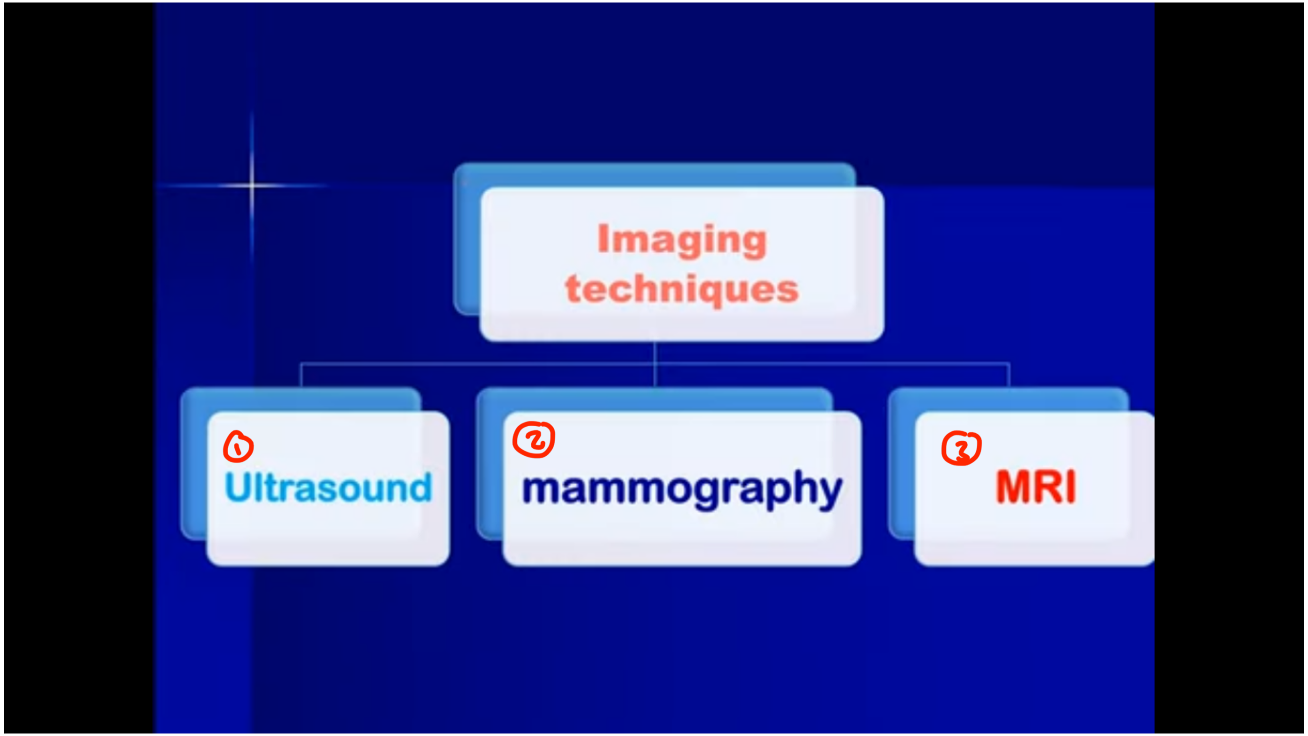
inspection (areola, Nipple changes)

Change in appearance of nipple
- **Inversion,** (turning inward into the breast)
- **retraction**

Change in color of nipple and areola
- Erythema,
- Erosion
- ulceration

Discharge

Nipple changes
Crusting
Inversion
Lump in breast or underarm area
Change in size or shape of breast
Discharge or bleeding from the nipple
Change in colour or appearance of breast skin or areola
Nipple pulled into areola

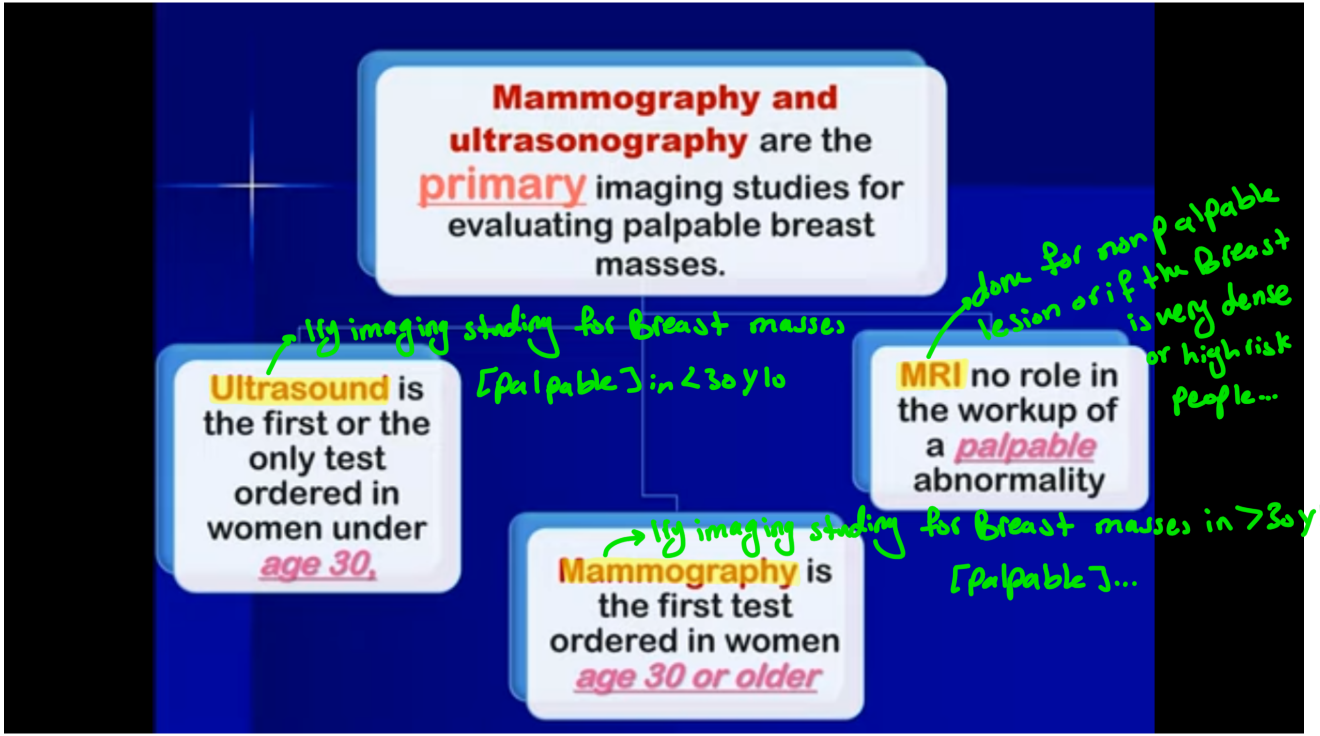


Imaging techniques

① Ultrasound

② mammography

③ MRI



Mammography and ultrasonography are the **primary** imaging studies for evaluating palpable breast masses.

Ultrasound is the first or the only test ordered in women under *age 30,*

1ry imaging studing for Breast masses [palpable] in <30 y/o

Mammography is the first test ordered in women *age 30 or older*

1ry imaging studing for Breast masses in >30 y/o [palpable]...

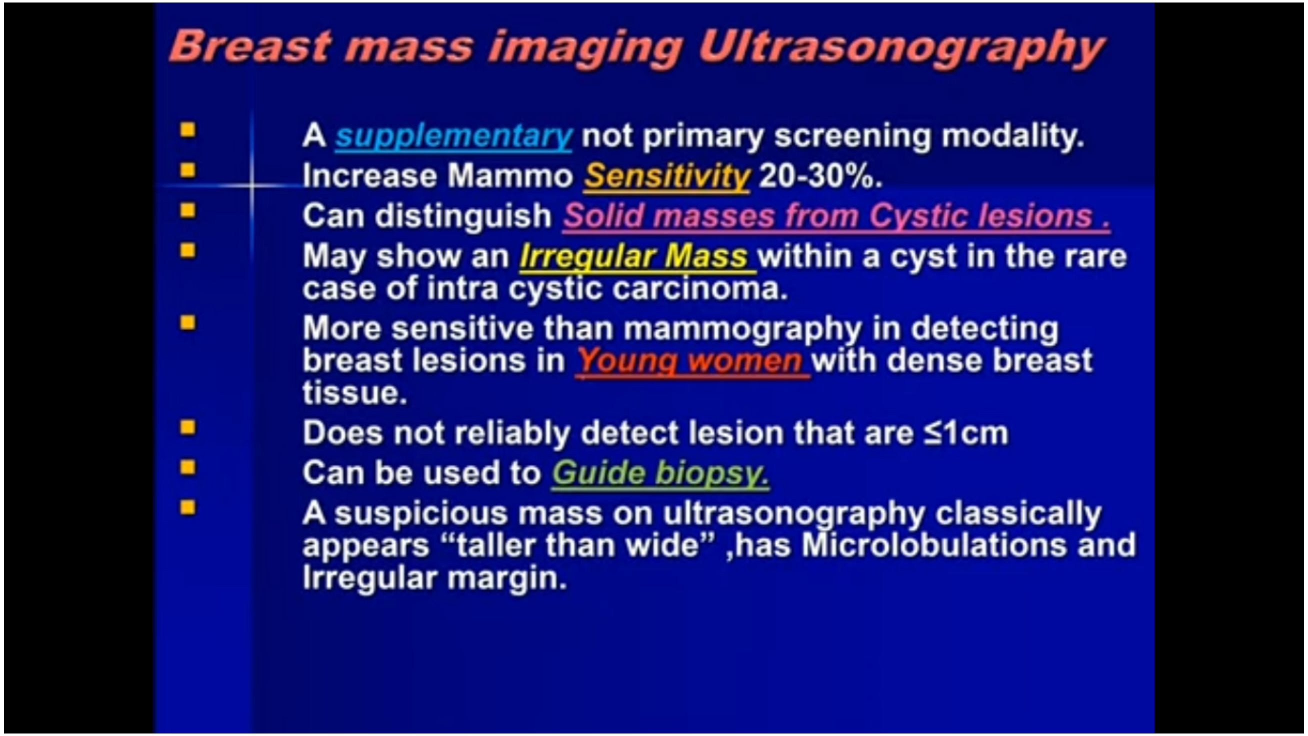
MRI no role in the workup of a *palpable* abnormality

done for non palpable lesion or if the Breast is very dense or high risk people...

* The simple cyst has fluid content... [if the content is Blood need larger syringe]...
↳ if we Aspirate it the cyst disappear...

* The complex cyst has solid component :-
↳ not disappear with Aspiration..

→ if there is septation in the cyst as in gall bladder, or if there is mud [turbulent fluid] → also called complex cyst...

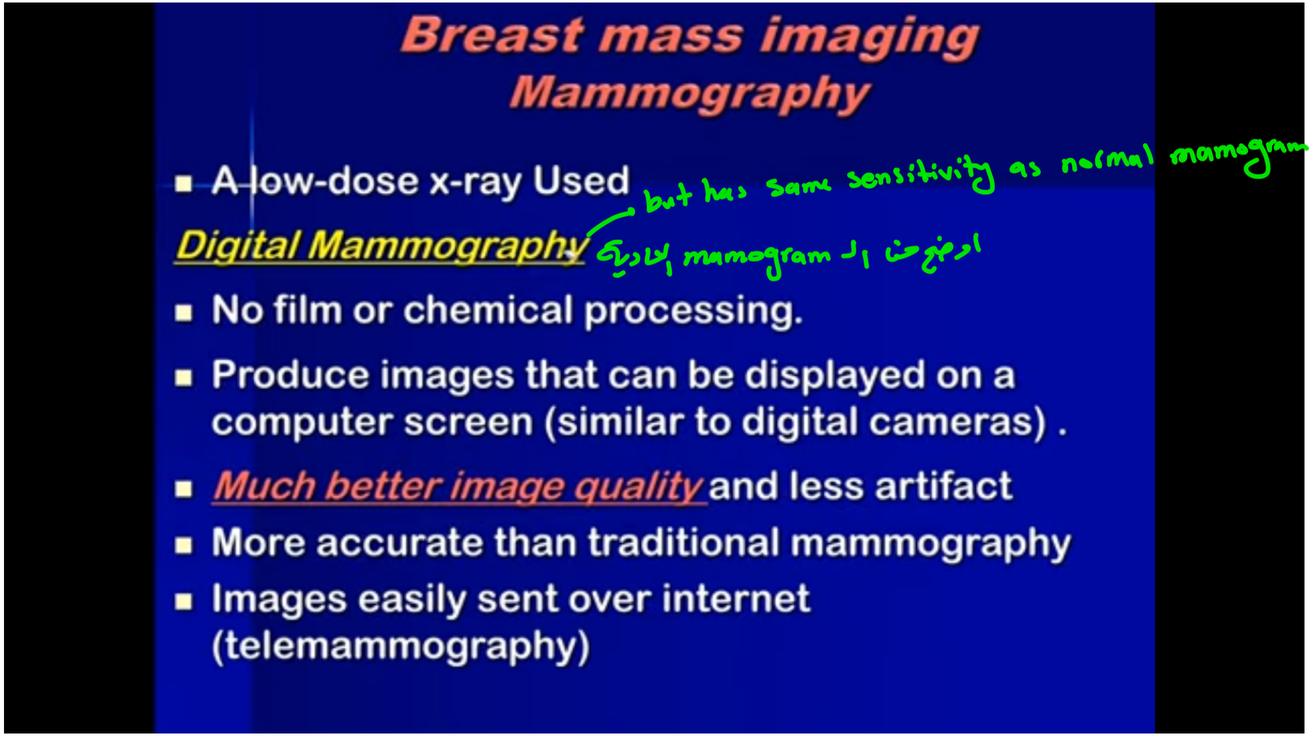


Breast mass imaging Ultrasonography

- A *supplementary* not primary screening modality.
- Increase Mammo *Sensitivity* 20-30%.
- Can distinguish *Solid masses from Cystic lesions .*
- May show an *Irregular Mass* within a cyst in the rare case of intra cystic carcinoma.
- More sensitive than mammography in detecting breast lesions in *Young women* with dense breast tissue.
- Does not reliably detect lesion that are ≤1cm
- Can be used to *Guide biopsy.*
- A suspicious mass on ultrasonography classically appears “taller than wide” ,has Microlobulations and Irregular margin.

* There is 2 types of mamogram → screening [we do it for all female even without complian مش تشتكي + no radiological presence...
→ diagnostic 2veiw → medio lateral oblique
→ Cranio Cuadal [CC]

OR → Primary
→ secondary → if we do mamography after 2weeks of taking Biopsy...
↳ we do it to see the other Breast [the normal breast]...

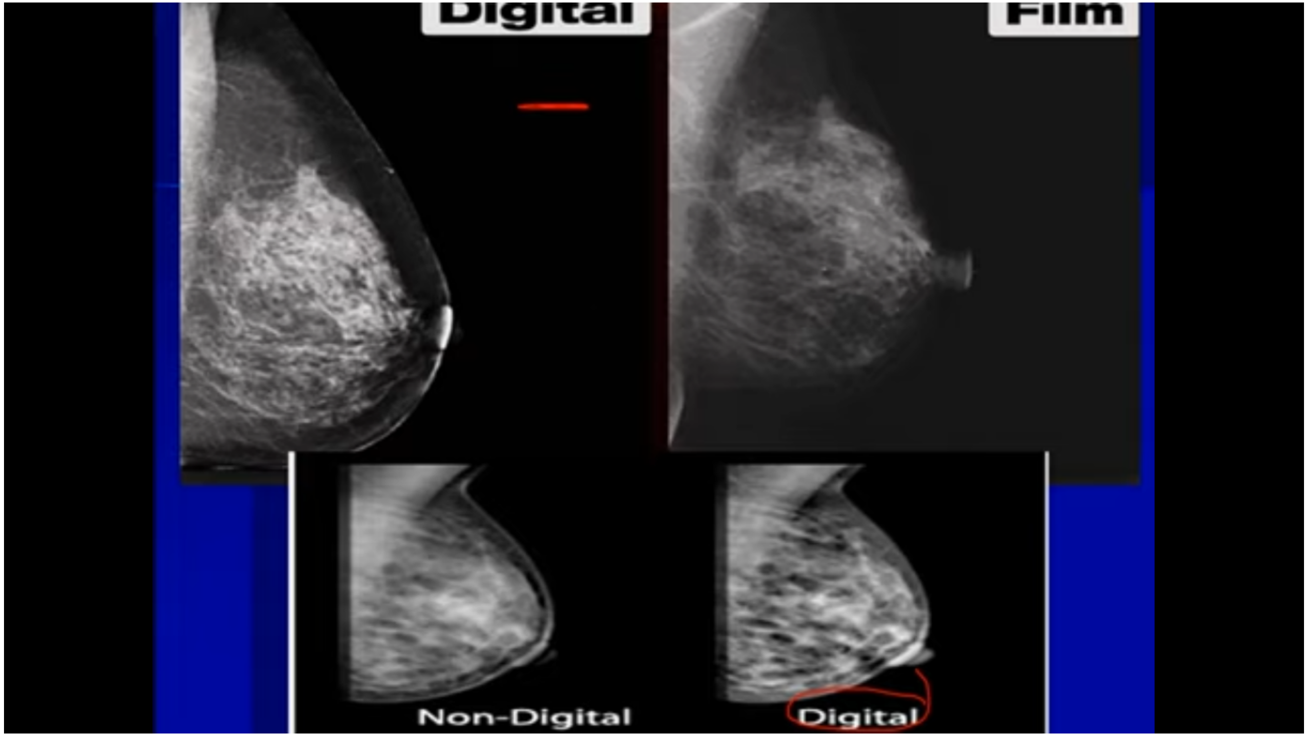


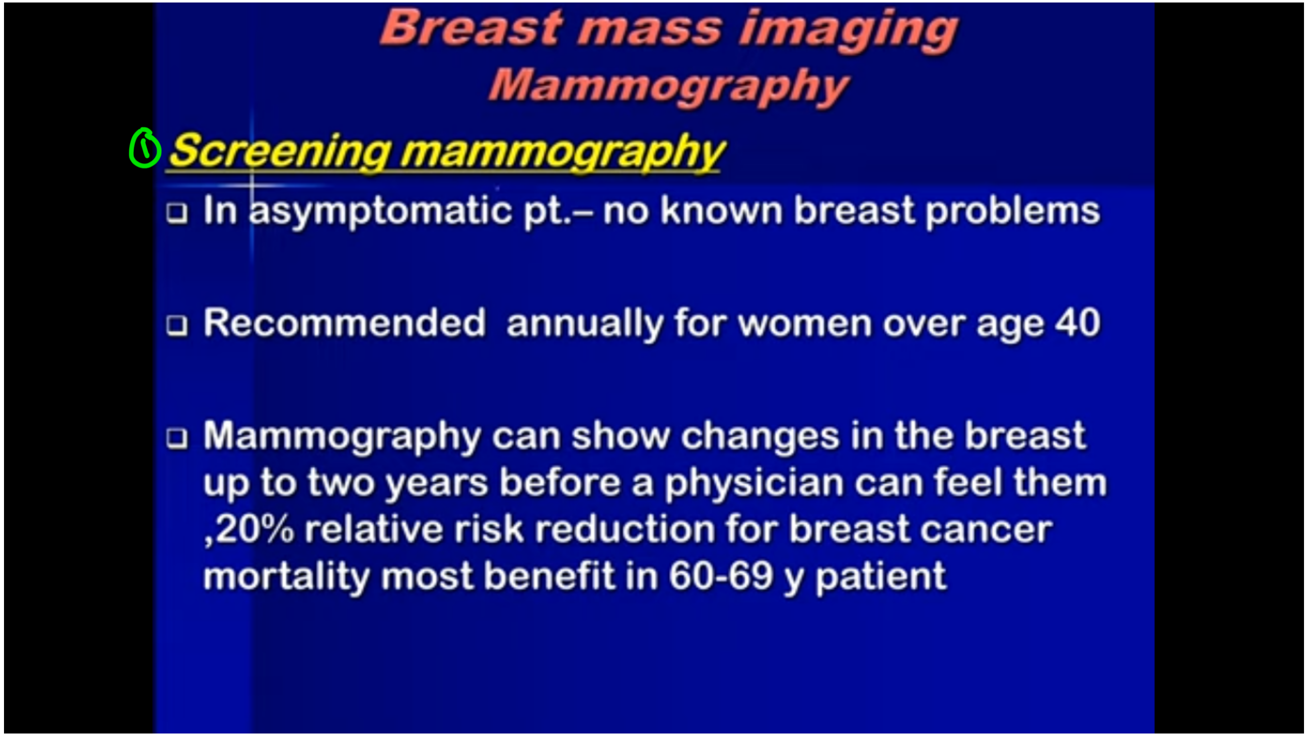
Breast mass imaging
Mammography

- A low-dose x-ray Used

Digital Mammography → but has same sensitivity as normal mamogram
ارخص ال mamogram العادي

- No film or chemical processing.
- Produce images that can be displayed on a computer screen (similar to digital cameras) .
- *Much better image quality* and less artifact
- More accurate than traditional mammography
- Images easily sent over internet (telemammography)

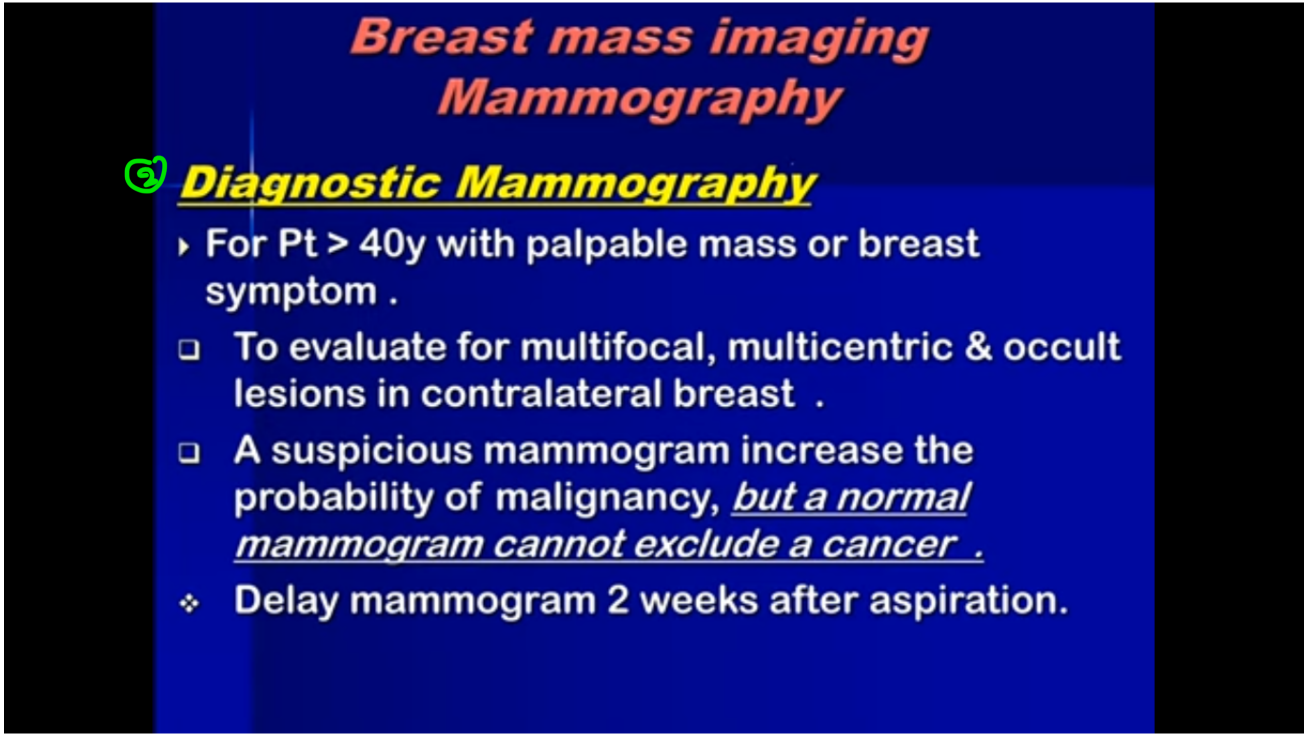

Digital
Film
Non-Digital
Digital



Breast mass imaging
Mammography

① ***Screening mammography***

- In asymptomatic pt.– no known breast problems
- Recommended annually for women over age 40
- Mammography can show changes in the breast up to two years before a physician can feel them ,20% relative risk reduction for breast cancer mortality most benefit in 60-69 y patient



Breast mass imaging
Mammography

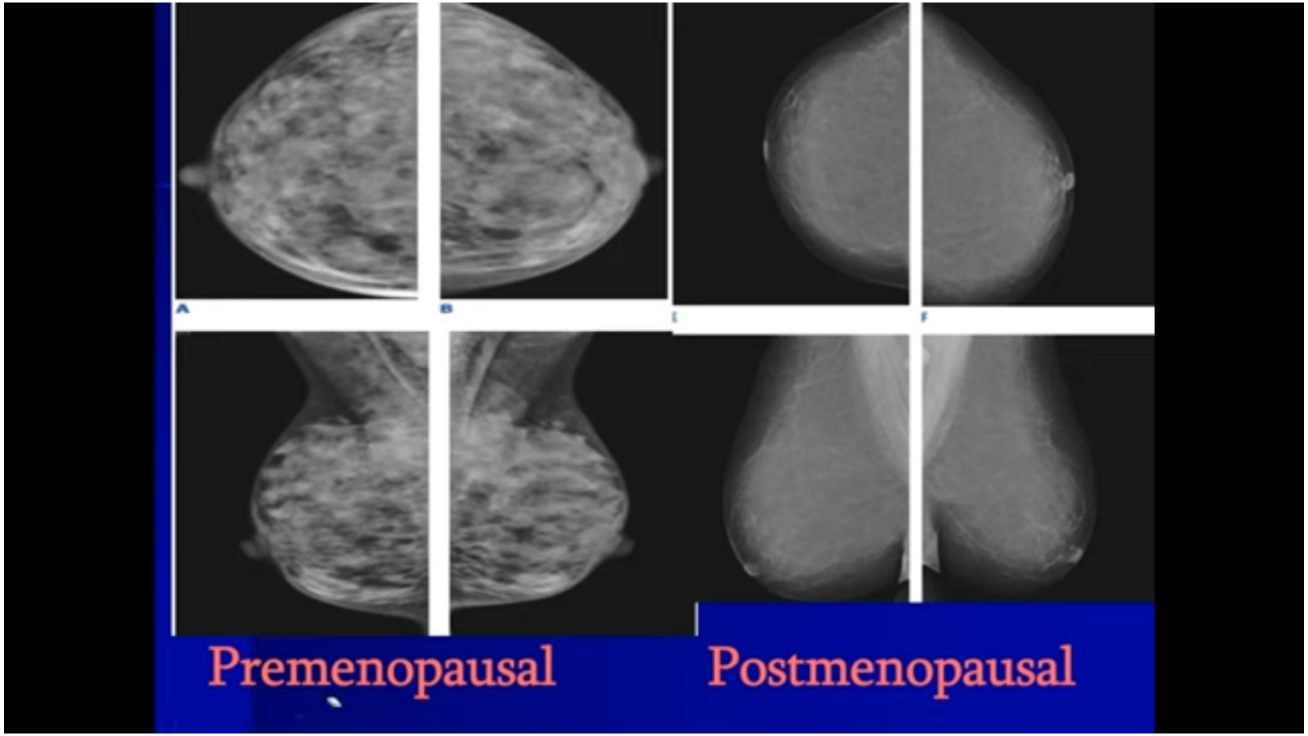
② ***Diagnostic Mammography***

- For Pt > 40y with palpable mass or breast symptom .
- ☐ To evaluate for multifocal, multicentric & occult lesions in contralateral breast .
- ☐ A suspicious mammogram increase the probability of malignancy, *but a normal mammogram cannot exclude a cancer .*
- ❖ Delay mammogram 2 weeks after aspiration.

* The mediolateral oblique view we see the axilla.
* The CranioCueedal view we can see the central and deep and medial part of the Breast...

بنقدر نضغط اكثر من ال view الثاني

← لو شكينا بشي بعد هدول ال 2views ممكن نعمل addetional views بواسطة Riadiological...



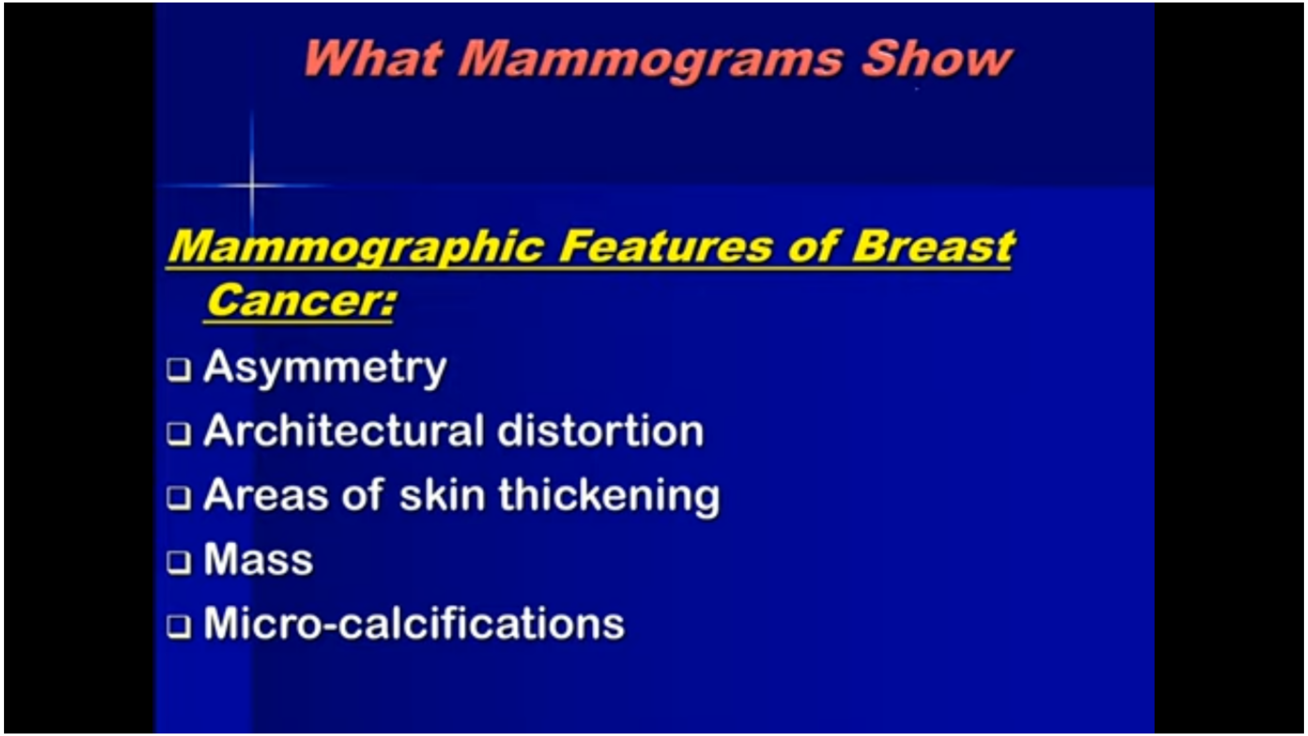
← ال females عندهم palpable axillary LN أكثر من ال males ، السبب :-

① less muscular

② more hygiene in female

(espically the shaving which may lead to axillary crackes → lead to nonspecific lymphadenitis

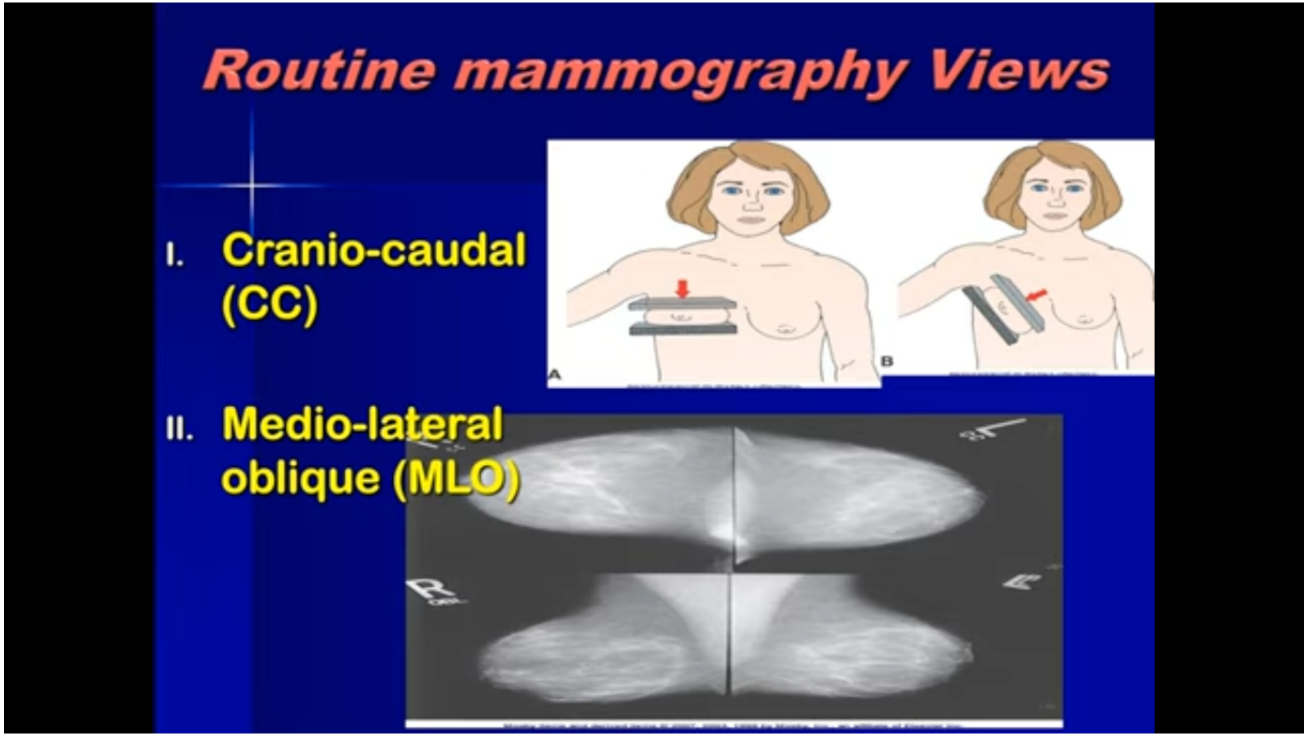
ولو ضلت تتكرر بتصير palpable LN



What Mammograms Show

Mammographic Features of Breast Cancer:

- ☐ Asymmetry
- ☐ Architectural distortion
- ☐ Areas of skin thickening
- ☐ Mass
- ☐ Micro-calcifications



Routine mammography Views

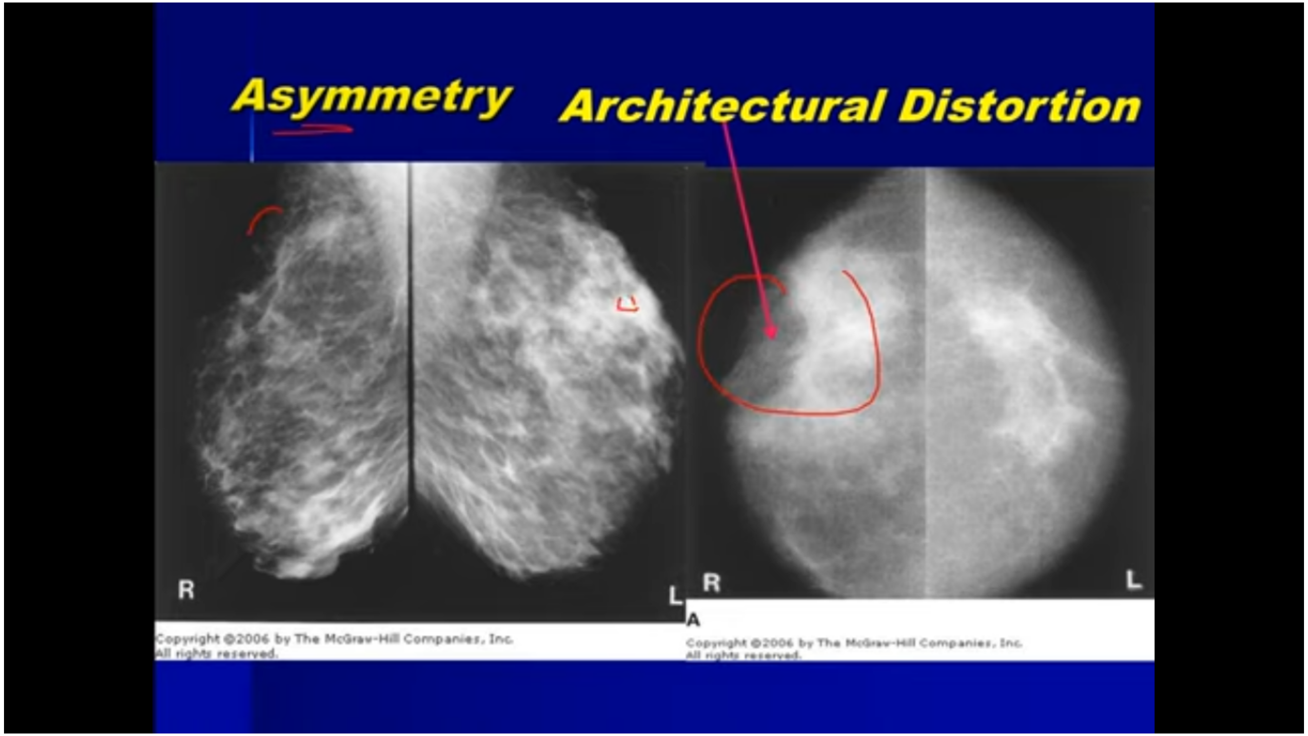
I. Cranio-caudal (CC)

II. Medio-lateral oblique (MLO)

* In mamogram we can see:- ① Asymmetrical Breast...

② masses → regular. round :- Bengin...
└ irregular :- malignant...

③ presence of micro calcification indicate malignant mass... [taller than wide]
↳ the sun ray apperance [spiculated]



Asymmetry **Architectural Distortion**

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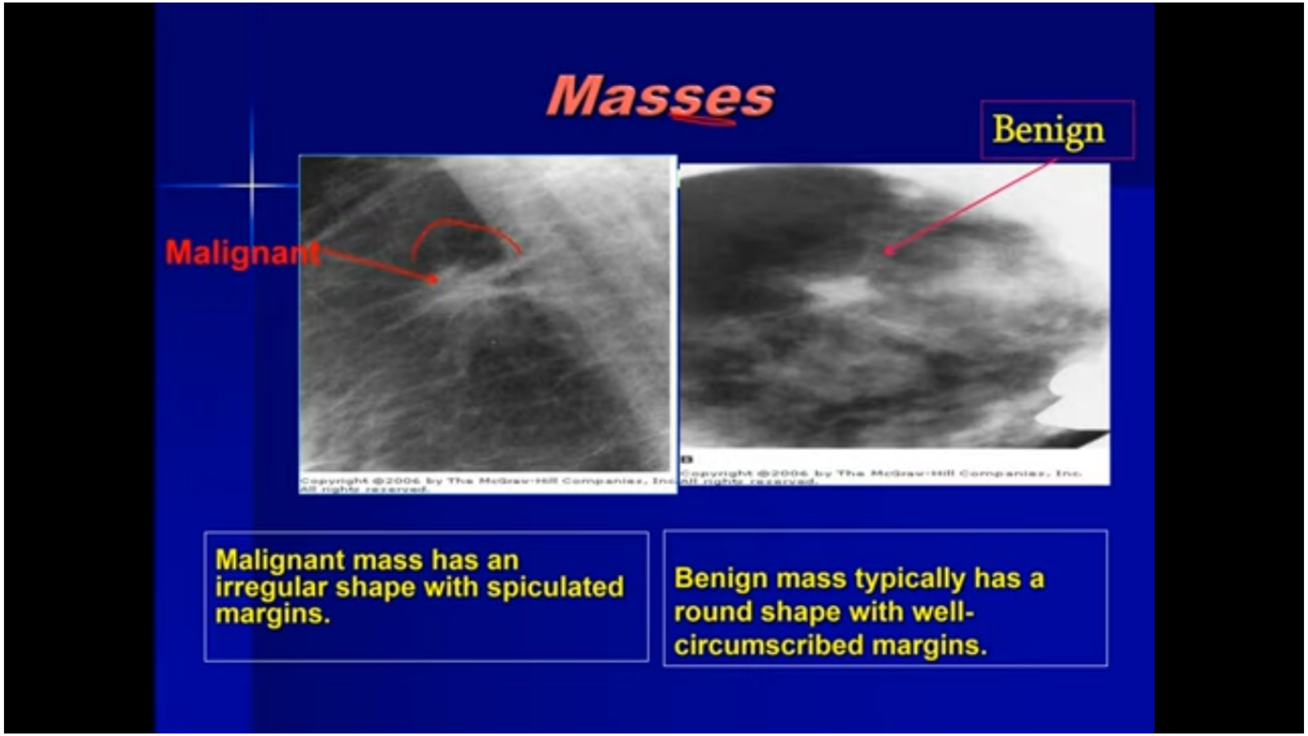
* The Bengin Lymph node → as hoarse shoe has Cortex and medulla كانها مجوفة [there is hallow]...

* The metastatic Lymph node → solid mass...



Masses

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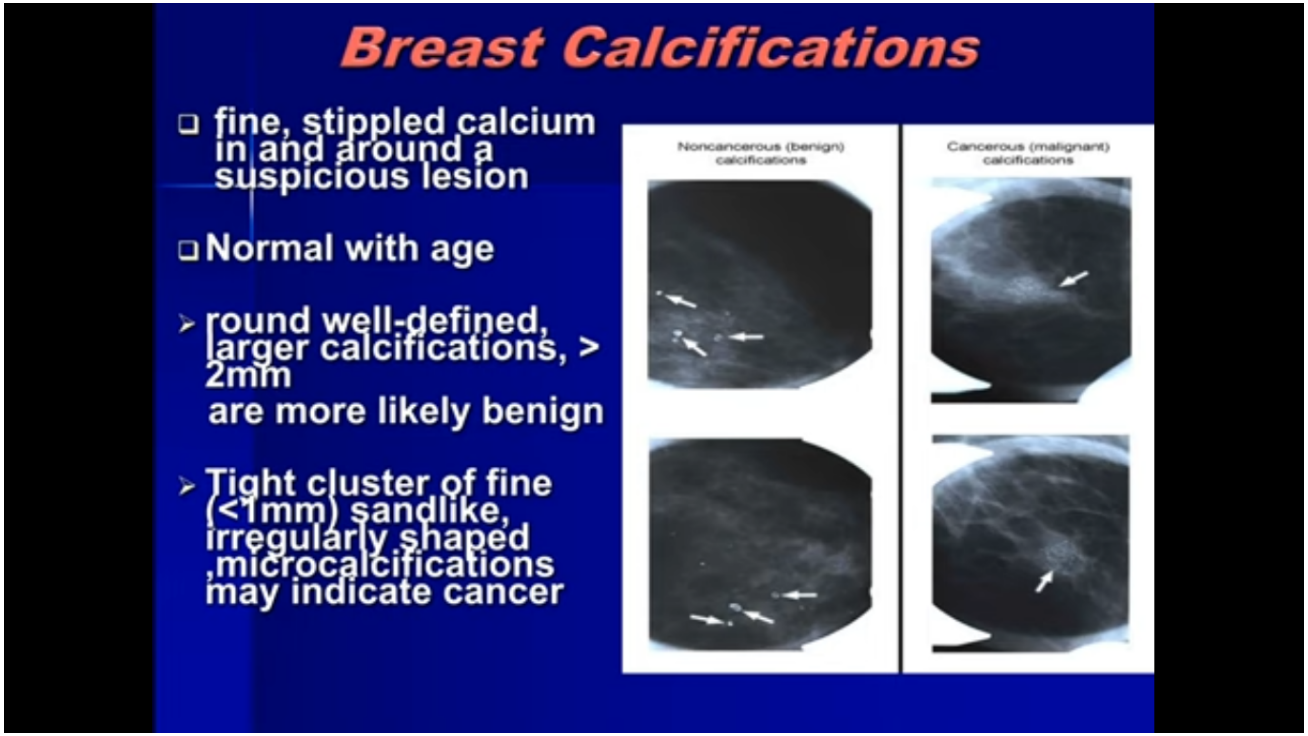
Malignant mass has an irregular shape with spiculated margins.

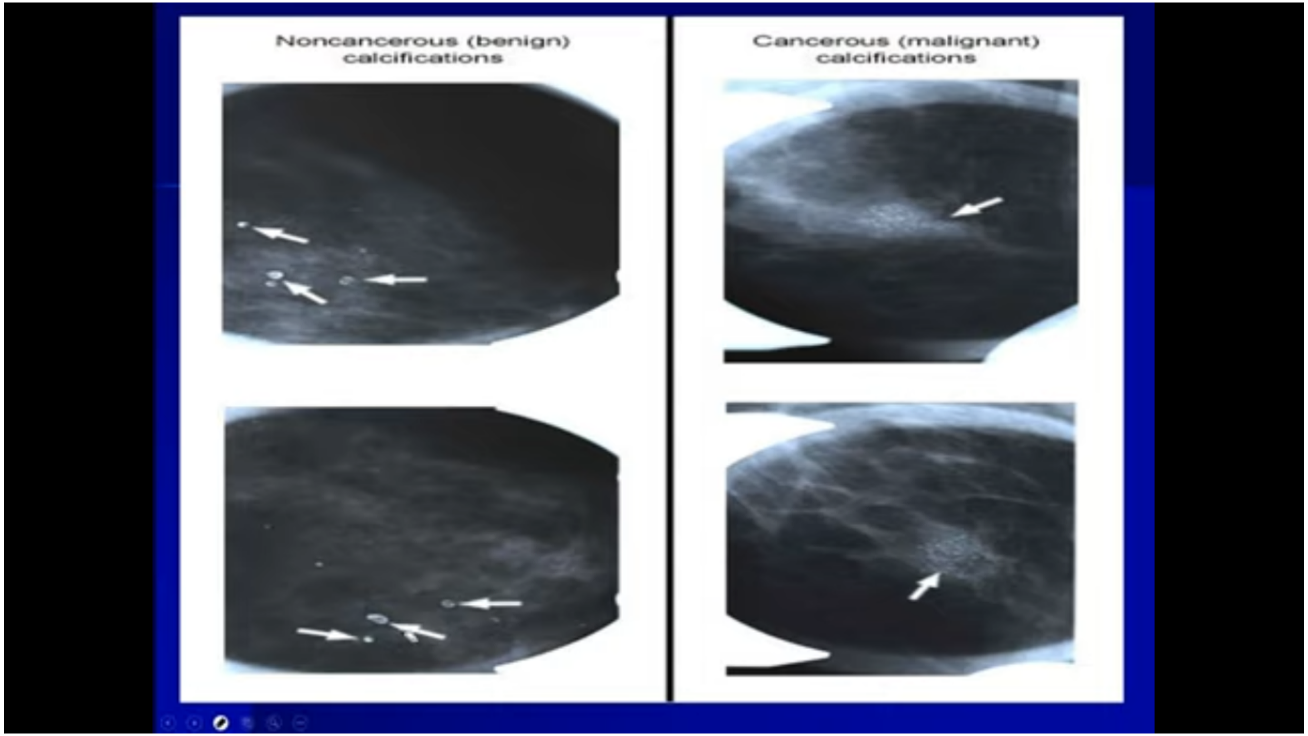
Benign mass typically has a round shape with well-circumscribed margins.



Breast Calcifications

- fine, stippled calcium in and around a suspicious lesion
- Normal with age
- round well-defined, larger calcifications, > 2mm are more likely benign
- Tight cluster of fine (<1mm) sandlike, irregularly shaped ,microcalcifications may indicate cancer

Noncancerous (benign) calcifications
Cancerous (malignant) calcifications

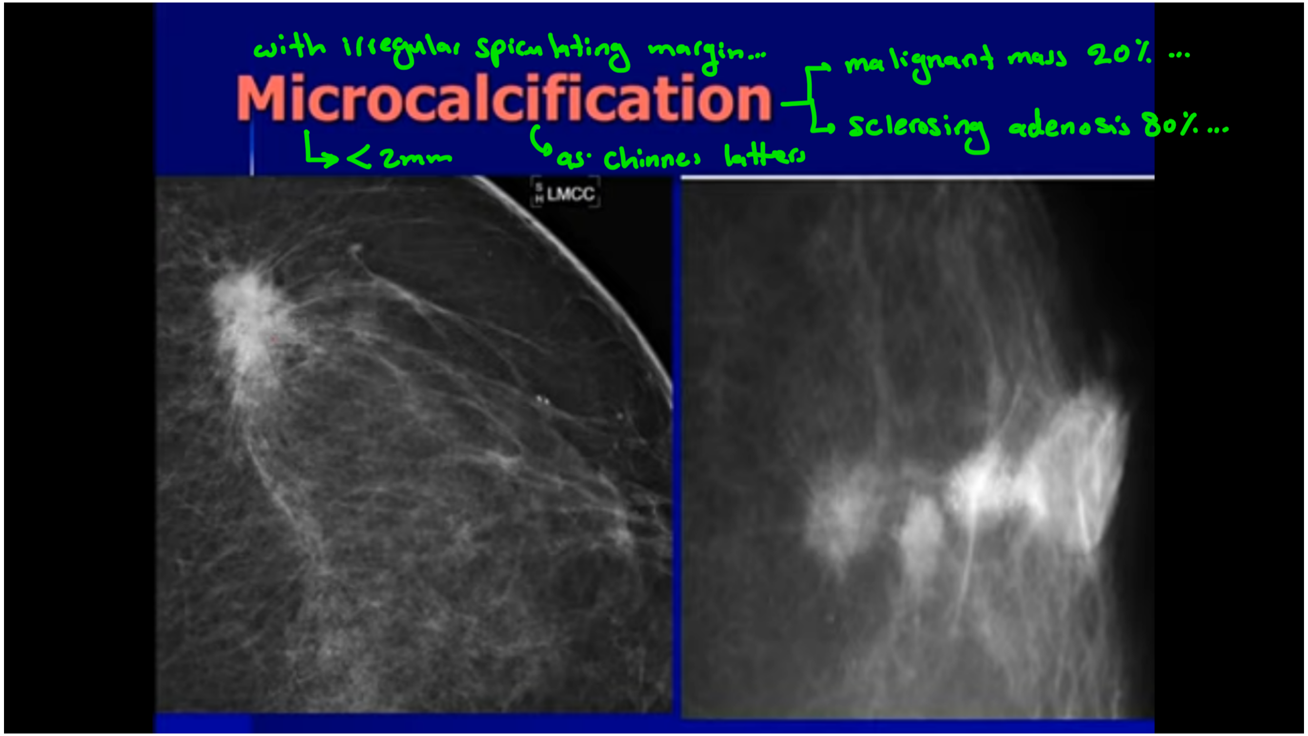


Noncancerous (benign)
calcifications

Cancerous (malignant)
calcifications

*The macrocalcification indicate Bengin mass...

↳ >2mm



with irregular spiculating margin...

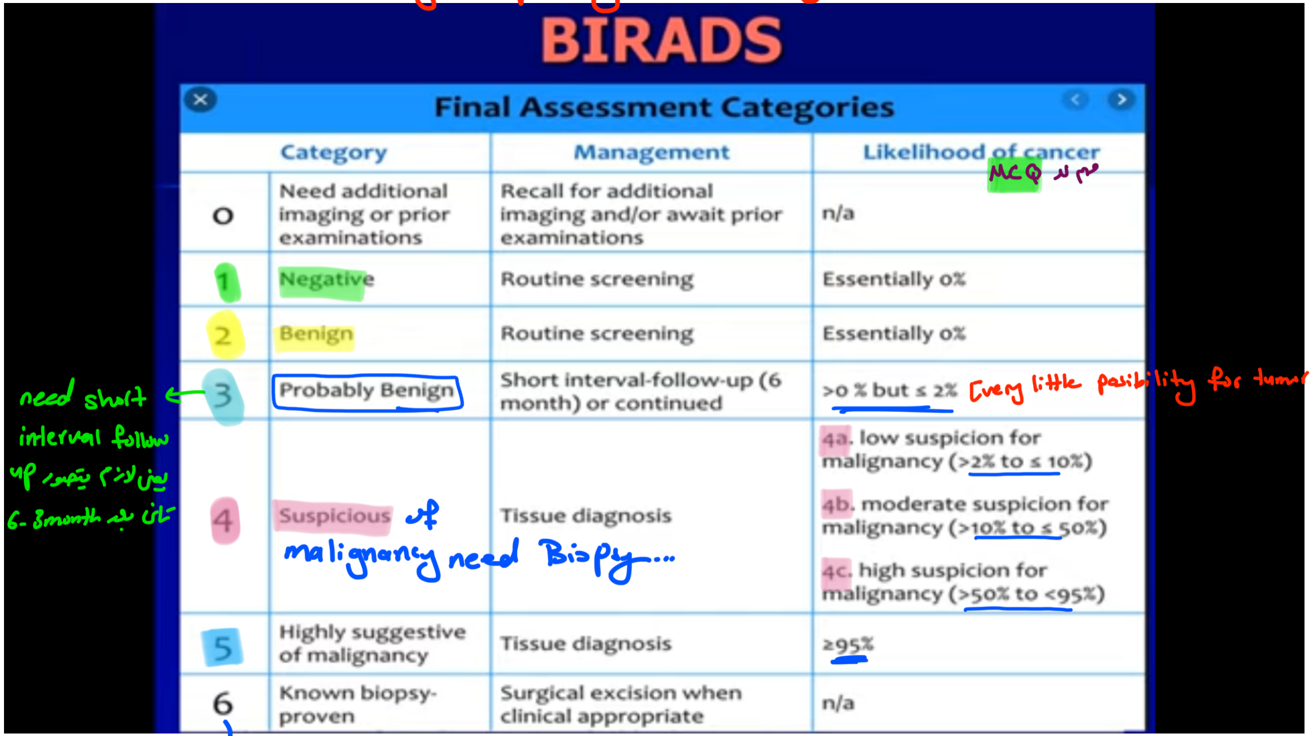
Microcalcification

↳ < 2mm

↳ as· chinnes letters

- ↳ malignant mass 20% ...
- ↳ sclerosing adenosis 80% ...

Breast imagian reporting and data system clacification...



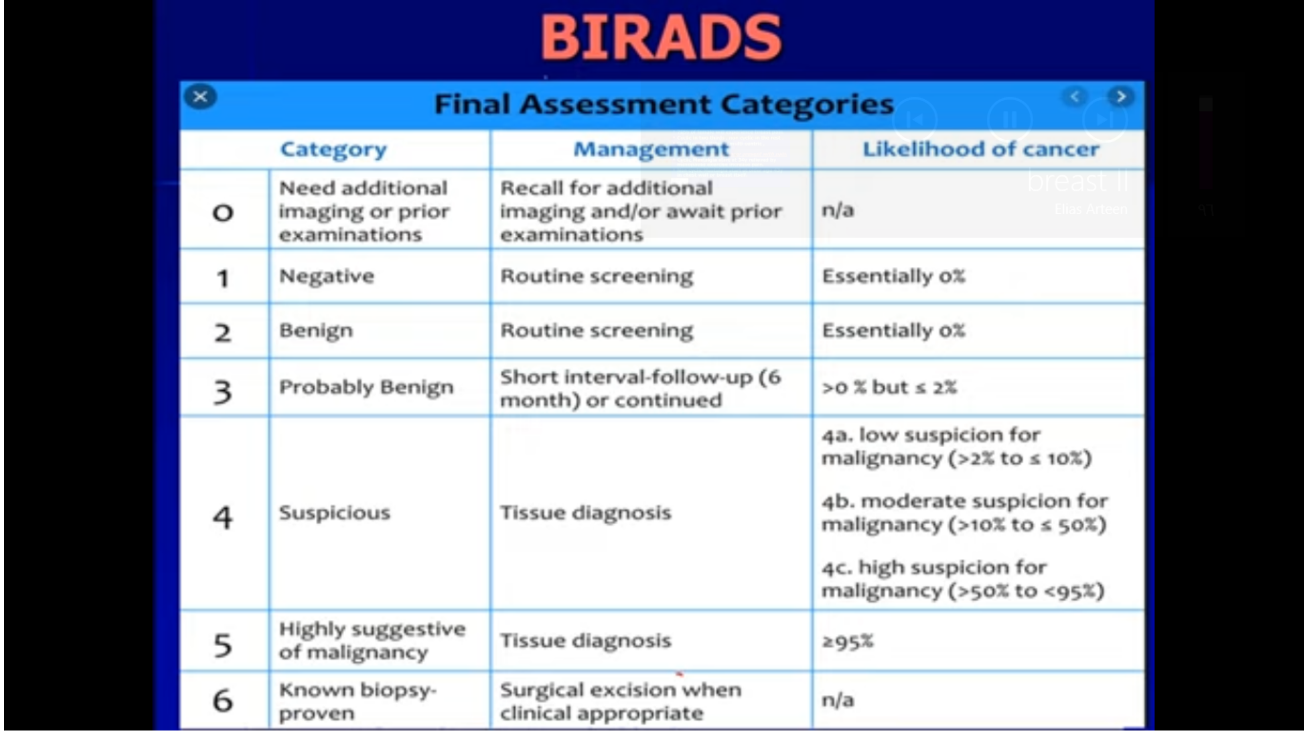
BIRADS

Final Assessment Categories

	Category	Management	Likelihood of cancer مهم لل MCQ
0	Need additional imaging or prior examinations	Recall for additional imaging and/or await prior examinations	n/a
1	Negative	Routine screening	Essentially 0%
2	Benign	Routine screening	Essentially 0%
3	Probably Benign	Short interval-follow-up (6 month) or continued	>0 % but ≤ 2% [very little posibility for tumor]
4	Suspicious of malignancy need Biopsy...	Tissue diagnosis	4a. low suspicion for malignancy (>2% to ≤ 10%) 4b. moderate suspicion for malignancy (>10% to ≤ 50%) 4c. high suspicion for malignancy (>50% to <95%)
5	Highly suggestive of malignancy	Tissue diagnosis	≥95%
6	Known biopsy-proven	Surgical excision when clinical appropriate	n/a

need short interval follow up يعني لازم يتصور
تاني بعد 6- 3month

اخدنا عينة وطلعت cancer وبعد اسبوعين رجعنا عملنا
2ry mamogram...



BIRADS

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6	Known biopsy-proven	Surgical excision when clinical appropriate	n/a

* The phyllodes tumor begin after the fibroadenoma by 15 y/o...
↳ Come at 40 y/o
↳ Come at 15-25 y/o

← مريضة 17 y/o تم تشخيصها fibroadenoma (Bilateral) ـ شالوها ـ بعد 3 سنين رجعت 7cm وبعده بعرف انه التشخيص كان غلط فالتشخيص الصحيح :- cystosarcoma phyllodes ...

* The incidance of Breast Cancer in 20 y/o female :- 1:2000

* The incidance of Breast Cancer in 30 y/o female :- 1:633

* The incidance of Breast Cancer in 40 y/o female :- 1:99

* The incidance of Breast Cancer in 50 y/o female :- 1:57

* The incidance of Breast Cancer overall :- 1:8

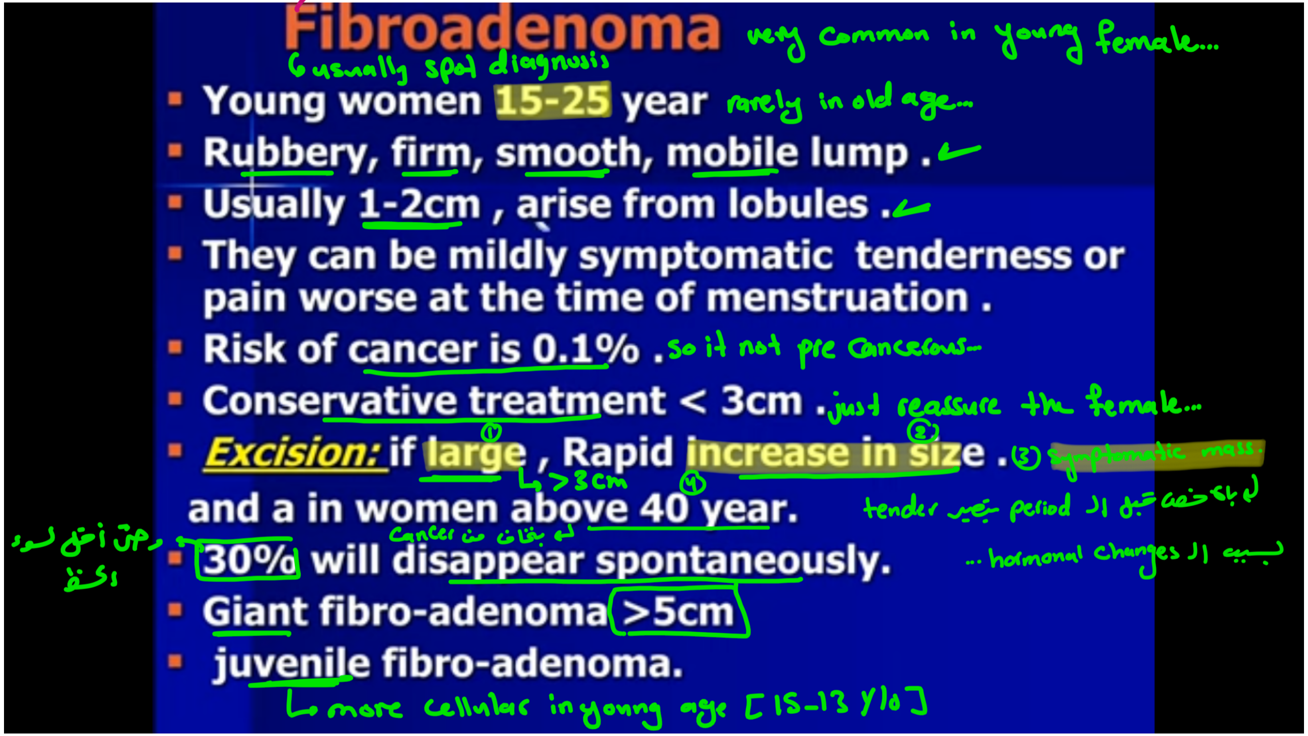
→ The common age for Breast cancer in females 55-64 y/o
↳ ليش هاذ؟

← لو اجت old age female بـ fibroadenoma غالباً بيكون عندها mass وهي صغيرة وما حستها يعني ما تشخصت...

* The fibroadenoma freely mobile so called the mouth of breast...

← لو كانت صغيرة بنسيبها..

* But once you remove any lesion you should send it to pathology...



Fibroadenoma

very common in young female...

↳ usually spot diagnosis

- Young women 15-25 year rarely in old age...
- Rubbery, firm, smooth, mobile lump . ←
- Usually 1-2cm , arise from lobules . ←
- They can be mildly symptomatic tenderness or pain worse at the time of menstruation .
- Risk of cancer is 0.1% . so it not pre cancerous-
- Conservative treatment < 3cm . just reassure the female...
  - if it 3cm and single female الافضل نشيلها but if she married حسب رغبتها
- *Excision:* if ① large ↳ >3cm , Rapid ② increase in size . ③ symptomatic mass. and a in women ④ above 40 year.
  - لما تكون قبل ال period بتصير tender
  - لما بتخاف من cancer
- 30% will disappear spontaneously. بسبب ال hormonal changes...
  - رح تختفي لوحدها
- Giant fibro-adenoma >5cm
- juvenile fibro-adenoma.
  ↳ more cellular in young age [15-13 y/o]

* Any lesion in premenopuse female [< 50 y/o] it's Bengin until prove other wise...
↳ Breast cyst - fibrocystic dz - fibroadenoma - fibroadenosis...

لأن اي mass بتكون ال female 50y/o<

* Any lesion in >50 y/o it's malignant untill prove other wise... [so the free female we begin mamogram at age >45 y/o]...

← متوسط عمر ال female يلي بيجيها بسبب Breast cancer ⇐ 68 y/o...

← حتى نأكد تشخيص ال fibroadenoma بنعمل true cut Biopsy مش ال FNA عشان نشوف ال cystosarcoma phylloids ولا fibroadenoma...

may be bilateral or multiple...

بنشيل الكبيرة وال symptomatic

* The cyclic - bilateral Breast pain → ع العادة ما بيخوف...

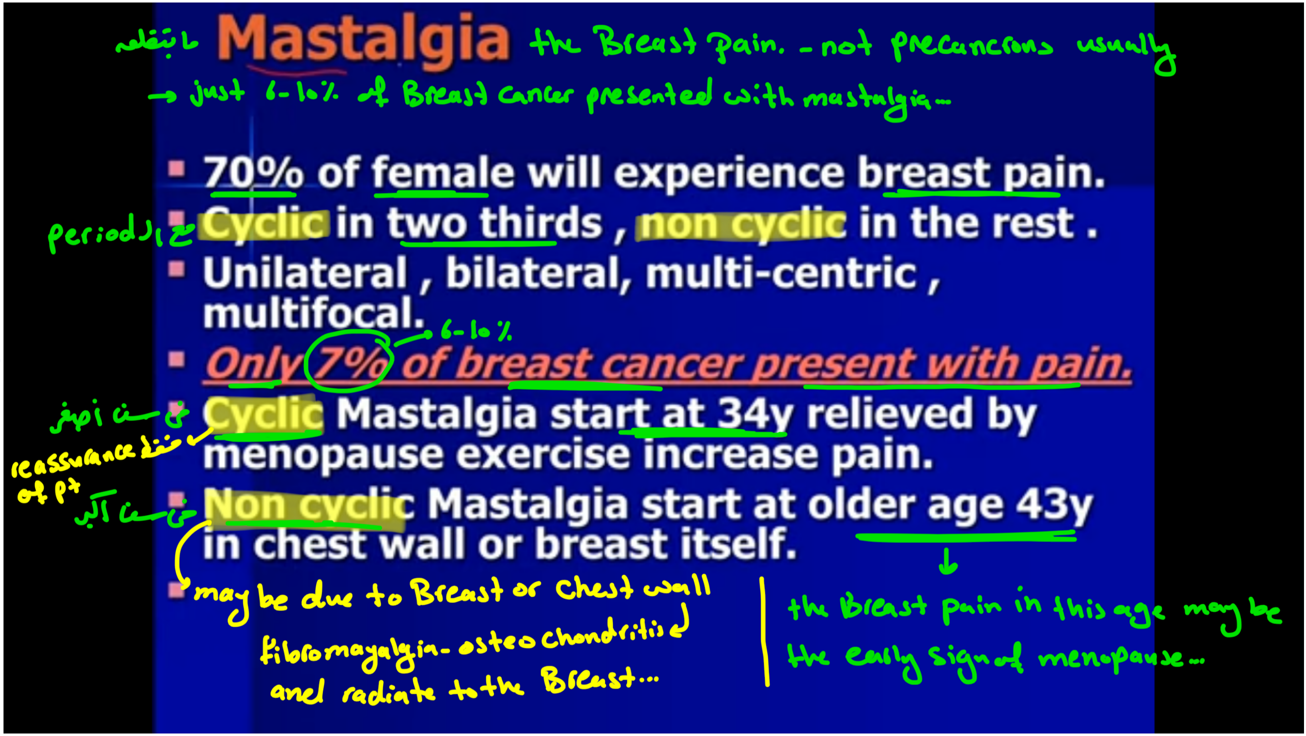
→ absence of discharge - mass indicate Bengin condition...

* May radiate to the tail of Breast and axilla ...

* Mastalgia usually come in the upper outer quadrant...

* **Multifocal**:- in the same quadrant...

* **multicentric**:- in diff. quadrant...



Mastalgia

- 70% of female will experience breast pain.
- Cyclic in two thirds , non cyclic in the rest .
- Unilateral , bilateral, multi-centric , multifocal.
- *Only 7% of breast cancer present with pain.*
- Cyclic Mastalgia start at 34y relieved by menopause exercise increase pain.
- Non cyclic Mastalgia start at older age 43y in chest wall or breast itself.

ما بتقلعه Mastalgia the Breast pain. - not precancrous usually

→ just 6-10% of Breast cancer presented with mastalgia...

6-10%

مع ال period

في سن أصغر

reassurance فقط of pt

في سن أكبر

may be due to Breast or Chest wall fibromayalgia - osteochondritis and radiate to the Breast...

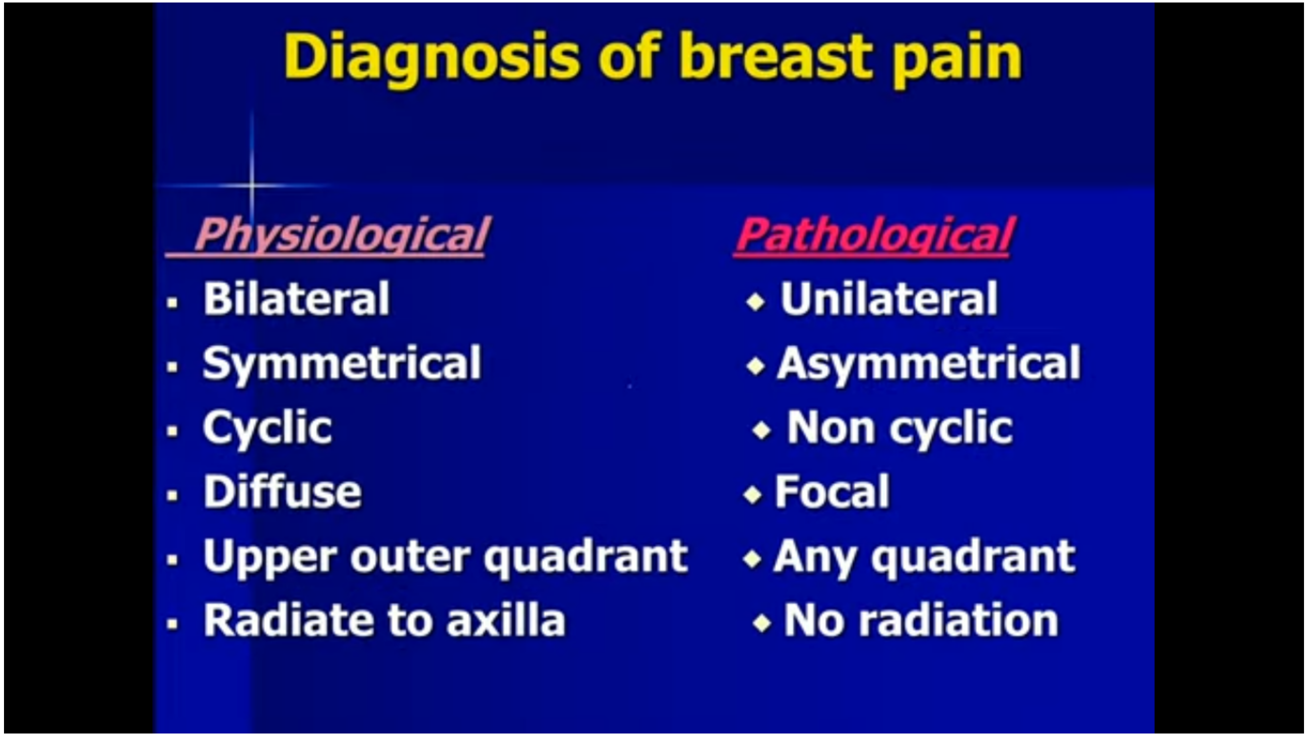
the Breast pain in this age may be the early sign of menopause...

* female presented with mastalgia we ask about:-

1- uni lateral or bilateral...
2- cyclic or non cyclic...
3- age...
4- Multicentric or multifocal...

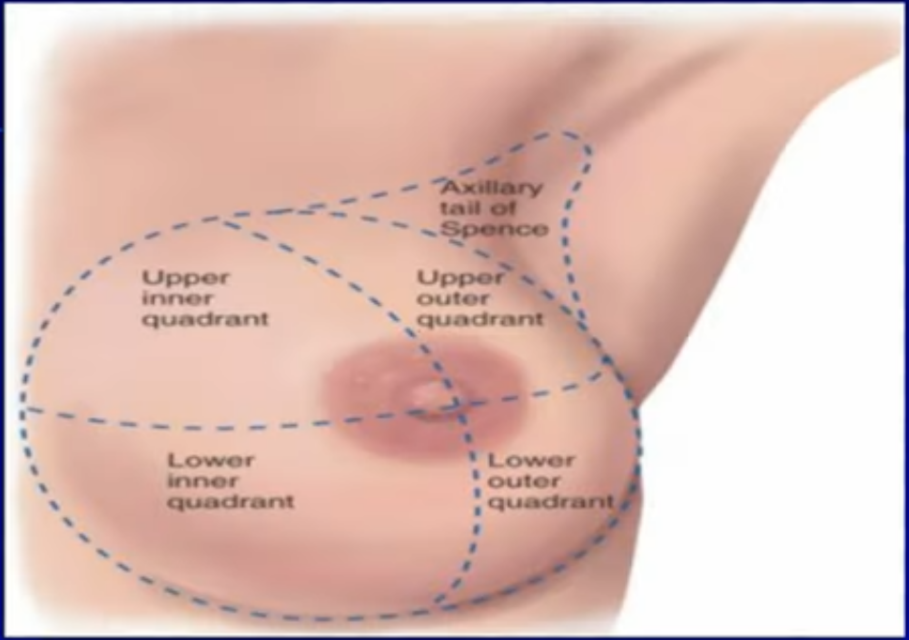
حتى نفرق ما بين ال physiological and pathological Breast pain

* newly discovered DM female >50 y/o may be due to :- pancreatic cancer...



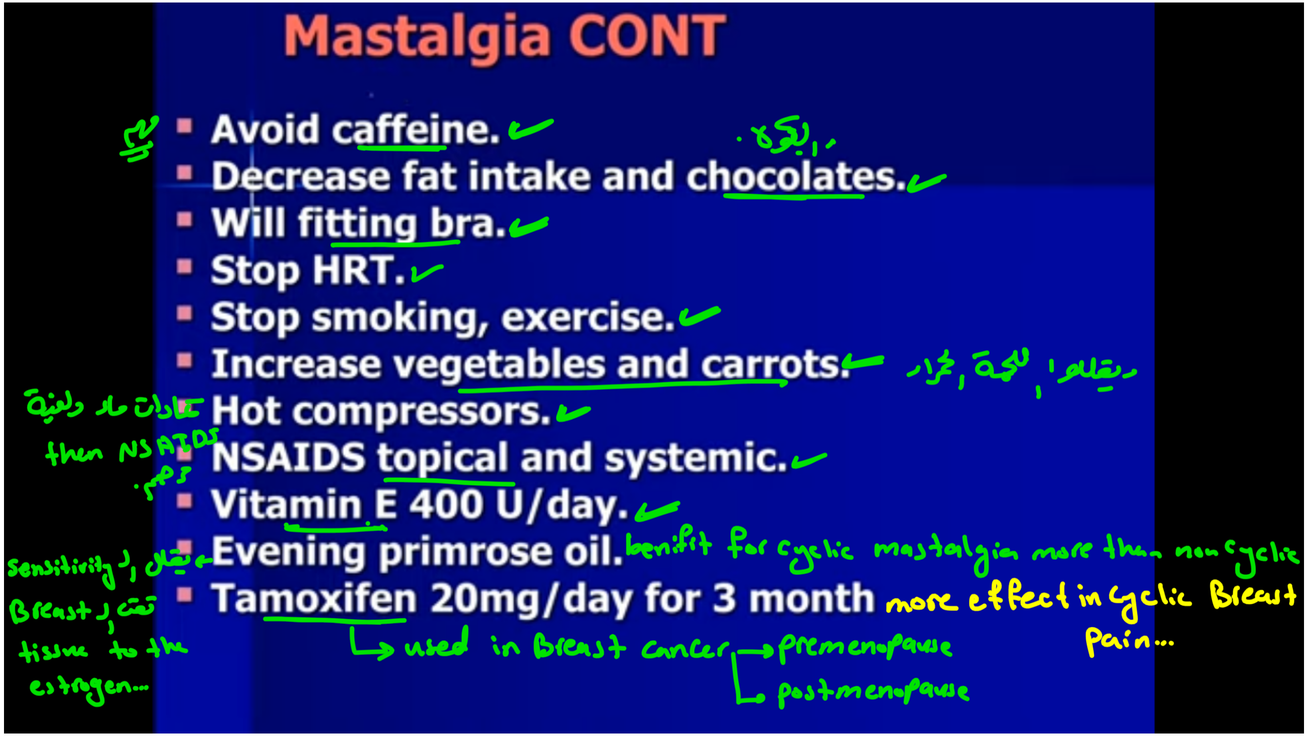
Diagnosis of breast pain

Physiological	***Pathological***
Bilateral	Unilateral
Symmetrical	Asymmetrical
Cyclic	Non cyclic
Diffuse	Focal
Upper outer quadrant	Any quadrant
Radiate to axilla	No radiation


Axillary tail of Spence
Upper inner quadrant
Upper outer quadrant
Lower inner quadrant
Lower outer quadrant

* The tamoxifen effect on → Breast :- عكس ال estrogen [anti-estrogen]
→ uterus :- نفس ال estrogen [estrogenic]
→ lead to endometrial hyperplasia...

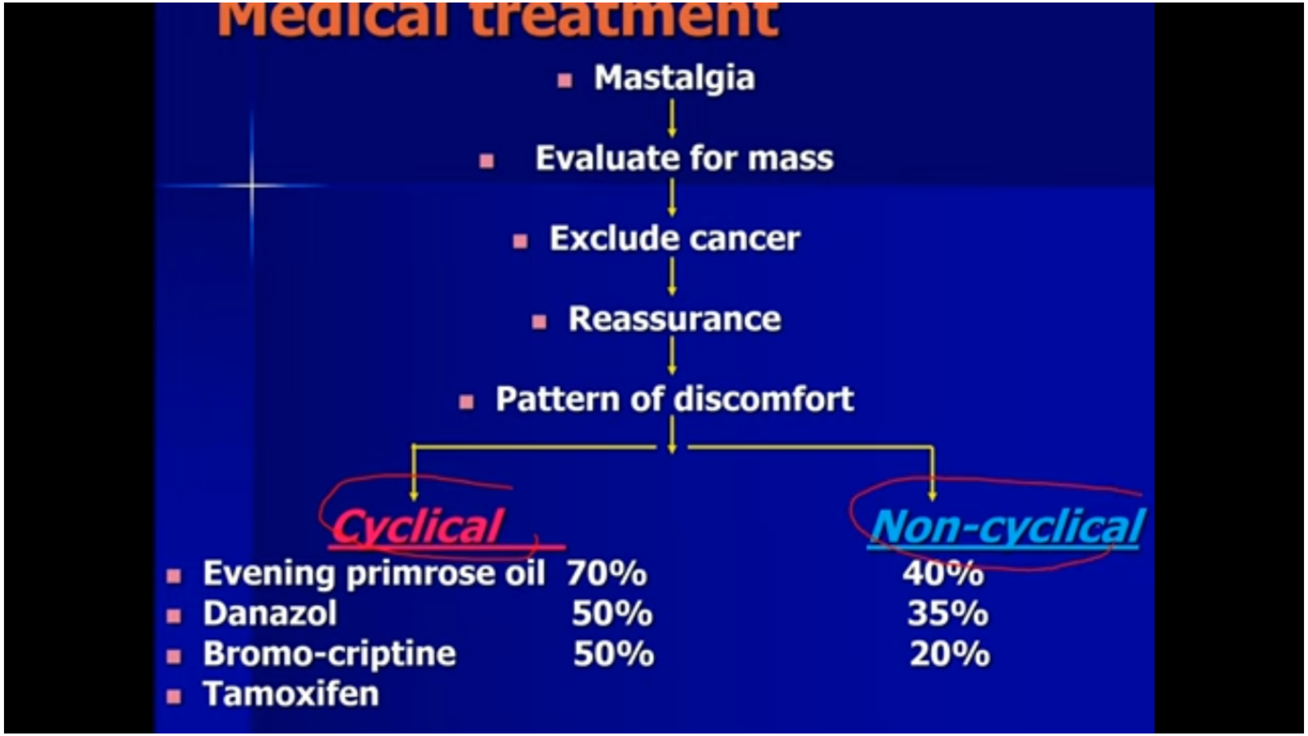
→ So the side effect of the tamoxifen is :- endometrial cancer...
[So may replaced by Aromatase inhibitor ولكن غير محبذ]



Mastalgia CONT

- Avoid caffeine. ✓ شاي
- Decrease fat intake and chocolates. ✓ الكوكو.
- Will fitting bra. ✓
- Stop HRT. ✓
- Stop smoking, exercise. ✓
- Increase vegetables and carrots. ✓ ويقللوا اللحمة الحمرا
- Hot compressors. ✓ كمادات ماء دافية
- NSAIDS topical and systemic. ✓ then NSAIDS ودهن.
- Vitamin E 400 U/day. ✓
- Evening primrose oil. benefit for cyclic mastalgia more than non cyclic ← بيقلل ال sensitivity تبعت ال Breast tissue to the estrogen...
- Tamoxifen 20mg/day for 3 month more effect in cyclic Breast pain...
  → used in Breast cancer → premenopause
  → postmenopause

* The Aromatase inhibitor used for post menopause female [Breast Cancer]
↳ may be used for pre menopause female ولكن وقتها بتوقف الدورة
[بتوقف شغل ال ovaries]



Medical treatment

- Mastalgia
- Evaluate for mass
- Exclude cancer
- Reassurance
- Pattern of discomfort

	Cyclical	*Non-cyclical*
Evening primrose oil	70%	40%
Danazol	50%	35%
Bromo-criptine	50%	20%
Tamoxifen		

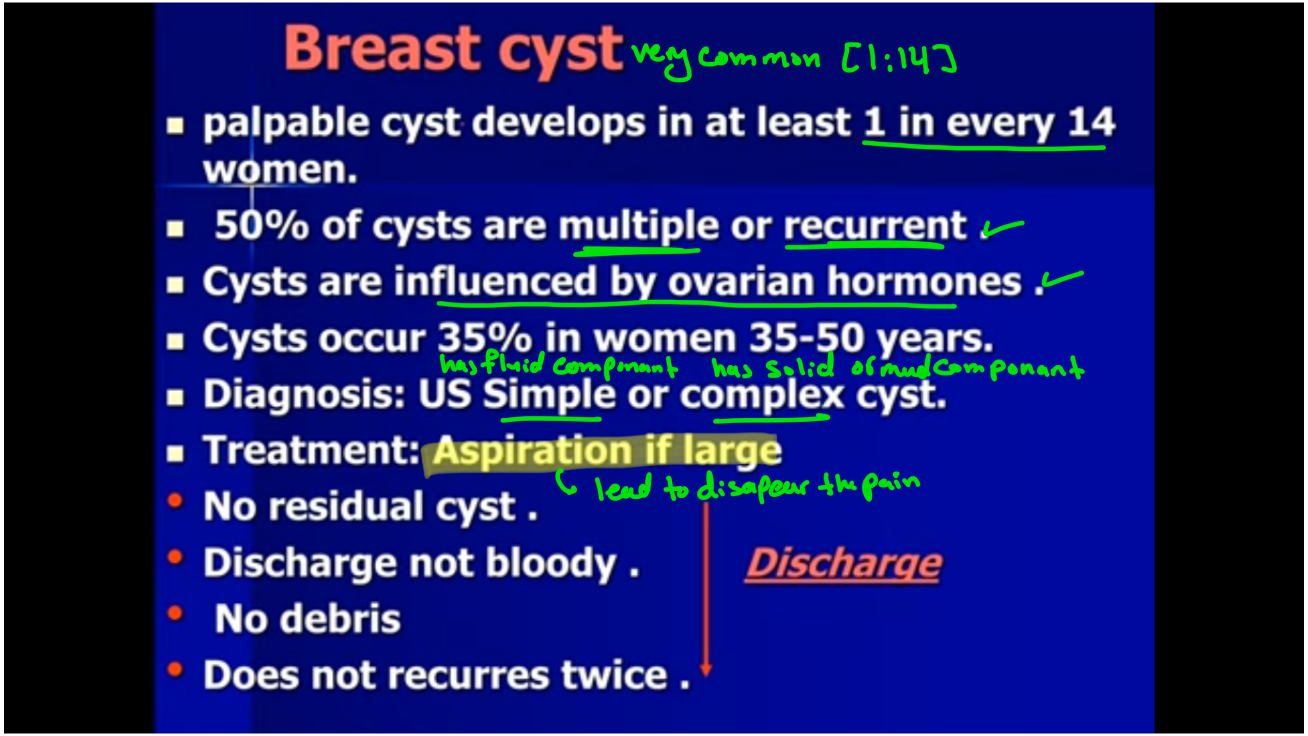
* if the cyst has soild - mud componant - septation - Bloody discharge should be removed + more workup...

* The fibrocystic dz [ANDI] occur in involusion state in female > 35 y/o...

* The Breast cyst come at age 35 - 50 y/o [rarely after 50 y/o]...

* Any Bloody cyst and recurrent after 2 times of Aspiration [after 12 week] we do excision...

* The Aspirated fluid not need to sent it for cytology...



Breast cyst

very common [1:14]

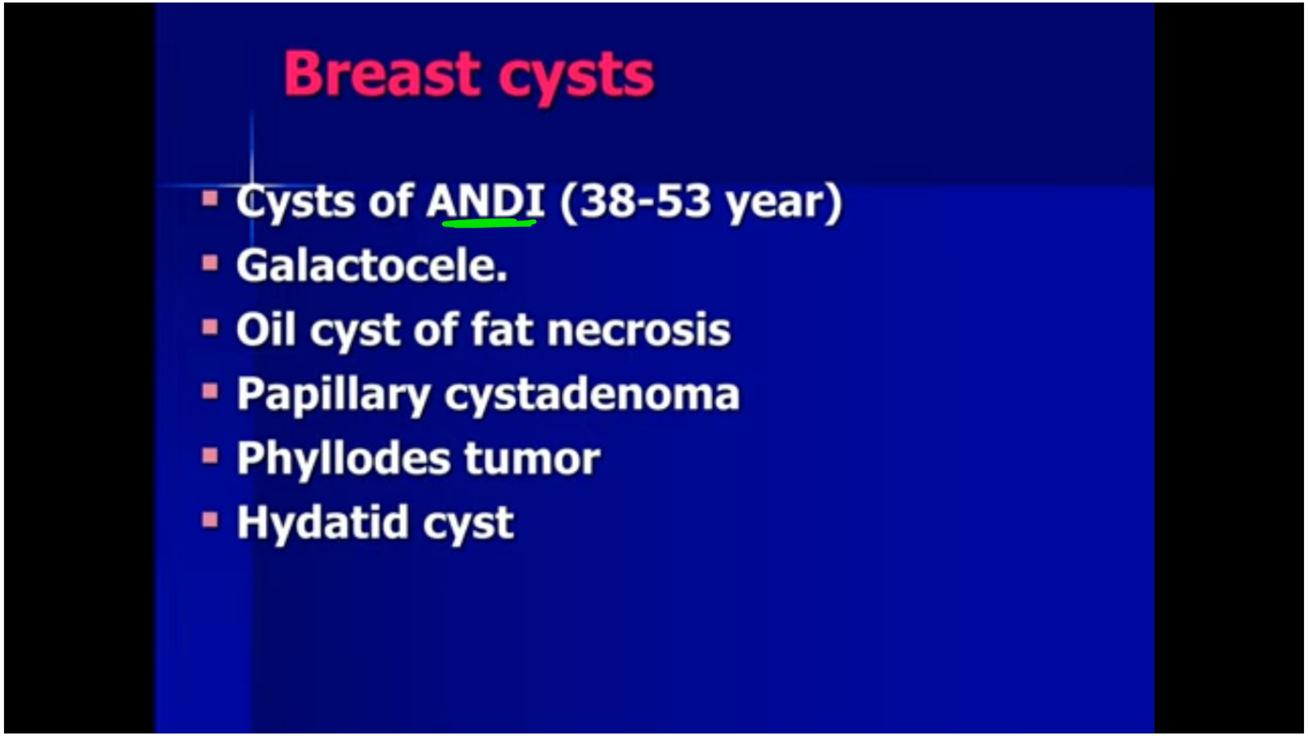
- palpable cyst develops in at least 1 in every 14 women.
- 50% of cysts are multiple or recurrent .
- Cysts are influenced by ovarian hormones .
- Cysts occur 35% in women 35-50 years.
- Diagnosis: US Simple or complex cyst.

  has fluid componant — has solid or mud componant
- Treatment: Aspiration if large

  lead to disapear the pain
  - No residual cyst .
  - Discharge not bloody .
  - No debris
  - Does not recurres twice .

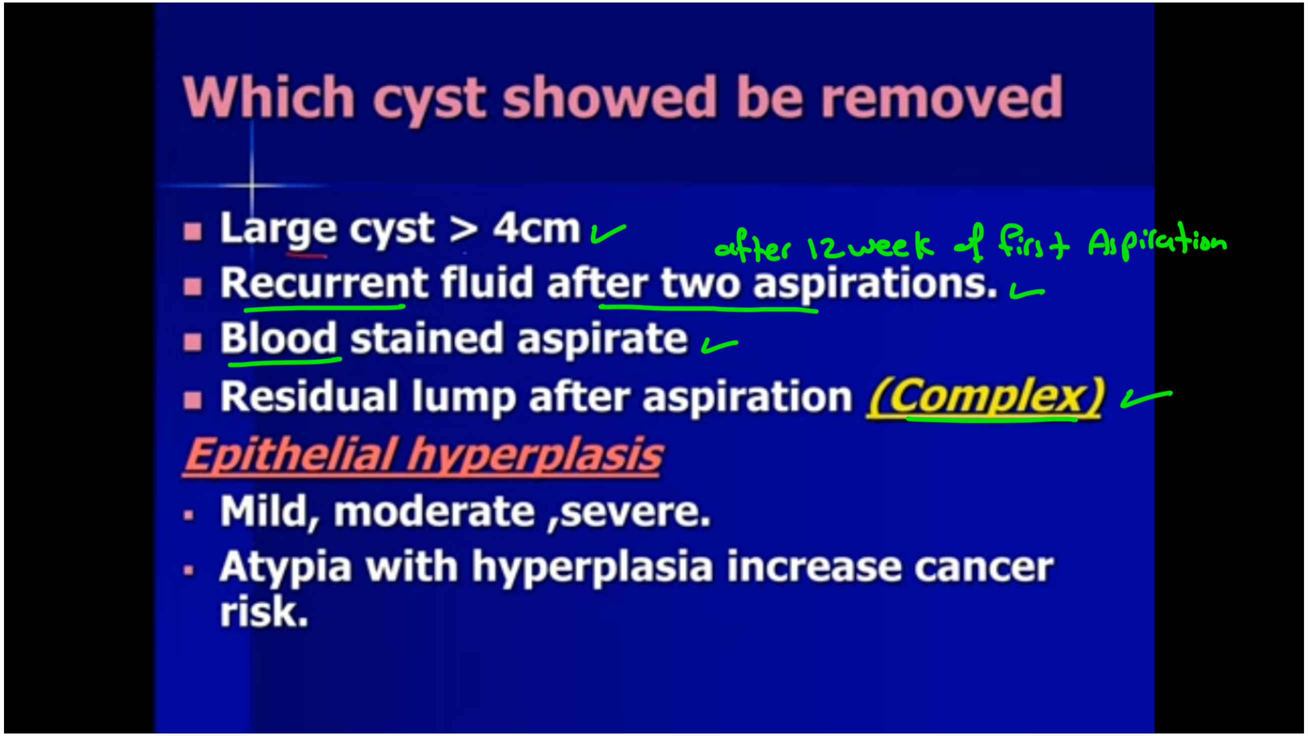
Discharge

← بعد ال Aspiration بنخلي المريضة ترجع بعد 6 اسابيع لنفحصها ب diff part of her cycle ... [مرتين ال cycle ⇐ 8weeks]



Breast cysts

- Cysts of ANDI (38-53 year)
- Galactocele.
- Oil cyst of fat necrosis
- Papillary cystadenoma
- Phyllodes tumor
- Hydatid cyst



Which cyst showed be removed

- Large cyst > 4cm ✓
- Recurrent fluid after two aspirations. ✓ after 12 week of first Aspiration
- Blood stained aspirate ✓
- Residual lump after aspiration *(Complex)* ✓

Epithelial hyperplasis

- Mild, moderate ,severe.
- Atypia with hyperplasia increase cancer risk.

* any Bloody nipple discharge need more work up...

↳ may indicate duct papilloma...

* female presented with nipple discharge we ask about:-

① unilateral or bilateral...

② discharge ، بيطلع قدّيش...

[the duct papilloma discharge from single or max. from 2 ducts / ductectasia from many opening]..

↳ 0.1% may become cancer

③ The color of discharge..

④ spontaneous discharge or not...

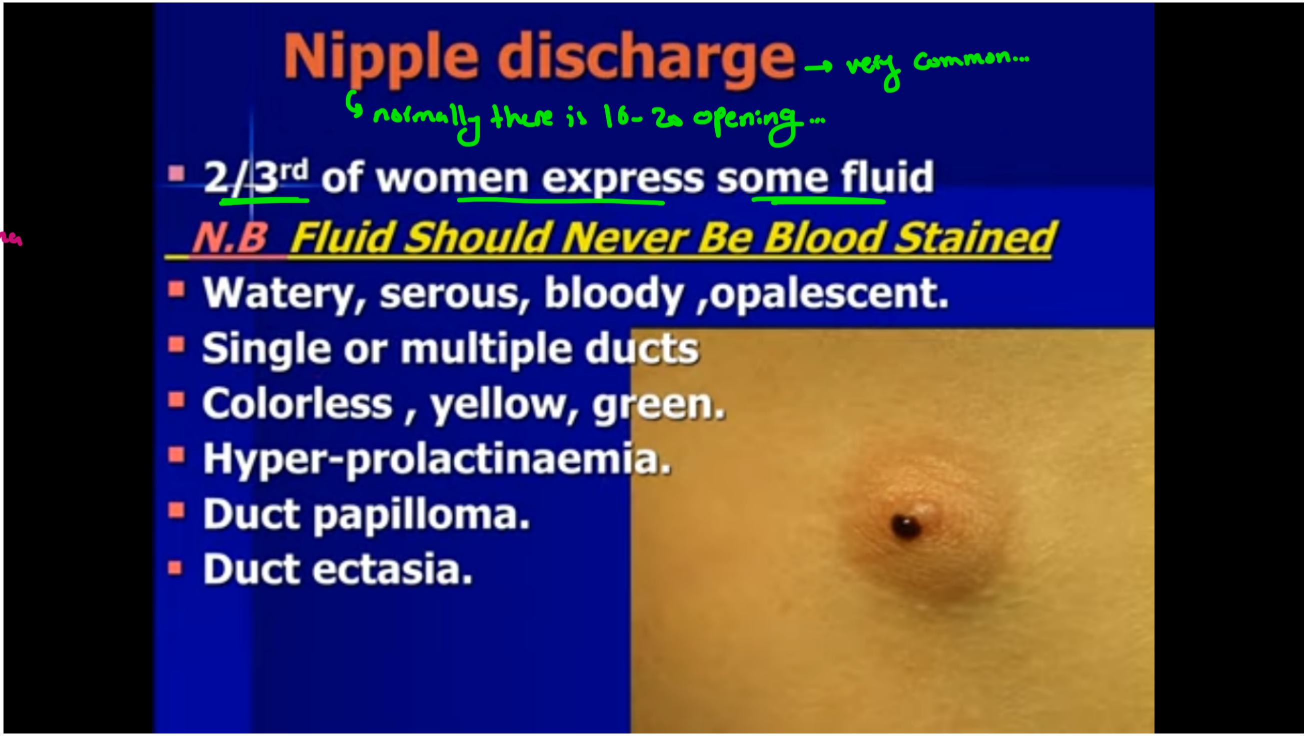
The spontaneous discharge worring than non-spont.

...يطلع بدّو need squeeze

*if the discharge is milk → ↑prolactine level released from ant. pituitary...

may indicate prolactinoma

→ The pos. pituitary release:- TSH - ADH - oxytocin...



Nipple discharge

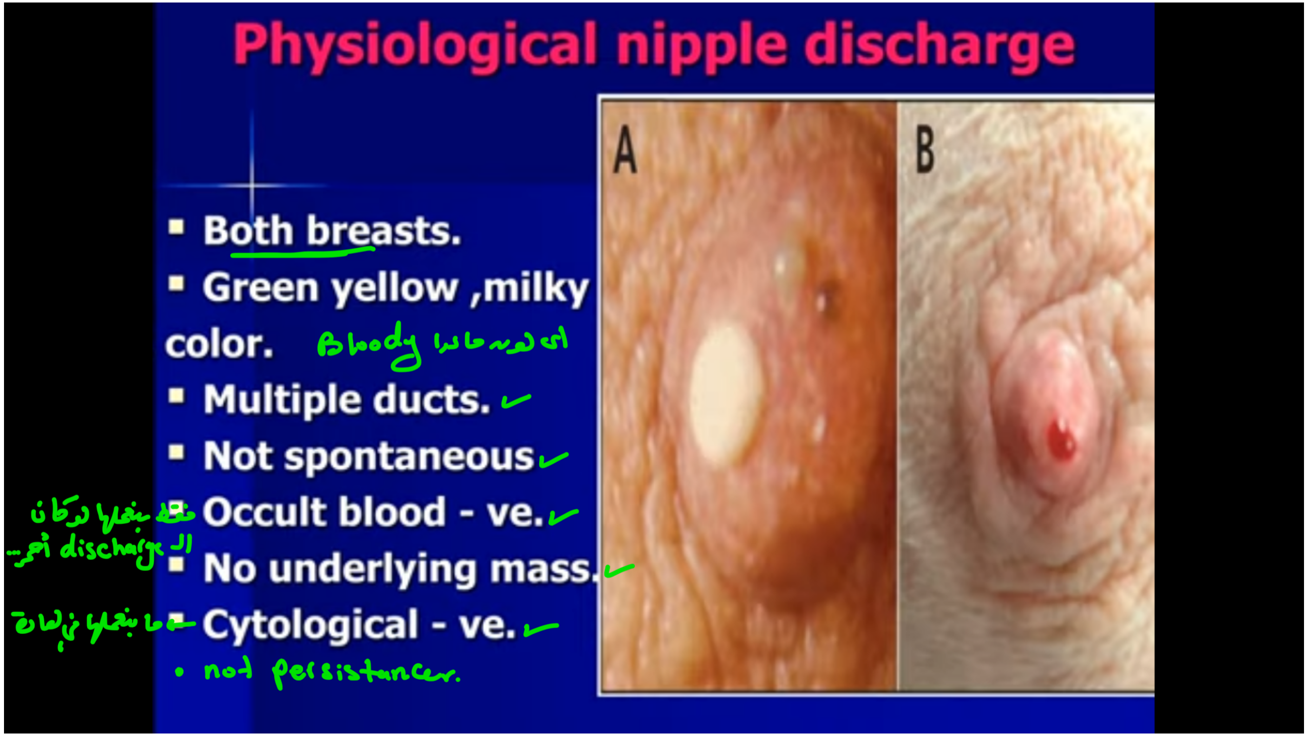
→ very common...

↳ normally there is 16-20 opening...

- 2/3rd of women express some fluid

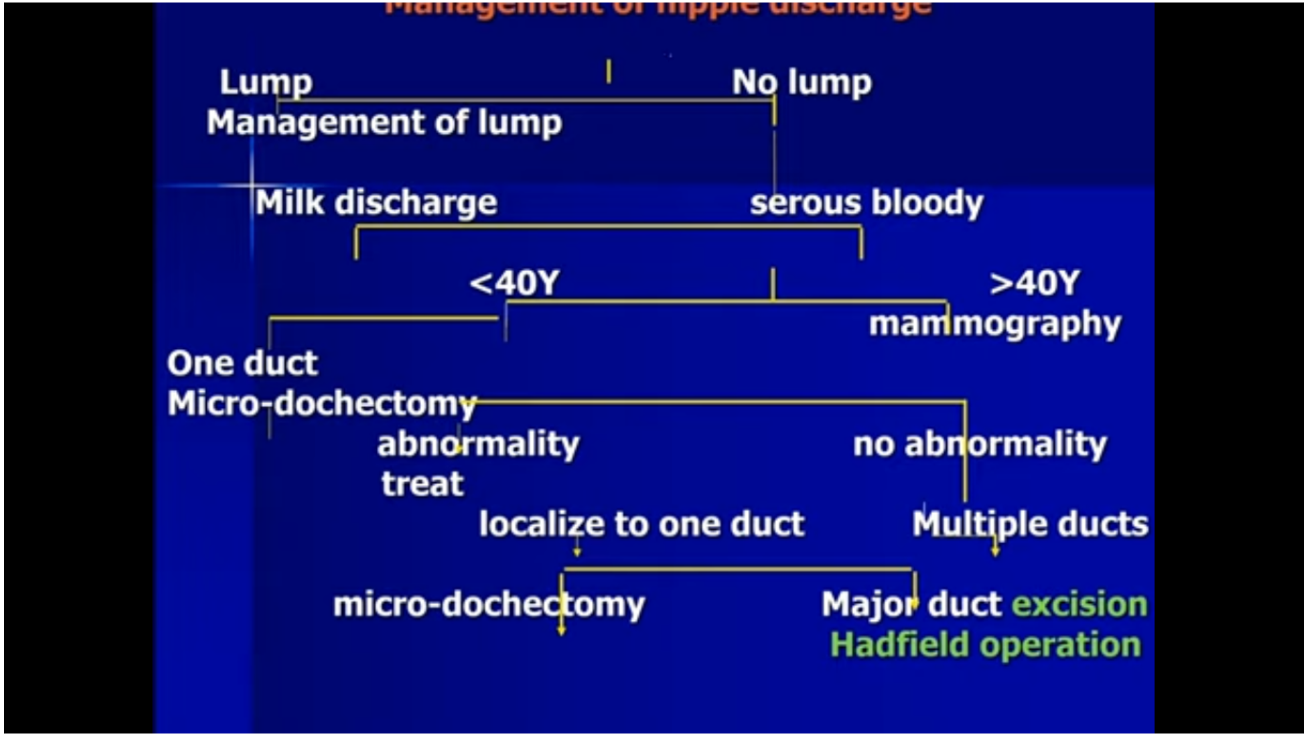
N.B Fluid Should Never Be Blood Stained

- Watery, serous, bloody ,opalescent.
- Single or multiple ducts
- Colorless , yellow, green.
- Hyper-prolactinaemia.
- Duct papilloma.
- Duct ectasia.



Physiological nipple discharge

- Both breasts.
- Green yellow ,milky color. Bloody [illegible]
- Multiple ducts. ✓
- Not spontaneous ✓
- Occult blood - ve. ✓ فقط بنعملها لو كان الـ discharge أحمر...
- No underlying mass. ✓
- Cytological - ve. ✓ ما بنعملها زيادة
- not persistancer.



Management of nipple discharge

Lump

Management of lump

No lump

Milk discharge

serous bloody

<40Y

>40Y

mammography

One duct

Micro-dochectomy

abnormality

treat

no abnormality

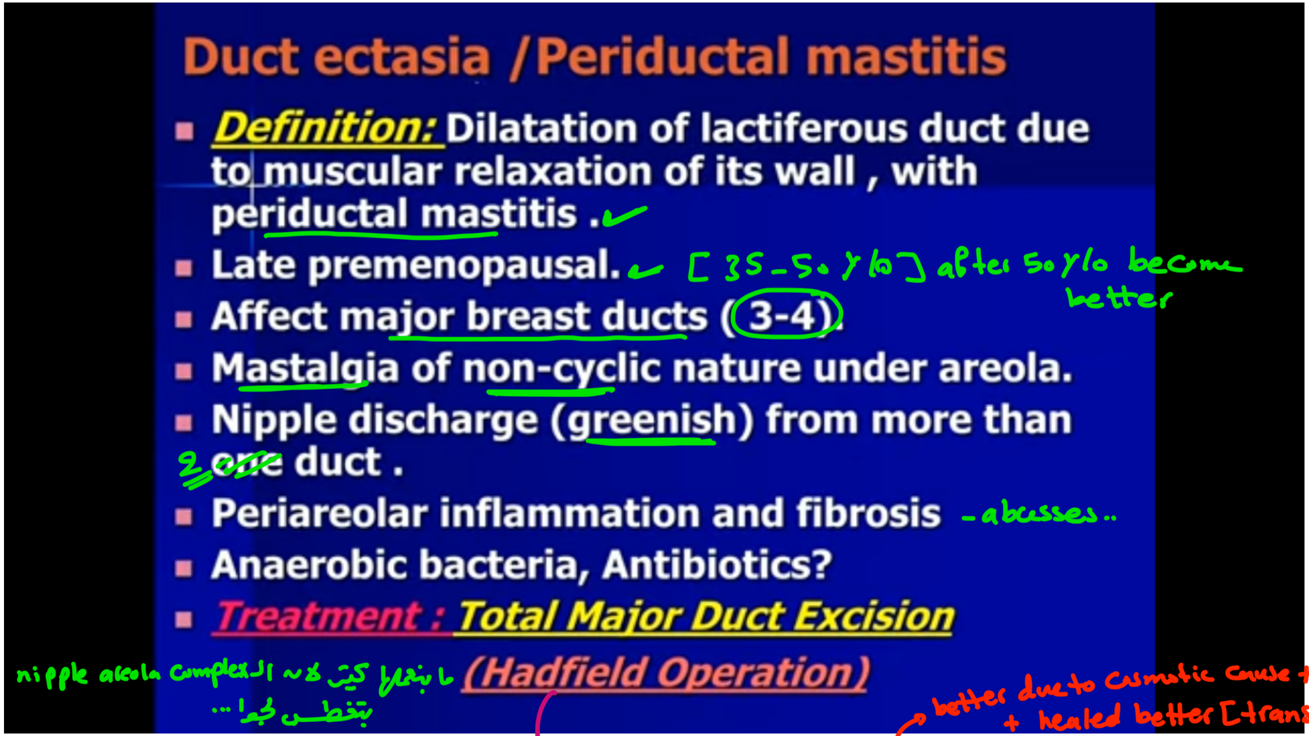
localize to one duct

Multiple ducts

micro-dochectomy

Major duct excision

Hadfield operation



Duct ectasia / Periductal mastitis

- ***Definition:*** Dilatation of lactiferous duct due to muscular relaxation of its wall , with periductal mastitis . ✓
- Late premenopausal. ✓ [35-50 y/o] after 50 y/o become better
- Affect major breast ducts (3-4).
- Mastalgia of non-cyclic nature under areola.
- Nipple discharge (greenish) from more than 2 ~~one~~ duct .
- Periareolar inflammation and fibrosis - abscesses..
- Anaerobic bacteria, Antibiotics?
- ***Treatment : Total Major Duct Excision***

ما بنعملها كتير لانه الـ nipple areola complex بتغطس لجوا ... ***(Hadfield Operation)***

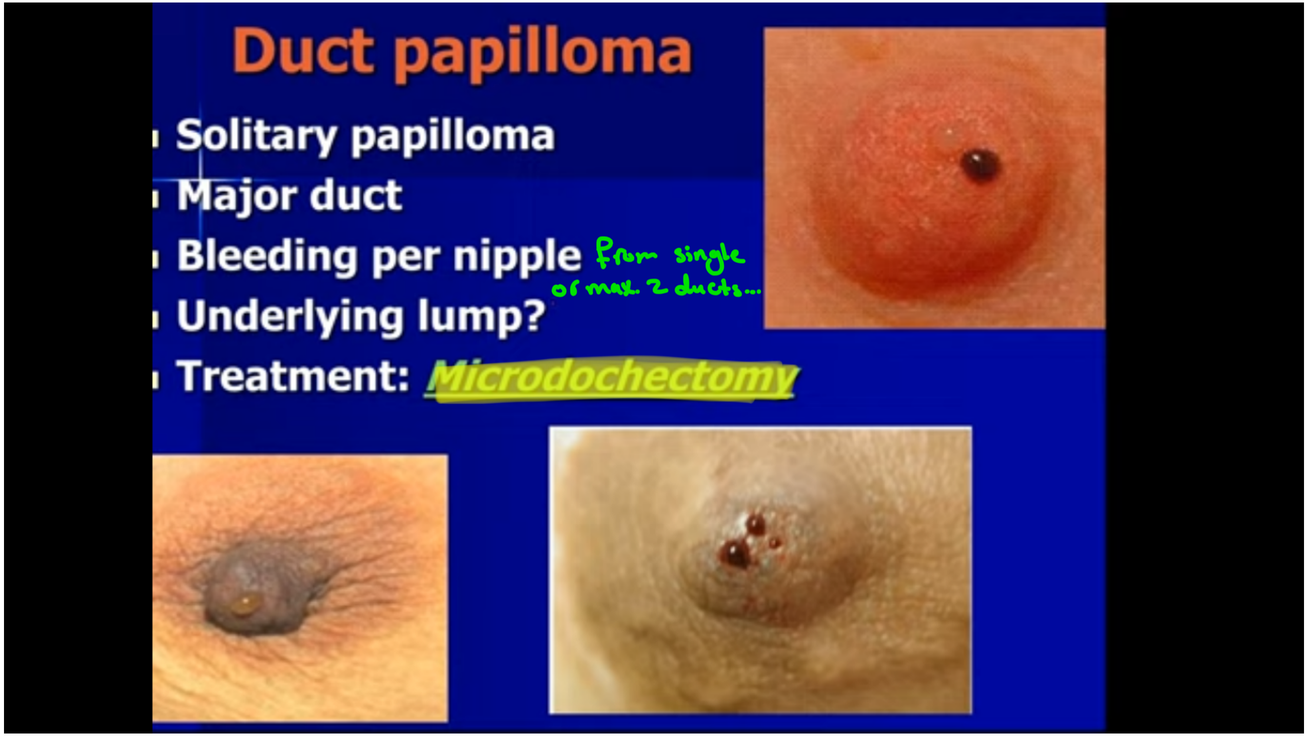
open smile incision below the nipple areola complex

لـ بنزحها لفوق وبنشيل كل الـ ducts وبعدين بنسكر

better due to cosmatic cause + BS mainly from superiorly.
+ healed better [transverse incision]

لذلك بنفتح من تحت
حتى نتفادى استطع
التقطيع بال BS ..

* The microductomy is mote popular than Hadfield operation
induct ectasia...
we do it if there is singleduct Bloody discharge فبنحيلها
بس لازم نخلي المريضة ممنوع تعمل squezze قبل لتروح للدكتور...



Duct papilloma

- Solitary papilloma
- Major duct
- Bleeding per nipple from single or max. 2 ducts...
- Underlying lump?
- Treatment: *Microdochectomy*

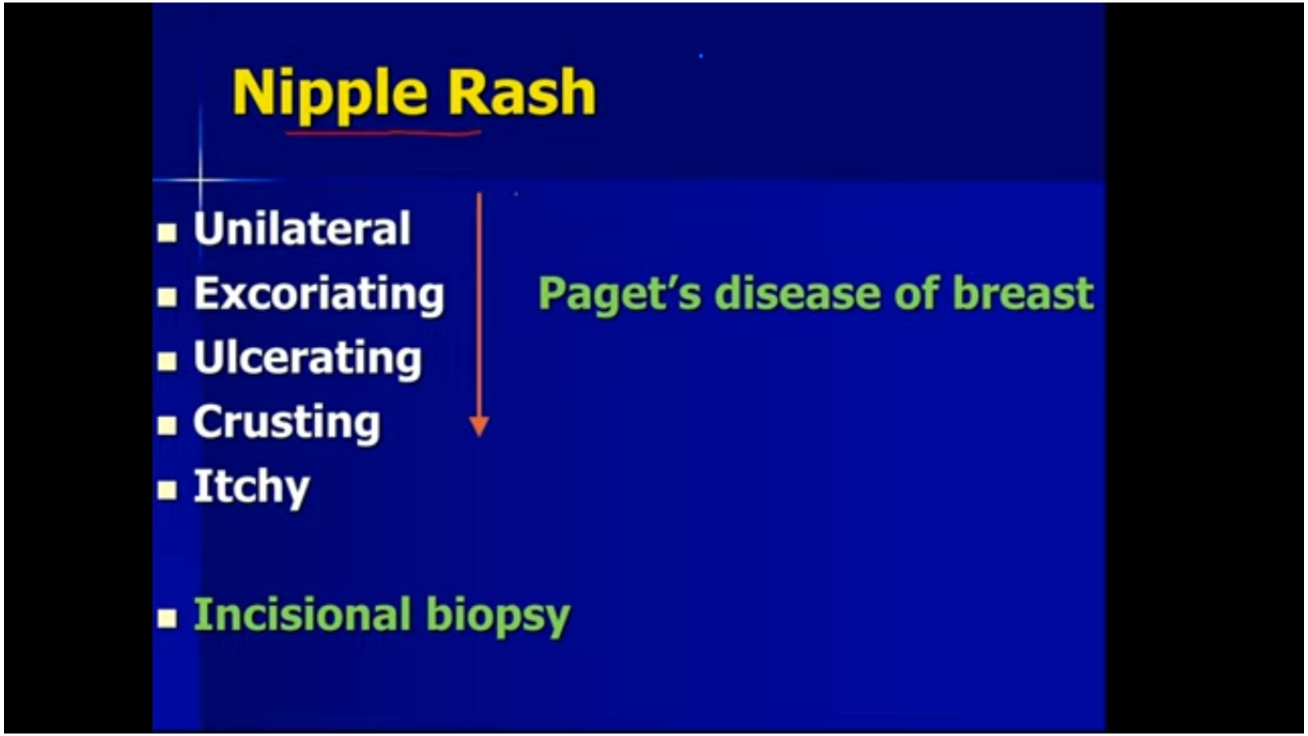
* The Bilateral rash → eczema حكة...

* The unilateral rash → Paget disease of the nipple...
بنخاف منه
has 97 % risk for malignancy...

* كيف ال Cancer وصل لل nipple areola complex ، عمل eczema وحكة
وتقشير distraction to this complex عن طريق ال lactifrous duct
[حيث إن ال cancer cell بتدخل بال duct وتصل للcomplex وبتعمله invasion]..

* Breast Cancer → in situ...
→ invasive..

* Colorectar Carcinoma:-
① familial polyposis coli :-
has 100% risk for malignancy...
[mainly come in the rectum]
② The non polyposis type
has 80% risk for malignancy
Come in the ceccum..

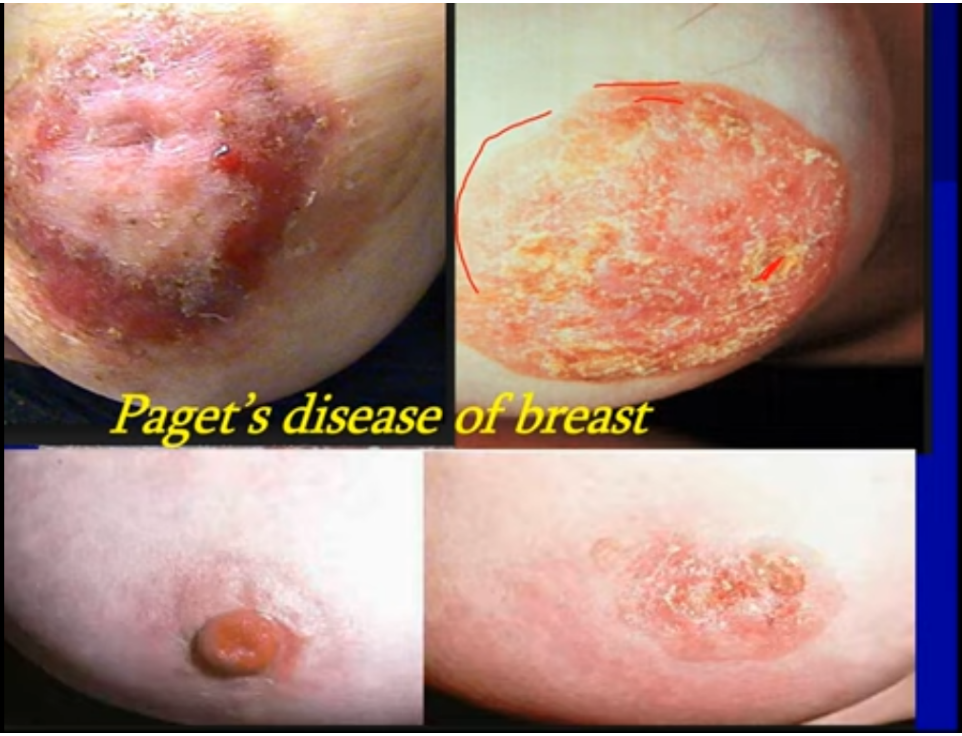


Nipple Rash

- Unilateral
- Excoriating
- Ulcerating
- Crusting
- Itchy

Paget's disease of breast

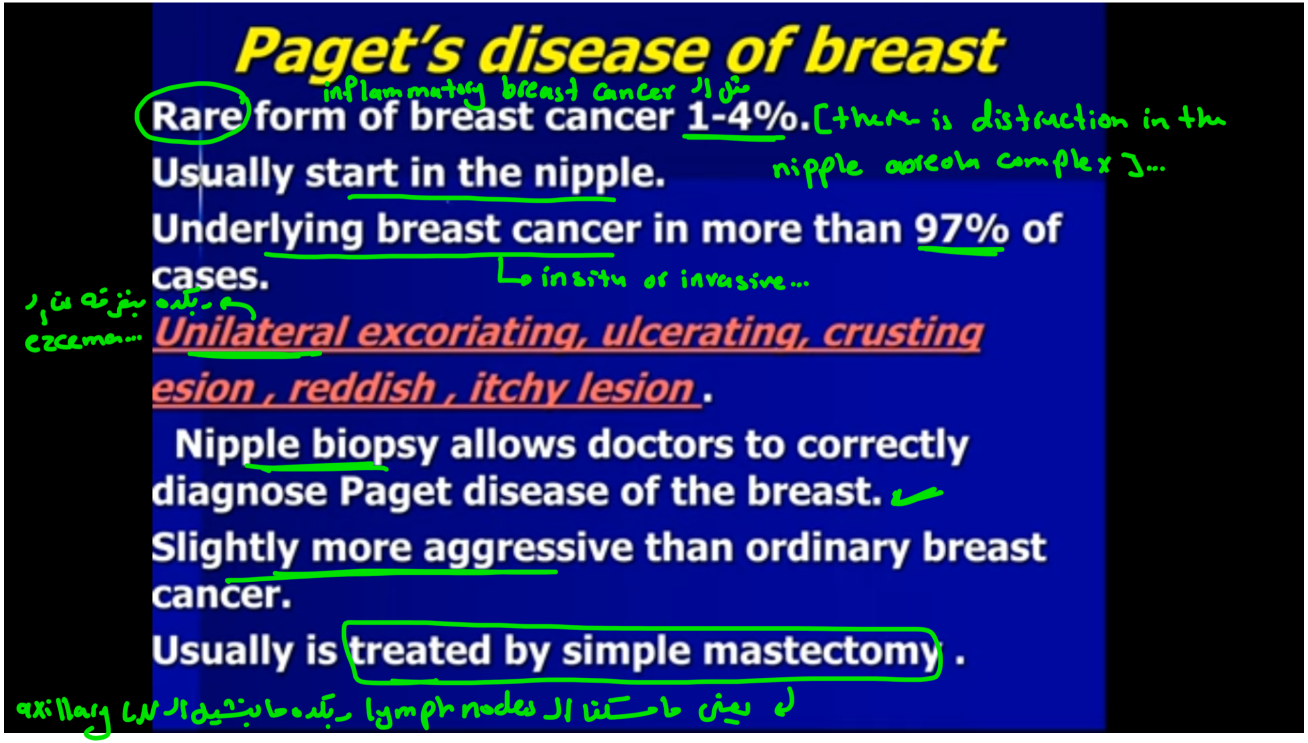
- Incisional biopsy



Paget's disease of breast

* if paget dz associated with cancer we do:- Simple Mastectomy due to distructed nipple aoreola complex in the middle of Breast
يعني ما بنقدر نعمل Breast preservaing

* The prognosis of cancer Breast better than paget dz + Breast cancer prognosis...
↳ more aggresive...



Paget's disease of breast

Rare form of breast cancer 1-4%. [there is distruction in the nipple aoreola complex]...

زي ال inflammatory breast cancer

Usually start in the nipple.

Underlying breast cancer in more than 97% of cases.
↳ insitu or invasive...

Unilateral excoriating, ulcerating, crusting esion , reddish , itchy lesion .

بكده بتفرقه عن ال eczema...

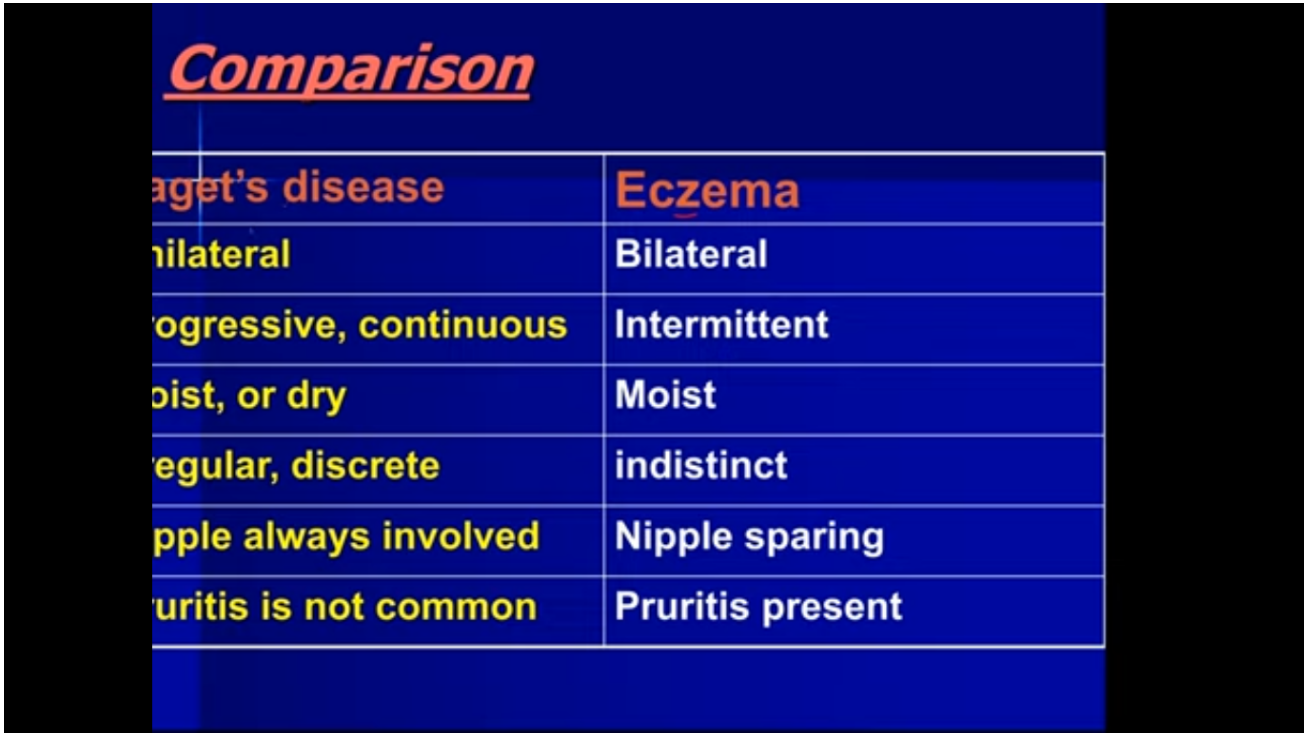
Nipple biopsy allows doctors to correctly diagnose Paget disease of the breast. ✓

Slightly more aggressive than ordinary breast cancer.

Usually is treated by simple mastectomy .

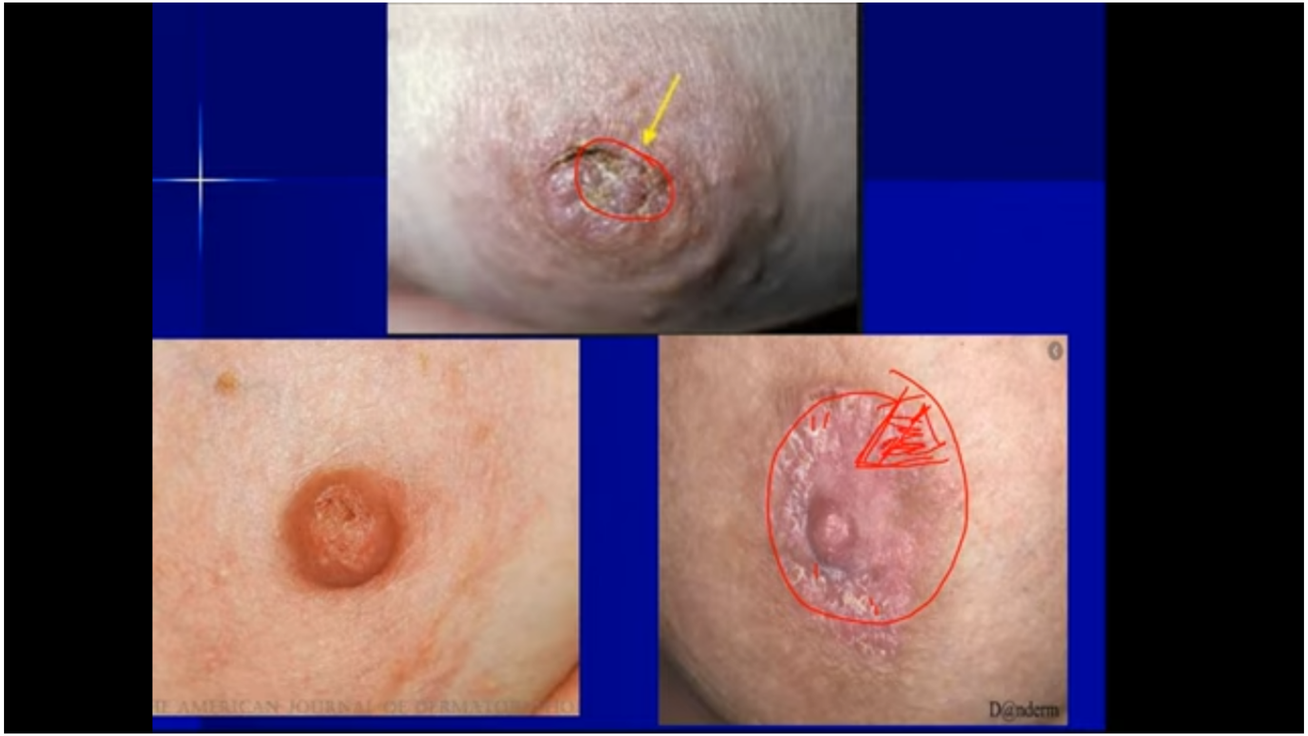
لـ يعني ما لمسنا ال lymph nodes بكده ما بنشيل ال axillary LN

* The modified radical mastectomy → we remove the axillary LN also...



Comparison

aget's disease	Eczema
ilateral	Bilateral
ogressive, continuous	Intermittent
oist, or dry	Moist
egular, discrete	indistinct
pple always involved	Nipple sparing
uritis is not common	Pruritis present


AMERICAN JOURNAL OF DERMATOPATHOLOGY
D@nderm

* **Mastitis:-** inflammation of the breast...
↳ we should ask about lactation state

→ if she not lactational indicate :- periductal mastitis - granulomatus mastitis...

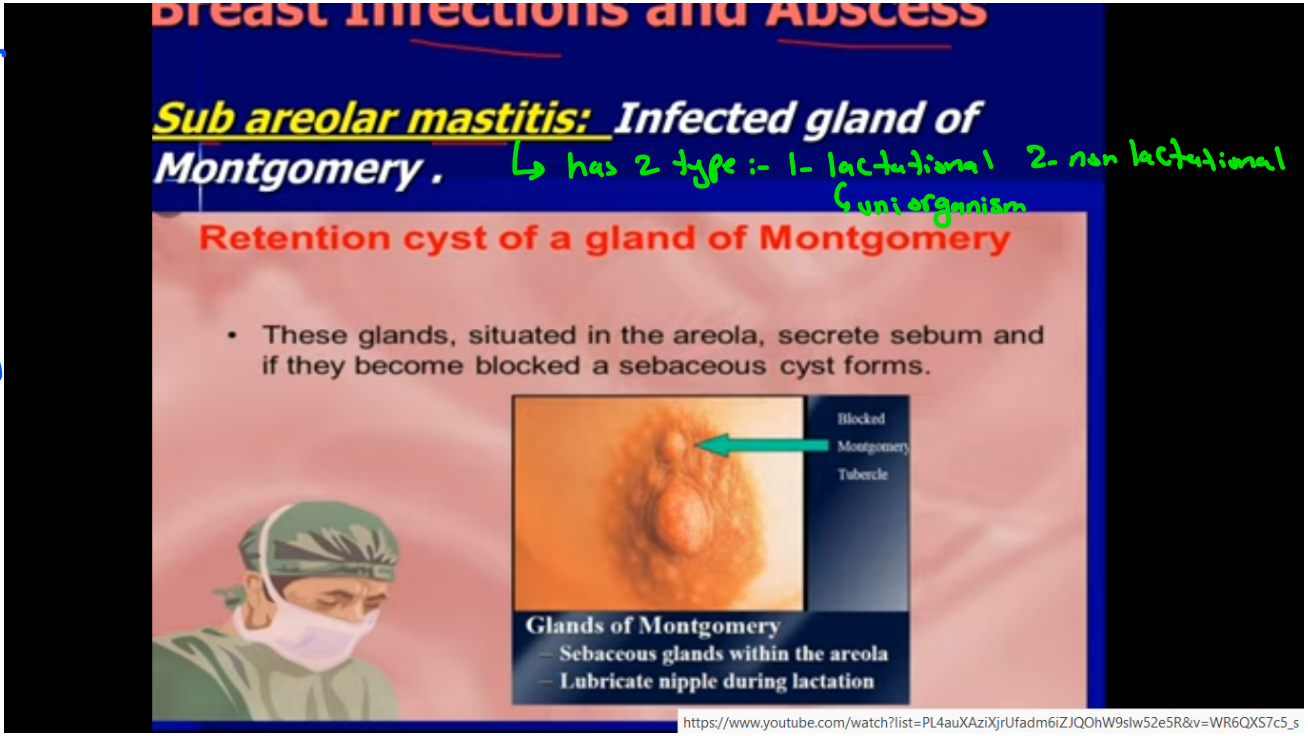
→ if she is lactational come at first 6 weeks of lactation, mainly due to :- staph. or strept. [gram +ve] [so we give ~~1st or 2nd~~ 3rd generation cephalosporine to cover the staph and strept Bacteria]...
first baby اول مرة بتخلف

لما تزيد ال generation بيقل ال covering ل gram ~~+ve~~ -ve بيزيد ل gram +ve ...

* **The tt of mastitis:-**

① 1st or 2nd generation of cephalosporine...
- if there is resistance ممكن نعطي sulfamethoprime or trimethoprime

② Hot compressore, ...
③ anesthesia [NSAIDS]
④ not stop the lactation
ولو كانت موجوعة وحش قادرة ترضع تستعمل pumb
[لو طلع حليب ابيض تكمل ترضع ولكن لو طلع turbulent بخاف يصير ال baby + التهاب مافيه توقف الرضاعة وتستعمل ال pumb]...



Breast Infections and Abscess

Sub areolar mastitis: ***Infected gland of Montgomery .***
↳ has 2 type :- 1- lactational 2- non lactational
↳ uni organism

Retention cyst of a gland of Montgomery

- These glands, situated in the areola, secrete sebum and if they become blocked a sebaceous cyst forms.

Glands of Montgomery
– Sebaceous glands within the areola
– Lubricate nipple during lactation

https://www.youtube.com/watch?list=PL4auXAziXjrUfadm6iZJQOhW9slw52e5R&v=WR6QXS7c5_s

*Any inflammation in the Breast doesn't improve with good antibiotic for 3 weeks max. indicate:- Inflammatory Breast Cancer
untill prove other wise...

Come in young age female
واصغر من عمر يلي بيجي فيه ال cancer...

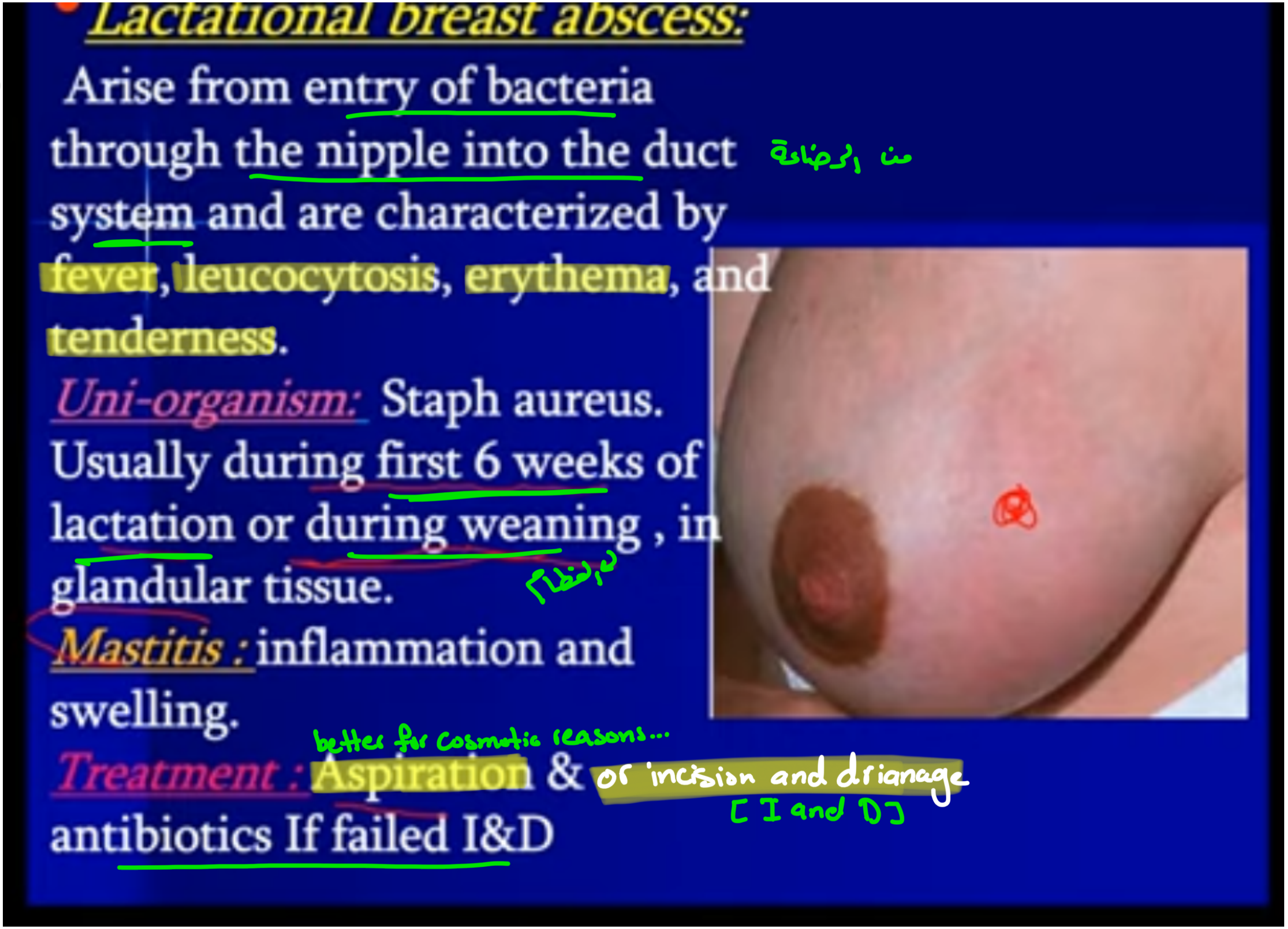
the erythema cover more than 1/3 of Breast...

+ مش دايما بيكون معه mass

*To do Aspiration:-

① لازم يكون ال Skin ← normal
فلو كان في necrosis ما بنفع نعمل Aspiration... [so we do incision and drainage]...

② لازم نحكي للمريض انه بدنا نعمل repeated aspiration
فلو المريضة مش حابة تضل ترجع تعمل Aspiration
[so we do incision and drainage]...



Lactational breast abscess:

Arise from entry of bacteria through the nipple into the duct system and are characterized by fever, leucocytosis, erythema, and tenderness.

من الرضاعة

Uni-organism: Staph aureus.

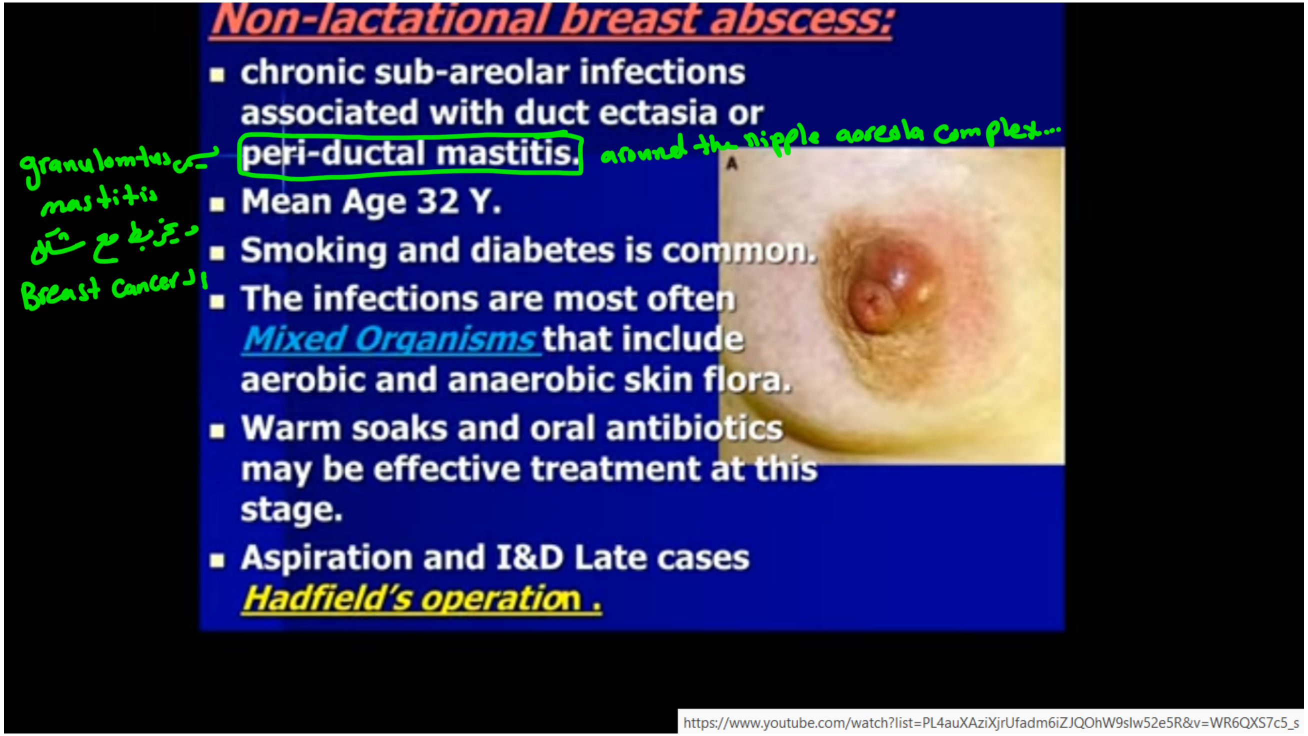
Usually during first 6 weeks of lactation or during weaning, in glandular tissue.

الفطام

Mastitis : inflammation and swelling.

Treatment : Aspiration & or incision and drianage [I and D]
antibiotics If failed I&D

better for cosmetic reasons...



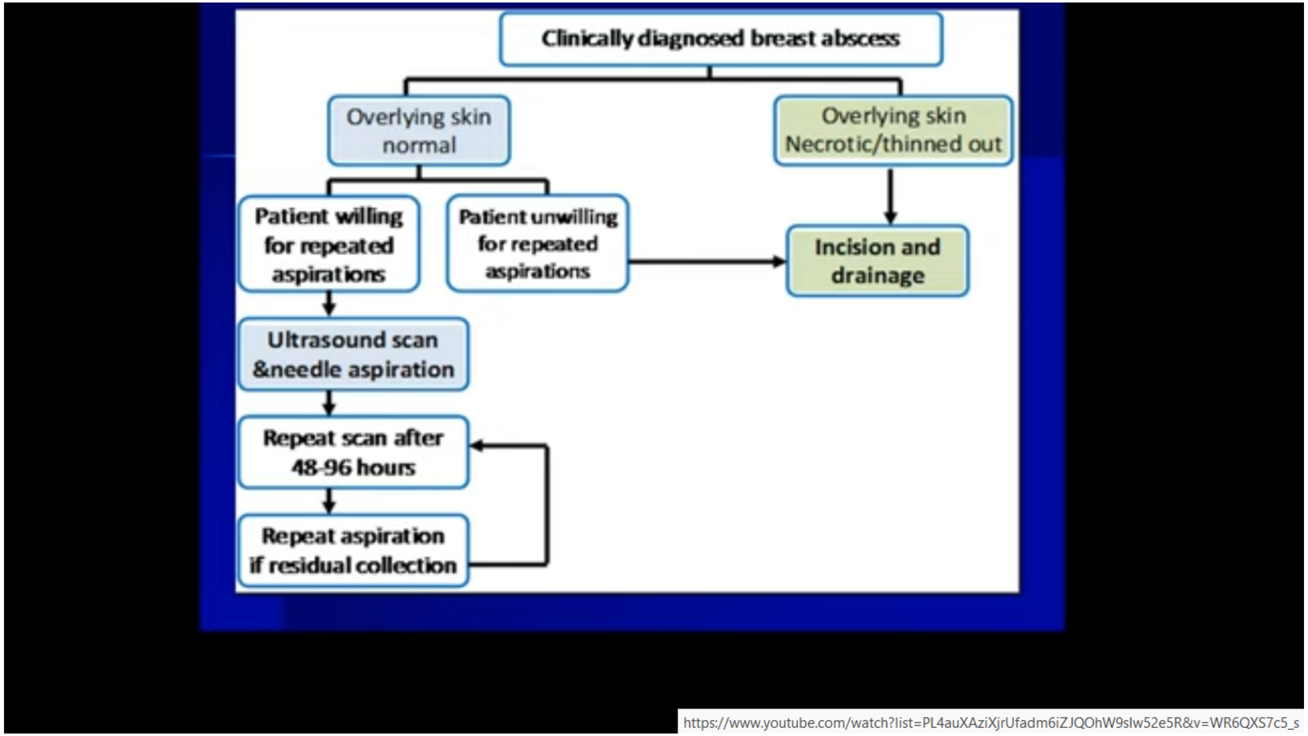
Non-lactational breast abscess:

- chronic sub-areolar infections associated with duct ectasia or peri-ductal mastitis.
- Mean Age 32 Y.
- Smoking and diabetes is common.
- The infections are most often *Mixed Organisms* that include aerobic and anaerobic skin flora.
- Warm soaks and oral antibiotics may be effective treatment at this stage.
- Aspiration and I&D Late cases *Hadfield's operation .*

around the nipple areola complex...

granulomtus يسمى
mastitis
ويترابط مع شي
Breast cancer ال

https://www.youtube.com/watch?list=PL4auXAziXjrUfadm6iZJQOhW9slw52e5R&v=WR6QXS7c5_s



Clinically diagnosed breast abscess

Overlying skin normal

Overlying skin Necrotic/thinned out

Patient willing for repeated aspirations

Patient unwilling for repeated aspirations

Incision and drainage

Ultrasound scan &needle aspiration

Repeat scan after 48-96 hours

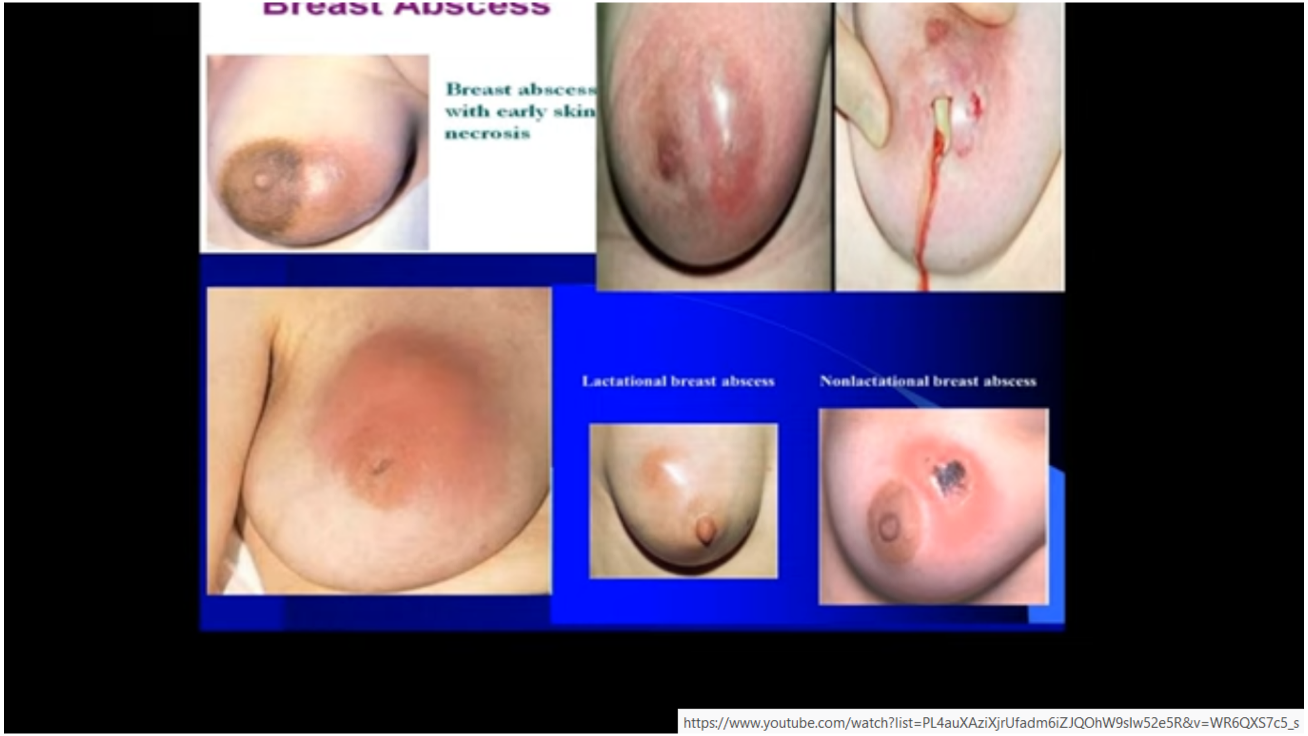
Repeat aspiration if residual collection

https://www.youtube.com/watch?list=PL4auXAziXjrUfadm6iZJQOhW9sIw52e5R&v=WR6QXS7c5_s

* May we put hemovac drain or penrose drain مطاط

↳ Better...

بعكس يسحبش بسبب ال thick pus



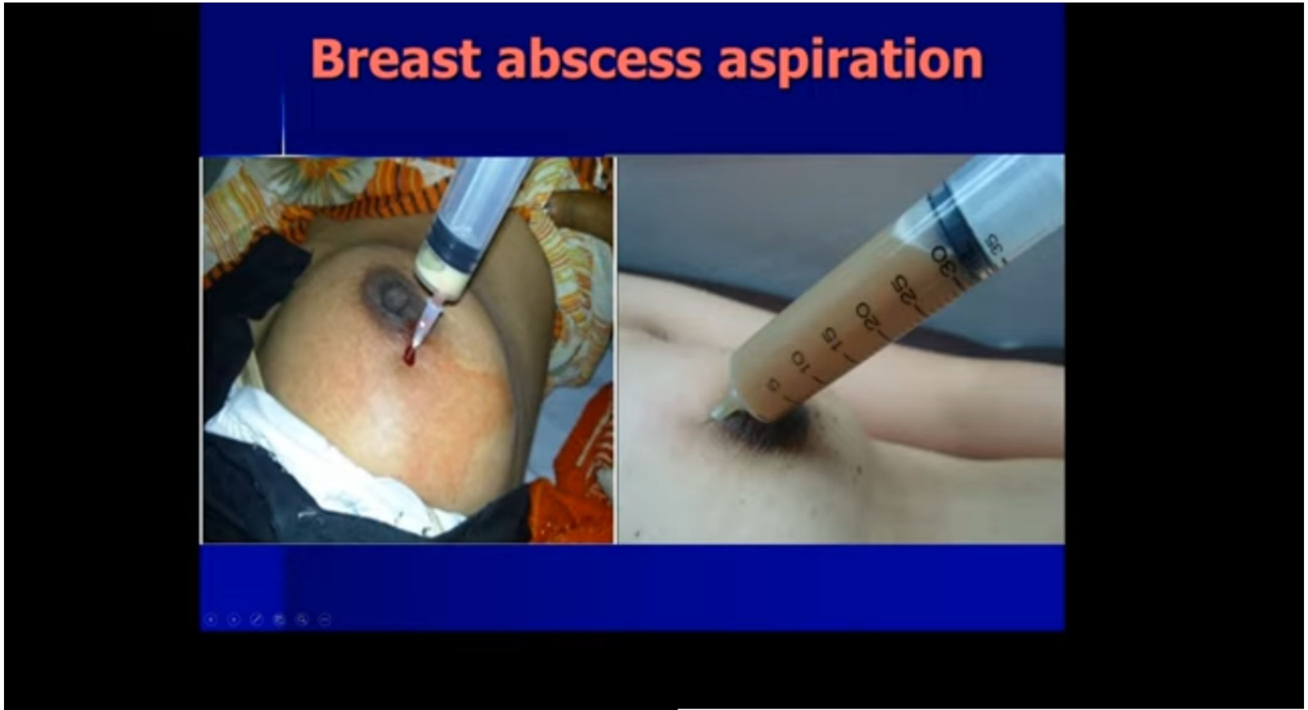
Breast Abscess

Breast abscess with early skin necrosis

Lactational breast abscess

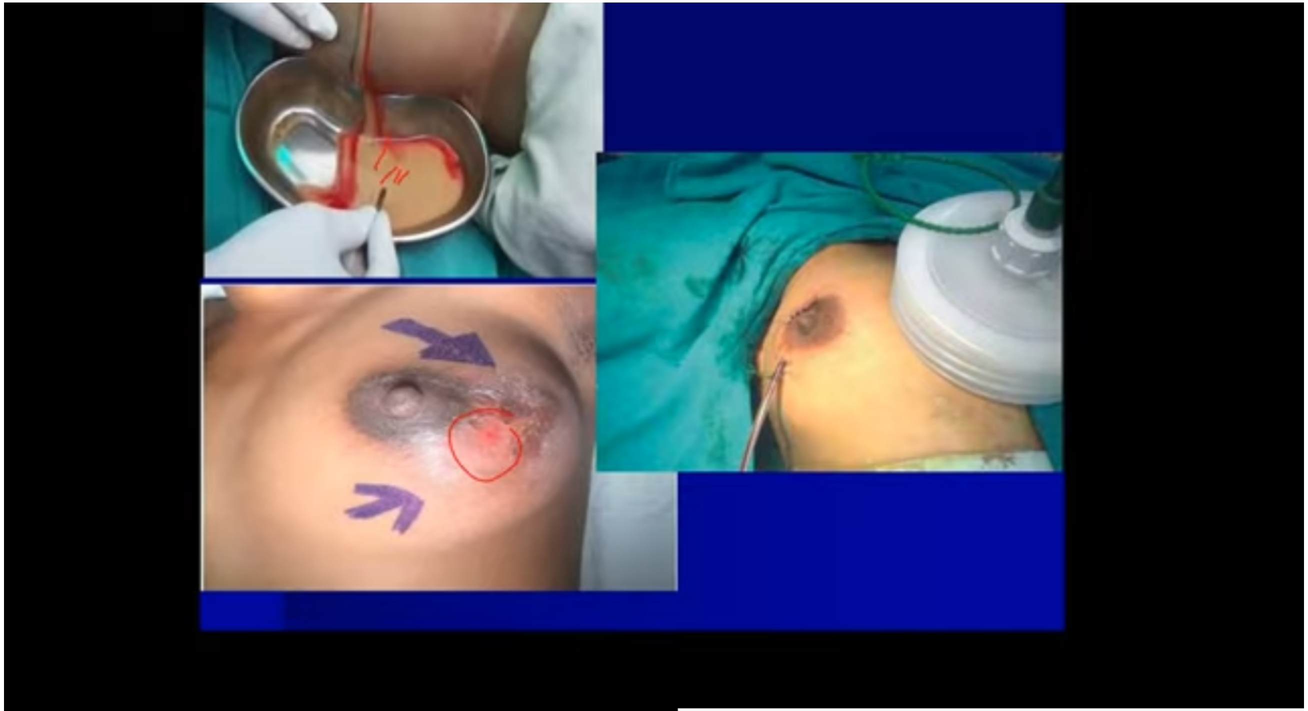
Nonlactational breast abscess

https://www.youtube.com/watch?list=PL4auXAziXjrUfadm6iZJQOhW9sIw52e5R&v=WR6QXS7c5_s



Breast abscess aspiration

https://www.youtube.com/watch?list=PL4auXAziXjrUfadm6iZJQOhW9slw52e5R&v=WR6QXS7c5_s



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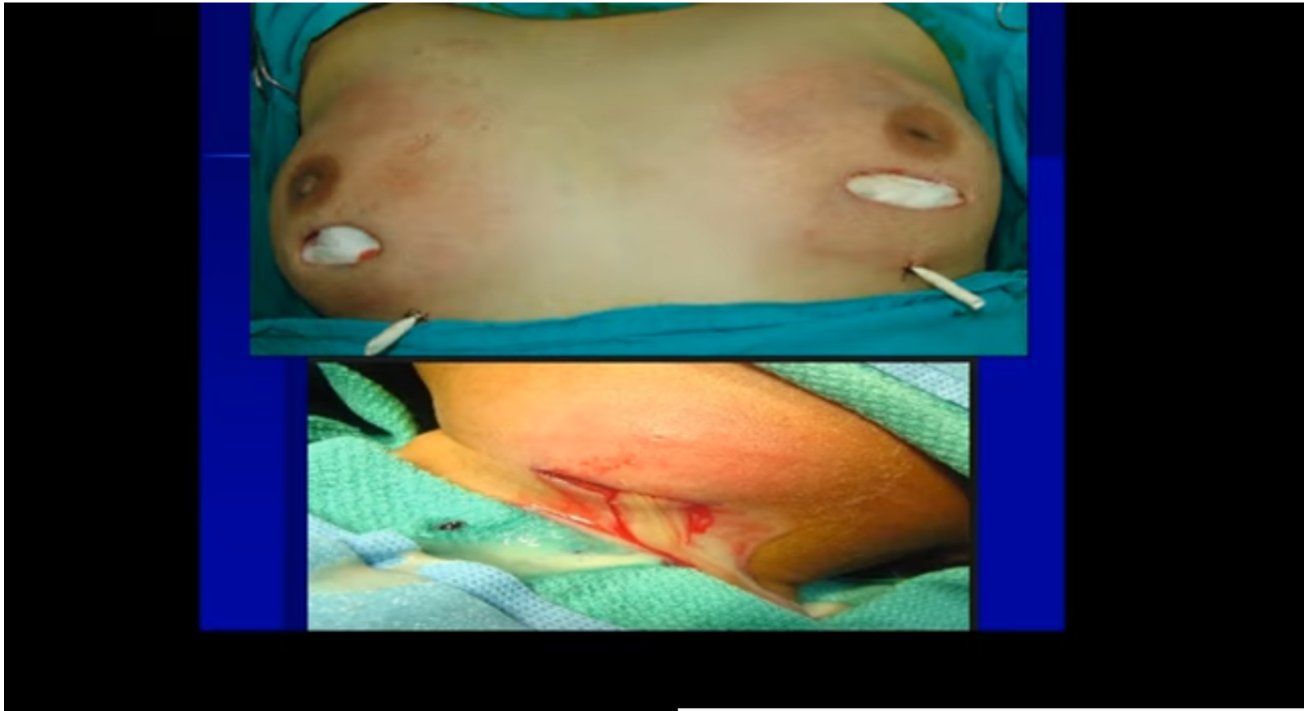


https://www.youtube.com/watch?list=PL4auXAziXjrUfadm6iZJQOhW9slw52e5R&v=WR6QXS7c5_s

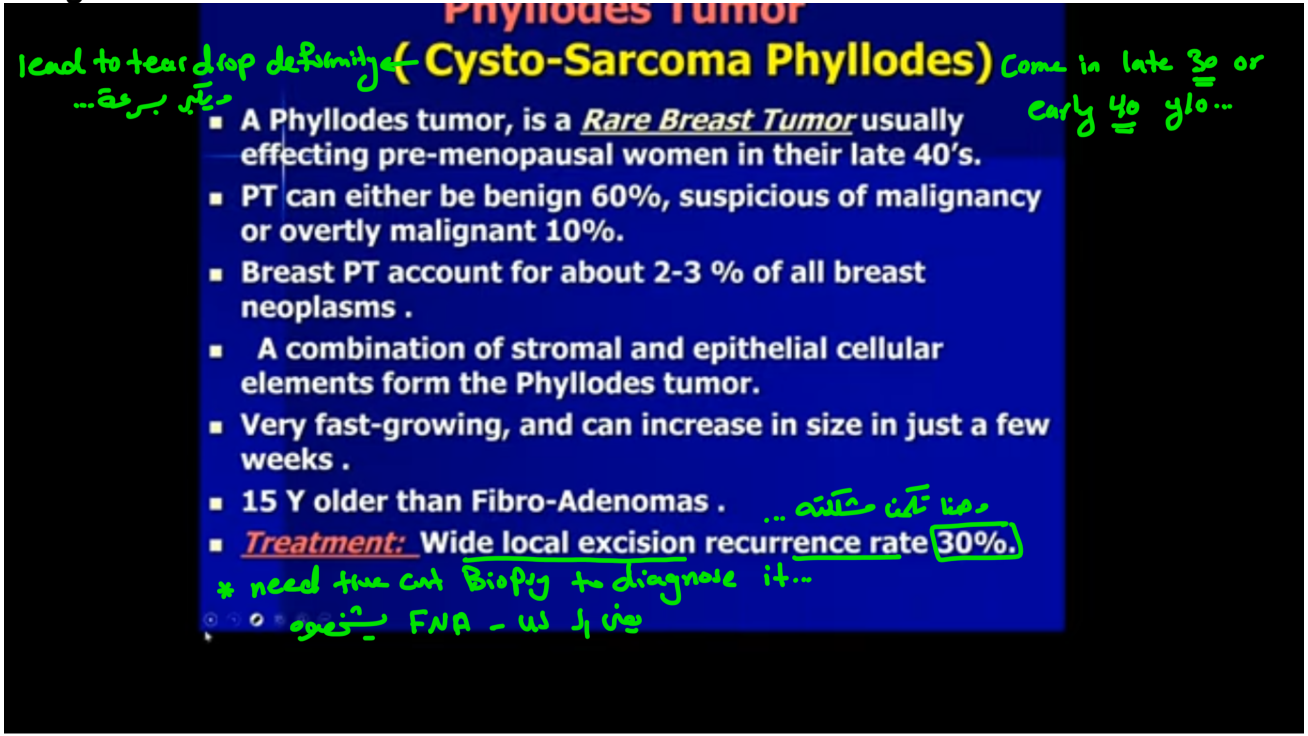
* The phylodes tumor compination of :- ① Strома ...
② epithelial...

- cysto sarcoma not reach the LN...
  [No LN metz]...
- lead to hematogenous spread...
  - Bone [mainly to lumber vertabrae] → so any eldery female presented with bony pain is Breast cancer untill prove other wise...
  - lung

* The phyllodes tumor in
  - 60% Bengin
  - 30-20% Border line
  - 10% malignant

مشكلته عكس يرجع !!
لذلك بنعمل wide excision
وبنحاول ما نعمل Bilateral mastectomy...

* In sarcoma we should know if it
  - low grade
  - high grade



Phyllodes Tumor

(Cysto-Sarcoma Phyllodes)

lead to tear drop deformity ← ديكبر بسرعة...

Come in late 30 or early 40 y/o...

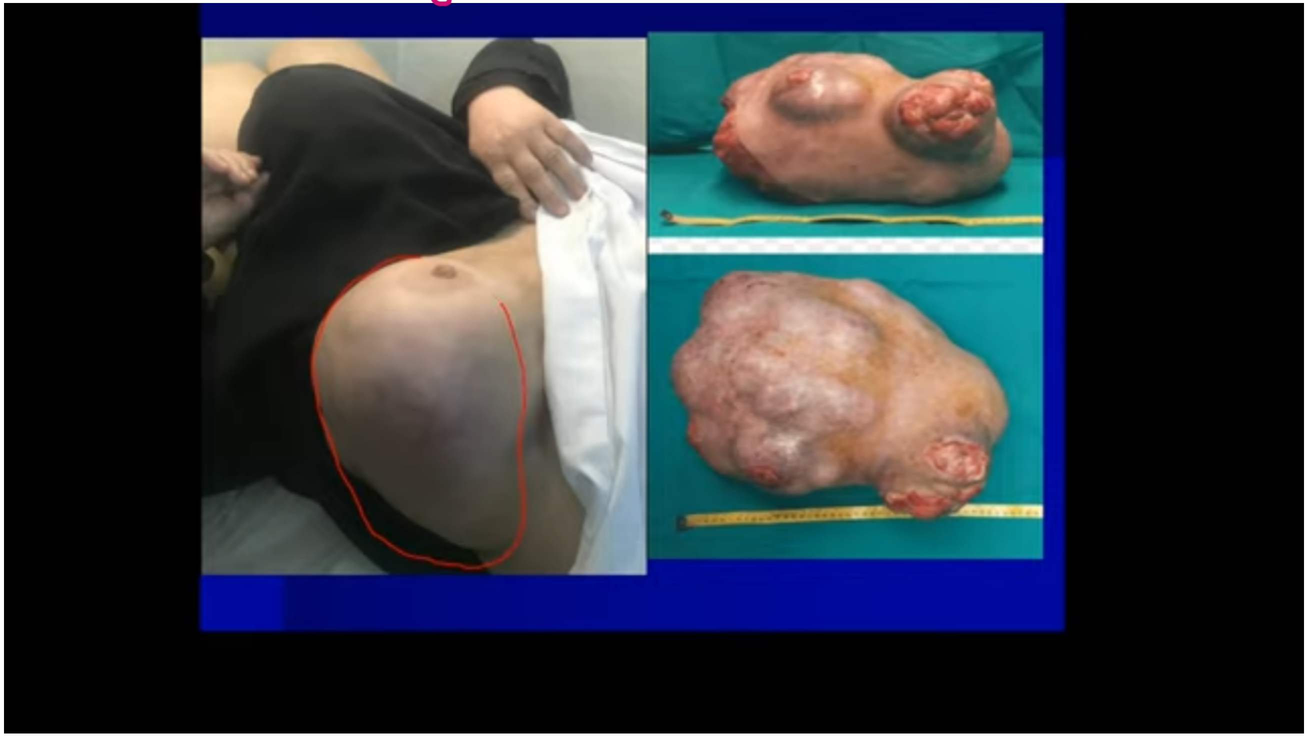
- A Phyllodes tumor, is a *Rare Breast Tumor* usually effecting pre-menopausal women in their late 40's.
- PT can either be benign 60%, suspicious of malignancy or overtly malignant 10%.
- Breast PT account for about 2-3 % of all breast neoplasms .
- A combination of stromal and epithelial cellular elements form the Phyllodes tumor.
- Very fast-growing, and can increase in size in just a few weeks .
- 15 Y older than Fibro-Adenomas .
- *Treatment:* Wide local excision recurrence rate 30%.

وهنا تكمن مشكلته ...

* need true cut Biopsy to diagnose it...
مش ال US - FNA يشخصوه

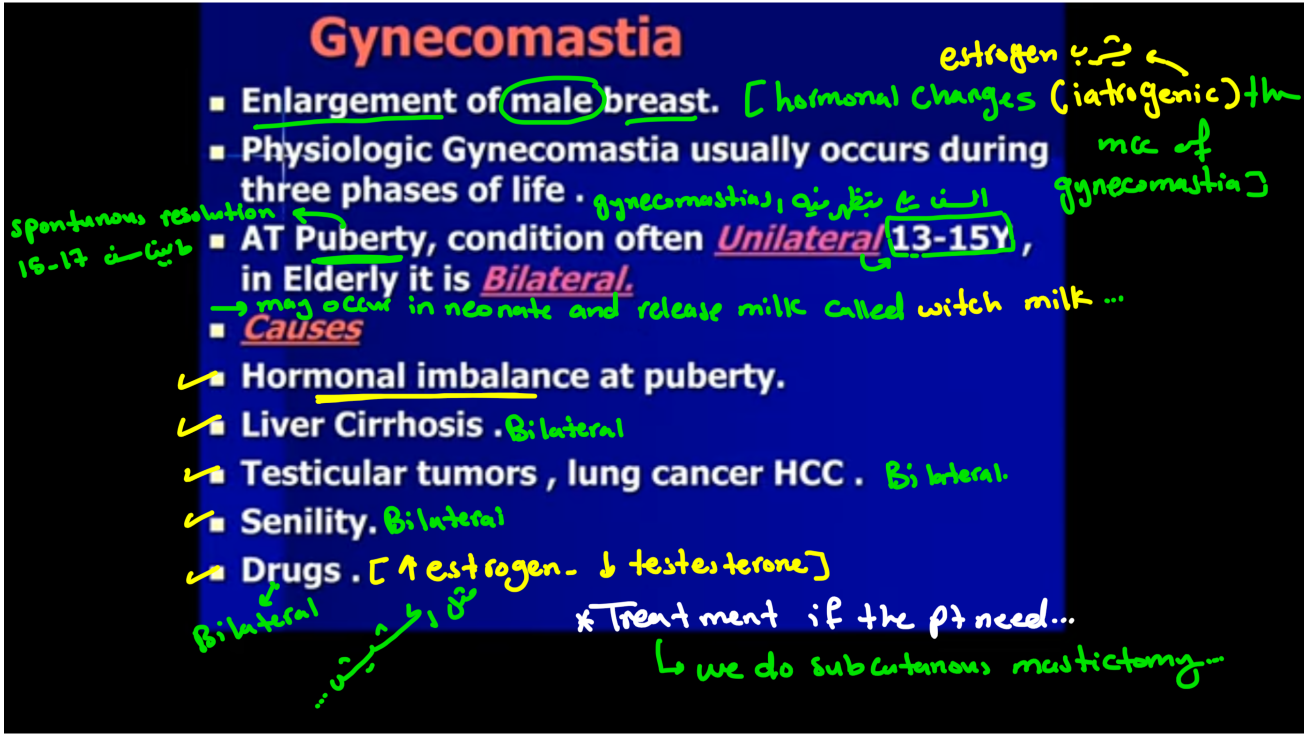
* eldery male presented with Bony pain is Prostatic cancer untill prove other wise...

Big phlloydes tumor...



* لو تم ربط ال testicular A. بالغلط بعملية ال varicocele بتاعه ال testis رح يصير فيها Ischemia ← Become Atrophied ← lead to low testosterone → lead to gynecomastia...

* The BS of testis:-
1- main testicular A...
2- artery of the vas...
3- cremasteric A.



Gynecomastia

- Enlargement of male breast. [hormonal changes (iatrogenic) the mcc of gynecomastia] ← estrogen بيتغير
- Physiologic Gynecomastia usually occurs during three phases of life . السن ← بتظهر فيه ال gynecomastia
- AT Puberty, condition often *Unilateral* 13-15Y, in Elderly it is *Bilateral.* → spontaneous resolution 15-17 بتطيب
  → may occur in neonate and release milk called witch milk...
- *Causes*
- ✓ Hormonal imbalance at puberty.
- ✓ Liver Cirrhosis . Bilateral
- ✓ Testicular tumors , lung cancer HCC . Bilateral.
- ✓ Senility. Bilateral
- ✓ Drugs . [↑ estrogen - ↓ testesterone] Bilateral بيشتغل زي ال...

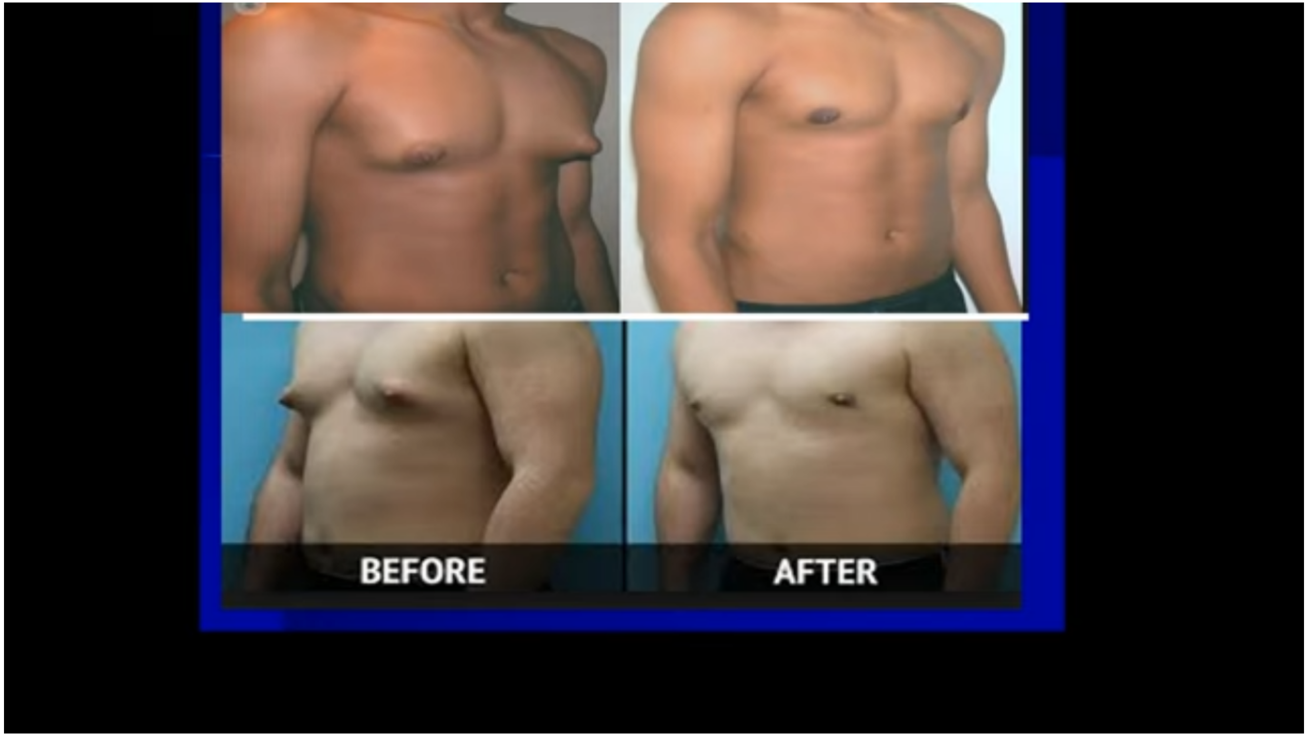
* Treatment if the pt need...
↳ we do subcutaneous mastictomy...

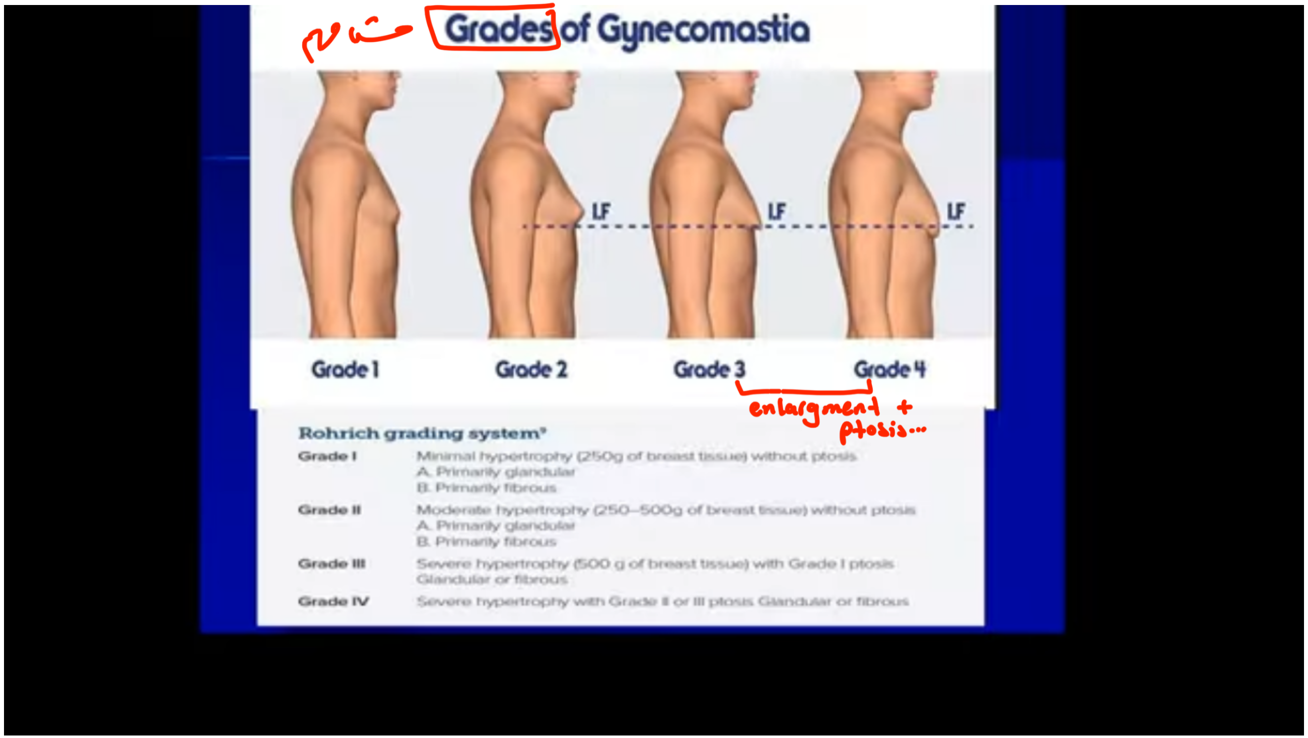
* Any young age male presented with gynecomastia is testicular cancer untill prove otherwise... [then maybe liver cirrhosis or hepatitis → so see the LFTs
- small cell cancer of the lung]... ↳ so do xray...
↳ as:- Teratoma common in 20 y/o...

* The Bleeding per rectum is Rectal Cancer untill prove other wise...

* The tumor marker of Hepatocellular carcinoma:- α fetoprotein [AFP]..

* The tumor marker of testicular carcinoma:- α fetoprotein or β HCG ...





مش مهم

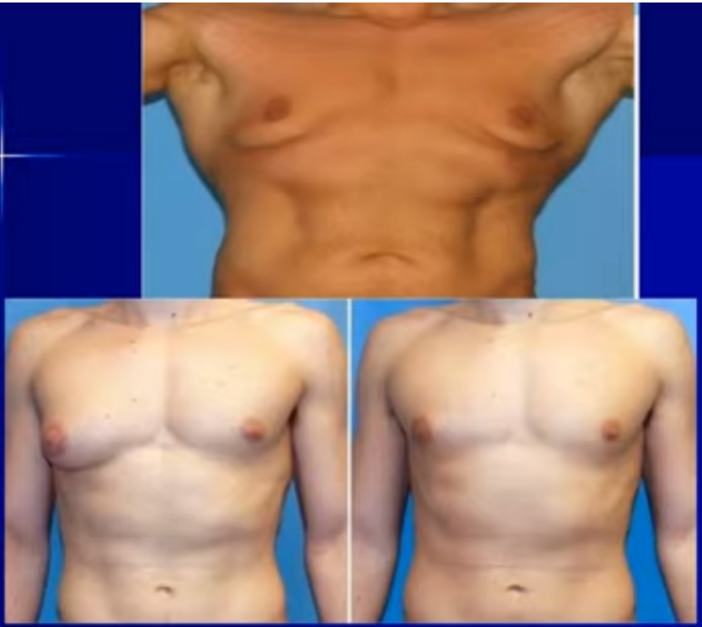
Grades of Gynecomastia

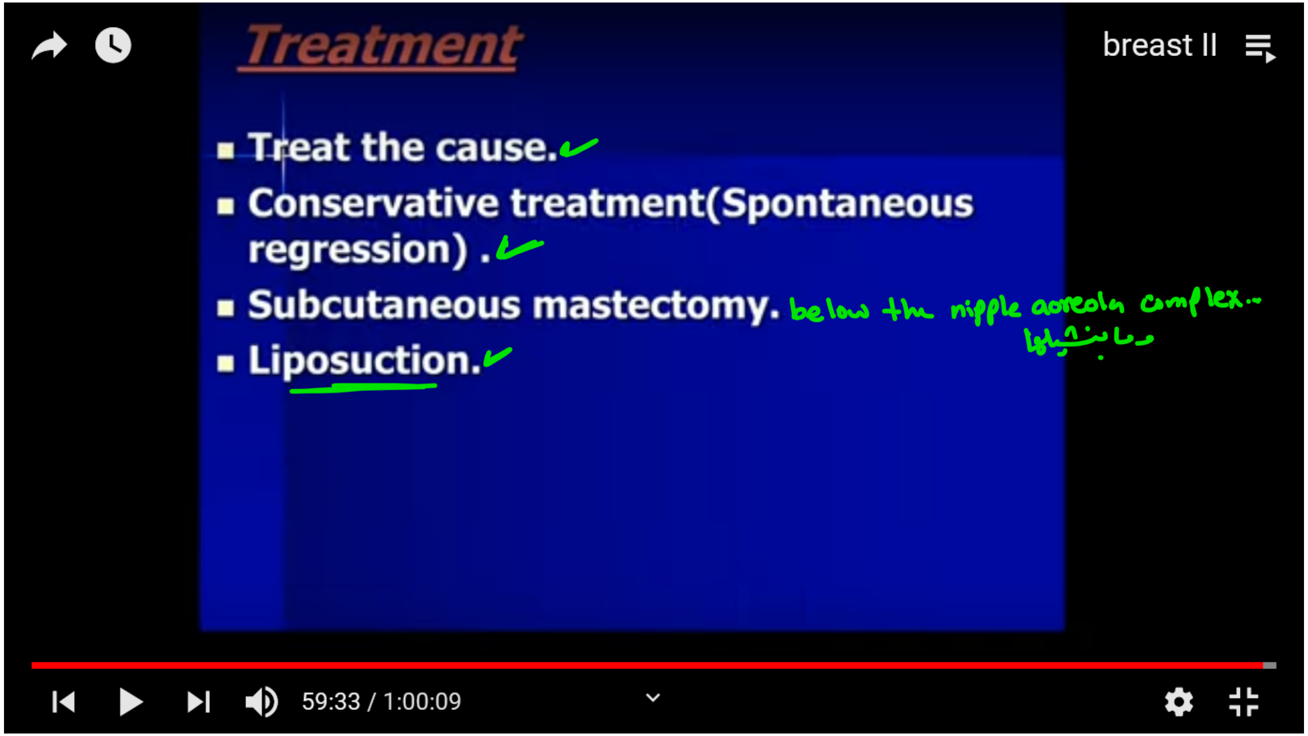
Grade 1 — Grade 2 — Grade 3 — Grade 4

enlargment +
ptosis...

Rohrich grading system[a]

Grade I	Minimal hypertrophy (250g of breast tissue) without ptosis A. Primarily glandular B. Primarily fibrous
Grade II	Moderate hypertrophy (250–500g of breast tissue) without ptosis A. Primarily glandular B. Primarily fibrous
Grade III	Severe hypertrophy (500 g of breast tissue) with Grade I ptosis Glandular or fibrous
Grade IV	Severe hypertrophy with Grade II or III ptosis Glandular or fibrous





Treatment

- Treat the cause. ✓
- Conservative treatment(Spontaneous regression) . ✓
- Subcutaneous mastectomy. below the nipple aoreola complex.. ومابنشيلها
- Liposuction. ✓