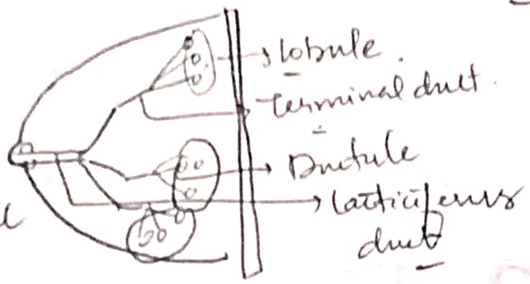
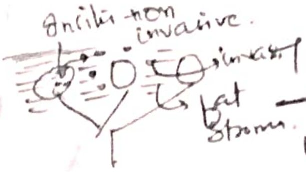
Breast Carcinoma

→ most common cancer.
→ ♀ : ♂ (1 : 150) [45 - 55] age gp. (perimenopausal group)
→ C/F : solitary / single (painless) palpable lumps.
→ Diagnosis : Triple technique
- Palpation
- Mammography
- FNAC.

BC
- NI
  - DCIS
  - LCIS
- I
  - IDS
  - ILC



Function : Milk syn takes place
↓
Ductules
↓
TD
↓
LD → L sinus → suckling
↓
mouth



Classification.

Ductal Carcinoma Insitu

[non - invasive]

a) Solid pattern (plugged)
b) Comedo pattern
↳ central necrotic debris
c) Papillary, finger like
d) Cribriform fenestration like sieve.

Invasive Ductal Carcinoma

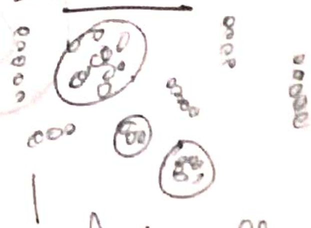
→ Stromal invasion
→ form (solid nests, Cords, singly)

Lobular carcinoma Insitu

[non-invasive]

→ Multiple ducts are involved
→ one lobule is infected.
→ some loosely arranged tumor cells.

Invasive lobular Carcinoma



→ Indian file pattern

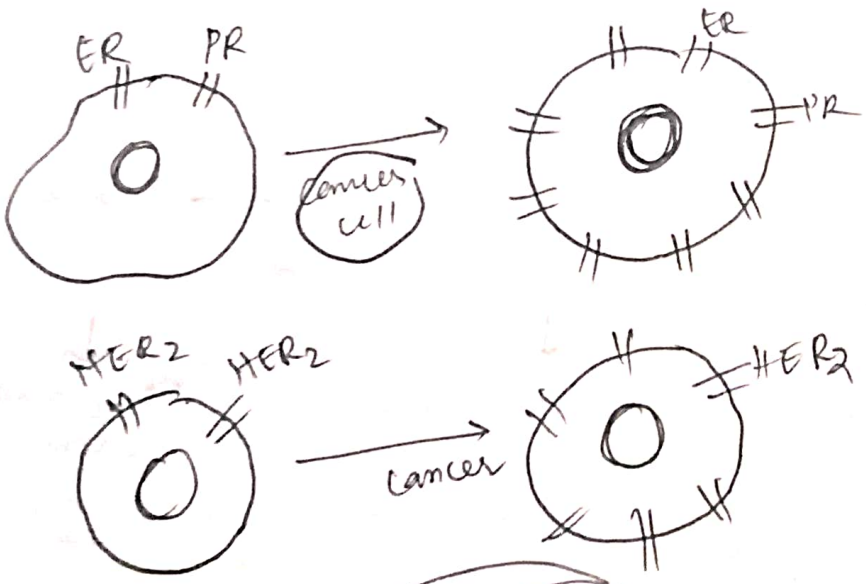
Paget's Disease of Nipple → eczematoid, scaly, pruritic, itchy periareolar lesion

→ Eczematoid lesion of the nipple assc with an invasive or non-invasive ductal carcinoma of the underlying breast.

→ malignant lesion.

- Grossly: crusted, fissured and ulcered →
- histologically: Paget's cell are present (tumor)

Breast Cancer Molecular Classification.



→ estrogen receptor ↑
→ progesterone receptor ↑

↓

uncontrolled mitosis

↓

Neoplasm

=

Hormonal therapy.

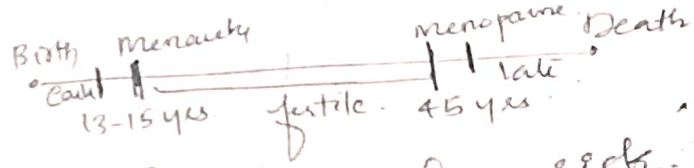
4 types

	ER/PR	Her 2	
Luminal A (95% good prognosis)	+	−	ER/PR-blocker Tamoxifen
Luminal B	+	+	
Basal / TNBC	−	−	→ Poor prognosis
Her-2 +ve	−	+	→ Herceptin Her2 blocker

Risk factors:-

1) Higher in developed countries
2) Family history - 2 to 6 fold higher risk.
   - → no. of blood relatives ∝ risk.
   - → younger age in the relative (mother)
   - → Bilateral cancer
   - → Breast & ovarian cancer.
3) Menstrual & Obstetric history:
   1) early menarche ✓
   2) Nulliparity ✓
   3) Delayed menopause ✓

← estrogen ∝ Breast cancer.



more ↑ pregnancy less risk.
more breastfeeding less risk

4) Estrogen exposure
   - Menopausal hormone therapy.

5) Fibrocystic change
6) Dietary factors
7) Exercise
8) Breast density
9) Envtl toxins
10) Radiation exposure
11) Carcinoma of the contralateral breast / endometrium.
12) Genetic factors :- 1) BRCA 1 gene — Chrom. 17
    2) BRCA2 → Chrom 13

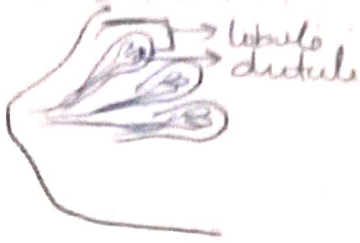
Implicated in both breast & ovarian cancer

in ♂ prostate cancer.

Tumor Suppressor gene

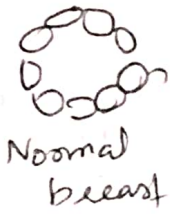
Note:-
- → Familial Breast Ca - BRCA 1
- → Sporadic / primary Ca → P53
- → overall → p53

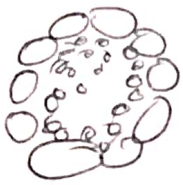
M/c → Left upper outer quadrant more common



Breast Cancer

- Non-invasive (In situ)
  - Ductal → DCIS
  - Lobular → LCIS
- Invasive
  - Ductal (IDC)
  - Lobular (LIC)

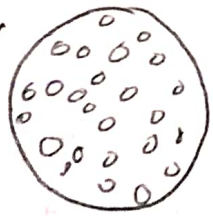

Normal breast


DCIS

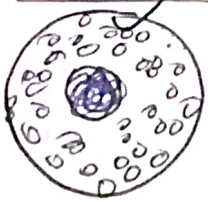

Invasive

DCIS

Solid pattern

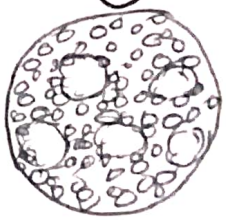


Comedo

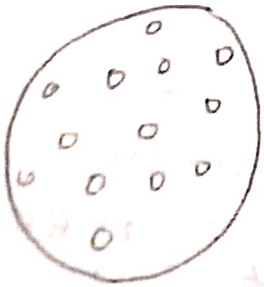


Papillary

Cribriform



LCIS



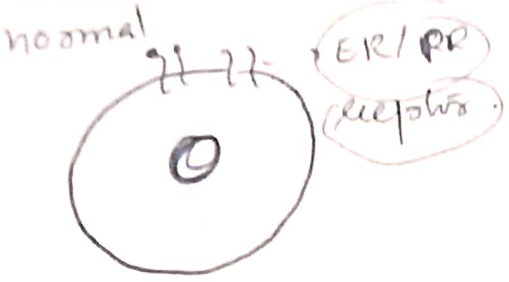
loosely arranged
Solid pattern
uniform cell

Classification

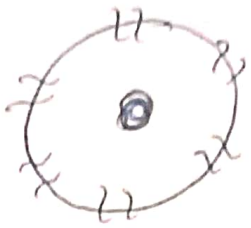
- Histopathological
- Molecular.

→ Receptors for Molecular classification

1) ER/PR receptors



Cancer cell.



→ ER/PR blockers can be given for hormonal therapy.
→ As use in ER/PR receptors lead to uncontrolled mitosis blocking them is an effective treatment.
→ Drugs like TAMOXIFEN (oral) can be given as ER/PR blockers

2) HER$_2$ receptors:
↳ Just like PR/ER.
↳ blocker → HERCEPTIN — i.V. T. much.
↳ Cost → 5-10 lakhs.

Molecular Classification

4 types

	ER/PR	HER-2	
(56%) Luminal A	+	−	Good prognosis
Luminal B	+	+	2nd best prognosis
Basal (Triple negative)	−	−	Worst prognosis
Her 2 positive	(−)	+	