Breast

Classify Breast Benign Epithelial Disease:

Non-Proliferative Breast Changes

Duct Ectasia
Cyst
adenosis
Fibroadenoma without complex
Mild Hyperplasia

Proliferative Breast changes:

① without ATypia
moderate Hyperplasia
Sclerosing adenosis
Papilloma
Fibroadenoma with complex

② with - ATypia
ATypical Ductal Hyperplasia
ATypical Lobular Hyperplasia

Carcinoma in-situ

DCIS
LCIS

invasive - Non-invasive Carcinoma of Breast / Type of Breast Stromal Tumor.

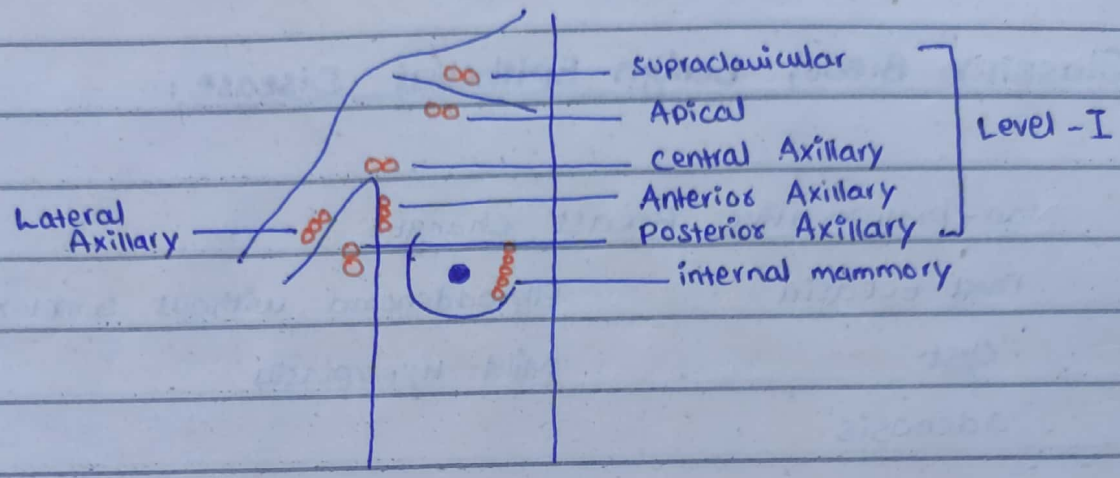
Benign → Fibroadenoma
Phyllodes Tumor

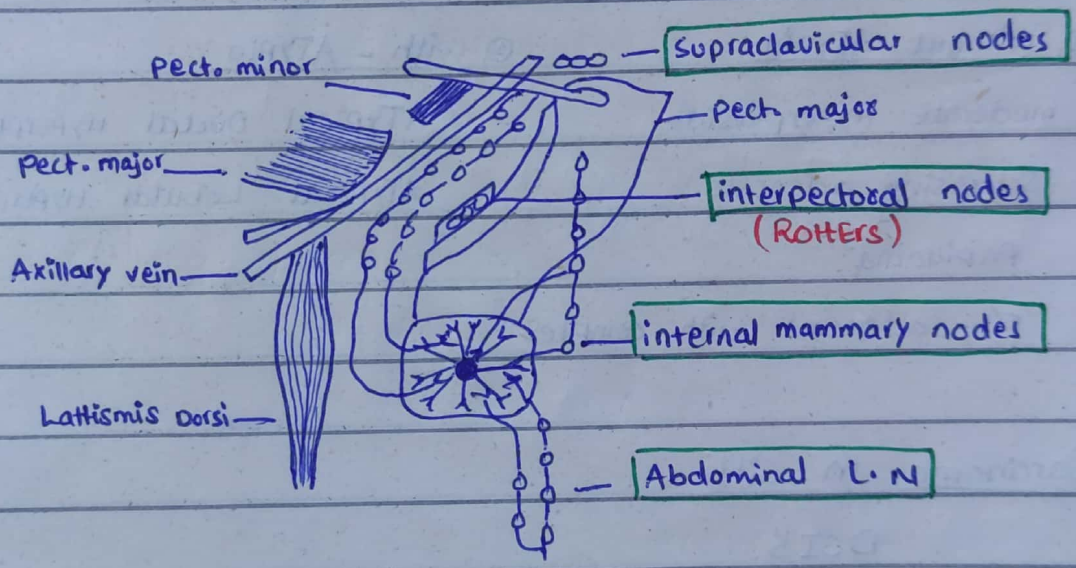
Carcinoma in-situ
D
• DCIS → comedo
• LCIS non-comedo → solid cribriform papillary micropapillary

invasive Carcinomas:

invasive Ductal carcinoma 80%
invasive Lobular carcinoma 15%
Medullary CA
Tubular CA
mucinous CA
inflamatory CA

Lymphatic Drainage of Breast





Level I : Lateral to pectoralis minor
nearest to breast & AFFect 1st in Carcinoma

Level II : Beneath Pect. minor

Level III : medial to pect. minor

Main Route of Lymph Drainage of Cancer
interpectoral (Rotters) nodes

Situated :- b/w Pect. major & minor

How to investigate the Breast Disease

Tripple Assessment :

Clinical Assessment (History + Examination)

Radiological imaging (USG + Mammography)

Histopathology (Biopsy)

Tru-cut Biopsy (normally) → invasive Ductal / Lobular

FNAC

Why we not go for FNAC?

① It cannot Distinguish invasive cancer from in-situ Disease.

② Tru-cut → wide bore more Tissue coming out
↳ prognosis:
ER / PR] bad prognosis
HER 2 neu → Good prognosis

① **History**

Painless or painful

unilateral or Bilateral

cyclic or non-cyclic

② **Examination** (inspection, palpation, auscultation, check metastasis)

inspection :

site
size
shape
Surrounding Skin colour
surface
scar-mark
Discharge
crusting
Retraction
lymph node

Palpation :

Temperature
Tenderness
Consistency
Fixity
mobility

Auscultation :

Bruie sound of lump

Metastasis : (in Malignancy)

Braine
liver
lung → pleural efusion
Spine ↳ pain
Abdominal Examination

③ **Radiological :**

Ultrasound : Before 35 years

useful in Dense breast in whom mamography mamogram is not helpful

Distinguish cyst from solid lesion

Mammography : After age 35 year ↓ Breast Tissue Density

view → ① Craniocaudal — Low voltage x-ray of breast

② Mediolateral oblique — use for screening purpose detect impalpable lump

MRI : can Distinguish scar From local recurrence of Breast Carcinoma

* Screening Before 35 Age <35

useful Tool in high risk women (+ve Family History)

It is a best imaging modality in women.

Cytology / Needle Biopsy :

FNAC

Core-cut Biopsy

Sentinal Lymph Node : It is a standard procedure for accessing axillary L.N metastasis in Pts with node -ve metastatic cancer

The First Lymph node which receive Lymphatic Drainage From a Tumor.

Blue dye is injected into Tumor Detect by Gamma-radiation

USES :

use for Drainage of cancer

Determine whether to remove Axillary L.N / NOT

indications :

indicated for Staging of Patient with early T_{1-2} invasive breast cancer & Clinically negative axillary node

of surgical Therapy on breast.

Nipple Discharge

Causes:

① **Discharge From Surface:**

Paget Disease

Skin Diseases (Ezcema, psoriasis)

② **Discharge From Single Duct:**

	Blood	Serous
PEC	Duct Ectasia	Duct Ectasia
	Duct Papilloma	Carcinoma
	Carcinoma	Fibrocystic Disease

③ **Discharge From more than one Duct:**

Blood stained	Black	Purulent	Milk
Duct Ectasia	Duct Ectasia	infection	Lactation
Papilloma		mastitis	Prolactinoma
Carcinoma			Hypo-Thyroidism

Treatment:

- First Exclude Carcinoma by Blood Test and Cytology
- Simple Reassurance is Sufficient
- Operation to remove effected Duct:

① **Microdochectomy**

Removal of single Duct
↓
Lacrimal probe passed into Duct
↓
Tennis Racquet incision made encompass entire duct
Periareolar incision made & nipple flap Dissect reach Duct
↓
Excised Duct

Cone Excision (major Duct)

A cone of retroareolar Tissue is removed encompass all from multiple Duct
↓
Apex of Cone → Toward nipple
Base → on pectoral Fascia

warning → unable to breast Feed
Altered nipple sensation.

1. A 20 year old lady Presents with Lump in Right Breast. Lump is 1.5cm in Size & Firm, Freely movable & no Axillary L.N.

2. A 25 Year Female presents in OPD with Complete of Painless Lump in Right breast since 20 days. No History of Fever Lump is Freely movable.

3. School going Girl has felt a lump in her Left breast non-Tender, Freely mobile mass of 2cm.

Diagnosis: Fibroadenoma

Also caued "breast mouse" (Because mobile in all direction)

- most common benign Tumor
- Solid Tumor
- If size > 5cm caued (Giant Fibroadenoma)
- usualy age (15-25 year)

investigation:

Tripple assessment

Ultrasound (Diagnostic choice)

Treatment:

Reassurance

Surgical incision is not indicated

Enucleation is done if cytology is suspicious

size > 5cm, Patient Desire.

For Mastalgia → NSAIDs

Soft Braw

Oil

Drug = Danazol = other = Tamoxifen, Bromocriptine

Fibroadenoma

- most Common Benign Tumor
- Age = 15-25 year
- Composed of Glandular & Stromal Tissue element
- Stage horn Appearance
- Freely movable
- No Risk of Malignancy

Phyllodes Tumor

- Less common
- Age = 40 years
- Composed of Epithelial & Stromal element
- Leaf like pattern
- Firm
- Risk of Malignancy

Phyllodes Tumor:

- Present as Large, massive Tumor
- bosselated surface & occasionally ulcerate
- mobile over chest wall.

Treatment:

When Pts Confirmed with Tripple assessment

- Reassurance
- wide Local Excision
- mastectomy only when → • ↑ size
  - Malignant
  - Recurrent

Diagnosis:

Tripple assessment

MMG

USG

FNAC
Core Biopsy

Breast cyst

occur = Last Decade of reproductive life

Classify breast cyst

Simple cyst

Complicated cyst

Complex cyst & Solid mass

Management :

Needle Aspiration

IF Resolve completely

Fluid is not Blood Stained

↓

NO Action

IF not Resolve

- Persist After Aspiration
- Reoccur
- Fluid Blood stained

↓

Cytological Examination

Core - Biopsy

Local Excision to exclude malignancy

Bi-RADS Category

Breast imaging Reporting and Data System

A reporting system used to Describe result of MmGr, USGr, Breast MR

Bi-RADS 0 = incomplete ADDitional mammography + USGr

Bi-RADS 1 = Negative - 0% Risk of malignancy (Routine Screening)

2 = Benign - 0% ROM

3 = Probably Benign - 1% ROF (Follow up Growth)

4 = Suspicious < A 2-10%, B 10-50%, C 50-95%] Biopsy

5 = Suggestive malignancy 95%

6 = Known Cancer (surgical Excision)

(Fahad)

1. A 25 year Lactating lady presents with pain, redness, Congestion OF Right Breast. O/E breast is diffusely Enlarge & non-Tender.

(Key touns 261)

2. A Lactating mother ē Pain in her Left breast. There is Tender 4x4 cm Lump upper outer Quadrant & inflammation.

(Annual)

3. A 31 year Lactating women Presents in OPD with Complaint OF Breast pain & swelling. O/E there is Redness and edema in central region & Lower outer Quadrant OF Breast.

(Key to uhs 261)

4. A 26 year old breast Feeding presents with Fever and Pain in Right Breast. Has Temperature 37.9c° and pulse Rate is 92/min. O/E there is Tender area adjacent to aereola OF Right Breast. There is surrounding erythema & Tender Lymphadenopathy in Right axilla.

Diagnosis: Breast Abcess

investigations:

① Culture & Sensitivity

② Aspiration OF pus For Cytology to Exclude malignancy

③ Ultrasound (USG)

Treatment:

Support breast

Local heat Application

Antibiotic (Augmentin)

Analgesic

Abcess should be drained & Aspirate repeatedly

ADvice :

① Breast Feeding should be stopped on effected side

② Breast should be emptied with breast pump avoid From congestion.

Causes :

Lactational	Non- Lactational
- Staphylococcus aureus	- middle aged women who smoke - Streptococcus - Anaerobes

① Peripheral non-Lactating B. Abcess associated with
Diabetes
Steroids
Rheumatoid Arthritis.

② periaerolar non- Lactating periductal inflammation.

(Annual 2021)

A **50 year Female** presented in OPD with **Blood stained nipple Discharge** with underline lump of Right breast for 4 month.

(Key to uhs 269)

A 50 year female presented in outpatient clinic reffered From Dermatologist by **Pruritis & Eczema of Lt. Nipple**. She had No Hx of Lactation, no previous breast masses, No Hx F of breast cancer. O/E revelead eroded Lt. Nipple, no, vesicle No breast mass & No palpable lymph node.

Diagnosis: Pagets Disease of Nipple.

investigations:

① **Histopathological**

- FNAC
- Tru-cut Biopsy
- incisional Biopsy

② **Radiological**

X-ray Chest, CT

CT, Ultrasound Abdomen

Ultrasound

Mammography

MRI

Bone Scan

How will you manage this case

① Surgical :

- Breast Conservative surgery
- Mastectomy
  - Simple mastectomy
  - Modified Radical mastectomy
  - Extended simple mastectomy

② Chemotherapy

③ Hormonal Therapy

1. A 30 year woman presents with a painless Lump in R Breast. O/E she has a hard Lump about 3cm in upper outer Quadrant with Skin tethering & mobile enlarged L.N in ipsilateral Axilla.

2. A 55 year post-menopausal Female presents with 3x4cm Lump in Right Breast. which is hard irregular & mobile on chest wall & adherent to Skin. There is 1.5x1.5cm mobile Lymph node in Axilla.

3. A 58 year Female seen in surgical OPD complaints of Lump in her Right Breast For last 1 year. Now she Presented as noticed some Skin Excoriation over Lump.

4. A 50 year Female with 2x3cm Lump in UOQ noticed that 1 month ago. O/E Lump is hard, non-Tender, adherent to Skin. Nipple is pulled towards Lump.

5. A 45 year Female 2.5cm Lump in UOQ of her breast. The Lump is stony-hard in consistency & palpable LEFT Axillary node. ELDER sister was operated 5 year ago For similar Lump.

Diagnosis:

Carcinoma of Breast.

Key to uhs (262)

investigations:

Tripple assessment (History, examination, + Radiology + cytology)

FNAC

Tru-cut Biopsy (when FNAC is non ocwlsive)

incisional Biopsy

Local Extend of Disease: MRI, MMG, US breast

Lymph nodes involvement:

Clinical Examination

Sentinal Lymph node Biopsy

Systemic spread:

X-ray chest (pulmonary metastasis)

USG Abdomen (Liver)

CT-scan (Brain)

Bone scan (Radioisotopes)

Treatment:

① Breast conservating Surgery (BCS)

② Mastectomy

Simple mastectomy: Remove all breast Tissue + skin.

Extended SM: Simple mastectomy + Level 1 Axillary LN.

MRM: whole breast + Large part of Nipple
L.N upto level 2

③ Sentinal Lymph node Biopsy

④ Chemotherapy:

Cyclophosphamide
Methoterexate

Transzutamab
5FU

Radiotherapy

Hormonal Therapy

Anti-estrogen (Tamoxifen)

Aromatase inhibitor (Anastrazole)

Pain

NSAIDS

Opiates

Risk Factors:

- AGE > 55 / old age
- Gender
- Family History
- Genetics:

  BRCA 1 & BRCA 2 mutation

  TP53 (Li Fraumeni Syndrome)

  PTEN (cowden Disease)

- Hormonal:

  Exposure to Estrogen & Progesterone

- Early menarche
- Late menopause

- Pregnancy + Breast Feeding
- Late 1st pregnancy
- OCPs
- HRT

Prognostic Factors:

(H-GOM)

① Histological Grade of Tumor
② Hormone Receptor status
③ Growth Factor Analysis
④ oncogene product measurnment
⑤ Measurnment of Tumor proliferation such as S-phase Fraction.

Staging system OF Disease:

TNM
UICC
Manchester staging system

TNM:

T: (Tumor)

T_{is} = Carcinoma in-situ
T_1 = P° Tumor < 2 cm in size
T_2 = 2-5 cm
T_3 = > 5 cm
T_4 = involve chest wall / skin Extension

N: (NODES)

N_0 = NO
N_1 = palpable mobile involved ipsilateral axillary node
N_2 = FIXED ipsilateral Axillary node involved
N_3 = ipsilateral internal mammary node.

M:

M_0 = No Distant metastasis

M_1 = Distant metastasis (involved supraclavicular node)

Give sites & method of spread of Breast CA:

1. Local spread:

into Chest wall & pectoral muscle

2. Lymphatic spread:

Axillary Lymph node 70%

internal mammary L.N (post. 1/3rd of Breast)

Supraclavicular LN

Contralateral LN

3. Hematogenous spread:

- Bones → Lumbar vertebrae → Femur → Thoracic → vertebrae
  Skull ← Ribs ↙
- Liver
- Lungs
- Brain
- Adrenal Gland
- ovaries

(Seond-up 2022)

A 40 year old lady had a mastectomy of Right side CA breast with Level 2 axillary Dissection. Her Histo Pathology Report revealed invasive Ductal carcinoma. Grade II 3.5 x 5.2 cm Tumor size with all margin free Tumor 2/15 axillary nodes involved with Tumor, ER, PR status negative, in initial staging workup no distant metastasis Found.

(a) **Stages of the Disease**

(b) **Describe Nottingham prognostic index score**

$$NPI = [0.2 \times S] + N + G$$

$0.2 \times 5.2 + 1.04 + 2 + 2 = 5.04$

S = Size of index Lesion in cms

N = Lymph nodes

$0 = 1$, $1-3 = 2$, $>3 = 3$

G = Grade I = 1

Grade II = 2

Grade III = 3

< 3.4 → Good Prognosis

$3.4 - 5.4$ → intermediate Prognosis

> 5.4 → Poor Prognosis

Prognostic Factors

Grade

Hormonal status

Tumor proliferation

Growth Factor

oncogenic Factor

(c) Breast carcinoma Treatment

Stage 0 : Carcinoma in situ

DCIS → Low Grade : Partial mastectomy

intermediate : P. M + Adjuvant Therapy

High Grade : mastectomy +/- Radiotherapy

LCIS → Lifelong surveillence

Prophylactic Tamoxifen

Bilateral total mastectomy

Stage I & II

Breast Conserving Surgery

mastectomy

Chemotherapy → methotrexate

Cyclophosphamide

Hormonal Therapy → Tamoxifen

Stage III

MRM

Adjuvant chemotherapy
Radiotherapy
> Chest wall

Hormonal Therapy for ER +ve case

Stage IV

Total mastectomy

Hormonal

Chemotherapy

NSAIDs & opiates → pain

Radiotherapy

Pleural Effusion Drainage & Pleurodesis

Brain edema → Rx by steroid.

Describe Steps of Modified Radical mastectomy for a Lump in upper outer Quadrant of Breast.

Steps of Mastectomy

Anesthesia = General

Position of patient = Supine position
Head is slightly Elevated
Arms are abducted

incision = Ellipitical

Raised the Flaps = Skin & Subcutaneous Tissue 8mm thick
upper Flap : upto Clavicle
Lower Flap : Rectus abdominis muscle
Lateral : upto post. Axillary Fold
medial : midline

Removal of breast

Axillary clearance

It means Removal of Fat & Lymph node upto Level 1

Carefully saved : ① Axillary vein
② Long thoracic nerve (serratus Ant.)
③ Thoracodorsal nerve (Lattismis dorsi)

Closure

2 Suction Drain are placed

Close the wound

What do you mean by Breast conserving surgery as regard to CA breast. What are its principles & indications.

Breast conserving surgery

It involve Resection of the P° Breast cancer with 1cm margin of normal-appearing breast Tissue & Radiotherapy to remaining breast to Avoid local recurrence of Disease.

indications:

- Small, unicentric Tumor
- medium sized or Large Breast
- Patient Compliance
- Favorable Physical Factor
- Good cosmetic outcome

Contraindications

multifocal

Tumor just below or involve nipple areola

Previous surgery or Radiotherapy

Connective Tissue Disorder

Principles of BCS:

(i) Relative risk of local recurrence was shown to be directly related to the excision.

(ii) Local recurrence direct impact on long term survival.

(iii) Ideally to clear rim of normal tissue arround the carcinoma

(iv) micoscopically disease free margins.

A 35 year old women presented with nipple discharge From Right Breast.

What is Differential Diagnosis:

① Paget's Disease of Nipple
Duct Ectasia
Duct papilloma
Duct Carcinoma

② Breast Abcess

How will you investigate:

Same as Paget's Disease of Breast.

SEND-UP 2021

A 55 year old lady presents in OPD with complaint of a lump in her Right Breast. HER SISTER Died of a CA breast 5 year ago.

(a) **Enlist investigations For this patient**

Triple assessment
FNAC
Tru-cut Biopsy
FNAC
Excisional Biopsy

Local Extend OF Disease : USG, MRI, mamography

systemic spread

X-ray Chest, Abdomen

US Abdomen

CT Brain

Bone scan

What is Triple assessment

As the name indicate it include 3 modalites

History + Examination

imaging → USG, MRI, mamography

Histopathology → Biopsy