THE BREAST

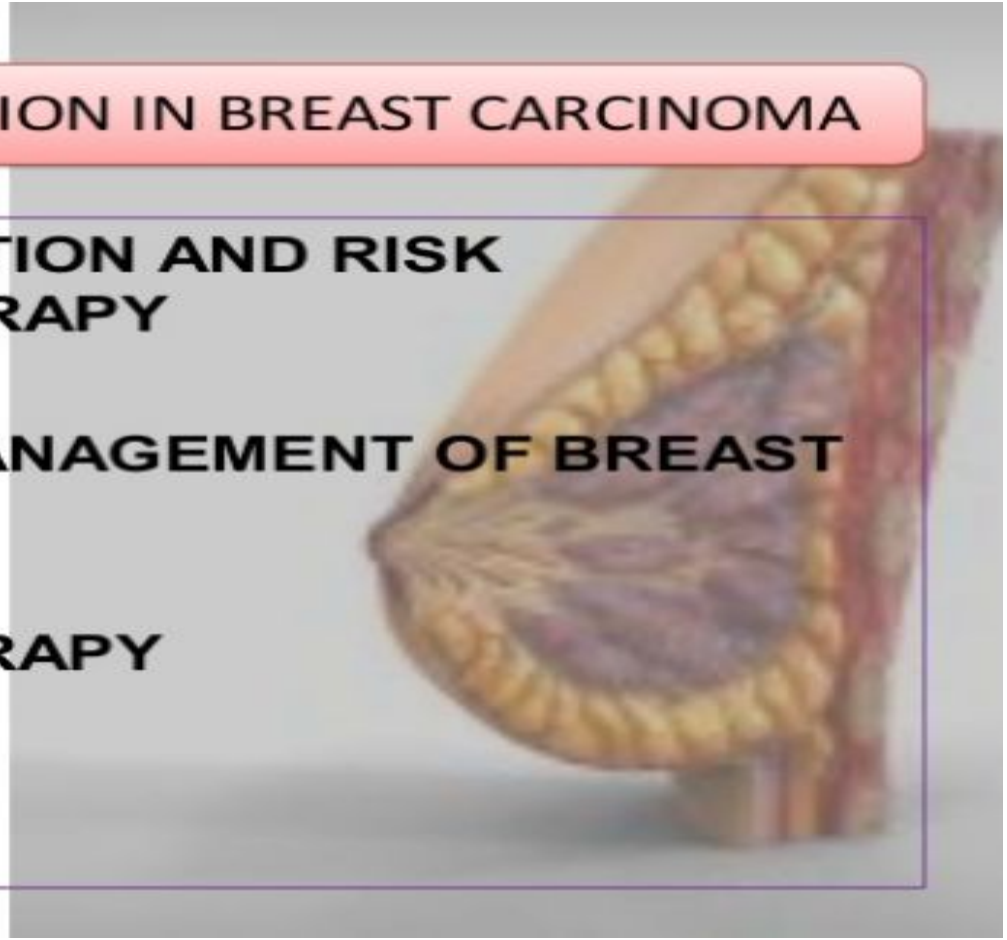
PROF. DR. AMNA JAVED

Breast carcinoma

Management of breast carcinoma

LEVELS OF INTERVENTION IN BREAST CARCINOMA

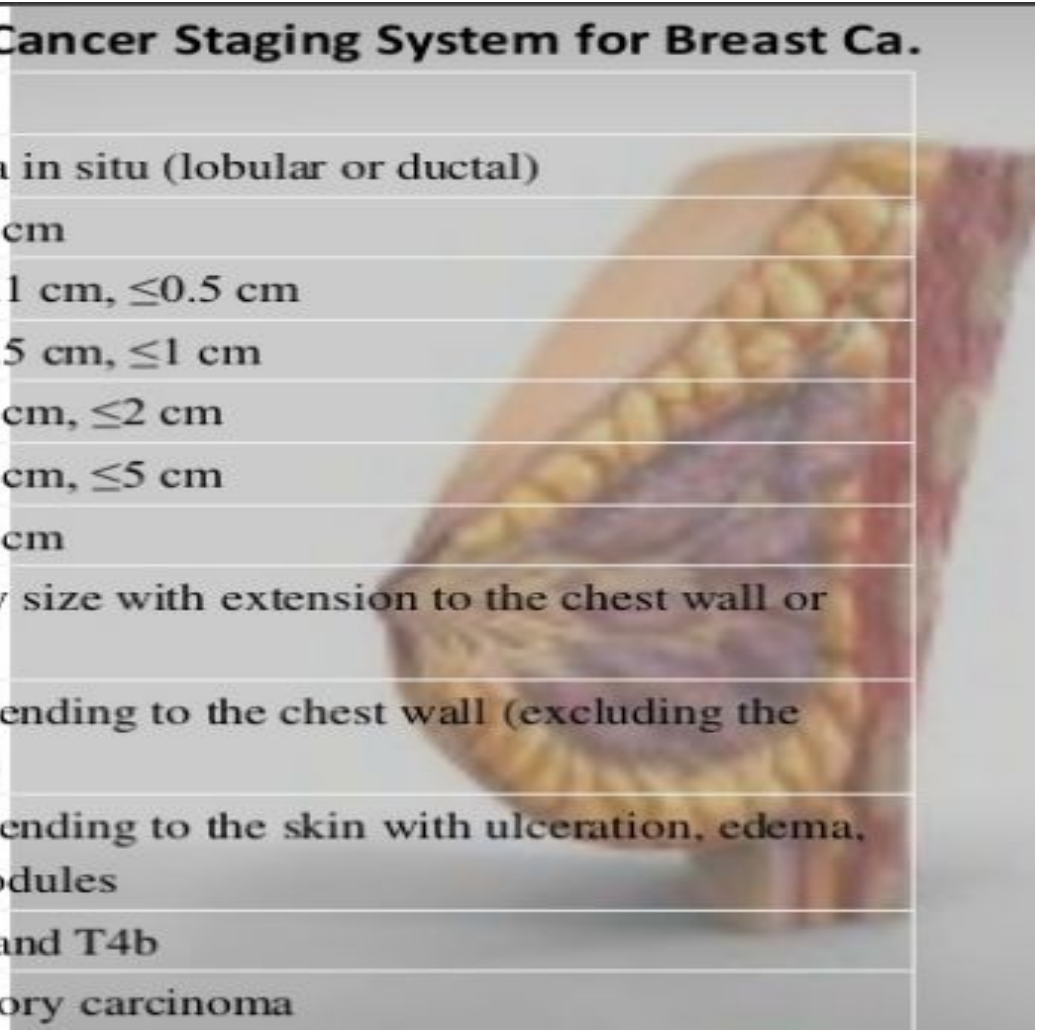
1. **RISK IDENTIFICATION AND RISK REDUCTION THERAPY**
2. **SCREENING**
3. **STAGING AND MANAGEMENT OF BREAST CARCINOMA**
   - **SURGERY**
   - **HORMONAL THERAPY**
   - **CHEMOTHERAPY**
   - **RADIOTHERAPY**
4. **FOLLOW UP**



STAGING, GRADING AND MANAGEMENT OF BREAST CARCINOMA

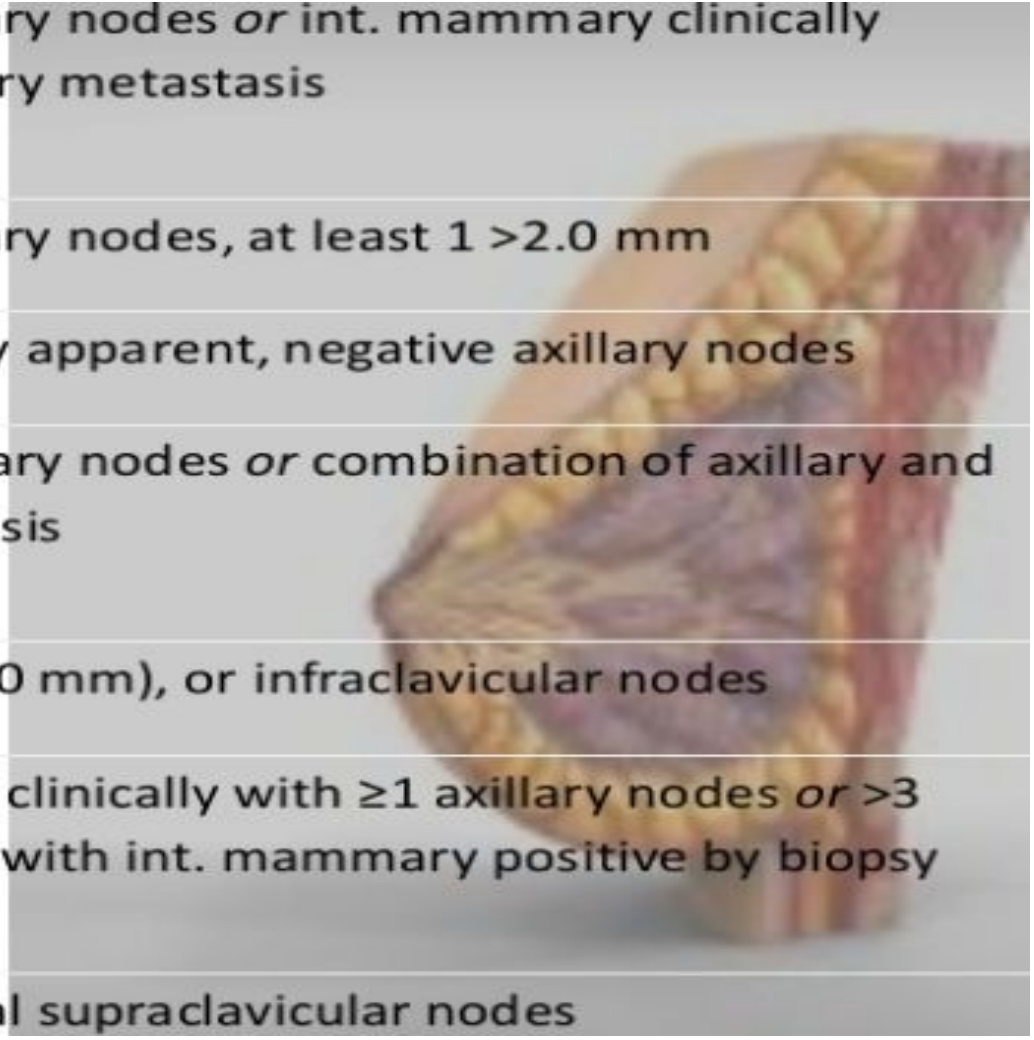
American Joint Committee on Cancer Staging System for Breast Ca.

(p)T (Primary Tumor)	
Tis	Carcinoma in situ (lobular or ductal)
T1	Tumor ≤2 cm
T1a	Tumor ≥0.1 cm, ≤0.5 cm
T1b	Tumor >0.5 cm, ≤1 cm
T1c	Tumor >1 cm, ≤2 cm
T2	Tumor >2 cm, ≤5 cm
T3	Tumor >5 cm
T4	Tumor any size with extension to the chest wall or skin
T4a	Tumor extending to the chest wall (excluding the pectoralis)
T4b	Tumor extending to the skin with ulceration, edema, satellite nodules
T4c	Both T4a and T4b
T4d	Inflammatory carcinoma

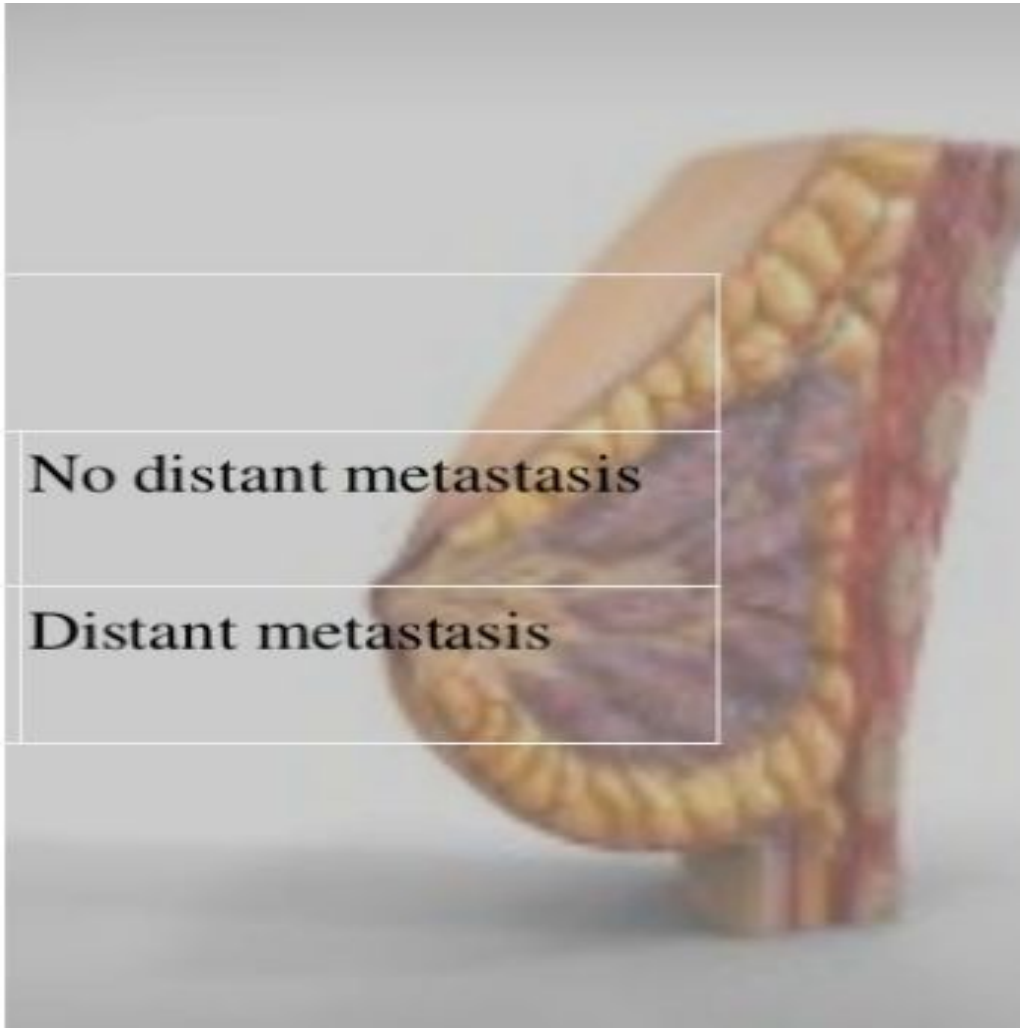


(p)N (Nodes)	
N0	No regional node involvement, no special studies
N0 (i^-)	No regional node involvement, negative IHC
N0 (i^+)	Node(s) with isolated tumor cells spanning <0.2 mm
N0 (mol^-)	Negative node(s) histologically, negative PCR
N0 (mol^+)	Negative node(s) histologically, positive PCR
N1	Metastasis to 1-3 axillary nodes *and/or* int. mammary positive by biopsy
N1(mic)	Micrometastasis (>0.2 mm, none >2.0 mm)
N1a	Metastasis to 1-3 axillary nodes
N1b	Metastasis in int. mammary by sentinel biopsy
N1c	Metastasis to 1-3 axillary nodes *and* int. mammary by biopsy

N2	Metastasis to 4-9 axillary nodes *or* int. mammary clinically positive, without axillary metastasis
N2a	Metastasis to 4-9 axillary nodes, at least 1 >2.0 mm
N2b	Int. mammary clinically apparent, negative axillary nodes
N3	Metastasis to ≥10 axillary nodes *or* combination of axillary and int. mammary metastasis
N3a	≥10 axillary nodes (>2.0 mm), or infraclavicular nodes
N3b	Positive int. mammary clinically with ≥1 axillary nodes *or* >3 positive axillary nodes with int. mammary positive by biopsy
N3c	Metastasis to ipsilateral supraclavicular nodes

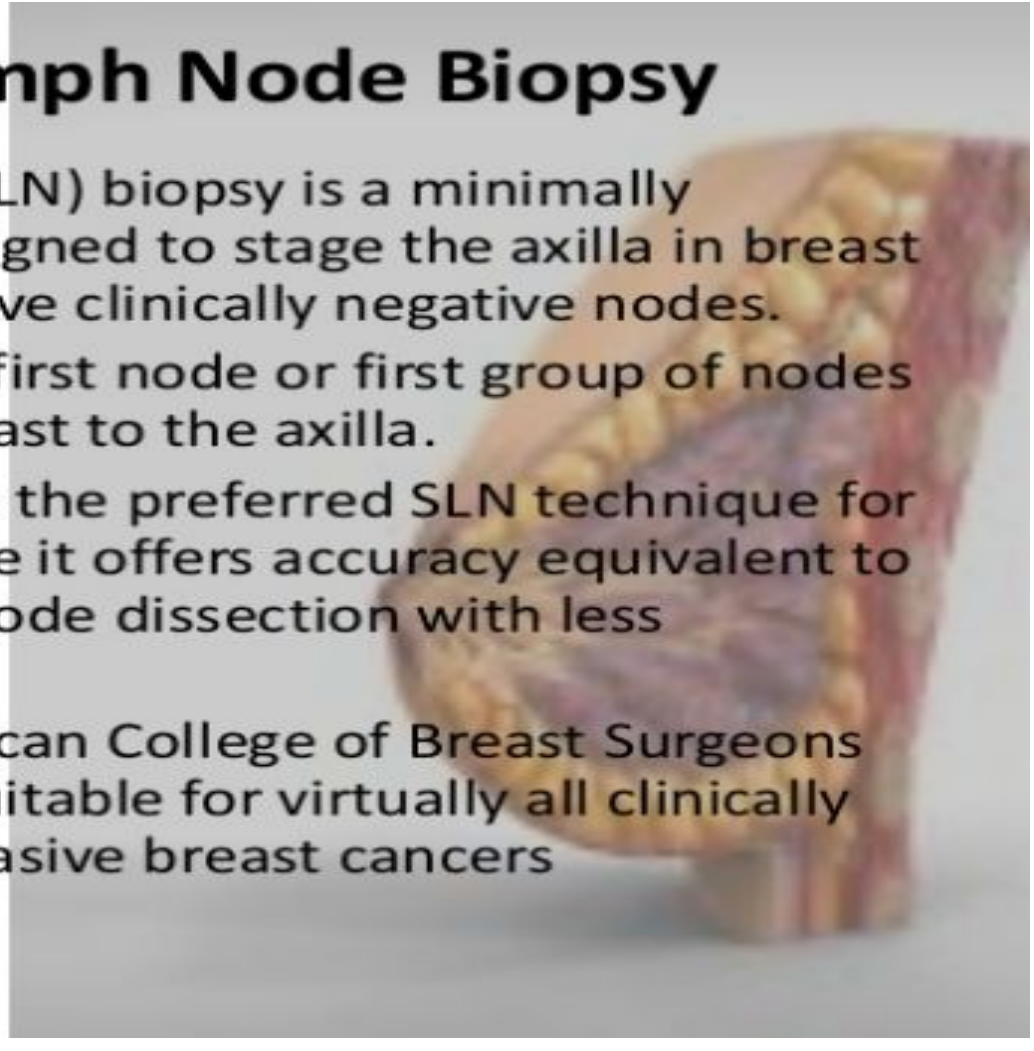


M (Metastasis)	
M0	No distant metastasis
M1	Distant metastasis

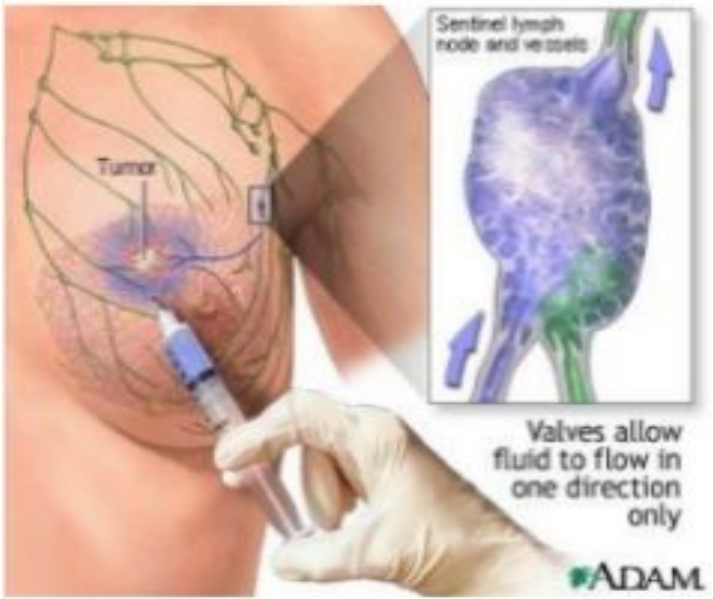


Sentinel Lymph Node Biopsy

- Sentinel lymph node (SLN) biopsy is a minimally invasive procedure designed to stage the axilla in breast cancer patients who have clinically negative nodes.
- Sentinel nodes are the first node or first group of nodes that drain from the breast to the axilla.
- SLN biopsy has become the preferred SLN technique for axillary staging, because it offers accuracy equivalent to that of axillary lymph node dissection with less morbidity.
- According to the American College of Breast Surgeons (ACBS), SLN biopsy is suitable for virtually all clinically node-negative T1-2 invasive breast cancers



SLN biopsy technique



- The best results with SLN biopsy are achieved with the combination of careful intraoperative digital examination and lymphatic mapping.
- Technique involves injecting radioisotope (technetium-99m sulfur colloid) alone or radioisotope plus a patent blue dye (Lymphazurin or methylene blue) into the tissues of the breast.
- With SLN dissection, typically 1-3 lymph nodes are removed and tested for nodal metastasis with hematoxylin and eosin (H&E) stain and IHC with an anticytokeratin cocktail.

Relative contraindications

- any procedure that potentially alters lymphatic drainage to the axilla.e.g.
  - ➢ breast augmentation, particularly when the implants reside in a subglandular position
  - ➢ reduction mammoplasty
- Allergy to blue dye or radiocolloid
- Pregnancy

Absolute contraindications

- Inflammatory breast cancer
- presence of biopsy proven metastatic axillary lymphadenopathy

BREAST CONSERVATION SURGERY

BREAST CONSERVATION SURGERY (BCS)

Principle: Breast tissue, nipple-areolar complex and skin are preserved. BCS is always associated with Radiation Therapy.

- **QUART:** Quadrantectomy + axillary LN clearance (Level I, II, III) + post operative radiation therapy.

- **Lumpectomy:** Lump with 1cm normal surrounding breast tissue is excised.

LUMPECTOMY

❖ INDICATIONS:

- Early breast carcinoma with tumour size < 4cm.
- Radiation is not contraindicated.
- Facility of radiation is present.

❖ CONTRAINDICATIONS:

- Multicentric tumour.
- History of previous breast irradiation.
- Pregnancy.
- Persistent positive margins after reasonable surgical attempts.
- Collagen vascular disease.

LUMPECTOMY

❖ ***DISADVANTAGES :***

- Higher rate of local recurrence, more common in younger women and tumours with high grades.
- Needs radiotherapy after surgery.

MASTECTOMY

TYPES OF MASTECTOMY

Simple or total mastectomy	Removal of breast tissue, nipple-areola complex, skin.
Extended simple mastectomy	Removal of breast tissue, nipple-areola complex, skin & level I axillary nodes.
Modified radical mastectomy	Removal of breast tissue, nipple-areola complex, skin & level I, II axillary LNs.
Halstead's radical mastectomy	Removal of breast tissue, nipple-areola complex, skin, pectoralis major & minor &level I, II, III axillary LNs.
Extended radical mastectomy	Radical mastectomy + removal of internal mammary LNs.
Super radical mastectomy	Radical mastectomy + removal of internal mammary LNs, mediastinal & supraclavicular LNs.

MODIFIED RADICAL MASTECTOMY

- ✓ Most acceptable and most widely practised surgery.

❖ ***Advantages over radical mastectomy:***

- Good postoperative cosmetic appearance
- Maintain motor activity in the arm
- Low rate of postoperative arm oedema
- Easy postoperative breast reconstruction

MODIFIED RADICAL MASTECTOMY

❖ ***INDICATIONS:***

- Large tumour size > 5cm.
- Multicentric tumour.
- Surgical lines after lumpectomy are not free of tumour.
- Poorly differentiated tumour.

MODIFIED RADICAL MASTECTOMY

- ***INCISION***

  Transverse elliptical incisions, including the nipple areola complex and skin overlying the tumour together with skin margins that lie 1-2 cm from the cephalic and caudal extents of the tumour.

MODIFIED RADICAL MASTECTOMY

❖ ***Anatomical boundaries of MRM:***

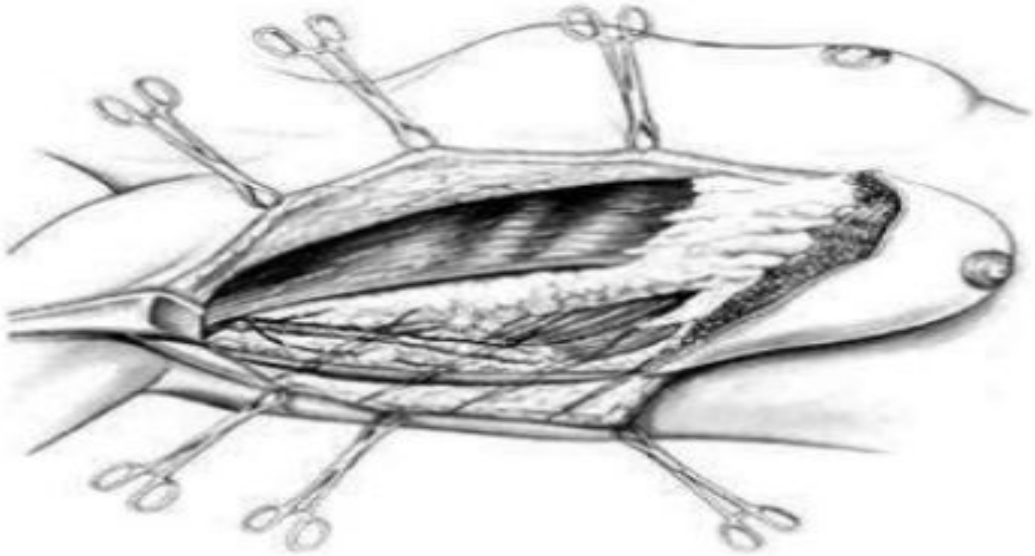
- **Lateral:** Anterior margin of latissimus dorsi muscle
- **Medial:** Sternal border
- **Superior:** Clavicle
- **Inferior:** Up to upper ¼ th of rectus sheath.

➢ ***Raising skin flaps:***

The upper skin flap is raised upto the clavicle and the lower skin flap is raised upto the upper quadrant of the rectus sheath.

MODIFIED RADICAL MASTECTOMY

- The fascia of the pectoralis major muscle and the overlying breast tissue are elevated off the underlying musculature.



MODIFIED RADICAL MASTECTOMY

- Three important structures should be preserved:

1. Axillary vein
2. Bell's nerve(long thoracic nerve)
3. Cephalic vein

MODIFIED RADICAL MASTECTOMY

❖ ***COMPLICATIONS***

1. Seroma/ lymph collection
2. Secondary infection
3. Flap necrosis
4. Haemorrhage
5. Pain and numbness in axilla, medial side of the arm
6. Shoulder dysfunction
7. Injury/thrombosis of axillary vein
8. Winging of scapula
9. Lymphedema of arm(few month later)

RECONSTRUCTION OF THE BREAST AND CHEST WALL

- ✓ The goals of reconstructive surgery after mastectomy are wound closure & breast reconstruction.

- ❖ ***COMMON OPTIONS:***
  - Implant(silicon gel).
  - Latissimus dorsi flap (LD flap).
  - Transverse Rectus Abdominis Myocutaneous flap (TRAM flap).

AXILLARY SURGERY

- Role of axillary surgery in CA breast is debated, but it is accepted that presence of metastatic disease within axillary lymph nodes is still the best single marker for prognosis.
- In early breast carcinoma, if there is no clinically apparent nodes and the disease is not multicentric, then sentinel node biopsy is considered.
- Otherwise Complete Axillary Dissection is done.

STAY HOME STAY SAFE

THANK YOU