

# 04

## CHAPTER

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### BREAST SURGERY

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- 4.1 Breast conservative surgery (BCS) with axillary lymph node clearance (AC)
- 4.2 MRM
- 4.3 BCS and LD Flap

#### **Breast Surgery in Oncology: Overview**

Breast surgery is a key component in the management of breast cancer and is often combined with chemotherapy, radiotherapy, and hormonal therapy. The type of surgery depends on the stage, tumour size, lymph node involvement, and patient preference.

The two main types of surgeries are:

1. **Breast-Conserving Surgery (BCS):** Also known as lumpectomy or wide local excision, it involves removing the tumour with a margin of healthy tissue, preserving most of the breast. It is usually followed by radiotherapy.

2. **Mastectomy:** Complete removal of the breast tissue. Variants include simple mastectomy, modified radical mastectomy (MRM), and skin/nipple-sparing mastectomy. MRM also includes axillary lymph node dissection.

Sentinel lymph node biopsy (SLNB) is commonly performed to assess nodal spread with minimal morbidity. In advanced cases or after neoadjuvant chemotherapy, axillary clearance may be done.

Reconstructive surgery (immediate or delayed) is often offered to improve cosmetic and psychological outcomes.

As a scrub nurse, your responsibilities include organizing instruments like breast hooks, electrocautery, harmonic scalpel, and specimen containers, assisting in lymph node dissection, maintaining sterility, and ensuring proper specimen handling and documentation.

#### 4.1. BREAST CONSERVATIVE SURGERY WITH AXILLARY LYMPH NODE CLEARANCE

Breast Conservative Surgery (BCS) involves the removal of the tumour (lumpectomy) with a margin of normal tissue, preserving most of the breast. Axillary Lymph Node Clearance (ALND) is done to remove lymph nodes for staging and to prevent cancer spread. This procedure is commonly performed for early-stage breast cancer. As a scrub nurse, your role is crucial in ensuring sterility, proper instrument handling, assisting in precise dissection, and ensuring smooth surgical workflow.

##### 1. Preoperative Preparation

##### Special Instruments & Equipment Required

##### 1. Special Trays:

- ❖ Breast Tray
- ❖ Vascular Instruments Tray
- ❖ Cauty Bipolar Tray

##### 2. Specialized Instruments & Equipment

- ❖ Not required

##### 3. Hemostatic Agents

- ❖ Surgicel
- ❖ Abgel
- ❖ Liga Clips (All Types)

##### 4. Drains

- ❖ Foley's Cath No. 14 & Uro Meter
- ❖ RVD No. 14
- ❖ Skin Stapler

##### 5. Sutures:

- ❖ Nylon 3.0 Cut - 01

##### 6. Consumable items:

- ❖ Non RO gauze

- ❖ RO gauze
- ❖ Skin mop
- ❖ Plastic sheet
- ❖ Linen thread 40, 60, and 100
- ❖ Methylene Blue Ink
- ❖ Skin marker

##### A. Instrument Trolley Setup

Ensure all necessary instruments are arranged properly.

##### 2. Patient Preparation

- ❖ **Positioning:** The patient is placed in a supine position with the arm abducted on the surgical side.
- ❖ **Skin Preparation:** The breast, axilla, and chest wall are cleaned using povidone-iodine or chlorhexidine.
- ❖ **Draping:** A sterile chest and axillary drape is applied to expose the surgical site.

##### 3. Surgical Procedure

##### A. Breast Tumor Excision (Lumpectomy)

##### 1. Incision & Exposure

- ❖ Pass scalpel blade (No. 15 or 10) for skin incision around the tumour.
- ❖ Raise the flap using cautery and hold it with a skin hook.
- ❖ Provide Langenbeck or Moynihan retractors for better visibility.

##### 2. Tumor Dissection

- ❖ Assist in dissecting the tumour with margins using electrocautery.
- ❖ Pass Allis or Babcock forceps to hold the breast tissue for excision.

- ❖ Ensure precise cutting to maintain oncologic safety margins.

### 3. Lymph Node Dissection

- ❖ Pass electrocautery & DeBakey forceps for precise node removal.
- ❖ Assist in isolating axillary vein, thoracodorsal nerve, & long thoracic nerve. Incision & Exposure

## B. Hemostasis & Closure

### 1. Hemostasis Control

- ❖ Provide cautery & hemostatic agents (Surgicel, AbGel) to control bleeding.
- ❖ Ensure all vascular structures are secured.

### 2. Drain Placement

- ❖ Hand over RVD No. 14 drain to prevent fluid accumulation & seroma formation.

### 3. Skin Closure

- ❖ Pass Nylon 3.0 for closure.
- ❖ Hand over skin staples or sutures for final wound closure.
- ❖ Apply sterile dressing over the surgical site.

### 4. Postoperative Duties

- ❖ **Final Instrument & Sponge Count** - Ensure all instruments & gauze are accounted for.
- ❖ **Specimen Handling** - Confirm proper labelling of tumour & lymph node specimens.
- ❖ **Patient Transfer** - Assist in safely transferring the patient to the recovery room.

- ❖ **Sterile Field Breakdown** - Dispose of all used materials appropriately.

## Scrub Nurse Key Responsibilities

- ❖ Maintain strict sterility throughout the procedure.
- ❖ Assist in precise tumour excision & lymph node clearance.
- ❖ Pass instruments efficiently to the surgeon.
- ❖ Monitor & count all sponges, needles, and instruments.
- ❖ Handle specimens properly for pathology.

## 4.2. MODIFIED RADICAL MASTECTOMY (MRM)

### Introduction

Modified Radical Mastectomy (MRM) is a surgical procedure for breast cancer involving the removal of the entire breast tissue, including skin, nipple-areolar complex, and axillary lymph nodes (level I & II), but preserving the pectoralis major muscle. This surgery aims to remove cancerous tissue while reducing the risk of local recurrence. As a scrub nurse, your role is crucial in maintaining sterility, handling instruments efficiently, assisting in dissection, and ensuring a smooth workflow.

### 1. Preoperative Preparation

#### Special Instruments & Equipment Required

#### 1. Special Trays:

- ❖ Breast Tray
- ❖ Vascular Instruments Tray
- ❖ Cautery Bipolar Tray

## 2. Specialized Instruments & Equipment

- ❖ Not Required

## 3. Hemostatic Agents

- ❖ Surgicel
- ❖ Abgel
- ❖ Liga Clips (All Types)

## 4. Drains

- ❖ RVD No. 14

## 5. Sutures:

- ❖ Nylon 3.0 Cut - 01
- ❖ Mersilk 2.0 RB - 01
- ❖ Skin stapler

## 6. OT consumable items:

- ❖ Non RO gauze
- ❖ RO gauze
- ❖ Skin Mop
- ❖ Plastic sheet
- ❖ Linen thread 40, 60, and 100
- ❖ Methylene Blue Ink

## 7. Patient Consumable:

- ❖ Skin marker
- ❖ Foley's cath no. 14 & uro meter

### A. Instrument Trolley Setup

Ensure all necessary general surgery and breast surgery instruments are available and arranged properly:

### 2. Patient Preparation

- ❖ **Positioning:** The patient is placed in a supine position with the arm abducted on the surgical side to expose the breast and axilla.

- ❖ **Skin Preparation:** The breast, axilla, and chest wall are cleaned using povidone-iodine or chlorhexidine.

- ❖ **Draping:** A sterile chest and axillary drape is applied to expose the surgical site while maintaining sterility.

## 3. Surgical Procedure

### A. Skin Incision & Breast Tissue Removal

#### 1. Skin Incision & Exposure

- ❖ Pass the scalpel blade (No. 10 or 15) for the elliptical skin incision around the breast.
- ❖ Provide Langenbeck or Moynihan retractors for better visibility.

#### 2. Breast Tissue Dissection

- ❖ Assist in dissecting the breast tissue from the skin flaps using Metzenbaum scissors & electrocautery.
- ❖ Provide Allis forceps to gently hold and lift the breast tissue.
- ❖ Ensure the pectoralis major muscle is preserved while clearing the overlying breast tissue.

#### 3. Specimen Handling

- ❖ Pass the specimen container for breast tissue collection.
- ❖ Ensure proper marking for tumour orientation before sending it for pathology.

### B. Axillary Lymph Node Dissection (ALND)

#### 1. Incision & Exposure

- ❖ Provide a scalpel blade (No. 15) for axillary incision extension.

- ❖ Hand over retractors to expose the axillary lymph nodes.
2. **Lymph Node Dissection**
    - ❖ Pass long Metzenbaum scissors & DeBakey forceps for precise node removal.
    - ❖ Assist in identifying and protecting axillary vein, thoracodorsal nerve, & long thoracic nerve.
    - ❖ Hand over bulldog clamps & vessel loops for vascular control.
  3. **Specimen Handling**
    - ❖ Ensure axillary lymph node specimens are sent separately for biopsy.
    - ❖ Label levels I & II lymph nodes properly for pathology.

### *C. Hemostasis & Closure*

1. **Hemostasis Control**
  - ❖ Provide cautery & hemostatic agents (Surgicel, AbGel) to stop bleeding.
  - ❖ Ensure all major vessels are secured.
2. **Drain Placement**
  - ❖ Hand over the Jackson-Pratt (JP) drain to prevent fluid accumulation & seroma formation.
3. **Skin Closure**
  - ❖ Pass Vicryl 2-0 for deep closure and Monocryl 3-0 for subcutaneous closure.
  - ❖ Hand over skin staples or sutures for final wound closure.
  - ❖ Apply sterile dressing over the surgical site.
4. **Postoperative Duties**
  - ❖ **Final Instrument & Sponge Count** – Ensure all instruments & gauze are accounted for.

- ❖ **Specimen Handling** – Confirm proper labelling of breast & lymph node specimens.
- ❖ **Patient Transfer** – Assist in safely transferring the patient to the recovery room.
- ❖ **Sterile Field Breakdown** – Dispose of all used materials appropriately.

### **Scrub Nurse Key Responsibilities**

- ❖ Maintain strict sterility throughout the procedure.
- ❖ Assist in precise breast tissue removal & axillary clearance.
- ❖ Pass instruments efficiently to the surgeon.
- ❖ Monitor & count all sponges, needles, and instruments.
- ❖ Handle specimens properly for pathology.

## **4.3. BREAST CONSERVATION SURGERY WITH LATISSIMUS DORSI FLAP**

### **Introduction**

Breast Conservation Surgery (BCS) with a Latissimus Dorsi (LD) Flap is performed in patients requiring breast reconstruction after lumpectomy (partial mastectomy). The LD flap involves using the latissimus dorsi muscle, skin, and fat from the patient's back to reconstruct the breast and maintain a natural contour. As a scrub nurse, your role is crucial in maintaining sterility, handling instruments efficiently, assisting in dissection, and ensuring a smooth workflow.

## 1. Preoperative Preparation

### Special Instruments & Equipment Required

#### 1. Special Trays:

- ❖ Breast Tray
- ❖ Vascular Instruments Tray
- ❖ Cauty Bipolar Tray
- ❖ Plastic Instruments Tray

#### 2. Specialized Instruments & Equipment

- ❖ Not Required

#### 3. Hemostatic Agents

- ❖ Surgicel
- ❖ Abgel
- ❖ Liga Clips (All Types)

#### 4. Drains:

- ❖ RVD No. 14 - 02

#### 5. Sutures:

- ❖ Nylon 3.0 cut - 2
- ❖ Vicryl 2.0 cut - 02
- ❖ Skin Stapler.
- ❖ **Monocryl 3.0 cut 02 SOS**

#### 6. OT consumable items:

- ❖ Non RO gauze
- ❖ RO gauze
- ❖ Skin Mop
- ❖ Plastic sheet
- ❖ Linen thread 40, 60, and 100
- ❖ Methylene Blue Ink

#### 7. Patient Consumable:

- ❖ Skin Marker
- ❖ Foley's Cath No. 14 & Uro meter

#### A. Instrument Trolley Setup

Ensure all necessary general surgery and reconstructive surgery instruments.

## 2. Patient Preparation

### ❖ Positioning:

- ⤴ Initially, the patient is placed in a supine position for breast tumour removal.
- ⤴ Later, the patient is repositioned in a lateral decubitus position for LD flap harvesting.

### ❖ Skin Preparation:

- ⤴ The breast, axilla, chest, and back are cleaned using povidone-iodine or chlorhexidine.

### ❖ Draping:

- ⤴ A sterile chest and axillary drape is applied to expose the surgical site while maintaining sterility.

## 3. Surgical Procedure

### A. Breast Tumor Removal (Lumpectomy)

#### 1. Incision & Exposure

- ❖ Pass scalpel blade (No. 15 or 10) for skin incision around the tumour.
- ❖ Provide Langenbeck or Moynihan retractors for better visibility.

#### 2. Tumor Dissection

- ❖ Assist in dissecting the tumour with margins using Metzenbaum scissors & electrocautery.
- ❖ Pass Allis or Babcock forceps to hold the breast tissue for excision.
- ❖ Ensure precise cutting to maintain oncologic safety margins.

**3. Specimen Handling**

- ❖ Hand over sterile specimen container for biopsy.
- ❖ Ensure tumour orientation is marked with sutures for pathological evaluation.

**B. Latissimus Dorsi (LD) Flap Harvesting & Transfer****1. Repositioning**

- ❖ The patient is placed in a lateral decubitus position with the operative side up.

**2. Incision & Flap Dissection**

- ❖ Provide a scalpel blade (No. 15) for the incision over the back.
- ❖ Assist in dissecting the latissimus dorsi muscle with overlying fat and skin using Metzenbaum scissors & electrocautery.
- ❖ Preserve thoracodorsal vessels and nerves.

**3. Flap Transfer to Breast**

- ❖ The flap is tunneled through the axilla to the breast defect.
- ❖ Ensure no vascular compromise occurs.

**4. Flap Inset & Contouring**

- ❖ The flap is sutured in place using Vicryl 2-0 cut.
- ❖ The breast shape is adjusted for symmetry.

**C. Hemostasis & Closure****1. Hemostasis Control**

- ❖ Provide cautery & hemostatic agents (Surgicel, AbGel) to stop bleeding.
- ❖ Ensure all major vessels are secured.

**2. Drain Placement**

- ❖ Hand over the RVD No.14 drain for both the breast and donor site.

**3. Skin Closure**

- ❖ Pass Vicryl 2-0 cut for deep closure and Monocryl 3-0 for subcutaneous closure.
- ❖ Hand over skin staples or sutures for final wound closure.
- ❖ Apply sterile dressing over the surgical site.

**4. Postoperative Duties**

- ❖ **Final Instrument & Sponge Count** – Ensure all instruments & gauze are accounted for.
- ❖ **Specimen Handling** – Confirm proper labelling of **tumour & lymph node specimens**.
- ❖ **Patient Transfer** – Assist in safely transferring the patient to the **recovery room**.
- ❖ **Sterile Field Breakdown** – Dispose of all used materials appropriately.

**Scrub Nurse Key Responsibilities**

- ❖ **Maintain strict sterility** throughout the procedure.
- ❖ **Assist in precise tumour excision & flap transfer**.
- ❖ **Pass instruments efficiently** to the surgeon.
- ❖ **Monitor & count all sponges, needles, and instruments**.
- ❖ **Handle specimens properly for pathology**.