



## RESEARCH ARTICLE

**Comparison of the Spectrum of Local Treatment Sequelae in Breast Cancer Patients Undergoing Modified Radical Mastectomy versus Breast-Conserving Surgery with Adjuvant Radiation Therapy****Dr. Niraj Satish Kale****Associate Professor, Department of General Surgery, Jawaharlal Nehru Medical College, Sawangi (Meghe), Wardha.**

**Background:** Breast cancer is the most common malignancy affecting women globally. Treatment options such as Modified Radical Mastectomy (MRM) and Breast-Conserving Surgery (BCS) with adjuvant radiation therapy offer distinct advantages. However, both modalities have varying post-treatment sequelae, including lymphedema, pain, and reduced quality of life. Identifying these differences is critical to guide clinical decisions.

**Objective:** To compare the local treatment sequelae between patients undergoing MRM versus BCS with adjuvant radiation therapy.

**Material and Methods:** This observational study included 120 patients with breast cancer—60 treated with MRM and 60 with BCS followed by radiation therapy. Patients were followed for six months post-treatment. Inclusion criteria were patients aged 30–70 years with early or locally advanced breast cancer. Exclusion criteria included metastatic disease and previous breast surgery.

**Results:** Patients undergoing MRM experienced higher rates of lymphedema (30%) compared to those with BCS (10%). Pain scores were also higher in the MRM group. However, radiation-related complications were observed in 25% of the BCS group.

**Conclusion:** Both MRM and BCS followed by radiation have distinct sequelae. MRM patients showed higher rates of lymphedema and pain, while BCS patients were prone to radiation-related side effects. Clinical decisions should consider these outcomes to optimize care.

**Keywords:** Breast cancer, Modified Radical Mastectomy, Breast-Conserving Surgery, Adjuvant radiation therapy, Treatment sequelae, Lymphedema.

**INTRODUCTION:**

Breast cancer remains one of the most common malignancies worldwide, representing a significant public health challenge. In India alone, breast cancer accounts for 14% of all cancers among women, and its incidence continues to rise, particularly in urban populations. Surgical management remains the cornerstone of treatment, and two main approaches—Modified Radical Mastectomy (MRM) and Breast-Conserving Surgery (BCS) with adjuvant radiation therapy—are widely adopted based on disease stage and patient preferences(1).

MRM involves the complete removal of the breast, including axillary lymph nodes, while BCS seeks to preserve breast tissue by removing only the tumor and surrounding margins, followed by radiation therapy to prevent local recurrence. Although both strategies aim to achieve similar oncologic

outcomes, they differ significantly in terms of post-treatment sequelae(2)(3).

Patients undergoing MRM are often at higher risk of lymphedema, chronic pain, and shoulder dysfunction due to the extensive nature of surgery and lymph node dissection. In contrast, those undergoing BCS may develop radiation-induced dermatitis, fatigue, and localized fibrosis from radiation therapy(4). Furthermore, psychological outcomes also vary between the two treatments, with some studies suggesting better body image and quality of life in BCS patients, despite their need for radiation(5).

While multiple studies have investigated individual treatment complications, there remains a need for comprehensive research comparing the spectrum of sequelae in both MRM and BCS patients. This study aims to fill that gap by systematically comparing the local post-treatment outcomes in patients undergoing

these two modalities. The findings will help oncologists offer more personalized care by weighing the risks and benefits of each treatment strategy(6)(7).

### Aim and Objectives

**Aim:**

To compare the spectrum of local treatment sequelae in breast cancer patients undergoing Modified Radical Mastectomy versus Breast-Conserving Surgery with adjuvant radiation therapy.

### Objectives:

1. To assess the incidence of complications such as lymphedema and chronic pain in MRM patients.
2. To evaluate radiation-related side effects and their impact on quality of life in BCS patients.

### Material and Methods

This observational study included 120 breast cancer patients treated at a tertiary care center for the period of 1 year. The participants were divided into two groups: 60 patients who underwent MRM and 60 who received BCS followed by adjuvant radiation therapy. Follow-up was conducted for six months post-treatment to assess sequelae.

### Inclusion Criteria:

Female patients aged 30–70 years.

Diagnosed with early or locally advanced breast cancer.

No previous history of breast surgery or radiotherapy.

### Exclusion Criteria:

Metastatic disease at diagnosis.

Comorbid conditions interfering with treatment or follow-up.

Patients lost to follow-up during the study period.

Data were collected using a structured proforma that included demographic details, tumor characteristics, and post-treatment complications. Pain was measured using the Visual Analog Scale (VAS), and lymphedema was assessed by arm circumference measurements. Radiation-related side effects were recorded according to RTOG grading. Statistical analysis was performed using SPSS software.

### Results

**Table 1: Incidence of Post-Treatment Sequelae in MRM and BCS Patients**

Complication	MRM Group (n=60)	BCS Group (n=60)	p-value
Lymphedema (%)	18 (30%)	6 (10%)	0.01
Chronic Pain (%)	20 (33.3%)	8 (13.3%)	0.02
Shoulder Dysfunction (%)	12 (20%)	4 (6.7%)	0.03

**Table 2: Radiation-Related Complications in the BCS Group**

Radiation Side Effect	Frequency (n=60)	Percentage (%)
Dermatitis (Grade I-II)	10	16.7%
Fatigue	12	20%
Fibrosis	3	5%

### Short Description:

The results indicate that MRM patients exhibited higher rates of lymphedema (30%) and chronic pain (33.3%) compared to the BCS group. On the other hand, radiation-related side effects were predominantly observed in the BCS group, with 20% experiencing fatigue and 16.7% reporting dermatitis.

### Discussion

The findings from this study highlight the distinct patterns of post-treatment complications in breast

cancer patients undergoing MRM and BCS. Consistent with previous studies, MRM was associated with a higher incidence of lymphedema, likely due to extensive lymph node dissection(8). Chronic pain and shoulder dysfunction also remain major concerns for MRM patients, underscoring the need for early physiotherapy interventions(9)(10).

BCS patients, however, faced radiation-induced complications such as dermatitis and fatigue, findings that align with earlier studies assessing the

impact of radiation therapy(11). The incidence of fibrosis, although low in this study, can become more prominent with longer follow-ups(12). These outcomes suggest that while BCS preserves body image and provides psychological benefits, it also necessitates continuous management of radiation-related toxicities(13)(14).

In clinical practice, the choice between MRM and BCS depends on multiple factors, including tumor size, patient preference, and access to radiation facilities. This study reinforces the importance of individualized treatment planning and the need to educate patients about potential sequelae to improve long-term outcomes(15).

### Conclusion

This study concludes that both MRM and BCS with adjuvant radiation therapy have unique post-treatment complications. MRM is associated with higher rates of lymphedema and chronic pain, while BCS patients face radiation-induced side effects. These findings underscore the importance of patient counseling and personalized treatment approaches to balance oncologic outcomes and quality of life.

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