

# PROSPECTIVE RANDOMIZED STUDY OF ONCOLOGICAL SAFETY AFTER PECTORAL FASCIA PRESERVATION IN MODIFIED RADICAL MASTECTOMY IN BREAST CANCER PATIENTS

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## Introduction

Breast cancer is the most prevalent malignancy and the second leading cause of cancer mortality in women. Over decades, surgical management of breast cancer has evolved from Halsted's radical mastectomy to less extensive modified radical mastectomy (MRM) with less morbidity, more cosmetic results, and similar survival rates. This was followed by introduction of breast conservative therapy (BCT), skin and nipple-sparing mastectomies which don't necessitate excision of whole or corresponding pectoral fascia (PF). PF is routinely excised during conventional mastectomy with no evidence to support this as it is part of muscular anatomy rather than breast tissue. It is firmly attached to underlying muscle with no separating epimysium unlike deep fascia in other body regions, so it is considered together with pectoralis major (PM) muscle as one myofascial unit. It also functions in breast lymph drainage as it is a part of deep lymphatic network.

## Aim of the work

The aim of this study was to assess the effect of pectoral fascia preservation during MRM regarding operative time, post-operative seroma formation, and oncological safety of the whole procedure in female patients with breast cancer undergoing MRM.

## Patients

This prospective randomized study included sixty female patients diagnosed with breast cancer admitted to the Surgical Oncology Unit, Alexandria Main University Hospital and were indicated to MRM during a period from October 2021 till June 2023. Patients were randomly classified into two equal groups: group A underwent MRM with PF excision while group B underwent MRM with PF preservation.

## Methods

### Exclusion criteria:

- Tumors less than 1 cm from PF by Sonomammography.
- Locally advanced breast cancer.
- Post neo-adjuvant therapy.
- Male patients with breast cancer.

After ethical approval, an informed consent was taken from all patients. In **group A**, PF was excised separately for histopathological assessment of oncological safety. In **group B**, PF was preserved and histopathological examination of undersurface of breast for residual tumor. All patients were followed up until June 2023 (4-20 months) with a mean follow-up period of 11 months.

## Results

Table(1) :Comparison between the two studied groups according to different parameters

|   | Group A<br>(n = 30) |      | Group B<br>(n = 30) |       | Test of sig.   | p       |
|---|---------------------|------|---------------------|-------|----------------|---------|
|   | No.                 | %    | No.                 | %     |                |         |
| <b>Oncological safety</b>               |                     |      |                     |       |                |         |
| Free PF                                 | 28                  | 93.3 | 30                  | 100.0 | $\chi^2=1.938$ | 0.499   |
| PF invasion                             | 2                   | 6.7  | 0                   | 0.0   |                |         |
| Operative time (min)                    | 111.5 ± 12.05       |      | 92.17 ± 11.57       |       | t= 6.339*      | <0.001* |
| Drain removal time (days)               | 12.60 ± 1.90        |      | 9.0 ± 1.14          |       | U = 57.0*      | <0.001* |
| Postoperative total drained amount (ml) | 939.5 ± 134.7       |      | 707.0 ± 161.8       |       | U = 131.50*    | <0.001* |

$\chi^2$ : Chi Square test , t: Student t test , U: Mann Whitney test

p: p value for comparing between the two studied groups

\*: Statistically significant at  $p \leq 0.05$

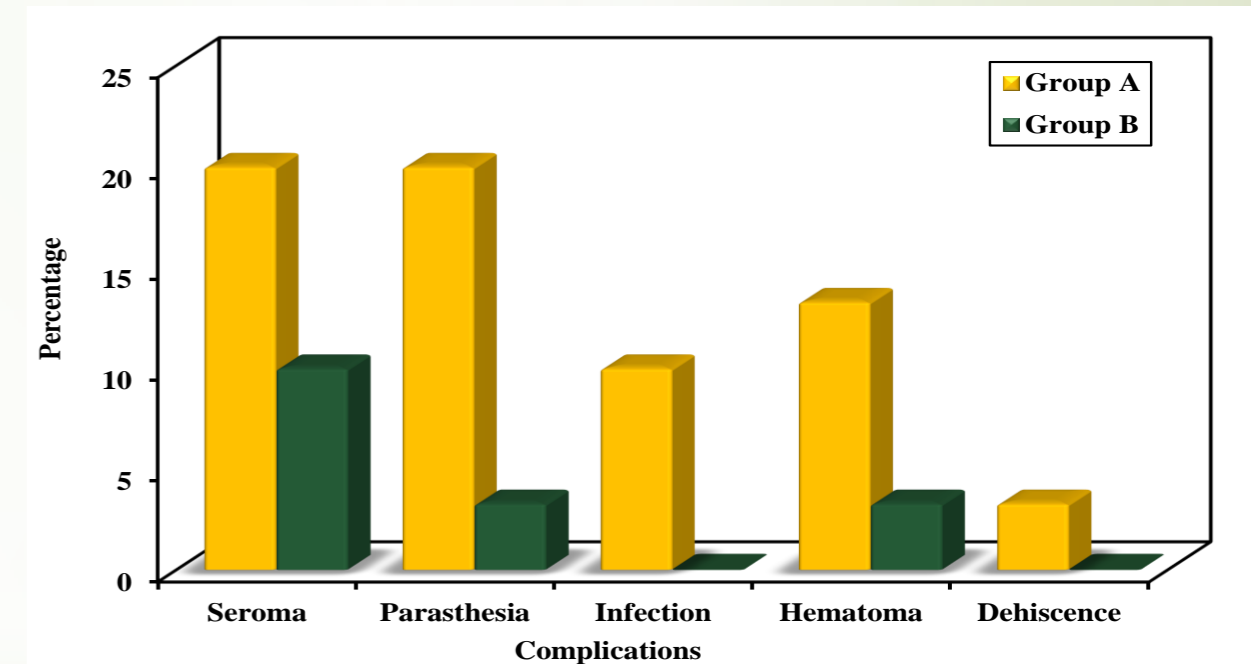


Figure (1): Comparison between the two studied groups according to the postoperative complications

## Conclusion

PF preservation during mastectomy is safe from oncological point of view with no evidence of local recurrence in both groups after long-term follow up. It can be done safely in certain clinical conditions which include early breast cancer in females, tumors 10 mm or more from pectoral fascia, and no history of neoadjuvant therapy. PF preservation has many advantages in reducing postoperative complications such as seroma formation, hematoma, infection, paresthesia, and wound dehiscence as well as decreasing operative time, total drain output, and shortens drain removal time.



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