

Latissimus Dorsi Flap VS Thoracoabdominal Flap in The Coverage of Skin Defects After Mastectomy for Advanced and Recurrent Breast Cancer

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Introduction

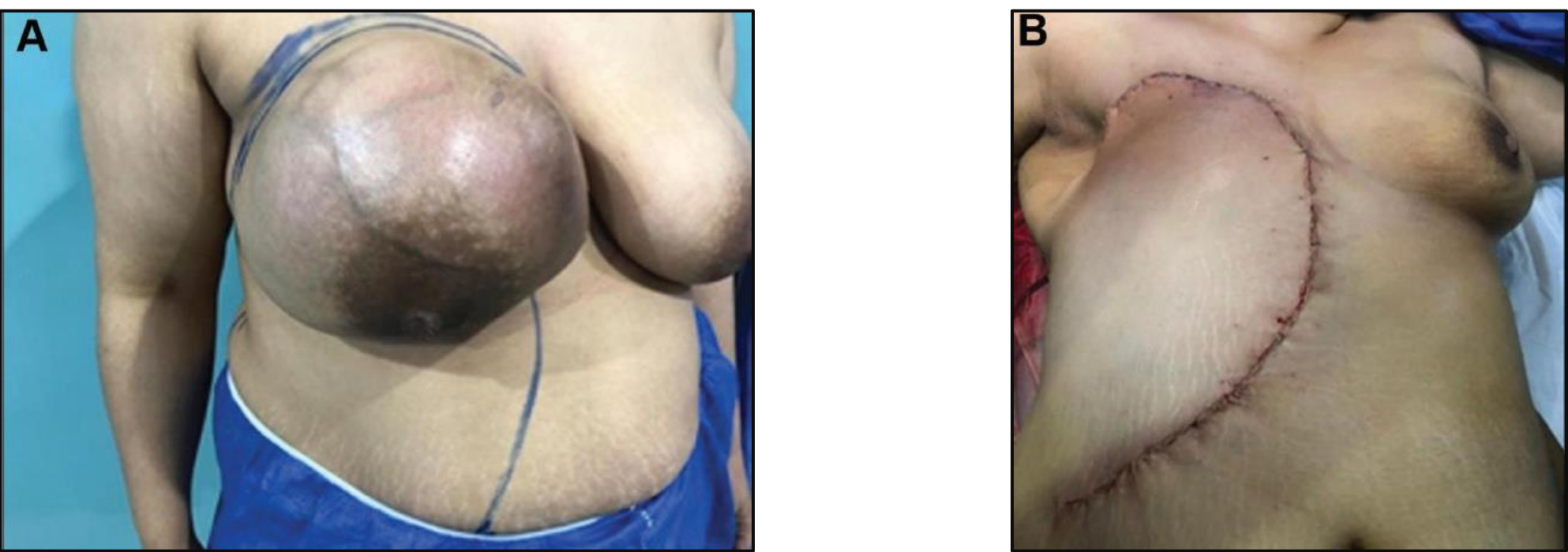
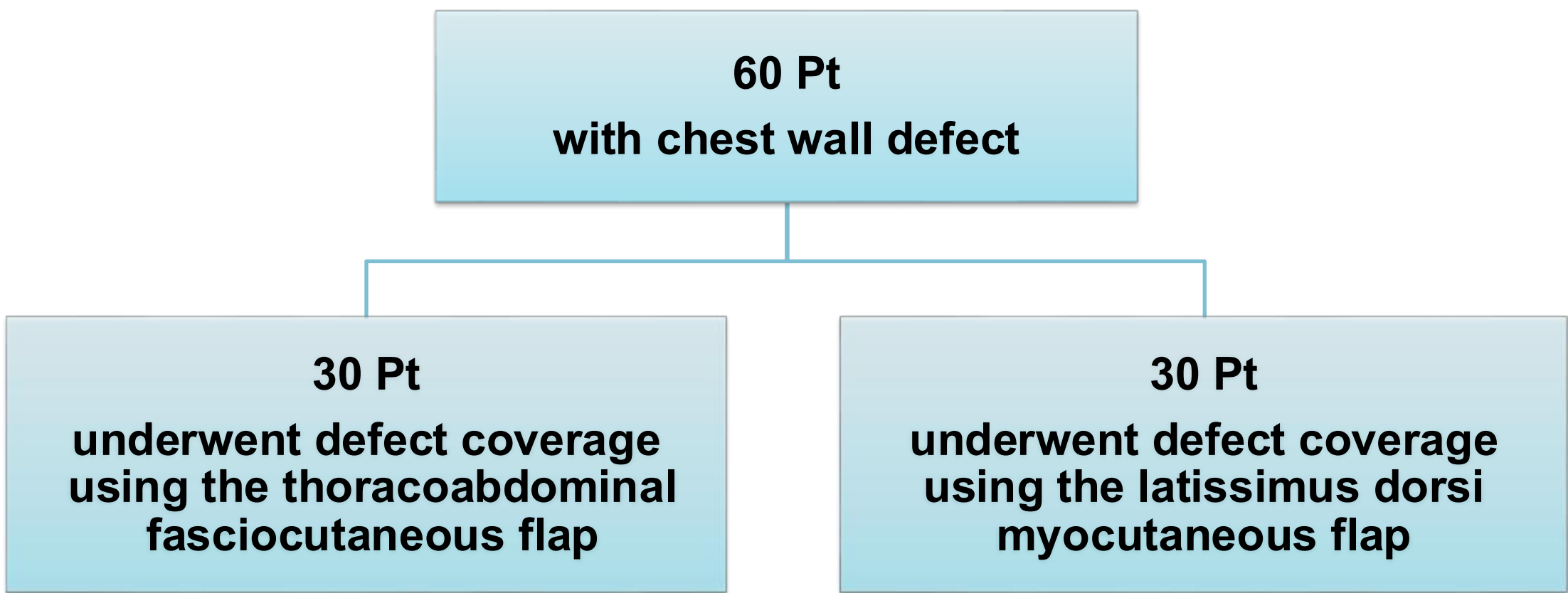
- Breast cancer is the most common cancer in women, accounting for approximately 26% of cancer cases worldwide. Despite advances in early detection and treatment, a significant percentage of cases in developing countries present at late stages due to social, economic, and healthcare system factors. Locally advanced breast cancer (LABC) and recurrent breast cancer often require mastectomy, which can result in significant chest wall defects.
- Reconstruction of these defects is crucial not only for aesthetic purposes but also for ensuring proper wound healing and improving the patient's quality of life. Various techniques, including skin grafts, myocutaneous flaps, and fasciocutaneous flaps, have been used for chest wall reconstruction. Among these, myocutaneous and fasciocutaneous flaps provide durable and aesthetically acceptable results.
- This study focuses on comparing two commonly used flaps: the latissimus dorsi (LD) flap and the thoracoabdominal (TA) flap. The comparison aims to determine which flap offers better outcomes in terms of operative time, flap size, and complication rates.

Objectives

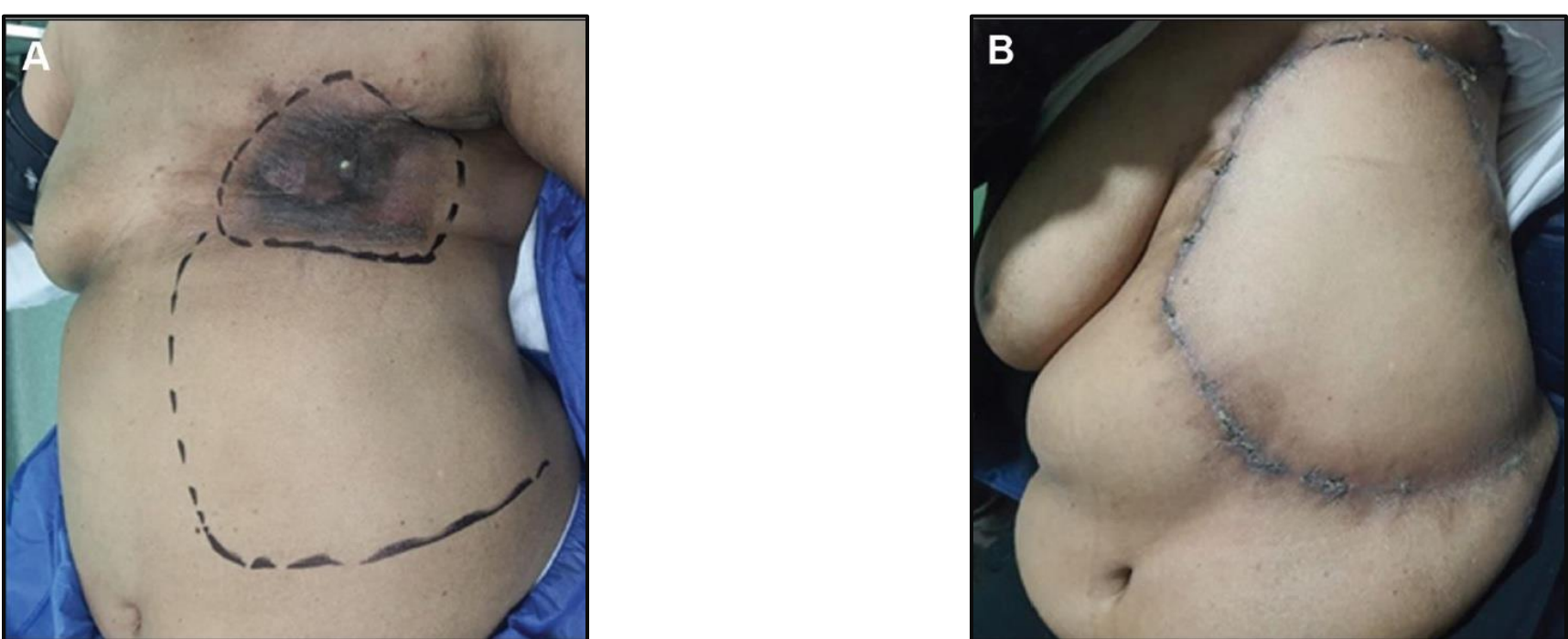
- To evaluate the effectiveness of latissimus dorsi and thoracoabdominal flaps in covering chest wall defects post-mastectomy.
- To compare the two flaps in terms of:
 - Flap size
 - Operative time
 - Postoperative complications
- To identify the most suitable flap for specific patient populations, particularly in patient with LABC and heavily infiltrated axilla.

Methods

- Study Design:** Prospective, randomized comparative study.
- Study Period:** March 1, 2021, to March 1, 2022.
- Sample Size:** 60 patients divided into two groups:
 - Group A:** 30 patients underwent defect coverage using the latissimus dorsi myocutaneous flap.
 - Group B:** 30 patients underwent defect coverage using the thoracoabdominal fasciocutaneous flap.
- Inclusion Criteria:**
 - Patients with locally advanced or recurrent breast cancer requiring mastectomy and chest wall reconstruction.
 - Patients with male breast cancer undergoing mastectomy.
- Exclusion Criteria:**
 - Patients with metastatic disease.
 - Patients unfit for surgery
- Procedure:**
 - Latissimus Dorsi Flap:**
 - The flap is harvested from the back using the thoracodorsal pedicle as the blood supply.
 - A skin ellipse is designed over a fat roll on the back.
 - After dissection, the flap is tunneled through to cover the chest wall defect.
 - Thoracoabdominal Flap:**
 - A rotational advancement flap is created from the anterior abdominal wall.
 - The flap relies on lateral perforators of the intercostal arteries.
 - Dissection is performed superficially, preserving the rectus sheath and external oblique aponeurosis.
 - The flap is advanced and rotated to cover the defect without requiring microvascular techniques.



(a–b) A case of LABC managed by mastectomy with a defect reconstructed by TA flap. TA, thoracoabdominal



(a–b) A case of local recurrence managed by resection and reconstruction by TA flap. TA, thoracoabdominal



(a–c) A case of local recurrence managed by excision and LD flap. LD, latissimus dorsi

Results

- Demographics**
 - The study included 60 patients: 57 females and 3 males.
- Age Distribution**
 - 42 patients (70%) were between 40 and 60 years old.
 - 7 patients (11.67%) were younger than 40 years.
 - 11 patients (18.3%) were older than 60 years.
- Marital Status**
 - 95% of patients were married.
 - 5% were single.
- Contraceptive Use**
 - 36 patients (60%) did not use oral contraceptive pills.
 - 24 patients (40%) reported using oral contraceptive pills.
- Clinical Characteristics**
 - Most cases were left-sided breast cancer (31 cases, 51.7%).
 - The most common tumor location was the upper outer quadrant (33 cases, 55%).
 - The majority of patients presented with locally advanced breast cancer (LABC) or recurrent breast cancer.
- Outcomes**
 - Flap Size:**
 - Group A (LD flap): Mean size = 284 cm² (range: 140–450 cm²).
 - Group B (TA flap): Mean size = 397.1 cm² (range: 225–650 cm²).
 - The difference in flap size was statistically significant (P < 0.001).
 - Operative Time:**
 - Group A (LD flap): Mean = 185.8 minutes (range: 160–240 minutes).
 - Group B (TA flap): Mean = 152.5 minutes (range: 110–200 minutes).
 - The difference in operative time was statistically significant (P < 0.001).
 - Complications:**
 - Group A: 8 cases (26.7%) experienced complications, including wound dehiscence, partial flap necrosis, and seroma formation.
 - Group B: 2 cases (6.7%) experienced complications, including seroma and partial flap necrosis.
 - The difference in complication rates was statistically significant (P = 0.038).

Comparison between the two studied groups according

	LD (n=30)	TA (n=30)	P
Size of flap (cm2)			<0.001
Mean±SD	284 ± 66.2	397.1 ± 98.4	
Median (minimum–maximum)	280 (140-450)	380 (225-650)	
Operation duration (min)			<0.001
Mean±SD	185.8 ± 18.6	152.5 ± 24.6	
Median (minimum–maximum)	182.5 (160-140)	152.5 (110-200)	
Complications	8(26.7%)	2(6.7%)	0.038

Conclusions

- Both the latissimus dorsi and thoracoabdominal flaps are viable options for reconstructing chest wall defects post-mastectomy. However, thoracoabdominal flaps offer significant advantages in terms of:
 - Larger flap size.
 - Shorter operative duration.
 - Lower postoperative complication rates.
 - Simpler surgical technique without the need for complex dissection or multiple positional changes.
- Therefore, thoracoabdominal flaps can be considered a superior alternative in cases of LABC and recurrent breast cancer, particularly in settings with limited surgical resources, Simpler surgical technique without the need for complex dissection or multiple positional changes.

References and Acknowledgments

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