

THORACO-ABDOMINAL FLAP FOR RESURFACING LARGE POST MASTECTOMY DEFECTS IN LOCALLY ADVANCED CA. BREAST

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ABSTRACT: Covering of large wounds after mastectomy in locally advanced Ca breast with skin that can withstand radiotherapy is a challenge to the surgeon. Here this study we used a local advancement flap from the adjacent area called Thoraco-Abdominal Flap (TA flap) for such giant defects. This is based on superficial and lumbar arteries and is thick to with stand consequent RT.

MATERIALS AND METHODS: Of the total 107 cases of LABC 32 had post mastectomy defects of larger than 12 cm and could not be closed by simple approximation. Among the 32 cases 17 cases are covered by split thickness skin grafting. 15 cases are covered by TA flap. These cases are assessed for mean operating time, mean blood loss, post-operative stay, flap necrosis and viability of the flap after radiotherapy. **RESULTS:** There is minimal extra time or blood loss in these cases. All the flaps healed well except for small edge necrosis in 4 cases. In all the patients we could start radiotherapy in the fourth week of surgery and all the flaps withstood RT well. After further evaluation probably this can be recommended as procedure for giant post mastectomy defects particularly for those who require RT early.

KEYWORDS: Thoraco- abdominal flap, post mastectomy defects, locally advanced carcinoma breast.

INTRODUCTION: Ca Breast is most common malignancy in world and is only surpassed by Ca Cervix in India.⁽¹⁾ Due to lack of awareness as much as 35% of them present very late. Doing mastectomy in such advanced (often ulcerated) tumors leaves large defects which cannot be closed by simple closure and needs resurfacing by S.S.G. which can get necrosed after Radiotherapy. So we need a flap cover for the raw area. Thoraco-abdominal flap is an answer for this. This is simple local adjustment flap safe and can be done with minimum expertise.

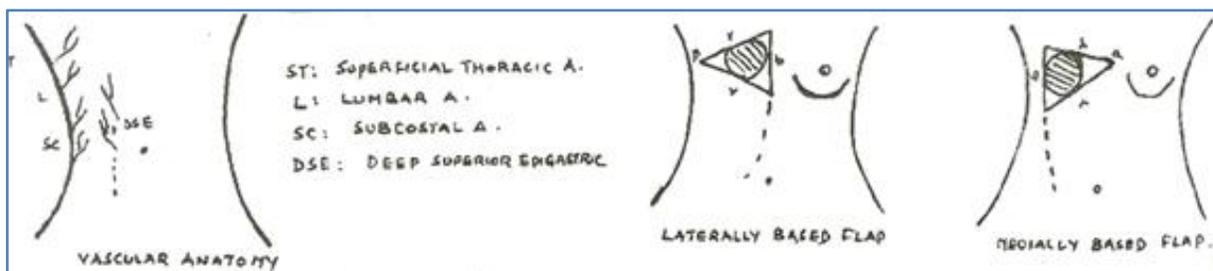
MATERIALS AND METHODS: A total of 347 cases of Ca Breast have been operated in G.G.H Kakinada in two years. Of these 107 cases are locally advanced carcinomas and 43 cases had ulcerated tumors. Of the total 107 cases 32 had a post-mastectomy defect of larger than 12 cm and which could not be closed with simple closure.

17 of the patients who had larger (>12 cm in diameter) defects had a split thickness skin grafting and 15 of them had TA flap. Those patients who underwent TA flap are evaluated for mean additional operating time, blood loss, flap necrosis, post-operative stay and re-evaluated for post radiotherapy flap necrosis after completion of RT.

FLAP DESIGN: TA flap is an advancement-rotation flap. It can be used as a medially based flap or a laterally based flap. A medially based flap derives its blood supply from perforators of

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superior deep epigastric artery which emerge at the lateral border of rectus abdominis.⁽²⁾ A laterally based flap is nourished by branches from lumbar, subcostal, intercostals and superficial thoracic arteries. The defect is triangulated first, this can be done by stretching the angles by Ally's forceps. The medial or lateral point of triangle acts as pivoting point (p). A circle is drawn from that point with one side of triangle as radius(r). Incision should be extended along this line keeping close to midline as much as possible. Length of extension depends on the width of the defect (b). Flap is mobilized in the sub cutaneous level which is relatively avascular. Medial limit is midline for laterally based flaps and anterior axillary line for medially based flaps. The flap is advanced and sutured to the upper flap of mastectomy.⁽³⁾ The apex of the flap may be trimmed incase of doubtful viability. No sizeable defects occur in the area of mobilization.



VASCULAR ANATOMY AND FLAP DESIGN: Of the 15 patients in 3 of them we used medially based flaps and in the 12 patients laterally based flaps. Toilet mastectomies were performed in 21 cases and 11 patients had axillary dissections as per their stage protocol.

All the patients received post-operative Radiotherapy starting in the fourth week of surgery. RT and chemotherapy are given according to routine stage guidelines.

Patients are reviewed weekly after discharge up to 2 months after completion of RT. (a total period of 4-6 mths.)

RESULTS:

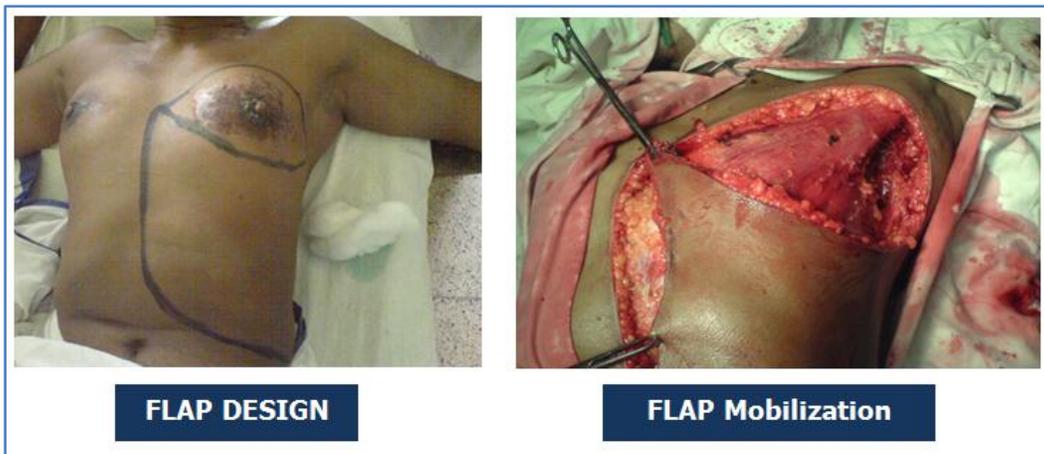
- In all the patients in whom TA Flap is used, we could cover the defects completely.
- The mean additional operation time was 35 mts (min 23 mts and max 47mts) which was almost the same time taken for skin grafting (25 mts).
- The additional blood loss is due to the procedure is about 40 ml (min 35ml max 65ml).
- The post-operative stay is the same as that warranted for mastectomy (7-8 days).
- In 3 pts there is a 1cm flap necrosis at the apex which could be excised and re sutured.
- After a follow up of 2 mths after full cycles of Radiotherapy none of the patients showed any sign of necrosis of the flap. All the patients could continue their normal activities by the end of third week of surgery. These results are summarized in the following table.

1. Total no of ca breast patients operated	347
2. No. of cases of LABC	107 (30.8%)
3. No. of cases having > 12cm defect	32
4. Types of mastectomy performed	Toilet mastectomy- 21

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	MRM -11
5. No of cases covered by skin graft	17
6. No of cases covered by TA flap	15
7. Mean additional time	35 mts (min 23 mts max 47 mts)
8. Mean additional blood loss	40 ml (min 35 ml and max 65ml)
9. Hospital stay	7.2 days(min 5days max 11 days)
10. Flap necrosis(immediate p.o)	3/15 (<1cm at the apex)
11. Radionecrosis of flap (after 3 wks after completion of RT)	None

TABLE 1



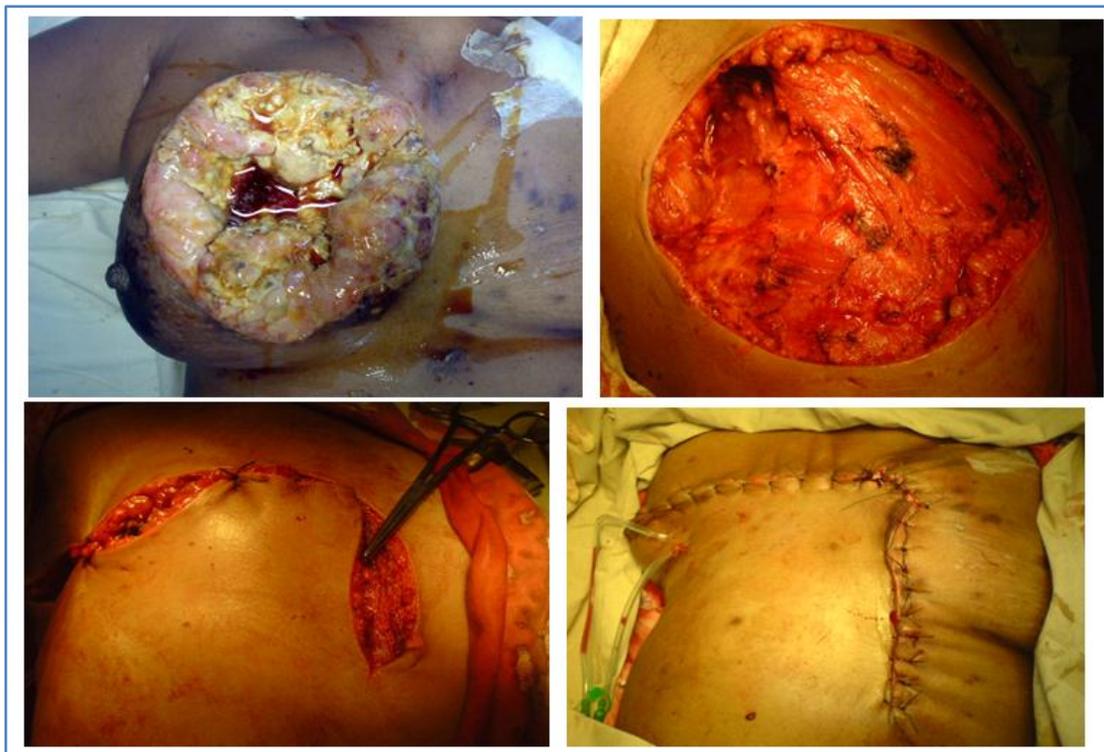


Figure 1, 2, 3 and 4

DISCUSSION: Though the awareness about BC has increased among public in India, LABC is still common. We often see advanced cases with large tumors, ulceration and fungation. Frequent problem in treating such cases is wound closure.

These defects have been treated by different methods in different times of history. Halsted used to leave it open to allow it to heal by secondary intention and scarring⁽⁴⁾. Skin grafting has been used but the problem with SSG is infection, poor appearance and Radionecrosis. CHANG et al and LOPEZ used omental transposition and SSG⁽⁵⁾ with a success rate of 70-80% but this has the problems of laparotomy and those of SSG.

Myocutaneous flaps like LD Flap and TRAM Flap have revolutionized this field. LD Flap introduced by TANSINI in 1896 was subsequently abandoned by HALSTED. It was reintroduced in 1975 for cover as well as cosmesis and is presently procedure of choice for those who wish to have their normal 'SHAPES'.⁽⁶⁾ TRAM flap was introduced by HARTRAMP in 1982 and has better cosmetic results.⁽⁷⁾ The drawback of MC flaps is that they need surgical expertise, prolonged time and additional blood loss.

Thoraco-abdominal Flap is introduced first by BROWN in 1975. It was used both for resurfacing and prosthetic reconstruction of breast.⁽⁸⁾ But with the advent of MC flaps its usage has come down.

Indian patients present very late in the disease due to lack awareness and self-neglect. Main intention of the surgeon in these cases is to remove the tumor as part of cyto-reduction and

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skin cover that heals fast so that we can resort to other modalities of therapy like radiotherapy, chemotherapy and hormonal therapy which may be beneficial to the patient. Most of the patients are not particular about the cosmesis. Moreover the surgeons who perform mastectomies may not have the expertise needed for the MC flaps. In this setting the goal of early post-operative recovery and good skin cover that can withstand Radiotherapy is well addressed by TA Flap. ⁽⁹⁾

TA Flap is simple cutaneous flap which needs minimal additional time and average surgical expertise. Blood loss is also minimal. All our patients had good full thickness skin cover that could withstand RT well. This is well evidenced by our follow up to 2months after the last dose of RT. Early post-operative recovery is a boost to the patient and prepares them for further management.

CONCLUSION: A predominant percentage of patients are still presenting with late and ulcerating/fungating Ca Breast. Most of them need immediate post-operative RT. For these patients TA Flap can be considered as it is simple, less time consuming and very effective, particularly if the patient needs early post-operative radiotherapy.

REFERENCES:

1. Persichetti P1, Cagli B, Tenna S, Fortunato L, Vitelli CE.[Role of cutaneous thoraco-abdominal flap in the surgical treatment of advanced stage breast tumors]-SupplTumori. 2005 May-Jun; 4 (3): S177.
2. Gray's text book of anatomy 40th ed: 1065, 1079 -1081.
3. Berish S, Luis O, Vasconez, Elizabeth J, - Operative technique- Mobilization of the thoraco-abdominal flap. Grabb's Encyclopedia of Flaps, Hall-Findlay- 2008 vol iii, 656 pages.
4. Nakao K, Miyata M, Ito T, Ogino N, Kawashima Y, Maeda M, et al. Omental transposition and skin graft in patients for advanced or recurrent breast cancer. Jpn J Surg 1986; 16: 112-7.
5. Brown RG, Vasconez LO, Jurkiewicz MJ. Thoraco- abdominal flaps and the deep epigastric arcade. Plastic Reconstr Surg 1975; 55: 416-21.
6. Deo S. V. S, Purkayastha J, Nootan K. Shukla, SonalAsthana-Thoraco-abdominal flap cover for large post-mastectomy defects-Indian Journal of Surgery, May-June, 2003;65(3):246-250.
7. Chin PI, Andersen JS, Somlo G, Chu DZ, Schwarz RE, Ellenhorn JD. Esthetic reconstruction after Mastectomy for Inflammatory breast cancer- is it worthwhile? J Am Coll Surg 2000; 190: 304-9.
8. Hartram pf CR Jr, Schelfan M, Block PW. Breast reconstruction with TRAM. Plast Reconst Surg 1982; 69: 216-25.
9. Shukla HS, Gupta B, Sahni K, Samuells S. Role of rectus abdominismyocutaneous flap in surgery for breast cancer. Eur J SurgOncol. 1987; 13: 321-329.

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