

# Lattissimus Dorsi Musculocutaneous Flap in Management of Advanced Cancer Breast

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**Objective:** To determine the effectiveness of the use of lattissimus dorsi muscle in management of advanced cancer breast.

**Setting:** Plastic surgery service, Surgical Department, Salmaniya Medical Complex, Bahrain.

**Subject and Design:** Review of all cases of advanced cancer of breast necessitating use of flaps for coverage of skin defect after or management of advanced cancer breast.

**Results:** The flaps survived completely in all the 8 patients.

**Conclusion:** Lattissimus dorsi is a very useful flap in management of advanced cancer breast cases.

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Breast cancer is one of the commonest malignancies affecting the females. The treatment of breast malignancy has seen extremes, from being super-radical to being super conservative in the excision of the breast. Irrespective of the modality of treatment and the aggressiveness of its institution, there has not been much change in the survival statistics of breast cancer<sup>1-3</sup>. The plastic surgeon has a definitive role in the management of breast cancer. This can broadly be defined at two levels: (a) in the initial management of breast cancer and (b) in the reconstruction of breast in the post-mastectomy scenario. In the locally advanced stages or in the highly malignant varieties of the disease, the surgical management necessitates excision of large skin along with the breast tissue, and this calls for provision of stable skin cover with plastic surgery techniques. Although simple skin graft can be used in some situations, these generally do not address the problem adequately. The cover provided is not stable and this precludes the use of post-operative radiotherapy for a long time, which in most of the situations provides an important adjunctive treatment modality. If however, a well vascularised full thickness cover can be provided, it can be of great advantage by allowing institution of postoperative radiotherapy very early in the treatment programme. Ipsilateral lattissimus dorsi has been found to be of great help in such a situation<sup>4-7</sup>. We present our experience with the use of lattissimus dorsi musculocutaneous flap in the management of locally advanced malignancy of the breast. The muscle has been used for resurfacing of large areas of loss of skin following excision of huge four quadrant cancers of large sarcomas. We have found it to be especially useful in management of large fungating tumours where apart from providing the skin cover it also effectively controls the infection and pain.

## METHODS

We have utilised lattissimus dorsi musculocutaneous flap in eight patients with advanced malignancy of the breast. The donor area was closed primarily in three patients and in five patients the area had been covered with split skin graft. In two patients the total skin territory of the muscle was used.

One patient had sarcoma of the breast, whereas 5 patients had advanced cancer of the breast. One patient had recurrent cancer and one patient had raw area following excision of cancer breast.

### Technique of raising the flap

We have utilised the technique originally described by Dowden and McCraw<sup>3</sup>. The planning in "reverse" is done and the flap is outlined. The incision is made around the skin down to the fascia, and the anterior border of lattissimus dorsi is identified. The muscle is dissected off the chest wall and the vascular pedicle on the under surface is identified and protected. The island of the musculocutaneous flap is elevated. The branch to serratus anterior muscle is sacrificed if more mobility is needed. The muscle is routed to the chest by opening the axilla through a zig zag incision through the posterior axillary fold. We have found it useful to oversee the cut edges of the remaining lattissimus dorsi muscle as this cuts down the bleeding and the post operative seroma formation.

## RESULTS

There was complete survival of the flaps in all the patients and healing was uneventful in all except one patient where there was partial suture line dehiscence which healed

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secondarily without any need for further procedure.

## DISCUSSION

There has been great emphasis on the early detection and management of breast cancer. There is general feeling that people now report early because of patient awareness and better methods of early detection of the disease. Skin and breast tissue conserving techniques have been advocated as they have shown to have the same survival statistics<sup>1-3</sup>. This may be true in the western societies. In the third world countries despite all the efforts being made regarding the early diagnosis and management, we still have patients who come to the surgeons in a very late stages of the disease. The tumours may be big or may have fungated and "burst" leading to very foul smelling purulent discharge. There are many factors leading to such a situation. The foremost is the lack of proper education in most of the population at risk. The females tend to ignore their illness for a long time. Many people do not report initially fearing it might turn into cancer. Even if it is diagnosed to be cancer, many turn to "alternative" forms of treatment as these offer "complete cure" without operation. The fear of loss of breast, a symbol of their femininity compels many to shun the medical treatment for a long time. As a result most of such unfortunate patients report to the surgeon at a very late stage of the disease. Although any treatment will not alter the survival in such patients, but something needs to be done to alleviate their suffering for the remaining period of their lives. Such patients do need what has been called "Toilet Mastectomy". The breast along with the fungating growth is taken out and then a cover is provided with lattissimus dorsi musculocutaneous flap. This takes care of the infection and septicaemia and gives relief from the agonizing pain. The muscle flaps fight the infection better than the conventional skin flaps and skin grafts as these bring in more blood supply and leukocytes to fight the infection<sup>8-15</sup>. The lattissimus dorsi musculocutaneous flap can solve the problem of resultant skin defect and fight the infection in the same setting. Even in patient without fungation, like breast sarcoma and four quadrant carcinoma, the resultant skin defect may be too big to be closed primarily and would necessitate import of skin. Lattissimus dorsi can provide quantities of skin for such patients. Lattissimus dorsi has also proved to be the first line flap for chest wall reconstruction following radionecrosis after breast cancer therapy<sup>24</sup>.



Figure 1. Huge fungating carcinoma needing toilet mastectomy

Even today some plastic surgeons do believe in modified radical mastectomy where they use "thin" skin flaps which might necrose postoperatively. In such complicated wound management lattissimus dorsi musculocutaneous flap is of great help.



Figure 2. Large L dorsi flap transferred

There is a controversy regarding the ligation of thoracodorsal pedicle during the axillary clearance. Although many authorities have advocated removal of the thoracodorsal artery and vein<sup>15-17</sup> for better clearance of the axilla, there is a growing trend towards preserving the vessels<sup>18-20</sup>. Even if the vessels have been ligated the lattissimus dorsi muscle can still be elevated<sup>6</sup>. In fact it has been suggested that this ligation acts as a "delay" for the future use of lattissimus dorsi flap.



Figure 3. Late postoperative appearance

Barlett et al<sup>21</sup> in most of their cadaveric dissections (96%) found a T-shaped configuration between scapular, circumflex-scapular and thoraco-dorsal artery. This allows one to bridge a peripheral arterial defect at the same time. Hamza<sup>22</sup> found a consistent anastomatic vessel between branches to lattissimus dorsi and serratus anterior muscle. The lattissimus dorsi muscle can still survive on the retrograde blood supply through branch to serratus anterior muscle<sup>23</sup>.

## CONCLUSION

We feel Lattissimus dorsi is a very useful flap in the management of skin defects resulting from toilet mastectomy and excision of large malignancies of breast such as sarcomas and four quadrant carcinomas.



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