



Case Report

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Total Breast Reconstruction with Autologous Dual Flaps- Scarless LD with Transposition Flap.

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Abstract

Total breast reconstruction using autologous pedicled flaps has evolved over the years. With advent of perforator based flaps-, increasing use has been seen for partial and total Breast reconstruction. The concept of reconstructive ladder and elevator is based on selection of simplest procedure . Other criteria of selection are based on patient characteristics in terms of morbidity, available donor volume and extirpated volume ratio, ptosis, skin colour match of breast with donor site , tolerance to radiation, ptosis of contralateral breast , patient s economic status and expectations. Unilateral summarization is challenging and careful selection of the donor site and autologous tissue for flap harvest needs to be considered.

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Introduction

We present a case of benign phyllodes requiring nipple sparing mastectomy and reconstruction. Use of transposition flaps quoted in literature (Ref1) is an underutilised procedure. These flaps help to harvest the tissue in lateral fold of chest wall without the need for a preoperative imaging in absence of previous radiation or scarring. Myocutaneous LD has been the workhorse for partial or total breast reconstruction. The learning curve is easy and different modulation can be done to harvest large flaps and scarless LD (LD mini). Both these techniques are versatile, carry less risk of losing flap vascularity and have a short learning curve.

Description

A 37-year female presented with large lump occupying entire left breast in a 36 C Breast. The lump was growing since last few months. She stated that she had slight pain in the breast occasionally. She also mentioned that the lump was increasing rapidly in the last 2 months. She was married and had 3 kids, last delivery being 8 years back. Clinically, on examination, the lump was around 10x8 cm in the left breast with no palpable axillary nodes. The skin above the tumor was pinchable and Nipple could be pinched well from the tumor. Right breast, bilateral axilla and supraclavicular area were normal. She had no previous history of surgery or biopsy or treatment of breast. She had no family history of cancer. Radiography revealed single large lobulated mass having multiple cystic spaces with internal septations consistent with phyllodes.

Trucut gun Biopsy of left lump was benign phyllodes. Further imaging workup was CECT thorax and bone scan, which was done in view of large size of tumor and clinical suspicion of malignancy.

CECT thorax and bone scan was normal. She was explained different options of surgery. Also, the tentative need for second surgery in case the final diagnosis of surgical specimen comes as malignant phyllodes was discussed. She opted for a wide excision and reconstruction. Options of immediate reconstruction were discussed while informing about the expected results of surgery. Also, she was well informed about the need for radiation in case final histopathological diagnosis is borderline or malignant.

She underwent wide excision of the tumor with frozen for margins. Her frozen revealed free margins more than 1 cm except anterior which was 8 mm on the skin. The cavity on left side was reconstructed using dual flap from the same incision. Transposition and scarless L. D (mini-LD) were used for oncoplastic incision was placed along the lateral Mammary crease. Skin flaps were raised. As in nipple sparing mastectomy. The tumor was removed with margins and specimen was sent for margin assessment on frozen. The transposition flap was designed from the same incision with a curve at upper end like a fish tail to reach posterior axillary line at apex. Lateral chest wall fold was used for flap harvest.

The base of incision (inframammary crease) was the rich area of vascular supply from perforators. Also, the dermal supply holds the flap vascularity (1)

No Doppler or other modality was used for the harvest of the flap. The lateral extent was the posterior axillary line to avoid injury to TDAP perforator. However, future use of LTAP is obviated because the incision crosses the midaxillary line at 4th intercostal space where the LTAP perforator is usually found.

The same incision was used to raise the scarless LD hence sparing the Skin of the back.

The flap was not detached from the insertion of LD at humerus, but rotated after its distal detachment to be allowed to fill the extirpated area. The length of mini-LD harvested was 12 cm before in setting. More than 70 percent of extirpated breast volume was attained by transposition flap and rest 30 percent by scarless LD. There was no residual deficit after reconstruction.

Indocyanine Green (ICG) was used to ascertain the vascularity of flap. And suture line the surgical duration was 5 hours. Flap harvest time was 30 minutes for each of the two flaps approximately.

She resumed her daily activity after discharge and her social life after 10 days of surgery after the drain removal. Minor seroma occurred at LD site that settled without intervention.

Her final HPE was left phyllodes (benign) with clear. The tumor measured 10.5x10 cm x6 cm. All margins were more than 1 cm except anterior margin which was 8 mm with skin anteriorly.

Three breast surgeons reviewed the postoperative pictures and were shared the modified Harvard cosmetic score on aesthetic outcomes. Two scored very good and one excellent on the aesthetic results BCT version- 2 questionnaire was shared with the patient to assess her psychosocial outcomes after surgery and satisfaction with the new operated breasts. She scored 87 percent on psychosocial.

(48/50) and 82 percent on satisfaction with the breasts (57/60)

Her score for physical wellbeing (chest wall) was 100 percent (30/30) and impact on work 90% (31/32)

Discussion

This case report reinforces the practical application of transposition flaps which can be used as a combination with scarless LD. The procedure is simple, not bound with preoperative Doppler or other equipment and brings down the complications related to LD. ICG was used to establish that the vascularity of the transposition flap is well maintained when it reaches no farther the posterior axillary line.

Phyllodes tumor of the breast is a rare entity. Most cases present as large tumors and need evaluation to classify according to WHO classification. Staging by CECT Thorax and Bone scan needs to be done if phyllodes is malignant, however preoperative determination is difficult and challenging.

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In a study by Yazid (7) on 443 patients, he concluded that margins were found to be independent factors of overall survival.

Recent MD. Anderson guidelines suggest no margin revision for benign non recurrent phyllodes.

The final treatment plan for the reconstruction for phyllodes depends on the final histological diagnosis. For large tumors, it is essential to rule out the malignant component in histology. Also, it is essential to rule out recurrence by history as margin of 1 cm or more and radiation would be essential as a part of treatment for a recurrent phyllodes.

Transposition flaps are based on dermal supply and rich perforator vascular supply at inframammary crease. (1) The largest extent in oblique direction is posterior axillary line, where the flap stops to preserve the perforator from TDAP, Also, the flap width depends on donor site availability evaluated on pinch test.

LD myocutaneous flaps have been used as a versatile option for autologous reconstruction; however, harvesting of large flaps result in poor donor wound healing due to tension on dermal supply and persistent seromas. Seromas are related to large size of LD flaps, whether traditional or scarless. In a study by Mina Youssef, he reported seroma in all his patients. In the study by Maitani, Kosuke (5), total Breast reconstruction was done. Seroma did not bother the patient or surgeon partly because the flap volume was lesser and fat augmentation was used to supplement the LD muscle. The procedure was carried out in a single stage, which is an advantage over staged procedures. Mini LD has been used in partial breast defects as large as 150 gm by Dr Rainsbury (6) for coverage of implants as a replacement for acellular dermal Matrix (3)

Mini LD is an alternative option to reconstruct 20-30 percent of breast defects without a scar on the back. It is based on thoraco dorsal pedicle as vascular supply. The flap length can be assessed measuring the distance from Apex to the distal point of defect.

An extra length of 3-5 cm is raised for the muscle shrinking after the harvest. The flap can be left attached to the vascular pedicle only for greater mobility and reach.

Both transposition and LD tolerate radiation with minimal fat necrosis. Radiation was not a part of treatment plan in this patient being benign phyllodes on Final histopathology and being non recurrent on history.

If second surgery is anticipated in phyllodes. use of Latissimus dorsi muscle is discouraged in first attempt to spare for future reconstruction. Meeting patient expectations on cosmesis is challenging and hence a single or dual staged approach is based on case selection, largely on Final histological type.

Aesthetic surgery related factors and psychosocial factors are high contributors of quality-of-life. Patient symptoms carry equal validity as any other variables.

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Breast cosmesis is aimed at restoration of breast cone, projection and ptosis. Use of autologous tissue for reconstruction is well tolerated, acceptable, radiation compliant and has better outcomes as compared to alloplastic method. The aims of replacement are good aesthetics, patient satisfaction, minimal donor site morbidity, short hospitalization, faster recovery and return to daily activities.

Psychosocial factors, satisfaction with outcomes, sexual and physical wellbeing are contributory towards quality-of-life post procedure. These can be assessed with the validated licensure questionnaire (BCT version-2).

The risk factors for lower scores on satisfaction with breast include patient psychosocial well-being, type of incision and BMI (2). Overview of literature shows that the physical well-being decreased but satisfaction with breasts increased over a period of follow up of one year.



Figure 1



Figure 2



Tumor delivery from lateral Mammary crease and the skin envelope over it



figure 03



Figure 04



Figure 05

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Figure 06 Final In setting of Both Flaps



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Figure 7. DAY 1. Post op



Figure 8 First post op day

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Figure 9 – small seroma – resolved without intervention

Conclusion

With increasing use of autologous flaps for breast defects, the return to activity has improved. The wide options of flaps available has made the task of a breast surgeon easier. Case selection based on all criteria helps to choose the right one.

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