

Single Bilateral Undivided TRAM Flap for a Bilateral Breasts Reconstruction Including Intermammary Presternal Skin Defect Coverage

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ABSTRACT

We present a case report of 30-year female presenting with a large skin and soft tissue defect of anterior chest wall, after bilateral mastectomy. Unlike other patients, she also had sternum defect after resection of skin of sternum. She had a 34x17 cm defect of anterior chest when she presented to us. We covered the defect and reconstructed bilateral breasts all with a single paddle bilateral delayed Transverse Rectus Abdominus Myocutaneous (TRAM) flap. Our flap paddle measured 42x21 cm and we observed no tip necrosis.

Key Words: TRAM flap. Mastectomy. Large anterior chest defect. Carcinoma breast.

INTRODUCTION

Breast cancer is the second most common cause of cancer mortality in women.¹ Inflammatory breast cancer is a clinico-pathological entity. It is characterised by rapid progression and aggressive behaviour from onset of disease. With introduction of systemic chemotherapy, mortality from inflammatory breast cancer has reduced.² There is also a role of postoperative adjuvant radiotherapy in the treatment of carcinoma of breast,³ as well as, preoperative chemotherapy.⁴

Bilateral mastectomy is indicated in patients with bilateral involvement of breasts with carcinoma. Contralateral mastectomy is also indicated for patients at high risk for the contralateral breast cancer as a prophylactic procedure. Role of plastic surgery comes both in wound coverage and breast reconstruction.

CASE REPORT

We present a case of 30-year married female, a mother of three children. She presented to us with an open wound of anterior chest for eight days after bilateral mastectomy and excision of intervening sternal skin by ablative surgeon for bilateral invasive ductal carcinoma.

Past history revealed that patient developed a lump in her left breast two years back, which kept on increasing in size. She got treatment after one year and an excision

biopsy was done, which turned out to be a malignant mass. Soon after the procedure, her left breast got swollen and inflamed. Work up was done and revealed left lymph nodes involvement with no systemic metastasis. Neo adjuvant chemotherapy was started after a multi-disciplinary meeting on advice of oncologist (Figure 1). In the meanwhile she developed another lump also in her right breast and core needle biopsy revealed it to be malignant. Bilateral mastectomy was done and intervening skin over sternum was also removed for suspicion of involvement along with bilateral axillary clearance.

Patient presented to us with a 34x17 cm spectacle shaped anterior chest skin defect including bilateral breasts loss and sternal skin defect with sloping margins (Figure 2). Pathological report showed the involvement of the deep margin with malignancy.

We planned to cover chest skin defect with a bilateral TRAM flap after excision of remaining tumor, but we were posed with a challenge of also covering sternal skin defect and reconstruction of breasts. We delayed the TRAM flap by ligating the inferior epigastric vessels on both sides. One week later, second stage was executed. We marked the TRAM flap which could be closed primarily. It was 42x21 cm sized flap marking for TRAM. A bilateral flap was raised without dividing them from each other and inseting was done. In this approach, pedicles were kinked at two sites, first at sub costal area and second at the flap base. Wound was closed primarily as planned. We used large mesh of polypropylene for abdominal wall donor site. Drains were removed at fourth postoperative day. No complications were noted during surgery and at the seventh postoperative day, other than a 2x2cm² triangular area of bluish discoloration on right side of the flap, there were no other defects (Figure 3).

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Figure 1: Breast after systemic chemotherapy.



Figure 2: Post-mastectomy skin defect.



Figure 3: Postoperative appearance of anterior chest wall.

Resection of the deep margin was done with collaboration with ablative surgeon and confirmed by the frozen section. Resection was done at second stage of the procedure.

DISCUSSION

Breast reconstruction is an essential part of the multi-disciplinary team. In mastectomy defects for reconstruction, one have to choose between immediate or delayed reconstruction.⁵ In an immediate reconstruction, there is a better aesthetic outcome due to preservation of the breast skin envelope and also the benefit in the psychosocial aspect. Whereas, delayed breast reconstruction is usually reserved for patients who will require post-mastectomy radiotherapy.⁵ Reconstruction can also be completely autologous or prosthetic using a tissue expander,⁶ it can be done as single-staged or two-staged procedure,⁶ with each having different sets of complications.⁷

Patients with large breasts and bilateral mastectomy pose a challenge for reconstructive surgeon. Large amount of tissue is required to reconstruct larger ptotic breasts. A subset of these patients also present with open wounds and thus require wound coverage.

Options for skin defect coverage and breast reconstruction include Deep Inferior Epigastric Artery flap (DIEP), TRAM flap as free or pedicled,⁸ and Lattismus Dorsi (LAD) flap.⁹ Other flaps also mentioned in literature are Ruben's flap, Transverse Upper Gracilis (TUG) flap, Transverse Myocutaneous Gracillis (TMG) flap, Inferior Gluteal Artery Perforator (IGAP) flap, and Superior Gluteal Artery Perforator (SGAP) flap.

Bilateral LAD flaps can be used for coverage of the large skin defects of the chest, but they require breast prosthesis for breast reconstruction and create small to moderate-sized breast. Complications include the smaller breasts and capsule contracture, especially when radiotherapy will be given.

If we have had used this flap, sternal defect of the patient would be covered by the tip of the the flaps and

any necrosis would have left an open wound at central defect. Secondly, radiation therapy was anticipated in this patient which may excoriate the graft and lead to physical and emotional stress to the patient.

Use of TRAM flap is documented in literature both as free and pedicled flap for breast reconstruction as well as to cover chest skin defects. It does not require prosthesis and creates large ptotic breasts. It has been used as unilateral or bilateral procedure. Complications of this flap include fat necrosis of flap and hernia formation at donor site.

In this case, using a delayed bilateral pedicled single paddle TRAM flap, we not only covered a large wound but also created bilateral breasts simultaneously. It resulted in breasts with flap symmastia. Careful planning and delaying the procedure avoided any fat necrosis. Unlike LAD, the central defect at sternum was not covered by the tip of flap. Breasts created were large and avoided the need for prosthesis. Breast size and shape in clothing was adequate and patient satisfaction was high.

Drawbacks include placing the mesh at donor site, delayed procedure, and need for creation of cleavage in the future.

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