

Extended V-Y Latissimus Myocutaneous Flap: An Option For Reconstruction Of Large Defect Following Mastectomy For Locally Advanced Breast Cancer

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Abstract

Background

Management of breast cancer remains challenging in underdeveloped countries such as Senegal. Diagnostic is often made late with locally advanced breast cancer. This causes difficulties with covering large defects after mastectomy. Through two observations we report the feasibility of covering large thoracic defects by an extended V-Y latissimus dorsi myocutaneous flap.

Methods

A retrospective study was carried out at the Department of Plastic Surgery of Dantec on patients with locally advanced breast cancer with predicted problems of wound closure after mastectomy. We used the extended V-Y latissimus dorsi myocutaneous flap.

Results.

These were two patients aged 45 and 57 years with both a T4dN1M0 breast cancer. Their breast cancer had resisted to chemotherapy. Mastectomies and lymph nodes removal were followed by immediate coverage with an extended latissimus dorsi V-Y flap. One patient had delayed wound healing due to lymphorrhea. Complete wound healing was achieved within 21 and 35 days. One patient died 2 years after surgery and the second is still alive after 18 months of follow up.

Conclusion

The extended V-Y latissimus dorsi myocutaneous flap is a good and safe option in covering defects left by extended mastectomy. Its morbidity is low and does not delay adjuvant chemotherapy and or radiotherapy.

INTRODUCTION

The prevalence of breast cancer (BC) is increasing in low- to middle-income countries such as those in West Africa. In Senegal, as in most countries of the subregions, breast cancer continues to be diagnosed at a late stage. Seventy-six percent of breast cancer is diagnosed at the T4 stage [1]. This poses the problem of management of breast cancer in Senegal with limiting factors located at all stages of the care process which remains long, difficult and expensive for the majority of patients [2]. In advanced, ulcerated and infected breast cancers, covering defects left by the extended

mastectomy is particularly problematic. The extended V-Y latissimus dorsi myocutaneous flap described by Micali and Carramaschi [3] provides a suitable method of wound closure without a significant donor site morbidity. The aim of this article is to confirm the usefulness of the flap's design and its safety through these two cases of advanced breast cancer.

CASE 1

A 57-year-old patient was admitted at the Cancer Department for a left breast tumor evolving for more than 2 years. Clinical examination showed an ulcerated and

inflammatory tumor of the whole breast with fixed axillary lymph nodes (Fig 1). The biopsy reveals an invasive ductal carcinoma classified as a T4dN1M0 breast cancer.

Figure 1a

T4d left breast cancer



A first line chemotherapy with a CMF protocol (Methotrexate - 5FU- Cyclophosphamide) and a second line based on taxanes did not show response. A mastectomy of cleanness was then planned. The procedure began in the supine position for the time of the mastectomy and axillary lymph nodes removal. A 25 cm defect in its major axis was left. The patient was then placed in the left lateral position and the flap was harvested according to the classic extended V-Y latissimus dorsi flap design. The muscle tendon was sectioned on his 4/5 to facilitate anterior translation. The defect and the donor site were closed primarily. Complete wound healing was achieved in 15 days. The patient survived for two years.

Figure 1b

Large wound following mastectomy and axillary lymph node removal



Figure 1c

Flap design with a "V" shape



Figure 1d

Complete primary wound closure with the extended V-Y latissimus dorsi flap



Figure 1e

Post-operative result after 1-year follow up.



CASE 2

A 45-year-old patient was admitted at the Cancer department for a right breast tumor evolving for 1 year. She had in her past a conservative treatment for a left breast cancer. Clinical examination showed an ulcerated and infected tumor in the external quadrant of the right breast with fixed axillary lymph nodes (Fig 2). Clinical and paraclinical examination showed a breast cancer classified T4d. Pre-operative chemotherapy had not given a significant response.

Figure 2a

Anterior view showing external tumor



Figure 2b

Lateral view, T4d cancer ulcerated and infected tumor



The mastectomy and axillary lymph node removal left a defect of 23 cm in its major axis. An extended V-Y latissimus dorsi flap was performed to cover the defect and donor site primarily. A continuous lymphorrhea occurred

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and caused delayed wound healing in the anterior part of the flap. Complete wound healing was obtained 35 days later. Chemotherapy and radiotherapy were then given. After 25 months follow up the patient is still alive, and no recurrence is detected.

Figure 2c

Chest defect after mastectomy



Figure 2d

Extended V-Y latissimus dorsi flap harvested



Figure 2e

Immediate result



Figure 2f

Result after 1-year follow up.



DISCUSSION

Breast cancer is a real management challenge in developing countries.

It is the second most common cancer in women after that of the cervix with an ever-increasing incidence and mortality [4]. According to the GLOBOCAN 2018 study [5], the incidence of BC reached 1,758 cases per year in Senegal compared with 869 in 2012. However, these statistics seem to be largely underestimated for several reasons, including poor reporting processes, lack of cancer registries, lack of diagnostic facilities, and low accessibility to screening and oncology care in rural areas. Almost 76% of cancers continue to be diagnosed at the T4 stage [1]. In this specific cases, surgical management is advocated as it provides local control and satisfactory wound care [6,7]. Although disease-free survival can be expected in only a minority of patients, local control rates can be adequate and patients have a better quality of remaining life [6,8].

The main problem posed by these enlarged mastectomies is the coverage of the defect which is not accessible to the usual technique of latissimus dorsi flap. The fear of leaving a large defect causing pain, discomfort and delay adjuvant therapy did not facilitate our oncologist surgeons to make decision of operating these patients before. Surgical abstention was previously the main option, but this was very badly experienced by the patients who lost hope. Skin graft had been also used to cover the mastectomy wound but according to authors [8,9,10] wide excision of tumor and skin grafting do not provide robust wound cover that allows for postoperative chemotherapy and radiotherapy.

The extended V-Y latissimus dorsi myocutaneous flap was described by Micali and Carramaschi [3]. The usefulness of the extended V-Y latissimus dorsi flap design is its ability to close a large defect without the expense of a donor wound [11]. The thoraco-dorsal pedicle is already dissected during the mastectomy and facilitates flap harvesting and reduces the time of the procedure. In both cases where this flap was performed, we achieved complete defect and donor site primarily covering. Wound healing was obtained in good

timing that not delay adjuvant therapy. The other important fact is that, complete tumor removal had increased the comfort of life with better social integration and better adherence to treatment due to the hope raised.

CONCLUSION

Locally advanced breast cancer continues to be seen in developing countries. Their surgery posed the problem of covering large mastectomy defects. The extended V-Y latissimus dorsi flap is a safe procedure with low morbidity that allows wound closure in enlarged mastectomy.

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