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Case Study

# Closure of Skin Defect After Mastectomy for Locally Advanced Breast Cancer

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## Abstract

**Introduction:** Locally advanced breast cancer is common in Yangon General Hospital and constitutes about 25.5% of breast cancer cases. For the local control and quality of life, mastectomy is needed in the form of extensive surgery. Extensive mastectomy, toilet mastectomy, results in large skin defect which needs proper closure.

**Aim:** The aim of this study is to find out the various ways of defect closure after extensive surgery for the locally advanced breast cancer.

**Method:** Forty-one patients from 1st Jan 2018 to 31st December 2019 were included in this descriptive study. Clinical profiles were recorded. The types of closure of the skin defect were recorded. Postop complications were recorded.

**Results:** There are 181 breast cancer patients who underwent mastectomy and axillary dissection in surgical ward 2 of Yangon General Hospital. Forty-one patients (22.7%) had locally advanced breast cancer. In 37 patients, the defects were closed with bilateral advancement flap. Four patients (10.8%) developed flap necrosis in bilateral advancement flap. Three patient developed wound sepsis (8.1%). Six patients (16.2%) developed wound gaping. One patient underwent thoraco-epigastric flap. That patient develops wound sepsis. That patient has history of application of traditional medicine and has infected skin ulcer over the breast mas. Her culture result is moderate growth of enterococci. One patient underwent split skin graft. Two patients underwent thoraco-abdominal flap.

**Conclusion:** Bilateral advancement flap is a straight-forward way of closing the defect after extensive mastectomy. This type of closure is most used to get early closure. Thoraco-abdominal flap and split skin graft are also useful technique. Each method has its own advantages and disadvantages. Surgeon should tailor the surgery to the patient.

**Keywords:** Breast Cancer; Yangon General Hospital; Mastectomy

## Introduction

Breast cancer is the second most common cancer in Myanmar according to GLOBOCAN Data 2020 for Myanmar (Globocan, 2020).

In 2015, Surgery for breast cancer amounted to 17.12% (229) of all the elective major operations in Yangon General Hospital. Almost all these operations were total mastectomy with or without axillary dissection. In 2016, 244 cases of total mastectomy were carried out in Yangon General Hospital and 92 cases underwent mastectomy in New Yangon General Hospital.

According to the cancer registry 2017 (Yangon General Hospital), breast cancer accounts for 17 to 19% of all types of cancers.

Locally advanced breast cancer is common in Yangon General Hospital and constitutes about 25.5% of breast cancer cases.

For the local control and quality of life, mastectomy is needed in the form of extensive surgery. Extensive mastectomy, toilet mastectomy, results in large skin defect which needs proper closure.

Less attention has been paid to reconstructing large chest wall defects following a so-called "toilet mastectomy", wherein the mastectomy is performed on locally advanced breast cancer patients with the aim of ablating the breast and skin tissues and minimizing oncologic recurrence [3].

Generally, flaps are advantageous over skin grafts in terms of aesthetics and durability, especially when adjuvant radiation therapy is indicated. Skin flaps are usually preferred to myocutaneous flaps because of their relative simplicity and comparable results [4].

## Aim

The aim of this study is to find out the various ways of defect closure after extensive surgery for the locally advanced breast cancer.

## Method

Forty-one patients from 1st Jan 2018 to 31st December 2019 were included in this descriptive study.

Exclusion criteria are

- Patients presenting with recurrent breast cancer.
- Patients who do not give consent for diagnostic or therapeutic procedure to get the definite diagnosis of breast cancer.
- Patients found to have associated systemic metastasis during routine investigations.

Informed consent was taken after explanation of the procedure.

Clinical profiles were recorded. The types of closure of the skin defect were recorded. Postop complications were recorded. Collected data were compiled.

## Results

There are 181 breast cancer patients who underwent mastectomy and axillary dissection in surgical ward 2 of Yangon General Hospital. Forty-one patients (22.7%) had locally advanced breast cancer. In 37 patients, the defects were closed with bilateral advancement flap. Four patients (10.8%) developed flap necrosis in bilateral advancement flap. Three patient developed wound sepsis (8.1%). Six patients (16.2%). developed wound gaping.

One patient underwent thoraco-epigastric flap (Figure 1). That patient develops wound sepsis. That patient has history of application of traditional medicine and has infected skin ulcer over the breast mas. Her culture result is moderate growth of enterococci.

**Figure 1:** Large skin defect after mastectomy for locally advanced breast cancer (A), creation of thoraco-epigastric flap (B) and closure with thoraco-epigastric flap (C).

One patient underwent split skin graft.

One patient underwent thoraco-abdominal flap (Figure 2). The patient had a small skin necrosis at the tip of the flap. The wound healed well, and she was discharged from hospital as usual.

**Figure 2:** Thoraco-abdominal flap. Locally advanced breast cancer (A), Defect after surgery (B), thoracoabdominal flap (C), Flap necrosis in tip of thoraco-abdominal flap (D).

## Discussion

Surgery on locally advanced breast cancer often results in large chest wall defect.

Covering the chest wall defect is important for early adjuvant treatment.

Various techniques have been developed to close the skin defect after surgery for locally advanced breast cancer.

Skin grafts, local skin or fascio-cutaneous flaps and myocutaneous flaps are used in closure.

There are three kinds of skin flaps (bilateral advancement flap, thoraco-epigastric flap, and thoraco-abdominal flap).

In the study of Joo Seok Park., *et al*. 60% of the patients in the TE flap group developed distal flap necrosis. Among these, 2 patients required skin grafts because healing was delayed for more than 3 weeks due to significant necrosis [5].

In this study, one case of TE flap was included and developed wound sepsis due to pre-operative application of traditional paste.

In the study of Joo Seok Park., *et al*. [5] patients (22%) with TA flaps develop small distal flap tip necrosis, and both spontaneously healed within 3 weeks. It was believed perfusion to the TA flap is relatively robust, but the main drawback of this flap is the vertical midline scar [5].

The bilateral advancement flap is a simple way to cover the defect. In our hospital, bilateral advancement flap was commonly utilized.

Defects with greater vertical dimensions cannot be covered using this technique, and tension may result in wound dehiscence as was the case here when the vertical dimension of the defect was 19 cm [5].

Limitations of this study are small sample size and exclusion of myo-cutaneous flaps.

## Conclusion

- For two-year study period, hospital-based descriptive study about the locally advanced carcinoma breast was carried out.

Breast cancer prevalence continues to be high in the study population. It was found out that LABC contributes a large proportion of hospitalization.

- Late presentations result in advanced stages and curative treatment cannot be achieved resulting in increased mortality and morbidity and poor survival.
- The various methods were used in closure of skin defect after mastectomy.
- Bilateral advancement flap is a straight-forward way of closing the defect after extensive mastectomy. This type of closure is most used to get early closure.
- Thoraco-abdominal flap and split skin graft are also useful technique. Each method has its own advantages and disadvantages. Surgeon should tailor the surgery to the patient.
- In this study, myocutaneous flaps were not included.
- Further studies are required to get holistic knowledge about the closure of skin defect after mastectomy for locally advanced breast cancer.

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