



Thoracoabdominal Flap in Recidive Malignant Phyllodes Tumor Excision (A Case Report)

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Abstract

Phyllodes tumor is a type of tumor that is quite rare in the community and 10% to 30% of these cases are found to be malignant. Wide excision with proper margin is still as the main modality of treatment for Malignant Phyllodes Tumor. Large postoperative defects will be a challenge for surgeons in reconstructing the chest wall after excision. Thoracoabdominal flap is one of the preferred techniques for closing the defect of breast surgery in countries with limited resources such as in Southeast Asia. This technique is relatively easy and has low complication rate.

Case Report: A 42-year-old woman complains of a lump in her right breast that reappeared after breast surgery one year ago. We performed a wide excision of this tumor with a margin of 2 cm and the defect was closed using a Thoracoabdominal flap. Patients have been re-educated about the importance of postoperative radiotherapy.

Keywords: Malignant phyllodes tumor; Thoracoabdominal flap; Recidive

Introduction

Phyllodes tumor is a fibroepithelial neoplasm of the mammary gland. This tumor is quite rare in the community. Muller, in 1838 reported that the prevalence ranged from 0.3% to 0.8% of all breast tumors in women. Meanwhile, Parker, in 2001, stated that the prevalence of this tumor is less than 1% of all breast neoplasms. The literature states that 10% to 30% of cases of Phyllodes tumors are found to be malignant [1,2].

Malignant Phyllodes Tumor has potential to be recidive and metastatic. Surgical treatment with a wide excision technique is the best option in treating this tumor [1]. This procedure has an impact in the form of a large postoperative defect, so this will pose a challenge for surgeons to reconstruct the chest wall. Thoracoabdominal flap can be one of the surgeon's options in the closure of large postoperative defects of the breast. Rao et al. in 2015 reported that the Thoracoabdominal flap has the same ability as skin grafts in closing large defects, but with capability to shortening operating time, have less bleeding, and good healing results. Patients can also undergo radiotherapy after defect closure is done [3].

Presented in this case report is our treatment of Recidive Malignant Phyllodes Tumor with extensive postoperative defects. Thoracoabdominal flap was chosen as a method of closing the defect with consideration of its effectiveness and good results.

Case Presentation

A 42-years-old woman came to our clinic with complains of a lump that reappeared in the right chest for 1 month ago. The lump appeared on the surgical scar initially measured 1 cm × 1 cm × 1 cm and rapidly growing in 1 month to 10 cm × 10 cm × 8 cm. The lump is painful, ulcerated, and bleeds.

From her history, the patient complained of a right breast lump appearing initially four years ago. The lump was located under the skin with enlarged veins on its surface, slowly growing and there were no ulcers on the surface. The patient underwent a simple right-sided mastectomy 1 year ago at district hospital and the histopathological examination revealed as a Malignant Phyllodes Tumor. The patient was advised to undergo postoperative radiotherapy, but she refused to do it because of financial problem. Four months after surgery, a lump reappeared on the right chest. It was stated that the tumor has been recidive. Regional lymph node examination, thoracic radiology and abdominal ultrasonography did not show any metastatic process (Figure 1).

The patient underwent wide excision with a free margin of 2 cm from the recidive tumor by

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Figure 1: Preoperative clinical picture and excision design.



Figure 2: Postoperative defects and excised tumors involving part of the pectoralis major muscle.



Figure 3: Final closure of surgical defect with Thoracoabdominal Flap (a) and 6th day post operation wound condition (b).

including a previous surgical scar to prevent a recurrence. The operation took only 120 min. Surgical removal of the tumor is done by excising the pectoralis major muscle at the base of the tumor because of infiltration process of tumor (Figure 2). A rhombus-shaped postoperative defect was laid with an area of 440 cm² on the right chest. We performed a Thoracoabdominal flap to close this wide defect. The flap consists of two components: the right side, and the left side. The skin on the inferior side of the defect is divided in half and an incision is made downward along the width of the defect, then continues to divide to the right and left. Those two skin flaps were raised superiorly and used to cover the surgical defect. The abdominal flap defect was closed primarily by bringing the right and left sides closer together. We also put two vacuum drains in the operating area to collect fluids and blood after surgery (Figure 3). The patient has been evaluated at the surgical outpatient clinic on the sixth day

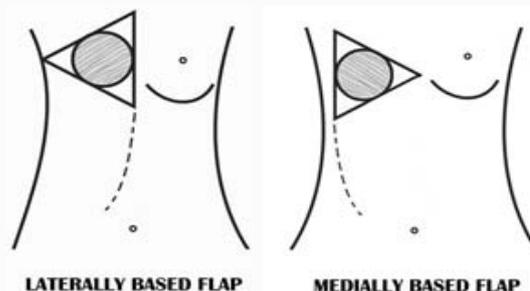


Figure 4: Laterally and Medially based TA Flap.

after operation. There were no complaints of fever, pain, or surgical infection. The flap was assessed as viable and there was no necrotic area on the wound. The results of histopathological examination revealed a Malignant Phyllodes Tumor of the breast and the tumor cells were no longer found in all excision margin. The patient was educated and scheduled to undergo radiotherapy.

Discussion

A Phyllodes Tumor is a tumor that is quite rare in the community. These tumors are classified histopathologically into 3 groups: Benign, borderline, and malignant. Anderson Cancer Center in 2012 reported the incidence of Phyllodes Tumor based on histopathology was 58% for benign tumors, 12% for borderline tumors, and 30% for malignant tumors. Benign and borderline Phyllodes tumors never recur once the tumor has been completely excised (with tumor-free incision margin). Meanwhile, Malignant Phyllodes Tumors require more aggressive treatment because of the high risk of recurrence and metastasis. The recurrence rate of this tumor was recorded at 14% to 21% [1,4,5]. Surgery is the main treatment for Malignant Phyllodes Tumor. Surgeon can decide between wide excision with safety margin 1 cm or simple mastectomy in manage this tumor. Those treatments will leave wide surgical defect which become a surgeon's attention after excision.

Broad and radical excision of the breast will leave a large defect so that primary closure usually cannot be performed. Various methods have become the surgeon's choice to reconstruct this wide defect, such as Skin Graft technique, Cutaneous flaps (ex: Thoracoabdominal Flap, Thoracoepigastric Flap, Bilateral Advancement Flap), and Myocutaneous flaps (ex: Latissimus Dorsi Flap and Transverse Rectus Abdominis Myocutaneous Flap). The Thoracoabdominal flap (TA flap) was originally introduced by Brown in 1975. However, this flap became less popular after the Myocutaneous flap has been introduced in 1985 [3,6,7].

In principle, the TA flap is a rotational-advancement flap of skin and fascia. This flap has two bases of pivot point: The medial base and the lateral base. The medial base blood flow comes from the superior deep epigastric perforating artery, whereas the lateral base blood flow comes from branches of superficial lumbar, subcostal, intercostal and thoracic arteries. The TA flap with a medial base is also known as the Thoracoepigastric Flap (TE Flap). The two flap bases are mirrors of each other, as shown in Figure 4 [3,7-9].

Srinivasa [3] stated that the TA Flap procedure in post-mastectomy defects in case of locally advanced breast cancer will give satisfactory results. The TA flap is considered easy to perform for surgeons who are not familiar with myocutaneous flap procedures. This flap is not only easier but also faster healing than skin graft

technique. Patients can immediately undergo radiotherapy for local control after the TA flap wound has healed. This flap is also useful in developing countries with limited resources because surgeon needs no expensive equipment [3,7-9].

Das and Choudhury [8] in 2013 reported that 1 in 20 patients (5%) who underwent TA flap surgery in cases of locally advanced breast cancer experienced complications such as wound dehiscence. These complications can be managed directly with secondary suturing and wound closure. The study explained that the majority of patients were able to go home from the hospital on 3 to 4 postoperative days and underwent radiotherapy with good results. There was no recurrence in 18 months after surgery. It can be concluded that the TA flap procedure is simple, low-cost, and provides good tolerance for radiotherapy [8].

Deo et al. [9] in 2003 has conducted research comparing TA flaps to Myocutaneous flaps (LD and TRAM flaps) in breast cancer cases. The TA flap requires a shorter operating time, shorter hospital stay, and significantly minimal risk of blood loss compared to the Myocutaneous flap. The morbidity and risk of local recurrence were not significantly different. The study concluded that the TA flap may be the first choice in patients with extensive post-mastectomy defects [8,9]. Joo Seok's study stated that the TA flap had a faster recovery time than the TE flap. Baroudi et al. wrote that TE flap was hemodynamically weak and fragile because of tissue tension on vascular. The risk of necrosis at the end of the flap is high. If this morbidity occurs, the patient must be re-debrided and followed by a skin graft to close the defect. However, this was disputed by Burattini et al. [10] who conducted a study on the safety and viability of the TE flap. In this study, it was found that the risk of dehiscence was only 7%. Persichetti stated that the TA flap is very useful in post-mastectomy breast defects with an area of less than 600 cm [2,3,7,10,11].

In our patient, we modified the TA flap by dividing the flap into 2 sides at the inferior defect. This flap is a combination of the TA flap on the lateral side and the TE flap on the medial side. We made this modification to provide free skin mobility and to minimize necrotic risk of tissue. Both of the TA Flap base will gain vascular supply maximally with minimal tissue traction. Nowadays, there is no consensus about surgical technique to close post-mastectomy defect. It depends on the experience of the surgeon, patient preferences, facilities, and the size of the defect. However, it is universally recognized that myocutaneous flaps are still better than cutaneous flaps in terms of reducing the risk of necrosis [11].

Conclusion

Closure of the breast excision defect using a Thoracoabdominal flap may be an option for a surgeon who is not familiar with

performing myocutaneous flaps in chest wall reconstruction. This technique has ability to minimize duration of operation, cost, has rapid healing time, and simple to do by a general surgeon. We have described in this case report about our experience in treating of Recidive Malignant Phyllodes Tumor with a Thoracoabdominal Flap as defect closure technique.

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