Outcome of Mastectomy with Immediate LD Flap Reconstruction by the Extended LD Flap Technique

Prakasit Chirappapha MD*, Youwanush Kongdan MD*,
Chairat Supsamutchai MD*, Teerawut Rakchob MD*,
Thongchai Sukarayothin MD*, Monchai Leesombatpaiboon MD*, Panuwat Lertsithichai MD*

** Department of surgery, Ramathibodi Hospital Faculty of Medicine, Mahidol University, Bangkok, Thailand*

Background: *Extensive dissection of the Latissimus dorsi (LD) myocutaneous flap is defined as dissecting the entire LD myocutaneous flap and fatty tissue overlying the muscle with a large skin paddle, improving the aesthetic result of immediate reconstruction. This technique enables autogenous tissue reconstruction possible in most Thai patients.*
Objective: *The aim of this study is to examine patients who performed mastectomy followed by extended LD flap reconstruction technique with general data, complications, aesthetic results and postoperative assessment of shoulder functions after extended LD muscle harvesting.*
Material and Method: *Between February 2005 and February 2008, 81 mastectomies with extensive dissection of LD myocutaneous flap were performed on 76 patients. Surgical oncologists prospectively followed-up patients for complications and aesthetic results. The data reported 95% confidence interval of odd ratio (95% CI of OR).*
Results: *Extensive dissection of LD myocutaneous flap was performed for bilateral breast cancer (n = 2) and breast cancer prophylaxis (bilateral LD flap, n = 3), chest wall recurrence (n = 2), ductal carcinoma in situ (DCIS) and DCIS with micro-invasion (n = 14), locally-advanced breast cancer (LABC) (n = 5), and infiltrating carcinoma (n = 50). The mean age of the patients was 44.26 years (95% CI of the difference = 42.34 to 46.18). Twenty-three patients had seroma formation at the donor site, requiring a single-needle, occasionally two times, aspiration after removal of the drains. The length of stay in the hospital ward was 2 days (95% CI of the difference = 2.45 to 3.19). At a median follow-up time of 107 months (range 84.18 to 117.06), there was moderate degree LD flap atrophy. No morbidity after LD muscle harvesting was detected. The donor site scar with contour was generally very good. All patients who facilitated this surgical technique had excellent cosmetic results.*
Conclusion: *Overall, we found that the extended LD-flap technique provided excellent aesthetic results with infrequent complications. Furthermore, in this small series, we found some degree muscle atrophy. We continue to offer this technique for all Thai patients, including those desiring surgical breast cancer prophylaxis as well as those with DCIS.*

Keywords: *Extended LD flap technique, Breast reconstruction, Seroma formation, Breast cancer*

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Immediate breast reconstruction is commonly used after mastectomy in patients with breast cancer. When a mastectomy is performed on a patient, breast reconstruction accommodates the desire for preservation of the body form and image[1]. It provides a good aesthetic surgical result and psychological outcome. Several surgical techniques can be used for reconstruction, including autologous tissue, implant, or a combination of autologous tissue and implant. The surgical option depends on the patient's characteristics, the stage of disease, treatment options, and surgeon's preference[2].

The extended *Latissimus dorsi* (LD) flap reconstruction is different from the standard *Latissimus dorsi* flap technique, which creates a large volume of *Latissimus dorsi* muscle and coverage fat on top of the muscle surface as well as a Myocutaneous paddle of skin and full-thickness fat[3]. It can be used to cover the defect of patients on whom mastectomy and reconstruction with LD flap was performed, with or without prosthesis with good result and aesthetic outcome. Because of the excellent blood supply, the extended LD flap is useful for patients with the risk of vascular problems, such as those who are or have been regular smokers, have obesity or history of diabetes. After the LD flap reconstruction, shoulder functional

Correspondence to:
Supsamutchai C, Department of Surgery, Ramathibodi Hospital, Mahidol University, Bangkok 10400, Thailand.
Phone: +66-2-2011315, Mobile: +66-85-0439901
E-mail: pogeneral2007@hotmail.com

limitation was for 6 to 12 weeks, and recovery to normal shoulder functions was at 6 months. Patients showed no long-term limitation of muscle and functional daily lift. Patients who practiced sport involving the LD muscle had improved shoulder function, especially the adduction function[4,5].

The aim of the present study is to examine patients on whom mastectomy was performed followed by the extended LD flap reconstruction technique with general data, complications, aesthetic results, and postoperative assessment of shoulder functions after extended LD muscle harvesting.

Material and Method

In the present study, extended LD flap reconstruction was performed on all patients between February 2005 and February 2008. General data was recorded, including the patients' age, surgical indication, type of breast surgery, axillary management, chemotherapy, radiotherapy, timing of following up patients, and complications. Before reconstructive surgery, all patients were informed and assessed in the preoperative and postoperative phases.

Information of the patients

All patients were informed about the oncologic outcome, surgery technique, potential complications of the surgery, and the shoulder function outcome after reconstruction.

Preoperative assessment

Before the breast surgery and LD reconstruction, a preoperative assessment of the patients' conditions and medical history was consulted and prepared, together with the state of local tissues, the condition of the other breast, and possibility of the donor site. Particular attention was given to assess the following:

1) The function of the *Latissimus dorsi* muscle is most often favorable for the integrity of the thoracodorsal pedicle. A preoperative evaluation was performed to confirm the integrity of its pedicle (if it was paralysed, the nerve had been damaged at the axillary clearance and the main vascular pedicle was probably divided at this stage) and to differentiate between its contraction and that of teres major. The examination for contraction of the muscle and its anterior border could be confirmed very simply by asking the patients to press their fists against their hips. In cases of any doubt, the *Latissimus dorsi* muscle was tested in the prone position and the arms slightly extended away from the body; the arm is abducted with retroflexion in medial rotation, while the examiner resists this movement by placing a hand against the inner aspect of the patient's forearm and applies passive abduction and slight anteflexion of the arm.

2) The appropriated amount of tissue flap was evaluated through pinching the laterodorsal pad and measuring the thickness of adipose tissue layers. The fat tissue was also evaluated along with the fat in the supprailiac region required for extended LD flap.

Surgical technique

The line of cutaneous paddle was made in the posterolaterlthorasic region. The supplementary volume of skin flap pedicle and *Latissimus dorsi* fat pads were divided into five zones; zone one is the fatty zone situated under the cutaneous crescent of the skin paddle, zone two is the fatty zone lying on the entire surface of the *Latissimus dorsi* muscle, zone three is the scapular fatty zone situated above the superomedial border of the *Latissimus dorsi* muscle folded over it as a hinged flap, zone four is the anterior fatty zone situated forward of the *Latissimus dorsi* muscle and folded over it as a hinged flap, and zone five is the suprailiac fatty zone accompanying the fat located above the iliac crest (the so-called love handles) and taken the lower part of the *Latissimus dorsi* muscle[6,7].

The extended LD flap technique harvested the entire LD muscle, including the suprailiac fat pad and fat tissue overlying the muscle, together with a large skin pedicle. Before mastectomy surgery, the patients were prepared to harvest the tissue flap in the sitting or standing position. The skin island was made on a transverse line and no more then 5 to 6 cm wide, and the fashion of the scar was covered by the bra strap line (Fig. 1). The immediate reconstruction performed after mastectomy created a lateral tunnel below the axilla to posterolateral breast, which marks the area of LD flap transfer from posterior to anterior. Alternatively, the LD flap could be harvested first in the lateral decubitus or prone position. The peripheral origin of the muscle was divided. The thoracodorsal neurovascular bundle was preserved after all of the LD flap, including the ellipse of overlying skin, was carefully rotated on its humeral insertion toward to the breast region via the tunnel created after mastectomy and the closing of the harvest site. The patient was repositioned in the supine position to prepare for the reconstruction. Once the LD flap was placed, it could be sutured to the anterior chest wall and the new breast parenchyma was performed.

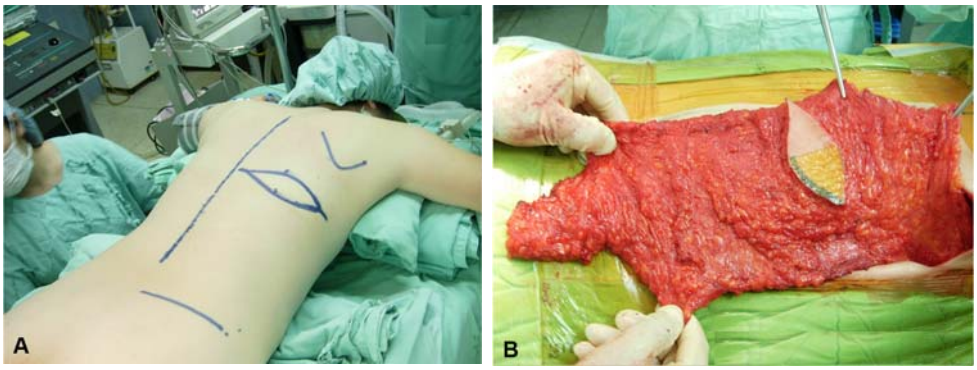

Fig. 1 The extended LD flap technique. A) The patient in prone position for prepare to harvested LD flap muscle. B) The large volume of extended LD flap with included fatty tissue overlying the latissimusdorsi muscle and the skin paddle.

Postoperative assessment of action, function, range of motion and aesthetic result

The LD muscle functions as a medial rotator, adductor and retroflexor of the arm[8]. The patients evaluated the function of the arm in several ways. These included the action of putting the hand in her back pocket, washing the opposite axilla, combing her hair, carrying a 4.5 kg weight at the affected side, using the hand overhead, lifting, perineal care, eating with a utensil, using the arm at shoulder level, dressing, pulling and throwing. American shoulder and elbow surgeons devised a scoring system to evaluate the overall functions of the shoulder depending on its activity. Each activity is evaluated on a scale of 0 to 4 and the results may be summed as following (score 0 = unable, score 1 = only with assistance, score 2 = with difficulty, score 3 = mild compromise, score 4 = normal).

Patients and experienced practical nurses evaluated the aesthetic outcomes. Experienced practical nurses evaluated the results as excellent, good, poor, and bad. The patients rated the results as extremely satisfied, satisfied, slightly satisfied or dissatisfied.

Results

In total, 81 mastectomies with extensive dissection of LD myocutaneous flap were performed on 76 patients. The mean age was 44.26 years (range 24 to 64 years, 95% CI of the difference was 42.34 to 46.18). The surgical indications of the patients underwent extended LD flap technique were as follows; DCIS (n = 8), DCIS with micro-invasion (n = 6), IDC (n = 47), ILC (n = 1), invasive papillary carcinoma (n = 1), Mucinous carcinoma (n = 1), Locally-advanced breast cancer (n = 5), recurrent cancer in the chest wall (n = 2), Prophylactic mastectomy (n = 2) and delayed breast reconstruction (n = 8). Almost all reconstructions were immediate; only 8 patients had delayed reconstruction, 5 of which were bilateral extended LD flap (Table 1).

Table 1. Patient's surgical indications

Surgical indications	n (%)
DCIS	8 (9.88)
DCIS with microinvasion	6 (7.41)
IDC	47 (58.03)
ILC	1 (1.23)
Invasive papillary carcinoma	1 (1.23)
Mucinous carcinoma	1 (1.23)
Lacally advance breast cancer	5 (6.17)
Cancer recurrent chest wall	2 (2.47)
Prophylactic mastectomy	2 (2.47)
Delay breast reconstruction	8 (9.88)
Total	81 (100)

Eighty one mastectomies with extended LD flap technique were performed, one for simple mastectomy, 33 for skin-sparing mastectomy, 6 for skin-sparing mastectomy with prosthesis, 12 for nipple-areolar complex sparing mastectomy, 1 for areola-sparing mastectomy, 18 for breast conservative surgery, 2 for wide excision from chest wall recurrence, and 8 for delayed breast reconstruction. 36 cases of sentinel lymph node biopsy were performed, and 31 cases of axillary lymph node dissection were performed. This technique is usually enough to replace the entire volume of breast tissue. We found that the extended LD flap technique provided excellent aesthetic results (Table 2).

In total, there were 5 patients with LABC. The

Table 2. Patients characteristics

Patients characteristics		n (%)
Unilateral extended LD flap reconstruction		71 (93.42)
Bilateral extended LD flap reconstruction		5 (6.58)
Reconstruction with extended LD flap technique		
Simple mastectomy		1 (1.24)
Skin sparing mastectomy		33 (40.74)
Skin sparing mastectomy with extended LD flap with prosthesis		6 (7.40)
Nipple-areolar complex sparing mastectomy		12 (14.81)
Areola-sparing mastectomy		1 (1.24)
Breast conservative surgery		18 (22.22)
Wide excision		2 (2.47)
Delay breast reconstruction		8 (9.88)
Axillary evaluation		
Sentinel lymph node biopsy		36 (44.44)
Axillary lymph node dissection		31 (38.27)
Complications		
Seroma		23 (28.39)
Hematoma		3 (3.70)
Nipple areola complex ischemia		1 (1.24)
Nipple partial loss		1 (1.24)
Fat necrosis		1 (1.24)
Delay healing at surgical site		2 (2.46)
Re-operation due to closed surgical margin		1 (1.24)
Drain (cc)	Median: 550 (450 to 666)	95% CI of the difference 541.36 to 747.81
Hospital stay (day)	Median: 2 (2 to 3)	95% CI of the difference 2.45 to 3.19

infiltrating tumors ranged from 5.5 cm. to 10 cm in size, and one patient had 24 positive axillary lymph nodes. Seroma formation at the donor site was the most-significant complication. Twenty-three cases (28.39%) had seroma complication. These seroma can usually be collapsed with needle aspiration, requiring a single-needle aspiration, occasionally twice, after removing the drains. Other complications were as follows; hematoma, 3 cases (3.70%), nipple areola complex ischemia, 1 case (1.23%), nipple partial loss, 1 case (1.23%), fat necrosis, 1 case (1.23%), delayed healing at surgical site, 2 cases (2.46%) and re-operation due to closed surgical margin, 1 case (1.23%). The hospital stay was 2 days (95% CI of the difference = 2.45 to 3.19). Almost all patients (90%) were discharged 2 days after surgery with drains. Some patients who received adjuvant treatment after the surgery were as follows; systemic chemotherapy treatment in 41 patients (53.94%), hormonal treatment in 39 patients (51.31%) and radiation therapy in 31 patients (40.78%).

Patients were followed-up prospectively, with at least 3 months of physical examination. The assessment of shoulder function started after complement of adjuvant chemotherapy or radiation therapy. The functional loss of the *Latissimus dorsi* muscle was noticed in three patients. They had mild compromise using the hand overhead (8.6%), putting the hand in a back pocket (2.9%), combing the hair (2.9%) and using the arm at shoulder level (2.9%) caused mild stiffness of shoulder joints. Currently, there is no instance of LD flap atrophy or the morbidity after LD muscle harvesting (Table 3).

Aesthetic results

Aesthetic results were judged in more or less the same way by both experienced practical nurses and the patients themselves (Table 4). Experienced practical nurses rated excellent as 81 percent, good as 13 percent, and poor as 3 percent. No results were considered to be bad/poor. 77 percent of the patients were extremely satisfied, 17 percent were satisfied, and 6 percent were slightly satisfied. It is important to note that in the cases of these two patients in the slightly satisfied category, there were no serious complications

Table 3. Post-operative assessment of shoulder function

Shoulder function	Total shoulder function assessments (n = 46) (scale)				
	0	1	2	3	4
Putting the hand in a back pocket				1	45
Washing the opposite axilla					46
Combing the hair				1	45
Carrying a 4.5 kg weight at the side					46
Sleeping on the affected side					46
Using the hand overhead				3	43
Lifting					46
Perineal care					46
Eating with a utensil					46
Using the arm at shoulder level				1	45
Dressing					46
Pulling					46
Throwing					46

Table 4. Aesthetic results of breast reconstruction

Evaluation	No.
Advance practical nurse evaluation	
Excellent	30/41
Good	9/41
Poor	2/41
Bad	0
Patient evaluation	
Deeply satisfied	29/41
Satisfied	10/41
Poorly satisfied	2/31
Dissatisfied	0

affecting the aesthetic results of the reconstruction (one case of partial flap retraction, and one case of revision of the flap due to closed margin) (Table 4 and Fig. 2).

At a median follow-up time of 107 months (range 84.18 to 117.06), there was moderate degree of LD flap atrophy. No morbidity after the LD muscle harvesting was detected. The donor site scar with contour was generally very good. All patients facilitated with this surgical technique had excellent cosmetic results. At the follow-up time, we found 5 patients (6.57%) with recurrence of their cancer at the chest wall, and 16 patients (20.05%) had metastasis in their lungs (n = 4), liver (n = 6) and bone (n = 6).

Discussion

The extended LD flap technique provides excellent replacement of the anterior axillary fold and infraclavicular breast. The shape is usually good without an implant. In this study, all patients were Asian with characteristically thin body habitus and abdominal fat thickness that is less than those of Caucasian women. In most patients, without any implant, the flap can be expected to match an opposite breast of a B or C cup size.

In our technique, the supply of fat came from five zones: 1) the fatty zone situated under the cutaneous crescent of the skin paddle, 2) the fatty zone lying on the entire surface of the *Latissimus dorsi*, 3) the scapular fatty zone situated above the superomedial border of the *Latissimus dorsi*, which was folded over it as a hinged flap, 4) the anterior fatty zone situated forward of the *Latissimus dorsi* muscle and folded over it as a hinged flap, and 5) the suprailiac fatty zone, which accompanied the fat located above the iliac crest (the so-called love handles) and taken from the lower part of the *Latissimus dorsi* muscle. The vascularization of zones 1 and 2 were brought about by the musculocutaneous and musculo-fatty perforators together to ensure good vascularization of the fatty tissues. The vascularization of zone 3 (the scapular fatty zone) was set up with the aid of small perforator vessels running cranially from the supero-medial border of the *Latissimus dorsi* toward the scapular fat zone. The vascularization of zone 4, which passed 3 to 4 cm beyond the anterior border of the *Latissimus dorsi* muscle, was achieved by means of

Fig. 2 Post operative views of skin-sparing mastectomy with the extended LD flap technique. A) Post operative 1 week with good contour of left breast, B) The donor site post harvested extended LD muscle at 1 week, C and D) Post operative 4 months with mild atrophy of left breast.

small perforator vessels coming from the *Latissimus dorsi*. Finally, the vascularization of zone 5 (the so-called love handles) was secured by means of the musculo-fatty perforators of the *Latissimus dorsi*. This vascularization was more delicate because it concerned the zone that was farthest from the pedicle. The extended LD flap method was most useful for the modified mastectomy defect, for it could also be reconstructed with either a tissue expander or a standard latissimus flap. The skin paddle can be used to replace minimal surface skin defects, but major defects, such as the wide excision of the chest wall recurrence with a vertical scar, should be attempted with caution.

When compared to reconstruction with tissue expansion followed by permanent implants, the extended LD flap technique has the disadvantages of a long procedure and the donor site on the patient's back. On the other hand, it had several advantages over the method of tissue expansion: (1) the shape is permanent and will not need future capsular revisions, (2) ptosis is inherent in the reconstruction, (3) the shape is less round, and (4) the anterior axillary fold and

infraclavicular area restoration is excellent.

This procedure offered an above-average breast reconstruction in proper candidates, and the patients were satisfied overall. The morbidity was similar to that of the standard latissimus reconstruction but somewhat less than for the pedicle TRAM flap. Patients viewed the donor scar positively. Seroma are common but easily managed.

Harvesting a LD muscle induced the most common early complication at donor site which is seroma formation reported as high as 60% to 80% of cases[6,9-11]. Twenty-three of our patients who had reconstruction with the extended LD flap technique experienced this complication because of the large dead space resulting from the muscle harvest. After raising an extended LD flap technique, the donor site morbidity was decreased to an absolute minimum. However, it is hard to show a significant permanent functional defect of the shoulder after harvesting the *Latissimus dorsi* muscle due to the compensation of other muscles around the shoulder[6]. Salmi et al. showed that shoulder extension strength deteriorated permanently after part of the LD muscle had been removed despite minimal subjective morbidity[10].

The extended LD flap technique is a new addition to breast surgery. Besides its functional benefits due to the minimal donor site morbidity, it gives advantages in flap shaping and consequently better aesthetic results and higher patient satisfaction. The algorithm described above is based on the extensive dissection concept allowing the surgeon to freely select, tailor or compose the flap, independent of the limited indications of conventional flaps.

What is already known on this topic ?

Mastectomy is standard treatment in early stage of breast cancer. When a mastectomy is performed on a patient, breast reconstruction accommodates the desire for preservation of the body form and image Standard Latissimus dorsi flap one of breast reconstruction techniques but it cannot get large volumn for large breast.

What this study adds ?

The extended *Latissimus dorsi* (LD) flap reconstruction is different from the standard *Latissimus dorsi* flap technique, which creates a large volume of Latissimus dorsi muscle and coverage fat on top of the muscle surface as well as a Myocutaneous paddle of skin and full thickness fat. Thai patients were Asian with characteristically thin body habitus and abdominal fat thickness that is less than those of Caucasian woman. In most patients, without any implant, the flap can be expected to match an opposite breast of a B or C size (large volume of breast). The complication in the technique is low. This technique enables autogenous tisse reconstruction in this techniques is low. This technique enables autogenous tissue reconstruction possible in most Thai patiens.

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Potential conflicts of interest

None.

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ผลลัพธ์ของการใช้เทคนิคการผ่าตัดตกแต่งหรือเสริมสร้างเนื้อเต้านมขึ้นใหม่โดยใช้ผิวหนังกล้ามเนื้อ latissimus dorsi และไขมันบริเวณหลังมาผ่าตัดตกแต่งเสริมภายหลังการผ่าตัดเลาะเนื้อเต้านมออกทั้งหมดทันทีหลังจากผ่าตัดเนื้อเต้านมออก

ประกาศิต จิรัปปภา, เยาวนุช คงด่าน, ไชยรัตน์ ทรัพย์สมุทรชัย, ธีรวุฒิ รักชอบ, ธงชัย ศุกรโยธิน, มนต์ชัย ลีสมบัติไพบูลย์, ภาณุวัฒน์ เลิศสิทธิชัย

ภูมิหลัง: การใช้เทคนิคการผ่าตัดตกแต่งหรือเสริมสร้างเนื้อเต้านมขึ้นใหม่โดยใช้ผิวหนังกล้ามเนื้อ latissimus dorsi และไขมันบริเวณหลังมาผ่าตัดตกแต่งเสริมภายหลังการผ่าตัดเลาะเนื้อเต้านมออกทั้งหมด (mastectomy) โดยทำทันทีหลังจากผ่าตัดเนื้อเต้านมออกไปจะช่วยให้เกิดผลลัพธ์ที่ดีในแง่ของความสวยงามของเต้านมและเหมาะสมสำหรับคนไทย

วัตถุประสงค์: เพื่อศึกษาถึงข้อมูลทั่วไป ภาวะแทรกซ้อน ประเมินการทำงานของหัวไหล่ รวมถึงความสวยงามภายหลังจากการผ่าตัดเลาะเต้านมออกทั้งหมดและตกแต่งเสริมสร้างเนื้อเต้านมขึ้นมาใหม่โดยใช้ผิวหนังกล้ามเนื้อ latissimus dorsi และไขมันบริเวณหลัง

วัสดุและวิธีการ: ผู้ที่มารับการผ่าตัดตกแต่งหรือเสริมสร้างเนื้อเต้านมขึ้นใหม่โดยใช้ผิวหนังกล้ามเนื้อ latissimus dorsi และไขมันบริเวณหลังมาผ่าตัดตกแต่งเสริมภายหลังการผ่าตัดเลาะเนื้อเต้านมออกทั้งหมด (mastectomy) โดยทำทันทีหลังจากผ่าตัดเนื้อเต้านมออกไปที่โรงพยาบาลรามาธิบดี ระหว่างเดือนกุมภาพันธ์ พ.ศ. 2548 ถึง เดือนกุมภาพันธ์ พ.ศ. 2551 โดยได้รับการติดตามและประเมินด้วยศัลยแพทย์สาขามะเร็งวิทยา ทั้งในส่วนของภาวะแทรกซ้อนและผลของความงดงาม โดยมีค่าความเชื่อมั่นอัตราส่วน odd อยู่ที่ร้อยละ 95

ผลการศึกษา: พบว่าการผ่าตัดตกแต่งหรือเสริมสร้างเนื้อเต้านมขึ้นใหม่โดยใช้ผิวหนังกล้ามเนื้อ latissimus dorsi และไขมันบริเวณหลังมาผ่าตัดตกแต่งเสริมภายหลังการผ่าตัดเลาะเนื้อเต้านมออกทั้งหมด (mastectomy) ร่วมกับผู้ป่วยแบบต่าง ๆ คือ ผู้ป่วย 2 ราย ใช้ทั้งสองข้าง ผู้ป่วย 3 ราย ผ่าตัด เพื่อป้องกันมะเร็งเต้านม ผู้ป่วย 2 ราย มีการเป็นซ้ำที่ผนังหน้าอก ผู้ป่วย 14 ราย เป็นมะเร็งท่อน้ำนมไม่ลุกลามและมะเร็งท่อน้ำนมไม่ลุกลามที่มี microinvasion มะเร็งเต้านมระยะที่สามตอนปลาย 5 ราย มะเร็งเต้านมชนิดลุกลาม 50 ราย ค่าเฉลี่ยอายุผู้ป่วยอยู่ที่ 44.26 ปี ผู้ป่วย 23 ราย พบน้ำเหลืองคั่งบริเวณแผลที่ใช้ผิวหนังกล้ามเนื้อ latissimus dorsi และไขมันบริเวณหลังมาผ่าตัดตกแต่งเสริมเต้านม โดยต้องมีการใช้เข็ม ขนาดเล็กเจาะดูดน้ำเหลืองที่คั่งออก 1 ครั้ง หรือบางครั้งก็ 2 ครั้งหลังจากที่นำสายระบายน้ำเหลืองออกไป มีระยะเวลานอนพักที่โรงพยาบาลคือ 2 วัน ค่าเฉลี่ยการติดตามผลการรักษาอยู่ที่ 107 เดือน และพบว่ามีการฝ่อของผิวหนังกล้ามเนื้อ latissimus dorsi และไขมันบริเวณหลังระดับปานกลาง ไม่พบความผิดปกติที่เกิดจากการนำผิวหนังกล้ามเนื้อ latissimus dorsi และไขมันบริเวณหลังมาใช้ แผลเป็นที่เกิดจากการนำผิวหนังกล้ามเนื้อ latissimus dorsi และไขมันบริเวณหลังมาใช้โดยทั่วไปก็อยู่ในเกณฑ์ดี ผู้ป่วยทุกคนพึงพอใจกับกับผลลัพธ์ด้านความสวยงามของการผ่าตัดด้วยวิธีนี้

สรุป: รวมทั้งหมดพบว่าการใช้เทคนิคการผ่าตัดตกแต่งหรือเสริมสร้างเนื้อเต้านมขึ้นใหม่โดยใช้ผิวหนังกล้ามเนื้อ latissimus dorsi และไขมันบริเวณหลังมาผ่าตัดตกแต่งเสริมภายหลังการผ่าตัดเลาะเนื้อเต้านมออกทั้งหมด (mastectomy) ได้ผลลัพธ์ดีเยี่ยมทั้งในด้านความสวยงามและภาวะแทรกซ้อนที่ต่ำ ถึงแม้ว่าการศึกษานี้จะเป็นการศึกษาขนาดเล็กและพบว่าการฝ่อของผิวหนังกล้ามเนื้อ latissimus dorsi และไขมันบริเวณหลังอยู่บ้าง ผู้นิพนธ์ยังคงแนะนำวิธีการผ่าตัดด้วยเทคนิคนี้ในผู้ป่วยคนไทยทุกคนที่มาทำการผ่าตัดเลาะเนื้อเต้านมออกทั้งในมะเร็งเต้านม รวมไปถึงเพื่อป้องกัน มะเร็งเต้านมหรือมะเร็งท่อน้ำนมไม่ลุกลามที่มี microinvasion