

Latissimus Dorsi Flap in Breast Reconstruction: A Case Serie with Short Term Results

Diari Jed*, Luc Rigonnot and Darido Jessie

Department of Obstetrics and Gynecology, Centre Hospitalier Sud Francilien, France.

*Correspondence:

DIARI Jed, Department of Obstetrics and Gynecology, Centre Hospitalier Sud Francilien, France.

Received: 12 March 2020; Accepted: 01 April 2020

Citation: Diari Jed, Luc Rigonnot, Darido Jessie, et al. Latissimus Dorsi Flap in Breast Reconstruction: A Case Serie with Short Term Results. Gynecol Reprod Health. 2020; 4(2): 1-4.

ABSTRACT

Breast reconstruction has many benefits for the patients in terms of rehabilitation, well-being and quality of life. A serie of ten patients who have had breast reconstruction with a latissimus dorsi flap in the past two years has been studied and short-term results have been reported. Several complications have been reported and include: necrosis, hematoma and infection. Many technical possibilities currently allow breast reconstruction to be offered to the majority of patients. The choice of the technique should be made after a good evaluation of the patient taking into consideration the failure factors.

Keywords

Breast reconstruction, Breast cancer, Flap, Postoperative complications.

Introduction

Nowadays, the treatment of breast cancer is more and more conservative. Sometimes, we found ourselves in the oncological obligation to carry out a radical treatment [1]. Mastectomy is often experienced as a trauma to the physical integrity. The first breast reconstruction was done in Paris in 1905 by the pectoralis minor whereas that using the latissimus dorsi was described around 1896 [2]. Several studies have shown that breast reconstruction has no effect on the prognosis of cancer disease [3-5].

Breast reconstruction can be performed immediately or at distance from the mastectomy [6]. There are several breast reconstruction techniques: simple prosthetic reconstruction, reconstruction with latissimus dorsi flap and reconstruction with Transverse Rectus abdominus myocutaneous (TRAM) flap. Each one of these has its advantages as well as its disadvantages.

The choice of breast reconstruction can be determined by certain parameters like the age, the amount of substance loss to be repaired, the skin condition, the patient's history, her morphology and opinion.

Whatever the adopted breast reconstruction technique is, the goal is not only to restore the initial breast volume but also to maintain symmetry between the two breasts. Therefore, the surgeon's skills and experience are very important.

In breast reconstruction, the technique using the latissimus dorsi flap is commonly used. We hereby report a serie of ten cases of breast reconstruction using the latissimus dorsi with the clinical and epidemiological characteristics of each patient, the postoperative course and the esthetic results. The breast reconstruction was carried out in the department of obstetrics and gynecology at CHSF during the last two years 2018 and 2019.

Our objectives are to evaluate our practice of breast reconstruction with latissimus dorsi flap by highlighting the epidemiological and clinical aspects along with the esthetic results and to compare our results with those of other teams.

Methods

This is a descriptive retrospective study on a series of ten patients treated in the last two years 2018 and 2019 and having undergone breast reconstruction by latissimus dorsi flap. The operation was performed by the same operator and all the patients had undergone the same operating technique. However, in cases of deferred breast reconstruction the lumpectomy or initial mastectomy was performed by other operators.

Results

The average age of our patients was 51 years (34-72 years). Two breast reconstructions were delayed (20% of cases), within an average of 5 months to three years, while the others were immediate. One of our patients had a history of diabetes. Three patients were smokers, two were hypertensive, and seven patients were obese. Preoperative radiotherapy was done in four cases.

The breast reconstruction with the latissimus dorsi flap was carried out in two stages:

The first being the removal of the musculocutaneous flap of the latissimus dorsi: patient in left/ right lateral side.

Verification of the points of support. Preoperative markings of the skin palette to be taken. Scrubbing with betadine then draping. Skin incision according to a preoperative pattern up to the transversalis fascia. Sampling of the muscle and areas of steatomerism step by step, starting with its anterior free edge, respecting the serratus muscle, the trapezius and rounded (teres major) muscles. Progressive hemostasis of the detachment area.

Identification of the thoracodorsal pedicle on the anterior side of the latissimus dorsi muscle, then dissection of this pedicle from its area of penetration into the muscle. Section of the muscle tendon without lesion of the pedicle, some fibers left in place to prevent traction of the pedicle. Creation of the concerned breast region and the flap is put on hold. Careful hemostasis of the dorsal detachment area. Insertion of 2 drains. Upholstery of the dorsal compartment with interrupted Vicryl 2/0 sutures. Subcutaneous Vicryl 0 sutures and Monocryl 3/0 intradermal sutures. Drains are kept closed.

The second step: Right / left breast reconstruction. Supine position, half-seated position. Verification of the support points. Preoperative drawing of the sub mammary groove. Scrubbing and draping. Incision with removal of the mastectomy scar. Partial excision of the shell found at the level of the mastectomy compartment. Creation of a new sub mammary groove according to the preoperative drawing with Vicryl 2.0 sutures. Closure of the tunnel between the dorsal compartment and the breast region leaving a finger opening. Verification of the vitality of the flap and hemostasis. Two drains inserted in the reconstruction lodge. Attaching the flap to form the upper and inner quadrants. No fixation in the lower and external part in order to have a ptosis. subcutaneous Vicryl 2.0 points between the flap and skin. Closure of the skin with 3/0 Monocryl. Fenestrated dressing allowing monitoring of the vitality of the flap.

As immediate and short-term post-operative complications, we noted:

- Two cases of hematoma
- Two cases of necrosis
- Four cases of infections

One patient was taken back to the operating room for ablation of the flap. On the other hand, and to improve the aesthetic result, four patients underwent lipomodelling. The surveillance Post-breast reconstruction was mainly based on clinical examination. Regarding the aesthetic result, 60% of our patients were satisfied and found that the result was good or excellent. The results obtained are set out in Table 1 below:

Case	Age	Background	Breast Cancer	Reconstruction	Post-operative follow-up
1	34	---	High grade DCIS with necrosis and extended microcalcifications (6 cm) of the upper inner quadrant of the left breast	Total mastectomy with sentinel node and immediate breast reconstruction with left latissimus dorsi flap and prosthesis	Day 15 hematoma Day 24 Evacuation of a subcutaneous collection
2	63	Hepatic steatosis Hypertension smoker	Grade III IDC of the right breast with radiotherapy then recurrence with grade II IDC	Total mastectomy with sentinel node and immediate breast reconstruction with the right latissimus dorsi flap	Lipomodelling twice
3	46	---	Grade II IDC Lower outer quadrant with extended micro calcifications treated with tumorectomy and right axillary dissection then takeover for insufficient healthy margins	Right total mastectomy with immediate breast reconstruction with right latissimus dorsi flap	No complications
4	65	Hypothyroidism Diabetes	Grade II multifocal ILC treated by Quadrantectomy QII of the left breast with sentinel node	Reverse sequence with radiotherapy then total mastectomy and breast reconstruction by left latissimus dorsi flap	Day 2 Resection of multiple necrosis areas
5	37	---	High grade DCIS of the lower outer quadrant of the right breast.	Right total mastectomy, sentinel node and immediate breast reconstruction with right latissimus dorsi flap	Lipomodelling
6	54	Smoker	Ulcerated mass of the left breast occupying all upper quadrants with cutaneous and glandular erosion of 4 cm in diameter: non-specific invasive carcinoma	Left total mastectomy with axillary dissection and immediate breast reconstruction with the latissimus dorsi flap	Day 1 hematoma Day 8 flap resection due to necrosis and infection
7	45	Dyslipidemia Hypertension	Grade I IDC with right tumorectomy and sentinel node GS, radiotherapy and hormonotherapy then takeover for insufficient healthy margins	Total right Mastectomy with immediate right breast reconstruction with latissimus dorsi flap and prosthesis	3 months and a half: Evacuation of a subcutaneous collection, 3 times

8	46	Pneumocystosis HIV +	Bifocal IDC of the right breast with high grade DCIS, Paget disease of the nipple with right mastectomy and axillary dissection then adjuvant chimio radiotherapy	3 years post mastectomy Secondary breast reconstruction with the right latissimus dorsi flap	No complications
9	44	---	High grade DCIS extended with necrosis and calcifications with right mastectomy and sentinel node	5 months post mastectomy secondary breast reconstruction with right latissimus dorsi flap	Day 21 lymphocele drained twice Then lipomodeling
10	72	Smoker	Grade II IDC inferior outer quadrant of the right breast	Right Mastectomy sentinel node with immediate breast reconstruction with latissimus dorsi flap	J13 Evacuation of a subcutaneous collection then lipomodeling

DCIS: Ductal Carcinoma In Situ, IDC: Invasive Ductal Carcinoma, ILC: Invasive Lobular Carcinoma.

Discussion

We will discuss the importance of breast reconstruction in the care of breast cancer patients, the different techniques and the predisposing factors for failure.

The treatment of breast cancer is undergoing new adjustments seeking to improve the physical and psychological experience of postmastectomy patients. Breast reconstruction has become today an essential part in the management of breast cancer. More than 95,000 breast reconstructions were performed in 2013 in the United States [7]. Immediate breast reconstruction post mastectomy is increasing in many countries [8].

Breast reconstruction can be carried out either by prosthesis or by musculocutaneous flaps (latissimus dorsi, rectus abdominis). Statistically, simple prosthetic reconstruction is the most common with a rate increasing from 30 to 54% in Great Britain between 2007 and 2013 and reaching 63% in the United States [8,9]. In fact, it is a very simple technique whose complications are rare or even very rare with a risk of hematoma of 2% and a risk of infection not exceeding 5% [10]. However, an analysis of 56 breast reconstructions by Latissimus dorsi flap that were performed between 1977 and 1983 comparing it to other breast reconstruction techniques: the complication rate was less with Latissimus dorsi flap which makes it the preferred method by several authors [4]. Breast reconstruction with latissimus dorsi flap takes all its advantage in the short operative period, the rich vascularization of the flap which enormously reduces the risk of postoperative necrosis and the good quality of the remaining scars. Veber et al. had conducted in 2012 a prospective study on twenty patients who underwent breast reconstruction by latissimus dorsi flap had given satisfactory results due to the preservation of the integrity of the latissimus dorsi as well as the good healing of the overlying site and the postoperative recovery which was fast [11].

On the other hand, the inconvenient of breast reconstruction with latissimus dorsi flap are above all its complications which have been reported by different authors at different percentages: varying between 3 and 8.2% for infections, between 3 and 9.1% for hematomas and between 10 and 38% for necrosis [1,3,5,12-14]. The long-term reliability of this technique had been questioned by the results of Berdah Benjoar et al. on 47 cases having undergone breast reconstruction by latissimus dorsi flap followed on a period of 5 to 11 years. Indeed, in 30% of cases there were sequelae linked

to the removal as well as implant change [15].

In our serie, we had 20% of hematomas, 20% of necrosis and 40% of infections which significantly constitutes a higher rate of complications than the rest of the studies reported in the literature.

Age, gender, tobacco, diabetes, hypertension, body mass index, radiotherapy, recipient site, limited surgical experience and choice of flaps are considered to be predisposing factors of flap failure. David E, et al. had identified independent risk factors influencing flap failure in a 2016 retrospective study of 1,530 flaps used in breast, head and neck and extremity reconstruction surgeries in 1,247 patients. This study identifies the alteration of the vascularization of the flap as the main risk factor involved in breast flap failures in addition to the following factors: preoperative radiotherapy, revision for venous anastomosis as well as postoperative bleeding [16].

In our serie, smoking, hypertension, preoperative radiotherapy are associated with a high rate of complications and poor esthetic results.

Conclusion

Many technical possibilities currently allow breast reconstruction to be offered to the majority of patients. The choice of the adequate technique should be made after a good evaluation of the field and taking into account the failure factors.

References

1. Body, H Faugon, J Lansac. Reconstruction mammaire, la pratique chirurgicale en gynecologie et obstetrique. Elsevier. 1999.
2. Bricout N, la chirurgie du sein, Paris, et al. petitJY cancer du sein, chirurgie diagnostic curative et reconstructive, medsi, mcgraw-gill. 1991.
3. Dauplat J, Le Bouedec G, Janny-peyronie N, et al. mastectomie avec reconstruction immediate pour cancer invasif du sein. J Gynecolobstet Biol reprod. 1996; 25: 17-26.
4. Madeleine le jour, P Alemanno, Albert De Mey, et al, analyse de cinquante-six reconstructions mammaires par lambeau du grand dorsal. annales de chirurgie plastique et esthetique. 1985; 30: 7-16.
5. petit JY, Lehmann A, mouriesse H. rietjiens M résultats à long

-
- terme après reconstruction mammaire. *Helvchir Acta*. 1988; 55: 869-877.
6. Dowden RV, yetman RJ. mastectomy with immediate reconstruction: issues and answers. *Cleve. Cin J med*. 1992; 59: 499-503.
 7. <https://www.plasticsurgery.org/documents/News/Statistics/2016/plastic-surgery-statistics-full-report-2016.pdf>
 8. Joanna C Mennie, Jennifer Rusby, David A cromwell, et al. breast cancer reconstruction epidemiology. *oncoplastic and reconstructive breast surgery*. 2019; 25-32.
 9. Albornoz CR, Bach PB, Mehrara BJ, et al. A paradigm shift in US breast reconstruction: increasing implants rates. *Plastreconstr surg*. 2013; 131: 15-23.
 10. Chabanne F. reconstruction mammaire apres mastectomie pour cancer cancer du sein (à propos de 186 cas). These Tours. 1999.
 11. Veber M, Guerin AN, Faure C, et al. A mojallal reconstruction mammaire par lambeau dorsal a prélèvement minimal et transfert graisseux. *annales de chirurgie plastique esthétique*. 2012; 57: 366-372.
 12. Eberlein TJ, creso LD Smith BL, Hergueter CA, et al. prospective evaluation of immediate reconstruction after mastectomy. *Ann Surgery*. 1993; 218: 29-36.
 13. Faucher A. le lambeau musculo cutané du grand dorsal applique à la reconstruction mammaire, résultat d'une série de 163 cas. *Ann Chir Plast Esthet*. 1993; 38: 187-191.
 14. Wickman M, Jurell G, Sandelin K. Immediate breast reconstruction: short term experience in 75 consecutive cases. *Scand J PlastReconstr surg Hand Surg*. 1995; 29: 153-159.
 15. Berdah Benjoar Y, Masson J, Revol M, et al. Résultats à long terme des reconstructions mammaires par lambeau de grand dorsal et prothèse. *annales de chirurgie plastique esthétique*. 2009; 54: 295-302.
 16. David E Las, Tim de Jong, J Michiel Zuidam, et al. identification of independant risk factors for flap failure: A retrospective analysis of 1530 free flaps for breast, head and neck and extremity reconstruction. *Journal of plastic reconstructive and aesthetic surgery*. 2016; 69: 894-906.