

Secondary Reduction Mammoplasty

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ABSTRACT

Reduction mammoplasty is one of the more frequently performed procedures by plastic surgeon, few patients present for revisional procedures and even fewer present for a secondary or repeated reduction mammoplasty. This study defines the secondary reduction mammoplasty as performing an additional or repeated reduction of the breast size using a pedicle nipple areola complex or free nipple areola complex.

This retrospective study was designed to review the experience of our department in secondary reduction mammoplasty. The patients in our series requested secondary mammoplasty for more of the following reason; Progressive breast hypertrophy, Breast ptosis, Persistent stigmata of macromastia, Inequality of breast size. 12 patients over 13 year's period were identified and reviewed.

The average patients' age at initial reduction was 35 years, the average patient's age at Secondary reduction was 38 years. The least time interval between the initial and secondary reduction is 1.5 years. The initial reduction performed using 3 technique was known while in 2 patients the initial reduction technique is unknown. The secondary reduction was performed using 3 techniques. 5 cases undergo secondary reduction using the same techniques; and 5 cases undergo secondary reduction using different techniques while other 2 patients we use vertical pedicle. No significant complication was detected in all cases; so secondary reduction is a safe and viable option when performed with either similar or different technique.

INTRODUCTION

Reduction mammoplasty is one of the more frequently performed procedures by plastic surgeon, few patients present for revisional procedures and even fewer present for a secondary or repeated reduction mammoplasty [1-8].

Studies have demonstrated consistent patient satisfaction after reduction mammoplasty. The breast will often undergo changes after surgery that impacts the final results; infrequently, so revisions surgery is required. These revisions may be necessary to correct minor size discrepancies, nipple asymmetry, hypertrophic scarring, area of fat necrosis and other minor asymmetry. Very few

patients present for secondary reduction mammoplasty and there are few reports of secondary reduction mammoplasty, in literature [9-12].

This study defines the secondary reduction mammoplasty as performing an additional or repeated reduction mammoplasty using a pedicle nipple areola complex on a previously reduced breast. The reliability of secondary reduction mammoplasty, particularly when the second reduction is a differencing technique, has been questioned [10,11].

Operative guideline for secondary reduction mammoplasty have been published [11], and these management proposals limit options for patients presenting for secondary reduction.

Aim of the study:

This retrospective study was designed to review the experience of our department in secondary reduction mammoplasty. It's trial to answer the question; Is using a different pedicel technique safe during secondary reduction mammoplasty or strict the technique used before, what can you do if you don't know the previous technique?.

PATIENTS AND METHODS

12 patients over 13 year's period were identified and reviewed retrospectively.

Only patients who underwent secondary reduction with pedicle or free nipple areola complex were included in the study while patients with minor revision or liposuction were excluded.

Patients data (when available); demographic and indications for secondary reduction were recorded, initial and secondary techniques time intervals between the two techniques. Patients follow-up and post operative complications were recorded.



Fig. (1): (A,B) Preoperative female patient 17y virginal hypertrophic breast designed for free nipple and areola technique. (C) Postoperative result after healing. (D,C) Result of intial technique after one and half year. (F) Postoperative result after the secondary reduction by same technique used in intial reduction (free nipple and areola graft).

RESULTS

12 patients over 13 year's period were identified and reviewed retrospectively.

The average patients' age at initial reduction was 35 years range between 17 to 48 years. The average patients' age at Secondary reduction was 38 years range between 18.5 to 49 years. The least time interval between the initial and secondary reduction is 1.5 years.

The patients in our series requested secondary Mammoplasty for more of the following reason; Progressive breast hypertrophy 6 patients, Breast ptosis 3 patients, Persistent stigmata of macromastia 2 patients, Inequality of breast size 1 patients.

The initial reduction performed using 3 technique was known while in 2 patients the initial reduction technique is unknown. The secondary reduction was performed using 3 techniques. 5 cases undergo secondary reduction using the same techniques and 5 cases undergo secondary reduction using a different techniques, while other 2 patients of unknown initial techniques we use vertical pedicle; Table (1).

No patients in this study suffered from significant skin, pedicle or nipple areola complex compromise except desquamation of one case of free nipple areola and managed conservatively.

Table (1): Initial and secondary techniques used.

Patients	Initial techniques	Secondary techniques
3	Free nipple and areola graft	Free nipple and areola graft
2	Inferior pedicle	Free nipple and areola graft
1	Superior pedicle	Free nipple and areola graft
2	Inferior pedicle	Inferior pedicle
1	Inferior pedicle	Vertical pedicle
1	Superior pedicle	Vertical pedicle
2	Unknown	Vertical pedicle

DISCUSSION

Reduction mammoplasty is one of the more frequently performed procedures by plastic surgeon, but repeated reduction is very rare only a few report of secondary reduction mammoplasty in literature [1-8].

There are several potential indications for secondary reduction mammoplasty. Progressive hypertrophy and ptosis likely represent the leading indications for secondary reduction [9-12].

Some patients may present for secondary reduction of contralateral healthy breast after cancer surgery to maintain symmetry. Additionally women undergoing reduction mammoplasty at the early age including those unique patients with juvenile breast hypertrophy (most of our case come early 6 patient between the ages of 17 to 24 years) may experience continued growth and may ultimately require secondary reduction. It is possible that hormonal influences including pregnancy, lactation, oral contraception and menopause may contribute to breast changes necessitating secondary reduction [9-12].

Hudson and Skoll [11] reported on series of 16 patients 8 of these patients underwent a repeated or secondary reduction mammoplasty with a pedicle nipple areola complex and 8 patients had inferior wedge excision. Of the 8 secondary pedicle reduction, 3 experienced vascular compromise of the complex with one recovering and two progressing to necrosis. One of the two patients with necrosis of nipple areola complex underwent secondary reduction with different pedicle technique (superiomedial to inferior pedicle). The other patients experiencing necrosis of the complex underwent secondary reduction with a similar pedicle technique (inferior pedicle). The authors suggested that if the nipple areola complex were to be pedicle during secondary reduction, the initial pedicle technique should be used. The authors further suggested that if the information regarding the primary reduction technique is not available, then a free nipple graft technique should be chosen.

Lejour [12] reported on the series of 14 patients. 9 of these patients underwent secondary reduction by vertical mammoplasty a technique of central breast reduction with an upper pedicle. Information regarding the initial technique of reduction was unavailable and not reported, but it was considered likely that these patients had undergone reduction with a technique that used a superior pedicle. Lejour reported that all patients healed without complications and concluded that technique using inferior pedicle are more likely to be dangerous for secondary reductions, because the breast tends to sag and bring the pedicle downward.

No patients in this study suffered from significant skin, pedicle or nipple areola complex compromise except desquamation of one case of free nipple areola and managed conservatively. Either in patients underwent a secondary reduction mammoplasty with a similar pedicle technique or different technique; these because the time interval between the two techniques has a benefit of a delay,

allowed for sufficient maturation at the scar interface within the breast tissue and we leaving the tissues attached to the underlying chest wall without undermining the flap.

The ability to successfully performed secondary reduction mammoplasty with a resulting sensate and viable nipple areola complex may be in part, due to the unique vascular supply of the breast.

Bostwick [8] has written that there is substantial collateralization of arterial flow within the breast, thus making it possible for the entire normal breast to survive on a function of its usual total arterial input.

The neurovascular supply of the breast has been specially detailed. The predominant blood supply to the breast is found in the a thin and pliable horizontal fibrous septum that functions as a ligamentous sling dividing the glandular tissue into a cranial and caudal segment. The origin of this horizontal connective tissue septum is the pectoral fascia at fifth intercostals space. The septum traverses the breast from medial to lateral and lead to the nipple areola complex. This horizontal septum similar to the mesentery of the intestines contains a cranial and caudal plexus of vessels supplying the breast. The nipple and areola complex receives its sole vascular supply by means of horizontal septum [13].

The most significant sensory supply, the deep segment of anterior cutaneous branch of fourth and sometimes fifth intercostals nerve is also found in horizontal septum, this finding would suggest that the critical central blood supply was not violate with either the primary or secondary reduction mammoplasty [13].

This information allows the surgeon to perform a secondary reduction with a different technique if such a technique wills more satisfactory correction the macromastia. Finally, secondary surgery is often more complicated and challenging. Many surgeon may not be familiar with the initial technique of reduction and therefore do not have the experience needed to achieve reproducibly excellent results with secondary reduction when limited to initial technique. With this information surgeon may not only tailor the procedure to the individual breast, but also select the method with which they have the most experience and reproducible results [7].

The results of this study demonstrated that using a different secondary reduction technique is generally safe; however one should consider per-

forming secondary reduction with the same pedicle technique that was used the primary reduction. In doing this every effort should be made to preserve the vascularity of the original pedicle so as far to avoid the potential for compromise. We further recommend that when using a different technique, the posterior soft tissue attachments to nipple and areola complex be preserved, as this has been shown to be critical to survival of the complex. In addition the vascularity of nipple and areola nipple complex must be ensured before leaving the operation room. If after using the same or different technique for reduction, the complex seems compromised, we recommend converting to the free nipple areola graft technique method of reduction.

Conclusion:

In our study the patients underwent primary and secondary reduction with differing technique. No patients suffered from significant or permanent skin, pedicle or nipple areola complex compromise.

We believe and supporting the evidence; the secondary reduction mammoplasty is safe and viable option when performed with either similar or different techniques. These findings allow the secondary reduction technique to be tailored to the individual breast and abilities of specific surgeon. Adequate time should be allowed between the primary and secondary reduction mammoplasty to allow for healing and revascularization. But in the difficult situation of secondary breast reduction every effort should be made to maximize safety and blood supply by leave the nipple areola and breast flaps attached as much as possible to their posterior blood supply.

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