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Breast Hypertrophy and Ptosis**

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Vertical Mammoplasty for Breast Hypertrophy and Ptosis

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ABSTRACT

Vertical mammoplasty for breast hypertrophy and ptosis has a lot of advantages, including eliminating the need for a transverse inframammary scar that usually yields an undesirable result. It also gives a more stable result and a better shape. Liposuction of the lower aspect of the breast is used as an adjuvant to this technique prior to surgery. 30 cases of breast reduction and mastopexy were done using this technique (19 reductions and 11 mastopexies). Evaluation of breast shape and position, scar healing and appearance, stability of the result over a long period of time was done. Results show that it is a safe technique that applies to different sizes of breast and gives a stable result that counteracts the inevitable sagging that occurs with other conventional techniques. Adjuvant liposuction makes the procedure easier and aids stability of the resulting shape and position.

INTRODUCTION

Most modern techniques for breast reduction and mastopexy end up leaving an inverted T shaped scar and since it is the long transverse inframammary scar that tends to be the most visible and prone to hypertrophy and widening, several methods have been proposed that use a shorter submammary incision [1,2].

Yet, most of these methods are only applicable to small and moderate sized breasts and moreover, they have a tendency to produce an unattractive square appearance to the lower aspect of the breast together with rising up of the scar onto the breast when sagging of the breast occurs [3].

Benelli described a breast reduction approach that leaves only a circular periareolar

scar but this method tends to leave a flat instead of the more pleasing conical breast [4] and moreover because of the tension on the scar it tends to stretch out [5].

Method of breast reduction without a transverse scar were introduced by the work of Lassus [6]. This technique depends on gathering up excess skin in the lower breast (which is otherwise excised in transverse scar methods) along the vertical suture line. It was Madeleine Lejour and Marwan Abboud who adopted this technique and added some modifications that prevented stretching and widening of the periareolar scar. They also introduced liposuction as an adjunct to their procedure, yet they do not consider it a must [7].

This technique benefits from three innovative principles [8]:

- a- Wider lower skin undermining to promote skin retraction.
- b- Overcorrection of deformities.
- c- Liposuction added to the procedure.

MATERIAL AND METHODS

Clinical material:

- 30 patients were included in this study with mean age of 33.30 y (28-41 y).
- 19 cases were breast reductions (63%) and 11 were mastopexies (37%).
- Liposuction was performed in 16 cases (53%)

with a mean amount of 334 cc removed from each breast.

- Size of breasts ranged from moderate to large (Nipple distance from sternal notch 25-36 cms with a mean of 29.1 cms).
- The parameters used for analyzing the persistence of vertical scarring were: inframammary cutaneous folds, wrinkling of the skin and puckering at 1,3 and 6 months during the postoperative period.
- Nipple sensations were tested in all cases.

Table (1): Age incidence.

Procedure	No. of cases	Age mean (y)	Liposuction done
Reduction	19	33.16	16
Mastopexy	11	33.55	0

Technique:

Liposuction is attempted at the beginning of reduction of all large breasts. But as deepithelialization of the nipple and areola pedicle is much easier when the breast is still firm, only this step of the procedure is done before liposuction.

The sequence is as follows [8]:

- 1- Markings.
- 2- Infiltration.
- 3- Deepithelialization.
- 4- Liposuction.
- 5- Surgical excision and remodeling.

Markings:

- I- Done with the patient in the upright position.
- II- First mark midline, submammary fold and vertical axis of the breast (drawn from submammary fold downwards 10-12 cms from midline).
- III- Lateral and medial vertical margins of resection are drawn by pushing breast up and to the opposite side and drawing a vertical line in continuity with the long axis of the breast.

IV- Future nipple site is drawn by the projection of inframammary fold on the anterior aspect of the breast on its vertical axis.

V- The upper part of the periareolar marking is located 2 cms above future nipple site.

VI- The two vertical lines are connected below by a transverse line 2-4 cms above the inframammary crease.

VII- From the upper part of the periareolar marking a curved line is drawn downward to each side joining the vertical lines perpendicularly at a variable point (it varies according to the size of the breast in order to limit the circumference of periareolar marking to 16 cms at the most).

In large breasts the vertical lines are more apart and periareolar marking joins them at a higher level giving a mushroom shaped area of deepithelialization, while in smaller breasts they join them lower giving a rather mosque dome shape.

Infiltration:

After the patient is anaesthetized and placed in semisitting position the lower half of the breast is infiltrated with 10 ml of 2% xylocaine with 1/100000 adrenaline.

Deepithelialization:

Deepithelialization of the upper area of skin delineated by marking down to 2-3 cms below the areola is done.

Liposuction:

Liposuction of the lower half of the breast is done through small incision in the area of skin to be resected.

Surgical procedure:

- Later margin markings are incised and skin outside markings is dissected free from underlying gland medially and laterally and down to inframammary fold.
- Lower central part of the breast is elevated off chest wall at the level of submammary fold upwards to the upper margin of the gland at the level of the third intercostal space creating a 6-8 cm vertical tunnel behind it. This central

- elevation of parenchyma on chest wall allows upper displacement of the breast and overcorrection of ptosis.
- Then two lateral cuts are made from lower part of future areola downwards isolating the central portion of the breast and limiting the medial and lateral pillars of breast tissue to be sutured together later on. So, these incisions divide the lower breast into three portions (central, medial and lateral).
 - In moderate reductions, excision is limited into the central portion of breast below the areola, while in large reductions the medial and lateral cuts can be beveled to include some tissues medially and laterally and also excision can be extended behind the areola leaving at least a 3 cm-thick areolar pedicle.
 - Then a strong slowly absorbing suture (taken at the upper areola) attaches the deep part of the gland to pectoralis major muscle at the highest level of dissection. This upper central stitch elevates the breast to an exaggeratedly higher position creating a temporary bulging and relieve tension on lower half of breast during healing.
 - Areola is then sutured into place.
 - The two lateral pillars of breast tissue left attached to pectoralis major and partly to overlying skin are sutured together with 3 or 4 running stitches starting below the areola. This shapes the breast and creates its conical shape.
 - Two drains are placed.
 - Skin is closed in 2 planes starting from the lower central part of skin gathering skin up as stitch goes to periareolar marking reducing the length of vertical incision to 6-7 cms in most cases.
 - At the end of operation the breast should be bulging in the upper part while flat below the areola and nipple.
 - Light dressing pushing up for 48 hours.
- Post-operative period:*
- Drains are removed after 48 hours.
 - Sutures are removed after 10 days.
 - A strong brassiere is worn day and night for 2 months.
 - Usually settling of the overcorrected high breast start within one week and also wrinkling of the vertical scar starts to resolve within the same period [9].
 - Wrinkles of the vertical scar resolve completely over the following weeks as the vertical scar shortens by at least 2 cms [10].
 - Lower portion of vertical scar initially extending below new inframammary crease soon rises up to hide in submammary fold as scar retracts upwards and breast settles down and so it does not cross submammary fold.

RESULTS

Table (2): Nipple site and amount of fat removed.

Procedure	Nipple site mean (cms)	Mean fat removed per breast (ml)
Reduction	28.89	334.53
Mastopexy	24.18	0

Breast shape and position were good in all cases and overcorrection settled completely within 2 months.

Scar wrinkles disappeared significantly within 2 weeks and completely over the following 3 months, only two cases needed further revisional surgery of the lower part of the vertical incision.

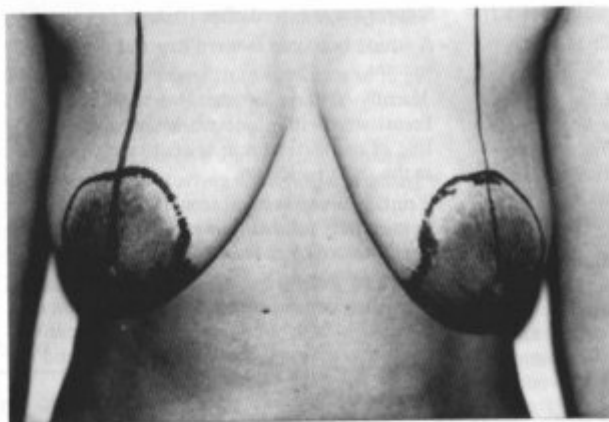
There was no other complication in this series as regards nipple vascularity, hematoma, seroma, infection, etc.

Follow up of breast shape and position up to 18 months showed stable correction.

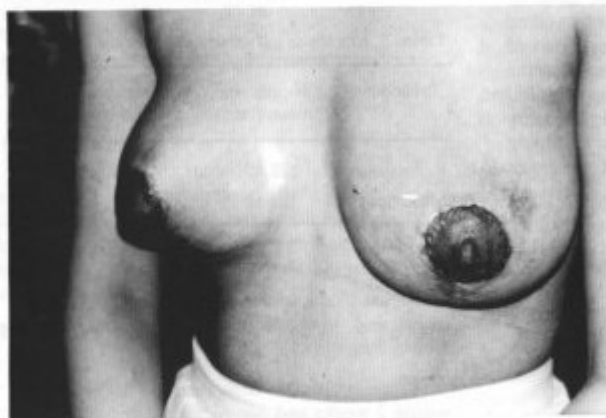
Nipple sensations were intact in all cases and so the possibility of future lactation as well.

Average fat removed by suction was 334.53 ml (Graph 2).

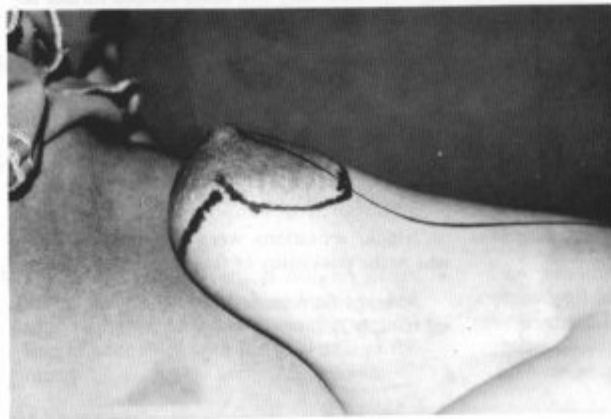
Fig. (1): Case 1 [A - D]



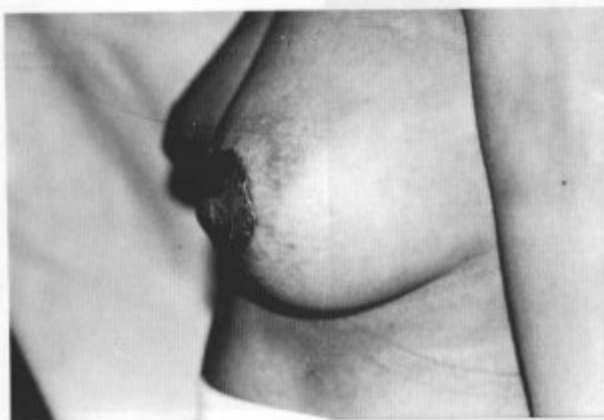
[A] Preoperative anterior view.



[B] Postoperative anterior view.



[C] Preoperative lateral view.



[D] Postoperative lateral view.



Fig. (2): Case 2 [A - B]

[A] Preoperative lateral view.



[B] Postoperative lateral view.



Fig. (3): Case 3 [A - D]

[A] Preoperative anterior view.



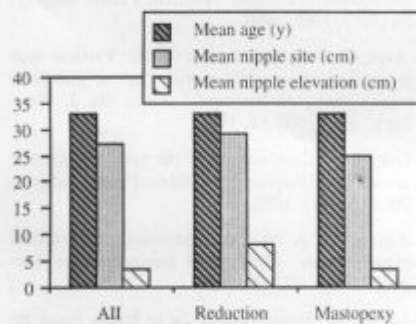
[B] Postoperative anterior view.



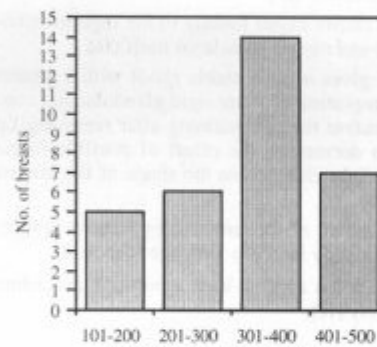
[C] Preoperative lateral view.



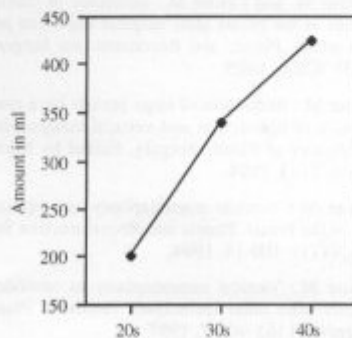
[D] Postoperative lateral view.



Graph (1): Case summary.



Graph (2): Amount of suction.



Graph (3): Amount of suction and age.

DISCUSSION

Vertical mammaplasty is a good alternative to conventional techniques of breast reductions and mastopexies in small to large breasts [11]. This technique is one of the most versatile methods of mammaplasty today [12].

This technique abolishes the need for a transverse inframammary scar, which is more prone to yield an undesirable result.

Long experience with vertical mammaplasty indicates that it is a safe procedure giving long-lasting results [13] as it has a number of important advantages:

- 1- It obviates the need to leave a transverse inframammary scar, which is usually, the one leaving an undesirable result.
- 2- It allows a better shaping of the breast by using the lateral and medial breast tissues as pillars to the new breast shape.
- 3- It leads to a more stable and lasting result as over correction of breast ptosis counteracts the inevitable sagging of the breast that occurs over the following 6 months.
- 4- It is applicable to very large breasts [14].
- 5- Sensations of nipple are preserved and possibility of future lactation is preserved [4].
- 6- Liposuction prior to surgery has some advantages of its own:
 - It allows a smaller and so an easier breast reduction [15].
 - It allows easier folding of the superior areola and nipple pedicle on itself [16].
 - It gives a more stable result with a greater proportion of more rigid glandular and connective tissue remaining after removing fat so decreasing the effect of possible future weight changes on the shape of the breasts, [17].
 - Amount of fat removed by suction proportionately increase with age (Graph 3).
- 7- It can be applied as a secondary procedure safely [18].

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