

## The Quadruple Pedicled Reduction Mammoplasty

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### ABSTRACT

Nipple-areola complex (NAC) safety, scar reduction and long term aesthetically pleasing results are the components of ideal reduction mammoplasty surgery.

We present a technique which maximize nerve and blood supply to nipple-areola complex, besides being versatile, easy, rapid and with pleasing cosmetic outcome. The technique ensures blood supply from superiomedial, superiolateral, superior and posterior regions to nipple (quadruple blood supply).

### INTRODUCTION

Through years reduction mammoplasty become a topic for heated debate due to different parameters involved in the procedure. The debate involves the survival of the nipple-areola complex, the scar length, scar quality, breast projection and long term preservation of the results especially avoiding pseudoptosis (bottoming) [1,2].

Mc Cully and Hudson [3] stated that superior pedicled R.M have lower incidence of bottoming and increases upper pole projection and allows reduction where it is most demanded i.e., the lower quadrant of the breast.

Bottoming is the vertical sagging of parenchyma of the breast leading to increased nipple-inframammary fold distance and leaving (NAC) at a higher position. This accumulation of breast parenchyma leads to empty upper pole of the breast where aesthetically fullness should be. However, the superior pedicle techniques are accused of being less safe for (NAC) survival especially with large reductions (supra sternal notch- NAC distance more than 42cm) due to kinking of the blood supply.

Scars are the final challenge in reduction mammoplasty [4]. It is the most common cause for litigation in R.M surgery [5].

We adopted a technique which besides its simplicity and rapidity it is safe for NAC sensation and blood supply as well as future lactation even with large reduction. It is versatile and can be used in both inverted T pattern and vertical skin closures.

### PATIENTS AND METHODS

During a period of one year and three months, 30 patients with mild to severe degree of macromastia were operated upon using the quadruple pedicled reduction mammoplasty technique. They were followed up for a period ranged from 3 to 6 months. Their ages ranged from 18-55 years. All of them were surgically fit, lactation free for at least one year before operation. Four patients were smokers and preoperative mammography was done to all patients above 35 years.

*Surgical technique: (Plates 1&2)*

Skin incisions were designed in the classic Wise pattern technique in 20 patients while in 10 patients they were done in the same way as Hall-Findlay technique. The areola was designed to have a diameter of 5-6cm [6].

*The following was done in cases of inverted T pattern reductions:*

- De epithelization was done from within the markings of the new NAC site till reaching a horizontal line extending from 3 & 9 o'clock position to the lateral lines of skin incisions. Also, a circle of areolar skin was de epithelized leaving a ring of

epidermis around the areola according to Schartzmann technique [7].

- The excision should be extended from the inframammary fold to the lower limit of deepithelization without any undermining superior to this line or deep to NAC to preserve the posterior blood supply. The transverse limit of excision is between the lines that marks the lateral limits of excision. A layer of fat is left covering the pectoral fascia to avoid injury to nerves and bleeding. If pectoral fascia is injured it is repaired to avoid bleeding and seroma formation from pectoralis major fibers.
- Skin release: The skin is released from the de-epithelization zone by a thickness of 1cm at least of subcutaneous fat to preserve the skin blood supply. The skin is dissected for 2-3cm laterally and medially. It is important to spare dermis the upper area of the new NAC site from 9 to 3 o'clock from this release as dermis gives better suspension to NAC and support stitches better and this gives a dermal suspender that help the support of the new skin and parenchymal relationship.
- Repositioning of NAC. The NAC is fixed in place by a single 2/0 or 0 vicryl stitch.
- Skin closure started from medial and lateral ends of the inframammary scar to avoid dog ears and avoiding lengthening of wound and appearance of the scar. By this way the excess skin of the dog ears will be shifted towards the nipple-areola complex.
- At this point the skin around the NAC should be refashioned better using a circular pattern 5cm in diameter to induce final circular areola.
- Drainage of the breast was done in all cases, the drain was removed when less than 50 C.C was produced.
- The wounds were dressed and adhesive elastic bandage was used as temporary breast support, then elastic bra was prescribed for at least 3 months.

#### *In cases of vertical scar reduction:*

In these cases the same was done as inverted T pattern in every thing except that while doing the excision part of the skin is elevated as flap from medial and lateral excision margins to allow excision of a rectangular part of parenchymal (like that of the inverted T pattern reduction).

## RESULTS

(Plates 3&4):

This study was done on 30 women, 20 were operated upon with inverted T pattern skin reduction while 10 were operated upon by vertical pattern similar to that of Hall-Findaly skin reduction. The maximum suprasternal notch-nipple distance was 42cm.

- Maximum weight of removed tissue was 1500gm.
- Maximum NAC transposition was 18cm.
- Maximum operative time was 3 hours and minimum 2 hours.
- There was no NAC necrosis in all cases.
- Two cases developed seroma. And 2 cases of inverted T group developed wound disruption at the angle between the vertical and transverse limbs of the wound.
- Scars were accepted by 27 patients, but the breast shape was considered pleasing in all patients.
- NAC sensation was reduced in one patient but improved to normal as reported by the patient in one year.

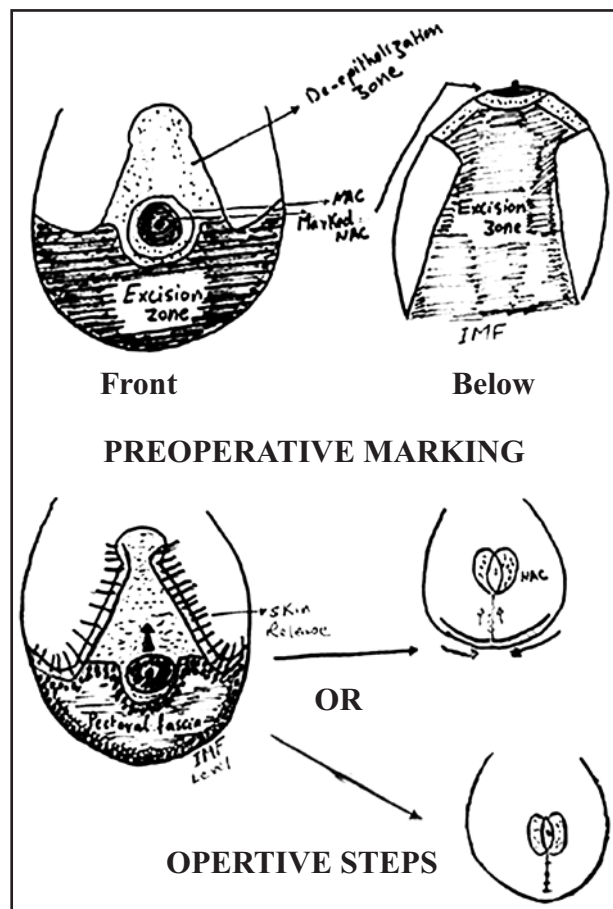


Plate (1): Diagram showing the idea of the operation.

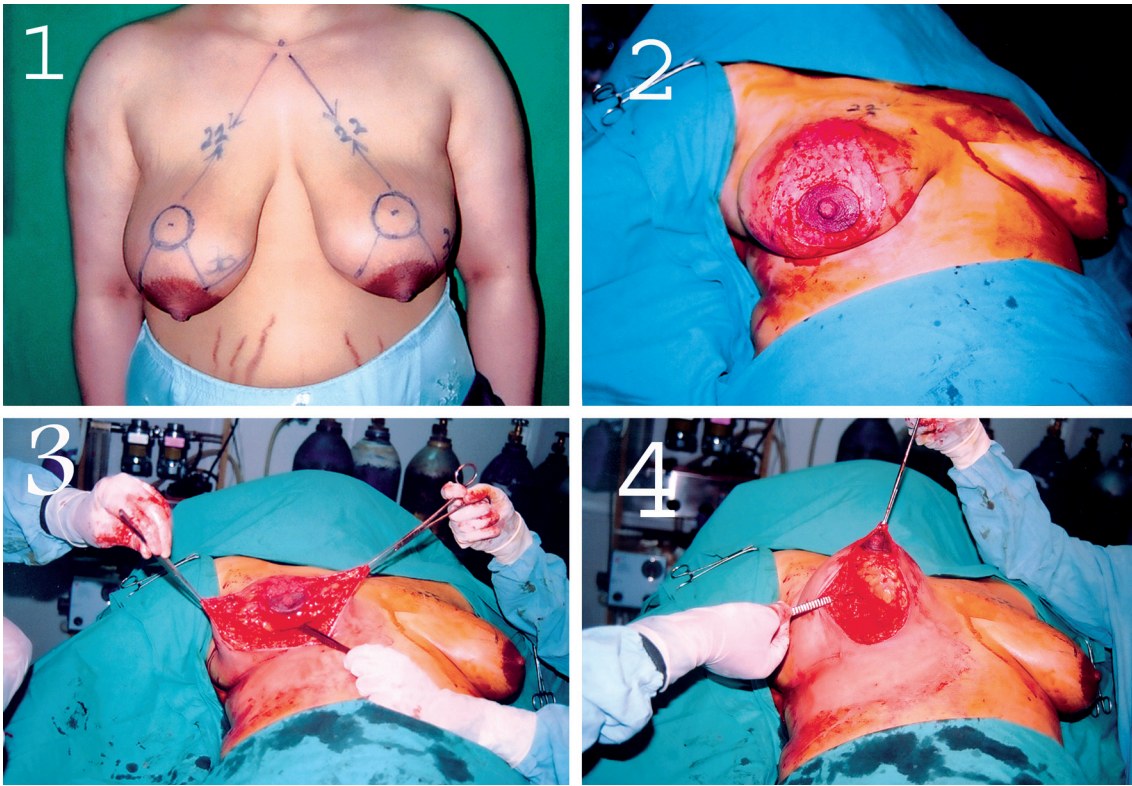


Plate (2): Operative Photos.

1- Markings. 2- De epithialization. 3- Excision. 4- NAC transposition.

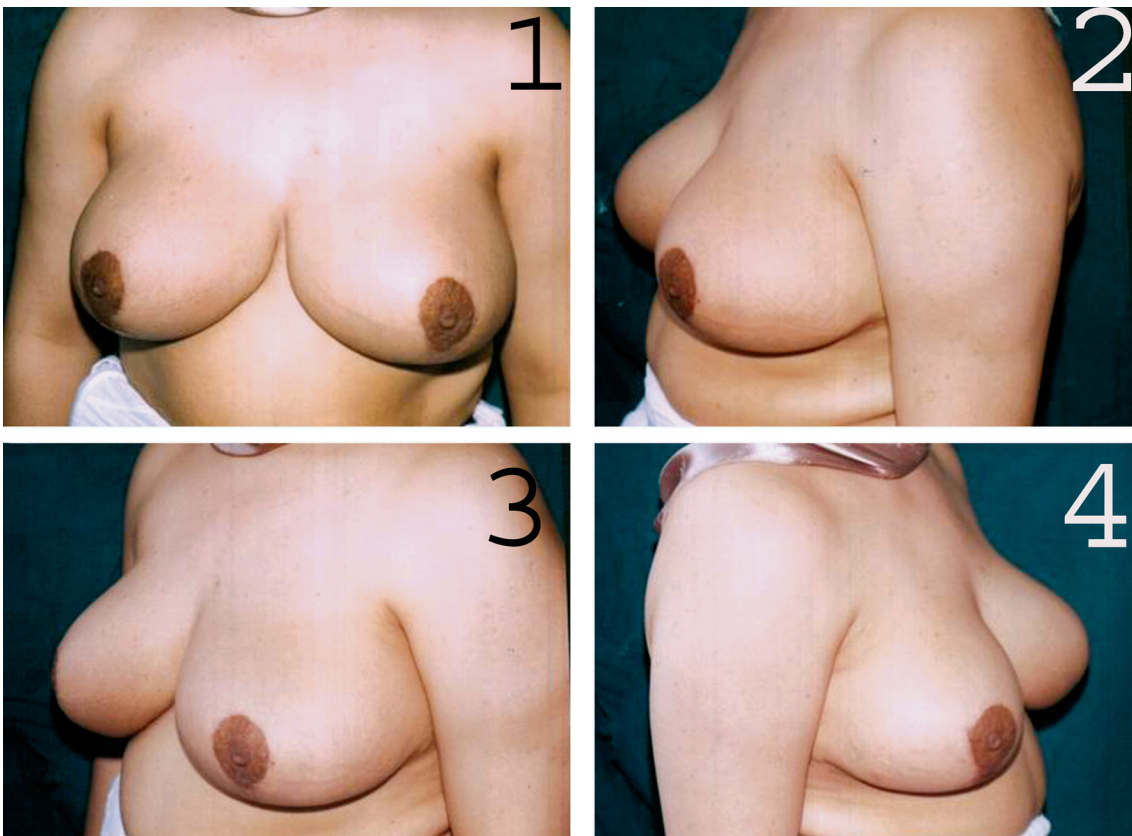


Plate (3): Same case in plate II, 6 months postoperatively.

1- Front view. 2- Left lateral view. 3- Left oblique view. 4- Right oblique view.





Plate (4): Some of our cases.

## DISCUSSION

Throughout the years reduction mammoplasty evolved from the mere preservation of NAC viability to minimal scarring, long lasting aesthetic results, preservation of NAC sensation and lactation ability [3].

Demographic data of age are close to those in Hegazy [8] series and Abel El Fattah et al. [9] series. This is expected because the 3 studies were done on patients with the same social, racial and cultural background. So, they will seek the operation at nearly the same age.

The maximum weight resected in this study was 1500gm. Compared to 1000gm as a maximum reduction produced by Chen et al. [10] in cases of superiomedial pedicle technique.

In our technique the maximum NAC transposition was 18cm compared to the work of Magdy,

2008 [11] who reported the maximum NAC transposition distance to be 15cm.

The fact that NAC was preserved in all cases is not surprising despite the large reduction and relatively long NAC transposition distance because in our technique we combined 4 types of pedicles (superior, superiomedial, superiolateral and posterior).

According to the anatomical study of Van Deventer [12] superiomedial pedicles were axial in 100% of cases. The superiolateral pedicles were axial in 70% of cases while the superior pedicles were axial in 33% of cases. The above mentioned facts if added to blood supply given by the posterior (central) pedicle because there was no retroareolar dissection explains the extreme rarity or absence of avascular necrosis of NAC even in large reductions and transposition Nahabedian et al., 2000 [13] reported 2% incidence of NAC loss in his superiomedial cases.

Two of our inverted T group had wound disruption at the angle of the T wounds; both were smokers (0.06%). Berthe et al. [14] reported 46% disruption and delayed healing in patients with more than 500gm reductions using Le Jour method.

Temporary sensation reduction was seen in 2 of our cases (0.06%). This result is due to avoidance of retropedicle dissection and preservation of both anterior and lateral perforators of intercostals nerves. The loss of NAC sensation depends mainly on the used technique i.e., the relation of the reduced specimen and nerve supply (Schlenz et al. [15]). The temporary loss of sensation can be explained to be neuropraxia [16].

Seroma occurred in 2 (0.06%) of our patients compared to 2.4% in Krethen et al., 2005 [17] series. The seroma of our cases resolved after aspiration under aseptic condition.

Scars were unaccepted by 3 of our series (15%). All of them were in the inverted T group. However, they were Fitzpatrick skin type IV in 2 cases and one patient was of type V. They were managed by silicon compression and local steroids. All patients done by the vertical reduction technique showed aesthetically accepted scars this result agrees with the statement of Cruz-Korchin and Korchin [18] who mentioned that vertical reduction patterns have better scar outcome than inverted T patterns.

Aesthetically pleasing breasts were achieved to all cases regarding shape and projection. The inquiry about shape was done after at least 6 months

postoperatively and any patient that fails to follow up at least 6 months was excluded. This result is not surprising due to the nature of the operation which enhances fullness in the upper part of the breast.

Operative time ranged from 2-3 hours. However this item is variable according to many factors including for example magnitude of reduction, the familiarity of the surgeon to the technique and the availability of experienced assistance.

Unchanged lactation ability was reported by 5 patients. They were the patients who experienced lactation pre and postoperatively. Although 5 is a statistically insignificant number but yet can be explained by preservation of the superior-lateral quadrant of the breast which holds the majority of the glandular part of the breast [19].

#### Conclusion:

The quadruple pedicled technique is useful, versatile, aesthetic, safe and easy. Due to these qualities it deserves to be equal to many of the top line used techniques.

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