

## **Simplified Approach for Correction of Severe Gynecomastia [Grade III]**

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### **ABSTRACT**

This article presented a new simple approach for treating severe gynecomastia [Grade III]. This study included thirteen men with grade III gynecomastia [aged 21-34 years]. The authors used an elliptical skin excision with preservation of NAC through a U-shaped superior pedicle flap. Patients were evaluated postoperatively for NAC viability and symmetry, scar acceptance and their outcome satisfaction. All patients revealed satisfaction of their chest contour, increase in their self confidence and improvement of their psychological insult. No cases of partial or total necrosis of the NAC were observed. There were no post-operative wound infections. The scar formation was acceptable from most patients; partly due to discussing that issue with the patients preoperatively. We found this approach allows an easily applicable and a simple suitable technique for correction of severe gynecomastia [Grade III] and achieves good outcomes with low complication rate and acceptable scars. In addition, it provides an excellent correction of breast contour and improvement of psychological insult.

### **INTRODUCTION**

Gynecomastia refers to benign enlargement of male breast secondary to glandular proliferation [1]. Gynecomastia is the most common disorder of the male breast and can be unilateral or bilateral. Gynecomastia is often asymptomatic and may be an incidental finding on routine examination, but breast pain or tenderness may be present, particularly if the onset of the condition is recent [2].

The development of gynecomastia is believed to be secondary to an alteration in the balance of progesterone and estrogen and must be differentiated from male breast cancer [3]. Both symptom relief and a better aesthetic result were the aims of the surgery. Cordova and Moschella have reported in detail, the goals of gynecomastia treatment: (1) Flattening of the thoracic region; (2) Elimination of the inframammary fold; (3) Correct positioning of the nipple-areola complex; (4) Removal of redundant skin; (5) symmetrization of the 2 hemith-

oraces and the 2 areolae; and (6) containment of scars [4].

Simon classification is one of the most useful classifications of gynecomastia; Grade I: Minimal breast enlargement without excess skin, Grade IIa: Moderate breast enlargement without excess skin, Grade IIb: Moderate breast enlargement with minor excess skin, Grade III: Marked breast enlargement with significant excess skin, similar to female breasts [5].

There are many surgical procedures [6-11] for correction of Grade III gynecomastia, characterized by a large volume of mammary and adipose tissue and excess skin, similar to the techniques used for female mammoplasty.

The objective of this technique is resection of skin for treatment of Grade III gynecomastia, while maintaining the vascularization of the nipple areola complex (NAC) via a superior pedicle of subdermal plexus. Also, it serves to give a flat male breast, not a feminine cone-shape breast that results from other regular reduction mammoplasty techniques.

### **PATIENTS AND METHODS**

During the past 3 years, we have used a new simplified technique for 13 male patients with grade III gynecomastia, according to Simon classification. Their mean age was 25 years [range 21-34 years] and all cases were bilateral. All patients were under clinical examination and mammary ultrasound to confirm the diagnosis of Grade III gynecomastia and to document the absence of any underlying disease. Also, they underwent routine laboratory examinations to confirm the general condition of them. All patients underwent our technique that includes elliptical skin excision with preservation of NAC through a U-shaped superior

pedicle flap. Patients were evaluated postoperatively for NAC viability and symmetry, scar acceptance and their outcome satisfaction.

*Preoperative marking:*

Patients were marked preoperatively while standing upright. The inframammary fold, midsternal line and breast meridian were marked and used as anatomic references. The nipple location was marked 18-21cm from clavicular level and over the breast meridian (Fig. 1). A large NAC was adjusted to 2.5-3cm in diameter. Marking the recommended upper border of excised skin was done at the normal location of the nipple. A U-shaped area starting from the marked point of an appropriate position of the NAC and involving the NAC was marked. The lower recommended border of excised skin was confirmed by the cranio-caudal digital pinch test with the upper one to avoid closure under tension.

*Operative technique:*

All patients received local anesthesia with sedation and positioned supine with the arms ab-

ducted at right angel. The entire surgical area was infiltrated with tumescent fluid [500ml ringer lactate + 1mg adrenaline + 25ml xylocaine 2% + 5ml 8.4% sodium bicarbonate]. De-epithelialization of the U-shaped area that carrying the NAC was done (Fig. 2). Incision of the lower border with undermining of the superior flap up to the marked level of the appropriate position of the nipple (Fig. 3) and readjusting it with the upper marked border before excising the excess redundant skin to ensure that there was no tension. A trans-dermal incision around the de-epithelialized U-shaped area was done. NAC was elevated on a superior pedicle as thin as 3mm. Full-thickness excision of the excess superior flap with glandular and fat components was performed (Fig. 4), then upper and lower borders were approximated (Fig. 5). Drain was inserted and kept in place for 24 hours. The wound was closed in layers; with interrupted deep dermal PDS 3/0 and continuous subcuticular monocryl 3/0 (Fig. 6). NAC was repositioned in an appropriate site over the chest and sutured with deep dermal 4/0 and continuous cutaneous vicryl rapide 4/0. Patients were instructed to wear a vest compression garment for one month.

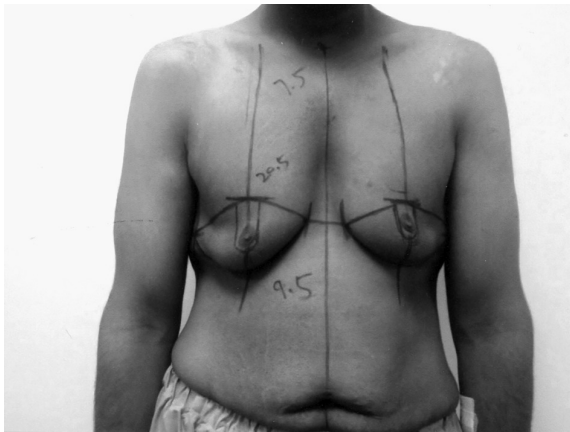


Fig. (1): Pre-operative marking.



Fig. (2): De-epithelialization of the u-shaped area.



Fig. (3): Lower border incision with undermining of superior flap.



Fig. (4): Excision of the redundant skin and elevation of the u-shaped flap.



Fig. (5): Staying sutures for approximation of upper and lower borders.



Fig. (6-A): NAC reposition over chest and wound closure.



Fig. (6-B): NAC reposition over chest and wound closure.



Fig. (7-A): Postoperative results; Anterior view.



Fig. (7-B): Postoperative results; Oblique view.



Fig. (7-C): Postoperative results; Lateral view.

## RESULTS

Thirteen patients with severe gynecomastia [Grade III] underwent our surgical approach with around 6 months follow-up period. All patients revealed satisfaction of their chest contour (Fig. 7), increase in their self confidence and improvement of their psychological insult. No cases of partial or total necrosis of the NAC were observed.

There were no post-operative wound infections. The amount of tissue removed from each breast was ranged from 150 to 485 grams. Reversible nipple hypoesthesia was noted in 2 patients. One patient with seroma formation was reported that successfully treated conservatively. The scar formation was acceptable from most patients; partly due to discussing that issue with the patients pre-operatively.

## DISCUSSION

Gynecomastia occurs in all ages. Neonatal enlargement may be the result of maternal hormones, and adults may have altered androgen/estrogen ratios from lower testosterone levels or high estrogens. The process can be unilateral or bilateral and is due to enlargement of the glandular breast tissue. There is no increased risk of breast cancer associated with gynecomastia [12,13].

Although it seems to be a harmless problem, gynecomastia is commonly a source of embarrassment and shame for the afflicted male especially when he is required to wear tight clothing, as in sports events. In addition, it considers as a serious psychologic problem when the patient reaches the age of obligatory military service. The principle aim of a plastic surgeon in the surgical treatment of gynecomastia should be to achieve an aesthetic result that creates a male type chest wall without unsightly scars, and to restore the normal male appearance and a healthy concept of body image [14].

Numerous modifications of the surgical treatment of gynecomastia were described trying to reduce conspicuous scarring and deformation of the thoracic wall. The cosmetic outcome remained unsatisfactory in men with severe gynecomastia as the result of persistent scarring, residual fat components or breast asymmetry [15].

Although some studies [16-18] considered that the vascular pedicle below the NAC, originating from intercostals vessels, is fundamental for blood supply of NAC, our technique proved that the subdermal plexus is capable of maintaining the NAC and this agree with Persichetti et al. [19] and Filho et al. [20].

We agree with Beckenstein et al. [21] in the NAC diameter should be adjusted to 2.5-3cm. On the other hand, we disagree that the NAC location should be 18cm from the midclavicular line and 10.5cm from the midsternal line because the possible variation of the NAC location regarding to the difference of the shape and the diameter of the chest of patients.

Reports in literature about the surgical intervention of gynecomastia revealed the complication rates ranging from 12.1 to 41% [22-24]. The most common complications were hematoma and seroma [24,25] and the overweight was considered a risk factor for complications [26].

Our approach presented as a single method of treatment of severe gynecomastia with several advantages. It is simple and easy applicable for juniors. A further advantages are short time consuming, good outcomes with low complications and excellent in restoring symmetry of the normal chest contour. Moreover, it is efficient to provide an adequate exposure of breast parenchyma excision and allow for maximal skin reduction.

In conclusion, this approach allows an easily applicable and a simple suitable technique for correction of severe gynecomastia [Grade III] and achieves good outcomes with low complications and acceptable scars. In addition, it provides an excellent correction of breast contour and improvement of psychological insult.

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