Versatility of Minimized Inferior Pedicle Flap Mastopexy for the Treatment of Pseudogynecomastia after Massive Weight Loss

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ABSTRACT
Massive weight loss in men may result in redundant chest skin. This is often characterized by excess skin and fat, along with descent of the inframammary fold and nipple-areola complex (NAC). These changes are consistent with pseudogynecomastia in contrast to gynecomastia which is associated with enlargement of glandular tissue. Approaches for treatment of pseudogynecomastia in massive-weight-loss patients must include the surrounding anatomic areas such as the upper abdomen and lateral chest wall. Failure to adequately evaluate these regions can lead to suboptimal results. Techniques for treating pseudogynecomastia include mostly excisional procedures, some of which maintain the NAC on a vascularized pedicle while others involve free nipple grafting.

Aim of the Work: To evaluating the effectiveness and versatility of using the smallest possible dimensions for the inferior pedicle flap mastopexy in the treatment of severe breast ptosis following MWL.

Methods: The present study retrospectively reviewed the charts of 20 patients operated upon for correction of pseudogynecomastia between October, 2011 and April, 2014. They were all operated using the minimized inferior pedicle mastopexy. All operations took place at Shaab Medical Center in Kuwait.

Results: All flaps survived with intact NAC sensation and only two patients (10%) complained of residual bulk. Three patients (15%) experienced slight decrease in the NAC sensation which improved by time.

Conclusion: Pseudogynecomastia is a condition with increasing prevalence which necessitates the development of new surgical approaches to deliver the best possible outcomes.

The technique presented in this paper is versatile and fits well with MWL patients with grade III pseudogynecomastia. It also is indicated where other techniques are not applicable and when the extent of the resulting scar is weighted against the desired cosmetic outcome.

Key Words: Pseudogynecomastia – Mastopexy – Inferior pedicle – Massive weight loss – Nipple areolar complex.

INTRODUCTION
Massive weight loss in men may result in redundant chest skin. This is often characterized by excess skin and fat, along with descent of the inframammary fold and nipple-areola complex (NAC). These changes are consistent with pseudogynecomastia in contrast to gynecomastia which is associated with enlargement of glandular tissue [1].

The presence of a firm mound under the NAC can help differentiate between gynecomastia and pseudogynecomastia. Pseudogynecomastia is particularly detrimental to the male psychologically and socially, affecting their self-image, self-esteem and willingness to appear unclothed in public spaces such as gyms, swimming pools, beaches, etc.

A search for corrective procedures has been documented in the medical literature for centuries. Surgery was always the mainstay of treatment approaches. Over a thousand years ago, in Cordoba, Omayyad Spain, Abul Qasim Khalaf Ibn Al-Abbas Al-Zahrawi, known in the West as Albucasis and later called the “Father of Modern Surgery”, described his approach to breast reduction in his 30-volume encyclopedic treatise on medicine “Kitab Al-Tasrif”. His method is similar to what is followed today [2].

The ideal male chest is muscular, flat, with the skin-fat envelope tightly adherent to the underlying musculoskeletal anatomy. There is minimal fat or breast tissue overlying the pectoralis muscle, however, some fullness around the nipple-areola complex representing glandular tissue does exist [3,4]. The ideal inframammary fold in men follows the contour of the inferior border of the pectoralis major muscle. The average NAC measures 28mm in diameter and is located approximately over the fifth rib, usually at its intersection with the lateral border of the pectoralis major [5,6]. The average nipple-to-sternal notch distance is 20cm.
Approaches for treatment of pseudogynecomastia in massive-weight-loss patients must include the surrounding anatomic areas such as the upper abdomen and lateral chest wall. Failure to adequately evaluate these regions can lead to suboptimal results. Techniques for treating pseudogynecomastia include mostly excisional procedures, some of which maintain the NAC on a vascularized pedicle while others involve free nipple grafting [7-11]. Prior accounts of liposuction alone for the treatment of higher grades of gynecomastia reported less patient satisfaction [12].

Several grading schemes have been proposed for the treatment of gynecomastia and pseudogynecomastia [12-14]. If the grading system introduced by Simon et al is referenced, one notes that little controversy or debate regarding the management of grades 1 and 2 exists at present, yet the difficulty in treating grade 3 persists [13]. Simon described three grades according to the size of gynecomastia; Grade I is minor but visible breast enlargement without skin redundancy. Grade IIA is moderate breast enlargement without skin redundancy; Grade IIB is moderate breast enlargement with minor skin redundancy; Grade III is gross breast enlargement with skin redundancy that simulate pendulous female breast [13].

Specific classification for pseudogynecomastia following MWL presented by Gusenoff A and Rubin P (2008) describing the degree of ptosis in correlation with the nearby chest wall laxity. Grade 1, where there is minimal excess breast skin and fat. Grade 2, where there is ptosis of NAC and IMF (inframammary line) below the ideal IMF with lateral chest rolls and minimal upper abdominal laxity. Grade 3, where the location of NAC and IMF below the ideal IMF with lateral chest rolls and upper abdominal laxity [14].

The main objective of this article is to present an alternate surgical approach to the treatment of severe breast ptosis in massive weight loss patients (grade III). This study presents the author's personal series and discusses in detail the management of severely ptosed breasts following MWL. Aetiological factors, histopathology and classifications are topics beyond the scope of this article.

Aim of the work:

The present work aims at evaluating the effectiveness and versatility of using the smallest possible dimensions for the inferior pedicle flap mastopexy in the treatment of severe male breast ptosis following MWL.

PATIENTS AND METHODS

The present study retrospectively reviewed the charts of twenty patients operated upon for correction of pseudogynecomastia between October, 2011 and April, 2014. All operations took place at Shaab Medical Center in Kuwait. Data collected included patient evaluation and medical management, the amount of weight loss after the bariatric surgery, the grade of pseudogynecomastia, the characteristics of their breasts in term of size consistency, skin quality, presence or absence of ptosis and degree of infra-mammary fold development, and the amount of the excised tissue. Patients were evaluated postoperatively for early complications, nipple-areola sensation, symmetry and final outcome.

The choice of the procedure was based on Gusenoff’s, et al., classifications and the need for skin resection. Patients with true gynecomastia or liver disease, endocrinopathies and on hormonal or drug therapy and those with suspected breast mass were excluded. In addition to those with BMI above 35, and those who underwent previous techniques and below the adolescents were also excluded. While patients presented after MWL with ptosed breasts with less fatty tissues and the distance between the new nipple position and the ptosed one is equal to or more than 5cm and with reasonable expectations regarding the visible scars, were included in the study.

A complete clinical and radiological examination can rule out cases with true gynecomastia or suspected tumor. Any palpable mass, especially in the presence of asymmetric enlargement, would undergo biopsy to rule out malignancy.

Preoperative marking:

With the patient in the standing position, the suprasternal notch, midline, and breast meridian were marked. The patient was asked to contract his pectoral muscles and the lateral border was palpated and marked. The proposed new nipple location was located at the intersection between the horizontal location of the fourth or fifth rib and the lateral border of the pectoralis muscle. The superior line of resection was marked at a level corresponding to a distance of 4-5cm inferior to the proposed new nipple position. This line would define the proper position of the new inframammary fold. If lateral chest wall laxity existed, the line would be extended laterally, with a slight curve superiorly, to correct this laxity. The inframammary fold was marked extending laterally to meet the lateral extent of the superior resection line. The
areolar diameter was reduced to 20-25mm with the lower border just at or slightly overhanging the inferior border of the pectoralis major muscle. A pinch test would confirm acceptable tension on closure.

All patients gave their written informed consent prior to the operations and before taking the pre-operative documentary photos.

**Operative technique:**

All operations were carried out under general anesthesia with the patient positioned supine with the arms abducted. The entire chest wall and upper abdomen were included in the operative field. Appropriate antibiotic and deep venous thrombosis prophylaxis were used.

Twenty male patients with severe breast ptosis (grade III) were operated upon using the narrow inferior pedicle flap mastopexy. In patients with residual breast fatty tissues, liposuction was done with utmost care away from the flap pedicle and under the areola to avoid endangering the vascularity and sensation of the areola. The liposuction was limited to the upper half of the breast that was meant to be pulled down after excising the excess skin. The planned excision ellipse was marked and the flap carrying the NAC was marked with the base width of 3-5cm and a flap length of 10-15cm or even more according to the degree of ptosis and displacement of the ideal IMF. The flap was de-epithelialised and was cut down vertically to the pectoral fascia. No undermining was allowed as the laxity of the tissue in those patients allowed the easy superior advancement of the areola to its new position without undermining. The length to width ratio of the flap should be kept as normal standards of pedicled flaps as a 3:1 ratio. In cases where the flap length to width ratio exceeded the standards, the flap width was kept between 3-5cm and no liposuction or folding of the flap was done. The remaining areas that were medial, lateral and superior to the inferior pedicle flap were excised down to the pectoral fascia. The lateral excision was extended up toward the axilla and even more posteriorly to rejuvenate the lateral chest wall and back rolls. Dissection was extended to the upper skin-parenchymal flap which was freed up to the second intercostal space and pulled down to reach the inframammary crease and simulate closure. The superior resection line was checked for closure, any excess skin was removed at this stage and a stapler was used to close the wound temporarily. Any residual bulky tissues were excised under direct vision without over-thinning of the upper flap.

The designated location of the NAC, which was determined preoperatively, was de-epithelialised. It was then cored out to deliver the NAC which was fixed with stitches and its vascularity carefully assessed. The inferior pedicle flap was then fixed to the pectoralis muscle fascia with 2-3 vicryle stitches on its medial and lateral borders. This fixation was indicated in cases with a long pedicle to guard against twisting of the pedicle or possible falling laterally into the axilla thereby giving rise to a lateral breast fullness. Drains were inserted and a few quilting sutures were inserted to block the cavity without skin indentation. In cases where the inferior pedicle flap was long, it could be folded once or twice safely while preserving the vascularity. The upper flap was thinned cautiously at the interface with the inferior pedicle flap to avoid bulkiness of the NAC. All wounds were closed in layers and compression garments applied.

**Postoperative care:**

Close follow-up was maintained in the early postoperative period to observe the NAC color, sensation and detect any alarming bleeding. Patients were discharged the next day with the drains which were removed after 4-7 days. Patients were advised to refrain from strenuous activity for a period of 4 weeks.

Schedules for follow up were planned according to each case, and after suture removal, were scheduled monthly for one year and six monthly for two years. Assessment of breast similarity, residual laxity or bulge, NAC sensation, scar visibility or hypertrophy and overall patient satisfaction were recorded and documented at each visit.

All patients were asked to fill in a self-assessment sheet consisting of linear analogue scales for five categories on which they rated their surgical results. They were asked to record overall satisfaction and judge the appearance of scars, the improvement in chest shape, NAC sensation and their self-confidence. The results and overall satisfaction were also assessed from records of previous clinic visits and postoperative photographs.

**RESULTS**

Twenty patients with grade III (Gusenoff) pseudogynaecomastia were treated by the narrow inferior pedicle mastopexy technique over a 30-month period. Their ages ranged from 20 years to 49 years (mean, 25 years), and all had presented with bilateral grade III breast ptosis. Fourteen patients (70%) were active current heavy smokers and one patient was alcoholic. All patients suffered of massive weight loss (MWL) either following
bariatric surgery (sleeve gastrectomy in 15 patients 75%) or due to a restricted diet and sports (five patients 25%). Their body mass index before the bariatric surgery or the dieting program ranged between 27->30. The average weight loss had ranged between 30-100kg and their body mass index was between 22-27 at the time of pseudogynecomastia correction and they had had a stable body weights for the preceding six months with no associated illnesses.

In all the cases, a significant reduction of breast volume with removal of any existing lipomatous tissue along with skin retraction led to a good male-looking chest. The mean weight of the resected specimens was 250g (range: 200-650g). The mean follow-up time was 4 months (range: 6-24 months). One case with history of alcoholism developed right sided haematoma (5%) after accidental drain slippage that needed aspiration and compression. Two cases had a residual bulge (10%), and another two patients developed left sided seroma (10%) that resolved after repeated aspiration. There were no infections or other early postoperative complications (Table 1).

Liposuction was performed in four patients (20%) where there was still adipose tissue. The volume of liposuction ranged between 250-350cc. Bruising secondary to liposuction resolved within 10 days.

All flaps survived with intact NAC sensation, only two patients (10%) complained of residual bulk which required reduction of the folded pedicle after six months and three patients (15%) developed slight decrease of the NAC sensation. The transverse scars settled nicely in the inframammary crease while the circumareolar scar healed nicely without tension.

Pedicle length to width ratio was kept within the safe limits ie 3:1 ratio. The width was 3-5cm in all patients and the length 10-15cm in 15 patients (75%) and 16-18cm in 5 patients (25%) (Table 2).

NAC was symmetrical regarding position and size and degree of sensation. Contour was excellent in eighteen patients (90%), and no dish deformity was encountered. All the patients were satisfied with the result, and none had functional impairment of the arms or complete loss of the nipple-areola complex sensitivity (Table 4).

<table>
<thead>
<tr>
<th>Serial</th>
<th>Age (years)</th>
<th>Weight (kgs)</th>
<th>BMI</th>
<th>Cause of MWL</th>
<th>Pedicle Length cm</th>
<th>Pedicle Width cm</th>
<th>Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>100</td>
<td>&gt;30</td>
<td>Sleeve</td>
<td>10</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>23</td>
<td>80</td>
<td>&gt;30</td>
<td>Sleeve</td>
<td>10</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>38</td>
<td>110</td>
<td>&gt;30</td>
<td>Sleeve</td>
<td>12</td>
<td>4</td>
<td></td>
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<tr>
<td>4</td>
<td>20</td>
<td>80</td>
<td>27</td>
<td>Sleeve</td>
<td>14</td>
<td>4</td>
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<tr>
<td>5</td>
<td>28</td>
<td>112</td>
<td>&gt;30</td>
<td>Diet</td>
<td>12</td>
<td>4</td>
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<tr>
<td>6</td>
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<td>88</td>
<td>28</td>
<td>Diet</td>
<td>10</td>
<td>3</td>
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<tr>
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<td>14</td>
<td>5</td>
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<td>37</td>
<td>101</td>
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<td>Sleeve</td>
<td>15</td>
<td>5</td>
<td>Residual bulge</td>
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<tr>
<td>9</td>
<td>49</td>
<td>122</td>
<td>29</td>
<td>Sleeve</td>
<td>18</td>
<td>5</td>
<td>Seroma</td>
</tr>
<tr>
<td>10</td>
<td>25</td>
<td>93</td>
<td>29</td>
<td>Diet</td>
<td>15</td>
<td>5</td>
<td>Residual bulge</td>
</tr>
<tr>
<td>11</td>
<td>23</td>
<td>93</td>
<td>&gt;30</td>
<td>Sleeve</td>
<td>15</td>
<td>5</td>
<td>Seroma</td>
</tr>
<tr>
<td>12</td>
<td>29</td>
<td>95</td>
<td>&gt;30</td>
<td>Sleeve</td>
<td>15</td>
<td>5</td>
<td>Residual bulge</td>
</tr>
<tr>
<td>13</td>
<td>32</td>
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<td>&gt;30</td>
<td>Sleeve</td>
<td>13</td>
<td>4</td>
<td>Seroma</td>
</tr>
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<td>15</td>
<td>5</td>
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<tr>
<td>16</td>
<td>33</td>
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<td>29</td>
<td>Sleeve</td>
<td>16</td>
<td>5</td>
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<td>16</td>
<td>5</td>
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<td>18</td>
<td>29</td>
<td>90</td>
<td>&gt;30</td>
<td>Sleeve</td>
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<td>Seroma</td>
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<tr>
<td>19</td>
<td>38</td>
<td>100</td>
<td>&gt;30</td>
<td>Sleeve</td>
<td>16</td>
<td>5</td>
<td>Seroma</td>
</tr>
<tr>
<td>20</td>
<td>39</td>
<td>87</td>
<td>&gt;30</td>
<td>Diet</td>
<td>12</td>
<td>4</td>
<td>Haematoma</td>
</tr>
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</table>

Mean 29.20 92.55 – – 14.05 4.45 –
SD 7.70 12.41 – – 2.42 0.76 –
Table (3): Leading cause of MWL.

<table>
<thead>
<tr>
<th>Cause of MWL</th>
<th>Percentage</th>
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<tr>
<td>Diet</td>
<td>34.6%</td>
</tr>
<tr>
<td>Sleeve Gastrectomy</td>
<td>45.7%</td>
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</table>

Table (4): Patients self evaluation by visual analogue scale.

<table>
<thead>
<tr>
<th></th>
<th>Poor results (0-3)</th>
<th>Good results (4-6)</th>
<th>Excellent results (7-10)</th>
</tr>
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<tbody>
<tr>
<td>Scar appearance</td>
<td>–</td>
<td>–</td>
<td>20 Patients</td>
</tr>
<tr>
<td>Chest shape and</td>
<td>2 Patients</td>
<td>18 Patients</td>
<td></td>
</tr>
<tr>
<td>symmetry</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>NAC sensation</td>
<td>3 Patients</td>
<td>17 Patients</td>
<td></td>
</tr>
<tr>
<td>Self confidence</td>
<td>–</td>
<td>–</td>
<td>20 Patients</td>
</tr>
<tr>
<td>Overall satisfaction</td>
<td>2 Patients</td>
<td>18 Patients</td>
<td></td>
</tr>
</tbody>
</table>

Figs. (1,2): Preoperative markings of pseudogynecomastia after losing 70 kilograms following sleeve gastrectomy in a 27 years old patient.

Figs. (3,4): Intraoperative view showing the flap de-epithelialization.
Figs. (5,6): Excision of the excess breast tissue and insetting of the de-epithelialized narrow inferior pedicle flap.

Fig. (7): Localisation of the new nac site.

Fig. (8): Intraoperative final closure.

Figs. (9-11): Case (1) Preoperative view of a 30 years male patient following MWL of 100 kilogram with severe laxity all over.
Figs. (12,13): Case 1- three months postoperative following combined abdominoplasty and inferior pedicle mastopexy.

Figs. (14,15): Case (1) Three months Postoperative lateral views.

Figs. (16,17): Case (2) Preoperative and two months postoperative views of a 25 years male patients following MWL (50 kg loss).
Figs. (18,19): Case (2) Two months post operative views.

Figs. (20-22): Case (3) Preoperative views of a 28 years patient following MWL of 50 kilograms.

Figs. (23-25): Case (3) Six months postoperative views showing left breast with mild residual bulge but with nicely healed scars.
DISCUSSION

Surgery is the mainstay of treatment for gynaecomastia and pseudogynecomastia. Although a wide range of surgical techniques have been described, surgeons often find it difficult to select the technique that will achieve the best results for a given patient. The prime concern of surgeons treating gynaecomastia is achieving an attractive male chest appearance with the least amount of scarring and deformity. The redundant chest skin fold in the male post-weight-loss patient represents a wholly different entity from gynaecomastia and is best described as pseudogynaecomastia [1].

The ideal procedure should masculinize chest contours while respecting the areolar complex, restoring the inframammary crease and minimizing surgical trauma. Severe volume deflation with shape distortion and inelastic skin and parenchyma makes the deformities difficult to correct. Short scar approaches usually do not adequately correct the inherent skin deformities of the MWL patient [15].

For MWL male patients, their main problem is their severely ptosed breasts resulting in a feminine breast appearance as well as the redundant skin apparent over the areas surrounding the breast territory. Consequently, lifting the ptosed breast without addressing the nearby lax skin will lead to less than optimum results. Hence the search for more radical techniques for skin excision in a way that corrects the area as a whole unit is preferred. Determining the degrees of breast ptoses in MWL patients depending mainly on the classification suggested by Gusenoff et al., has to take in consideration the lateral chest wall and any upper abdominal laxity [14].

Earlier techniques were excisional in nature. In grade I and II, Webester pointed out the value of the intra-areolar approach aiming to conceal the entry points of excision [16]. Webester’s technique was further applied by others who used a variety of designs all centered on the areola with different forms of extensions or remote incisions [12,16,17].

Crescentic mastopexy will allow for minimal mobilization up to 1 cm of the NAC in a cephalad direction and is reserved for cases with mild to moderate ptosis with good skin quality. In more severe ptoses (grades III) where excess skin needs to be excised, techniques that transpose the nipple areola complex were developed but the transposition was limited and the scars needed to be larger to permits adequate skin resection [18,19].

With the current rapid progress in bariatric surgery and the marked increase in its use and its indications, there is a concomitant increase in the number of males with MWL who request corrective plastic surgery because of resulting pseudogynecomastia. Fifteen (75%) patients in the present study were MWL candidates following sleeve gastrectomy while the other five (5%) patients had lost massive amount of weight by engaging in sports and restricted diets. Though all suffered of subsequent chest skin laxity, the degree of generalized laxity was severest in those patients following bariatric surgery due to the rapidity of weight loss. They represented grades III according to Gusenoff’s et al. and Simons’s breast ptoses classifications [22,13]. Their skin excess is not an easy task to be resolved by circumareolar excision alone but requires more radical skin excision that would also preserve intact NAC vascularity and sensation.

Vertical mastopexy and Wise pattern mastopexy could be used for severe cases where skin excision and NAC repositioning from 1 to 5 cm is required. The scars resulting from this procedure are usually the limiting factor as patients prefer a less invasive approach [20].

The inferior pedicle technique has provided a mainstay in the treatment of severe ptosis. Some authors advocate the use of the de-epithelialized whole lower flap as a dermo-fascial flap carrying the NAC to guarantee viability and intact sensation [11,21]. Others reduce the width of the flap to 10 cm only to serve the same goals but, because of limitations on the extent of skin excess that can be excised, patients are left with significant residual bulk [22].

An alternative method to elevate the nipple areola complex in patients with extreme pseudogynecomastia is to perform a similar elliptical excision, but replace the NAC complex as a free nipple graft. This approach results in a faster procedure, but patients may develop pigmented changes, prolonged time to heal, a stuck-on nipple appearance, and loss of sensation [23,24].

All these aforementioned merits and demerits have led to the development of the present technique designed to transfer the NAC safely on a narrow pedicle while guaranteeing intact circulation and sensation and without residual noticeable bulk. A review of the literature yields no previous description of the use of an inferior pedicle flap with a base width smaller than 8 cm in pseudogynecomastia patients. The present study utilizes a flap.
with a base width range of 3-5cm only and a length range of 10-18cm.

The use of the inferior pedicle flap should be restricted to those patients with a severe degree of ptosis and with a distance of more than 5cm between the inferior edge of the new areola and the proposed inframammary fold scar (chest wall incision) for best appearance. It is essential that the expected long inframammary scar be explained carefully to the patients prior to surgery.

The present technique provides the benefits of allowing for extensive skin and glandular resection while preserving the vascularity and sensation of the NAC with the narrowest flap pedicle. In accordance with other author, the scar, being transverse, is relatively acceptable as opposed to a vertical scar that would normally not be associated with the breast [21]. There is no tension on the skin edges as is the case with the T-shaped scar and thus ensuring smooth healing with good positioning of the scar within the inframammary groove away from the NAC.

In the MWL patient, the areola usually requires reduction in diameter if it has been stretched by the excess tissue. The diameter of the areola is adjusted to acceptable measures and, post-operatively, does not enlarge or get stretched by this technique as there is no tension. This is in contrast to the circumareolar technique where stretching of the areolar scar usually occurs and will result in a broad scar [10].

The transverse skin excess is present in both the upper and lower flaps in MWL patients. As the de-epithelialized inferior pedicle flap is narrowed to the lowest, safest dimensions, the lower flap skin excess is excised on both sides of the pedicle. This process has the advantage of lifting the upper abdominal laxity as well.

The narrow pedicle flap is treated with caution but is sturdy and has proved to be effective in preserving sensation and vascularity. Using a narrow pedicle gave the breast an attractive contour. There was no dish deformity as the retroareolar tissue is protected and without vertical scars.

While maintaining a pedicle offers several important advantages such avoidance of pigment change, faster healing, a more natural appearance, and intact sensation, these patients may experience more dysesthesias. With our pedicle technique, if the nipple appears compromised toward the end of the procedure, it can be converted to a free nipple graft exactly as stated by Gusenoff JA [22].

**Conclusion:**

Pseudogynecomastia is a condition with increasing prevalence which necessitates the development of new surgical approaches to deliver the best possible outcomes. The selection of a particular surgical technique must take into account the relative excesses of skin, fat and glandular tissue, nipple position, patient and surgeon preference, as well as the willingness of the patient to accept surgical scars in exchange for better chest contour in the more severe cases.

The technique presented in this study is versatile and fits well with MWL patients with grade III pseudogynecomastia. It also is indicated where other techniques will not address the lateral chest wall laxity and when the extent of the resulting scar is weighted against the desired cosmetic outcome.

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