

How to Cite:

Almeghawesh, Y. (2023). Combined superior and inferior dermoglandular flaps for projection enhancement in giantic breast amputation and free nipple areola graft. International Journal of Health Sciences, 7(S1), 2786–2793.
<https://doi.org/10.53730/ijhs.v7nS1.14577>

Combined superior and inferior dermoglandular flaps for projection enhancement in giantic breast amputation and free nipple areola graft

Yamen Almeghawesh

Specialist plastic surgeon Bellaroma Hospital Dubai, United Arab Emirates

Email: Yamenmgwish@yahoo.com

Abstract---Gigantomastia has been a pathological condition in which excised breast tissue weighs more than 1.5 kg per breast or when breast weight surpasses three percent of body weight. epidermis & Cooper's ligaments, which support breast tissue, expand as a result of breasts becoming heavier & larger, which causes breast ptosis. Numerous methods for correcting gigantomastia have been discovered. amputation for decreased studied cases who complain of gigantomastia & severe ptosis (space among nipple & inframammary fold exceeds twenty-five cm) are only eligible for mammaplasty with free nipple-areola grafting. purpose of that surgery is to achieve breast shape size that is acceptable while also relieving pain & suffering brought on by excessive breast tissue hypertrophy. flat, boxy breasts with poor projection is the main drawback of that treatment. Several flaps, including superior, inferior, medial, superomedial, & lateral-based flaps combined with wise-pattern skin excision, are employed to address this drawback.

Keywords---gigantomastia, breast tissue, epidermis, cooper's ligaments, gigantomastia.

Introduction

Gigantomastia has been a pathological condition in which excised breast tissue weighs more than 1.5 kg per breast or when breast weight surpasses three percent of body weight. epidermis & Cooper's ligaments, which support breast tissue, expand as a result of breasts becoming heavier & larger, which causes breast ptosis. Numerous methods for correcting gigantomastia have been discovered. (1) amputation for decreased studied cases who complain of gigantomastia & severe ptosis (space among nipple & inframammary fold exceeds twenty-five cm) are only eligible for mammaplasty with free nipple-areola grafting. purpose of that surgery is to achieve breast shape size that is acceptable while also relieving pain

& suffering brought on by excessive breast tissue hypertrophy. flat, boxy breasts with poor projection is the main drawback of that treatment. Several flaps, including superior, inferior, medial, superomedial, & lateral-based flaps combined with wise-pattern skin excision, are employed to address this drawback. (2)

Because poor projection has been a common complaint among surgeons, it might be difficult to shape the studied case's breasts in an aesthetically pleasing way. For the repair of gigantomastia, numerous dermoglandular flap procedures are proposed as superior, inferior, medial, & lateral-based flaps with varying thickness & dimensions, although the ideal is still up for debate. As previously noted, numerous projection enhancement adjustments are demonstrated in the literature. How, however, had been effects of these methods evaluated? Almost all of the authors favoured photographic assessment to evaluate obtained projection. the efficiency of using an inferior pedicle with a free nipple-areola complex to improve breast projection. (3)

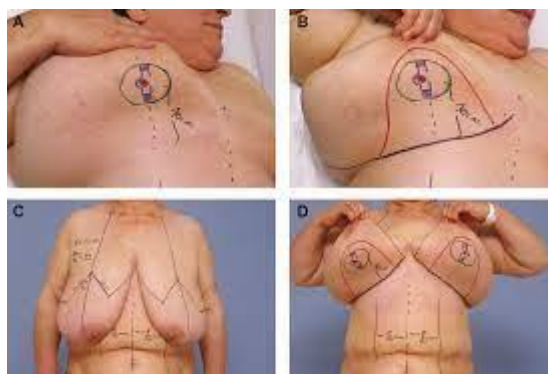


Figure 1. Nipple Areola Reconstructing Reduction Mammoplasty (18)

To raise central projection, superior dermoglandular flaps. Strauch et al. have utilised a superolateral dermoparenchymal flap, which is then rotated upward after being shaped to provide "periwinkle impact" via circular rotation to improve projection from the chest wall & produce a more rounded contour. Pedicle flaps that are vertical are frequently utilised to augment breast projection. Abramson preserved the inferior dermal pedicle reaching halfway among the inframammary fold & nipple & de-epithelialized the superior pedicle among 2 vertical arms of the wise template. the superior flap has been folded over the inferior flap & stitched to the pectoral fascia before being covered by lateral & medial flaps. When contemplating grafting over NAC transposition in gigantomastia, prominent worries are pedicle length, pedicle folding, & pedicle kinking, all of which impair NAC's blood supply. superior & inferior dermoglandular flaps, which are thirteen centimetres long & eight centimetres wide & give the breast its central hump. (4)

To maintain additional perforators supplying flaps, the flap's thickness gradually increases towards the pedicle base. Vicryl sutures had been used to join superior & inferior flaps at their free ends to lengthen the flap without risking distal hypoperfusion. To reduce the likelihood of breast bottoming, the flap had been folded back on itself & secured to the pectoral fascia with prolene

sutures. combined superior & inferior pedicle flaps have various benefits, including the ability to remove more glands while maintaining more pedicled tissue from lateral, medial, & central portions of the breast. Reduces the chance of distal fat necrosis, which can happen with single long pedicle procedures, & lastly, because the bed is properly perfused, there is a lower frequency of free nipple areola graft loss. (5)

absolute elimination of excessive breast weight with its consequences, that had been the major aim for surgery in our instances, might be an explanation for the increased rate of patient satisfaction. Despite scars & any other small shortcomings, most of the instances had been content with their new, normal breast shape. In individuals with gigantomastia, augmenting overlapped superior & inferior pedicle flaps with superior & inferior dermoglandular pedicle flaps may dramatically improve breast shape in terms of projection & volume. Long-lasting benefits are obtained by attaching overlapped flaps to the pectoral fascia, which lowers the rate of bottoming out. (6)

Hypopigmentation, graft loss, inability to lactate, diminished feeling, & reduced breast projection are some of its drawbacks. To produce more dependable & visually acceptable approaches, some authors have suggested foregoing the free-nipple method & instead changing pedicle reduction procedures. changed medial pedicle, for instance, by reducing its width & severing its superior connections. Likewise, by keeping as many connections to the chest wall as possible, it was safe to use the inferior pedicle in significantly hypertrophic breasts. By using colour Doppler ultrasonography to identify the principal pedicle & create a pedicle that contains these vessels, the procedure works. (7)

studied cases with severe macromastia can now be reduced more safely thanks to this technique. free-nipple breast-reduction procedure has been regrettably inevitable for some studied cases, despite numerous attempts at pedicle breast reduction improvements. Several authors have indicated various flap changes to raise projection to provide visually pleasing outcomes. These have included a variety of combinations & fixation methods with inferior, superior, lateral, & medial demoglandular flaps. An alternative strategy is tried in the manner given. To augment the breast mound, the nipple-areola complex has been transplanted over full-thickness superomedial or superior pedicles. As a result, it has become possible to achieve free nipple breast reduction akin to traditional pedicle reductions. (8)

For breast reduction, a variety of options have been previously reported. between most popular methods are inferior, lateral, superolateral, superior, superomedial, central, & bipedicle approaches. For mild or moderate degrees of macromastia, the majority of these treatments deliver adequate results. studied cases who require significant amounts of resection are most at risk. (9) Because of pedicle length & increased quantities of resection, most pedicle procedures put studied cases with substantial hypertrophy at risk for NAC circulation. best treatment option for studied cases with severe macromastia is still up for debate. According to some assessments, the inferior pedicle approach is more dependable in terms of NAC's safety. But if the quantity of resection is greater than 1,000 g, the T region experiences wound-healing issues, with bottoming out & projection

loss eventually emerging. Resection of bigger quantities is possible with Hall Findlay's modified superomedial pedicle technique with fewer complications. NAC's circulation is hampered when pedicle length rises. Additionally, a lengthy pedicle aids in the development of bottoming out. (10)

studied cases with comorbidities like diabetes mellitus, hypertension, vascular disease, & metabolic syndrome, or studied cases thought to be candidates for delayed wound healing & complications because of risk factors like obesity & smoking can prefer the free-nipple method. Even in this group, obtaining aesthetically pleasing output has been the main objective. widely based breast without projection is a common side effect of traditional free-nipple reduction mammoplasty. Recently, several dermoglandular pedicles are employed to offer augmentation of the central breast mound. majority of these flaps have been inferior- or superior-based flaps that are partially dissected free of pectoral fascia to allow for shaping & transferring as necessary. By way of illustration, superior dermoglandular pedicles were modified to augment central projection for free-nipple reduction mammoplasty with or without backfolding. (1)

In contrast, all of the techniques previously discussed NAC directly to their final position as standard after shaping & suturing flaps that increase projection. Even though our method resembles other methods that use superior flaps, all of them have flaps that range in thickness from one to four cm since authors felt that this was important for manipulating flaps. pedicles we prepared, on the other hand, had been pedicles that had not come loose from their attachments to the pectoral fascia. Due to a substantial amount of core breast tissue given, the conical form was achieved. This adjustment has effects beyond just making accurate predictions. 2nd & 3rd intercostal branches of the internal mammary artery & lateral thoracic artery, as well as deep pectoral perforators, feed into the pedicle that is created. (11)

In clinical practice, this circumstance offers NAC, which has been implanted as a full-thickness graft, the best viability. This feature, in our opinion, helps to reduce the likelihood of entire or partial graft loss or fat necrosis. The idea behind the stated method comes from the concept of switching from the free-nipple method & withdrawing NAC in conventional pedicle breast-reduction treatments when NAC circulation has been hampered. Under these conditions, the pedicle has been shortened & NAC is positioned in its new location. If pedicle circulation is completely lost, NAC may also be applied to breast skin flaps. Numerous surgeons currently employ this method. the crucial thing to remember is that this salvage technique was only employed as the last option to preserve nipple-areola. For studied cases with comorbidities like obesity, diabetes mellitus, hypertension, & smoking, on the other hand, the free-nipple method has been unquestionably indicated. There has been a variation of the free-nipple breast-reduction technique rather than the salvage technique. (12)

Breast reduction procedures should address both reconstructive & aesthetic concerns. studied cases who have enormous breasts & experience bra strap grooving, back, neck, or shoulder pain can benefit from breast reduction surgery. purpose of this operation has been to achieve an aesthetically acceptable final form while reducing excessive breast volume & ensuring adequate vascular

supply & sensitivity of the nipple-areola complex. safety of the pedicle has been attempted to combine with aesthetic & functional outcomes through a variety of breast reduction treatments. All involve skin resection pattern, parenchymal resection pattern, & pedicle design (or free nipple graft) to relocate NAC. Surgeons need to be knowledgeable about various approaches to adjust to various studied case presentations. pedicle, skin-resection pattern, & parenchymal-resection pattern should all be taken into account separately while doing breast reduction. (13)

superior pedicle, inferior pedicle, lateral pedicle, horizontal bipedicle, vertical bipedicle, & superomedial pedicle are 6 primary pedicles that are discussed. When Robert Wise created an inverted T skin resection pattern in 1956, he made significant advancements in the field of skin resection patterns by adapting the brassiere design. A wise skin resection pattern was then applied to every pedicle. To remove the horizontal scar, Arie⁴ initially described reduction mammoplasty with a vertical scar in 1957. (14) By moving NAC back into a healthy position, breast reduction surgery seeks to give ptotic or hypertrophic breasts an aesthetically attractive form. many methods have been developed to accomplish this throughout the past century. 3 characteristics that distinguish them most are the type of skin, the pattern of parenchymal excision, & pedicle selection to confirm the viability of NAC. Research has been done to show that 1 technique is superior to another. As previously noted, what has come to pass is the idea that surgeons ought to have a variety of options so they can choose the optimal procedure for each studied case. With a vertical skin resection pattern, Hall-Findlay modified & popularized the medial pedicle technique, which had been developed from the superomedial pedicle. (15)

Superomedial pedicle surgery had been initially recommended for breasts that were "moderate to rather large in size." Then, with nipple viability & feeling preservation, resections up to 4100 g in weight & NAC transpositions up to thirty cm were well tolerated. As the pedicle contains the main blood supply to the breast & has been shorter than the inferior pedicle in a given breast, additional investigations showed that medial pedicle reduction mammoplasty had been safe & dependable, even in situations of extreme mammary enlargement. Additionally, excessive strain on NAC is avoided in addition to stem twisting decreases in large breasts thanks to the lateral rotation of the pedicle from its base. When compared to amputation & free-nipple transplant, breast form & projection had been improved & outcomes had been on par with those from inferior pedicle procedures. (16)

medially based pedicle has the benefits of dependable circulation, maintenance of NAC feeling, decreased occurrence of NAC hypopigmentation, & improved central breast projection. 4th intercostal nerve has a special function in NAC innervations, according to anatomical research by Michelle le Roux et al. that looked at the neurovascular anatomy of eleven female breasts. Additionally, they concluded that de-epithelialization or weakening of the superomedial pedicle's superficial aspect would cause vascular compromise or denervation of NAC because the pedicle's blood supply ran through it in the superficial plane. Resection, if necessary, was advised to be carried out from a deep surface or pedicle's base. partial-thickness superior or medial pedicle design that we

employed in our approach is safe, according to this research. the full-thickness pedicle can collapse & compromise the vascularization of NAC, preventing proper deployment of the nipple-areola complex. (6)

In contrast to the approach used, loss of NAC sensitivity had been directly associated with breast size & resulting chronic nerve traction injury. In our research, two breasts (2.7 percent) lost NAC feeling after reduction mammoplasty with Wise design skin removal. 1 explanation could be that, as previously said, we typically conduct this type of surgery on studied cases with moderate to severe breast enlargement who may have experienced persistent nerve traction injury. (6)

With less scarring than inverted T scar, vertical scar reduction mammoplasty employing medial pedicle enhances the projection of breasts over time. We think that ptosis in the breast was caused by inferior wedge excision of excess breast tissue & long-term shape of the breast had been determined by suturing of medial & lateral pillars. Wise pattern skin resection & medial pedicle reduction mammoplasty to sixty-one studied cases; he created a medial pedicle with a base width of ten cm & ninety°-rotational angle. superior-medial pedicle with Wise pattern excision for severe gigantomastia (>1200 g). most common complications had been wound dehiscence at inverted Tapex & development of dog ears; complication rates had been comparable to those described in the literature. We encountered a similar issue in our research, most likely as a result of doing Wise pattern skin resection on studied cases with moderate to severe breast enlargement, that increased scar tension & necessitated the removal of more parenchymal & adipose tissue. (17)

Both functional & aesthetic concerns should be addressed during breast reduction surgery. Because it may be used to treat a variety of breast hypertrophies, reduce breast weight in a reproducible manner, & produce outcomes that have been aesthetically pleasing for both studied cases & surgeons, we discovered medial-pedicle-based reduction mammoplasty to be effective & dependable. We proved that medial pedicle reduction mammoplasty has been a safe surgical procedure, even for significant breast enlargement, in line with earlier investigations. Additionally, surgery takes little time, & there aren't many complications. Although I agree that the best breast reduction one surgeon performs, I still view medial-pedicle-based reduction mammoplasty with both vertical & wise skin excision patterns as the industry standard for varying degrees of breast hypertrophy. (10)



Figure 2. Combined Superior & Inferior Dermoglandular Flaps for Projection Enhancement in Gigantic Breast Amputation & Free Nipple Areola Graft(19)

References

1. Swanson, E. (2022). Revisiting the No-vertical-scar, Free Nipple Graft Breast Reduction. *Plastic and Reconstructive Surgery Global Open*, 10(9).
2. Naides, A. I., Schultz, J. J., Shulzhenko, N. O., & Keith, J. D. (2021). Chest masculinization technique and outcomes in 72 double-incision chest-contouring procedures with free nipple grafting. *Plastic and Reconstructive Surgery Global Open*, 9(3).
3. Ghidai, L., Bansil, H. A., Stuckey, A., Pandya, S., Edmonson, D., Michaud, P., & Gass, J. (2020). Nipple-sparing mastectomy and ptosis: using a free nipple graft with tissue expander reconstruction. *Plastic and Reconstructive Surgery Global Open*, 8(2).
4. Ramella, V., Stocco, C., Grezar, L., Spazzapan, L., & Papa, G. (2022). A new male nipple areolar complex design in trans men chest masculinization. *Plastic Reconstructive and Regenerative Surgery*, 58–63.
5. Vazquez, O. A., Hansen, P. Y., Komberg, J., Slutsky, H. L., & Becker, H. (2022). Free nipple graft breast reduction without a vertical incision. *Plastic and Reconstructive Surgery Global Open*, 10(3).
6. Sonmez, M., & Saglam, M. E. (2023). Preserving the Nipple Projection in Breast Reduction with the Free Nipple-Areolar Graft Technique: Purse-String Suture. *Aesthetic Plastic Surgery*, 1–6.
7. Yehia, M. A. (2021). Medial pedicle reduction mammoplasty in macromastia. *Benha Medical Journal*, 38(3), 1019–1041.
8. Khan, R. S., & Gill, N. A. (2021). Inverted-T Reduction Mammoplasty with Superomedial Pedicle for Gigantomastia-A Case Series. *Journal of Surgery and Research*, 4(3), 478–483.
9. Papadopoulos, S., Colpaert, S. D. M., Goulis, D. G., Nigdelis, M. P., Grimbizis, G. F., Tio, J., & Abdallah Abdallah, and. (2021). Fat grafting and auto-augmentation mastopexy after breast implant removal: technique and evaluation of outcomes using BREAST-Q. *Aesthetic Surgery Journal*, 41(6),

NP388–NP401.

10. Pompei, B., Grufman, V., Zoccali, G., & Farhadi, J. (2023). Breast implant reverse surgery: A step-by-step approach. *Journal of Plastic, Reconstructive & Aesthetic Surgery*, 82, 200–208.
11. Khan, U. D., Naseem, S., & Rafiq, S. (2022). Mastopexy using de-epithelialised dermoglandular flaps: a case series for maximal volume conservation following breast implants removal. *European Journal of Medical Research*, 27(1), 159.
12. Zelko, I., DeLeonibus, A., Haidar, J., Bahat, D., & Bishop, S. N. (2023). Nipple-Sparing Gigantomastia Breast Reduction: A Systematic Review. *Annals of Plastic Surgery*, 90(3), 267–272.
13. Hamdi, M., Chahine, F., Alharami, S., De Baerdemaeker, R., Hendrickx, B., & Zeltzer, A. (2021). The 10-year experience with volume distribution mastopexy: a novel, safe, and efficient method for breast rejuvenation. *Plastic and Reconstructive Surgery*, 148(1), 55–64.
14. Eren, S., & Öreroğlu, A. R. (2022). Modified central pedicle in breast reduction and mastopexy: the dermal suspension technique. *Aesthetic Plastic Surgery*, 46(6), 2753–2765.
15. Mandelbaum, M., & Henderson, P. W. (2022). Modified superomedial pedicle breast reduction or mastopexy for patients with medially positioned nipple areola complex. *Eplasty*, 22.
16. Bilgen, F., Ural, A., & Bekerecioğlu, M. (2021). Inferior and central mound pedicle breast reduction in gigantomastia: a safe alternative? *Journal of Investigative Surgery*, 34(4), 401–407.
17. Altramsy, A., Mohammed, A. H., Nassef, M., & Nafee, A. M. (2021). Combined Superior and Inferior Dermoglandular Flaps for Projection Enhancement in Gigantic Breast Amputation and Free Nipple Areola Graft. *The Egyptian Journal of Plastic and Reconstructive Surgery*, 45(2), 89–95.
18. Economides, J. M., Graziano, F., Tousimis, E., Willey, S., & Pittman, T. A. (2019). Expanded algorithm and updated experience with breast reconstruction using a staged nipple-sparing mastectomy following mastopexy or reduction mammoplasty in the large or ptotic breast. *Plastic and Reconstructive Surgery*, 143(4), 688e–697e.
19. Altramsy, A., Mohammed, A. H., Nassef, M., & Nafee, A. M. (2021). Combined Superior and Inferior Dermoglandular Flaps for Projection Enhancement in Gigantic Breast Amputation and Free Nipple Areola Graft. *The Egyptian Journal of Plastic and Reconstructive Surgery*, 45(2), 89–95.