

The Dermal Nipple-Areola-Complex Flap Method in Female-to-Male Gender Affirming Surgery

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Case Report

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Abstract

Background:

Subcutaneous mastectomy (SCM) plays a major role in female-to-male (FtM) gender affirming surgery, and obtaining a flattering chest contour remains a challenge to the surgeon. We present an operative method using a dermal nipple-areola-complex (NAC) flap with the aim to create a naturally masculine appearance, while reducing the risk of NAC complications by maintaining sufficient neurovascularization.

Methods:

Through a horizontal incision, a superior thoracic full skin flap was elevated at the dissection plane for mastectomy. The mastectomy was continued inferiorly, creating an inferior flap including the NAC. The surface of the inferior flap was deepithelialized, secluding the NAC, which allowed the inferior dermal flap to be inserted posterior to the superior flap. A circular defect was created in the superior flap, into which the NAC was sutured.

Results:

The surgery delivered satisfactory results with an aesthetically pleasing masculine appearance and a high level of patient satisfaction. We were able to place the horizontal scars inferiorly along the pectoral muscles, which enabled some camouflage. Additionally, the inferior flap provided a uniform filling effect to the chest, further contributing to the male aesthetic. There were no NAC complications.

Conclusion:

The dermal NAC flap method could be applied as an excellent alternative to the traditionally performed free nipple graft technique in FtM gender confirming surgery. The method is simple, provides an aesthetically appealing outcome, and poses a low risk of NAC complications. Intraoperatively, it allows for good exposure and a uniform removal of breast tissue, as well as repositioning and/or reduction of the NAC where required.

Introduction

Chest contouring is usually the first, and arguably most significant, step in female-to-male (FtM) gender confirming surgery. Obtaining a desirable masculine appearance importantly facilitates living in the male gender role, and significantly increases body satisfaction, quality of life and self-esteem [1–3]. As the awareness and social acceptance of transsexualism has increased in later years, so has the demand for surgery and the expectations of its outcome.

Various methods are being developed, in aim to optimize the aesthetic results while decreasing the risk of complications. Subcutaneous mastectomy (SCM) using the free nipple graft technique is universally known as the gold standard in FtM transgender patients with medium to large breasts [2–4]. The method

allows for rapid contouring and removal of excess skin, and repositioning of the nipple-areola-complex (NAC) and/or resizing where indicated. The main disadvantages to the technique are long residual mid-thoracic scars, the risk of NAC pigmentary and sensory changes, and graft necrosis.

We present our experience where SCM was performed in an FtM transsexual patient with medium size breasts, using the dermal NAC flap method. Our goal in using this technique was to preserve sufficient neurovascular function of the NAC, in order to reduce the risk of sensitivity loss, hypopigmentation and necrosis, as well as to achieve optimal aesthetic results in terms of a masculine appearance. The aim of this case description is to propose and show this alternative operative approach, which could be implemented in future patients.

Materials And Methods

A 20-year-old FtM transsexual patient was referred to our department with the desire to undergo chest masculinization surgery. The patient had undergone hormonal therapy prior to referral. The BMI of the patient was 22.3 and there were no concurrent medical conditions. Preoperative evaluation assessed a breast size of approximately 300 CC, and poor skin quality and elasticity due to the use of chest compression wests. There was no pronounced ptosis.

Preprocedural markings were made with the patient standing. The breast meridian and the inframammary fold (IMF) were marked. The amount of excess skin was estimated by gently pulling the breast downward, and the superior margin was marked. Laterally the line was curved slightly upwards, in order to create a rounded scar that would follow the inferior border of the pectoralis major muscle. The new position of the NAC was marked lateral to the breast meridian, with a reduced diameter of 25 mm.

The skin was deepithelialized after intradermal injection of local anaesthetic (Lidocaine with Adrenaline, 0,25% Amgros I/S). Incisions were made according to the superior margin, and SCM was carried out between the subcutaneous fat and the glandular tissue, sparing a 5 mm rim underneath the NAC to avoid depression deformity. The amount of breast tissue removed was 302 grams from the right breast and 312 grams from the left. The deepithelialized inferior dermal NAC flap was inserted beneath the superior full skin flap. A circular defect was created, into which the NAC was interpolated. Finally, the skin was closed with resorbable sutures.

Results

The patient was seen for follow-up appointments 2 weeks and 4 months post-surgery, respectively. He reported being exceedingly satisfied with the cosmetic results, with no complaints of nipple hyper- or hyposensitivity. The NAC were healed sufficiently with no pigmentary changes. The dermal flaps provided an even filling to the chest, avoiding the inversion effect sometimes seen when using the free nipple graft technique. There were no postoperative complications or need for corrective surgery.

As the preoperative breast size of our patient was medium, we were not able to place the residual horizontal scars inferior to the pectoral muscles, as would have been possible with larger size breasts. The scars were situated approximately two centimeters superior to the infrapectoral line. Nonetheless, they followed the natural anatomy of the chest and were well tolerated by the patient. Overall, we were able to attain a uniform contour with a naturally masculine aesthetic. The areola were reduced in size and lateralized according to the male anatomy.

Discussion

Our case shows that the dermal NAC flap method could be applied as an excellent approach in FtM chest contouring. The surgery delivered a naturally masculine appearance and a high level of patient satisfaction. Since the NAC neurovascular bundles are preserved, they promote good sensation and blood supply, minimizing the risk of complications. If nipple reduction is needed this can be performed in the same session, as the vascular supply is particularly reliable using this method.

According to existing algorithms, SCM using the free nipple graft technique is the gold standard in FtM transsexual patients with medium to large breasts with poor skin elasticity. Disadvantages to the method include NAC hyper- or hypopigmentation, sensitivity loss, the patch effect, depression deformities, and, in rare cases, complete or incomplete graft necrosis [2–4].

Alternatively, the superior or inferior pedicle technique has been proposed with the aim to preserve adequate neurovascularization to the NAC. Disadvantages include the long-term risk of ptosis and feminization, as some breast tissue is left in the thorax, as well as a visible inverted T-scar [2]. Although rare, there have been reports of FtM transsexual patients developing breast cancer after having undergone SCM [5–6], and one must assume this risk naturally increases with mammary tissue left in the chest.

Cely et al presented an alternative incision outline with the aim to hide the inverted T-scar, resulting in simple horizontal scars inferior to the pectoral muscles, similar to those seen in our study [1]. However, the issue of thorax feminization still remains, as a sufficient amount of tissue is required to be left in the pedicle in order to maintain blood supply to the NAC, which is carried on the only 6 centimeters in width pedicle. Due to this, additional liposuction is often needed in order to attain a natural and flat contour.

Our technique differs from the one above in that the subcutaneous tissue of the entire width of the breast is maintained as an inferior flap, while simultaneously almost all of the glandular tissue is uniformly removed. The inferior dermal flap conveniently creates an even and uniform filling to the chest, which is especially suitable to the male anatomy where the pectoralis major muscle is more developed than in the female.

The main focus with our paper was to propose an alternative operative approach that could be implemented in future patients. A similar technique has previously been applied in patients with grade III

gynecomastia [7–8], and as the hammock technique in immediate breast reconstructive surgery [9–10]. To our knowledge, it has not previously been reported in SCM in FtM transsexual patients.

Conclusion

The dermal NAC flap method provides a flattering and uniform chest contour, by preserving the dermal and fatty layer as well as the NAC neurovascular bundles. Consequently, the risk of NAC complications is low. The technique allows for a good exposure window for dissection and hemostasis, enabling well-demarcated removal of breast tissue. Reduction and/or repositioning of the NAC can be easily performed where required.

The method is most suitable in patients with medium to large breasts with some ptosis and/or good skin elasticity, as this will allow for a larger amount of skin recession, enabling the horizontal scars to be placed inferior to the pectoral muscles for optimal camouflage. Further studies need to be conducted in order to fully determine the outcome of this technique.

Declarations

Ethical statement

Conflict of interest:

The authors declare no conflicts of interest.

Ethical approval:

The ethical requirements of this institution have been met. Further ethical approval was not required according to Danish law.

Informed consent:

The patient has given informed consent for the use of clinical data and photographs for scientific purpose and publication.

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