

RM23 The Triple Confirmation Technique for Optimal Nipple Position in Transgender Chest Masculinization

Rutgers - New Jersey Medical School, Newark

Presenter: **Haripriya S. Ayyala, M.D.**

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Background

It can be a challenge to determine the ideal position of the nipple-areolar complex (NAC) in the transgender population. The authors present a novel technique to determine the best location and aesthetics of the female to male NAC.

Methods

All patients who underwent female to male mastectomy with free nipple grafting by the senior author were included. After double incision mastectomy via the inframammary fold, the location of the NAC is then confirmed using three steps. First, the vertical coordinate is determined at the level of the 4th rib near the border of the pectoralis muscle. Second, the horizontal coordinate is determined by dividing each unilateral chest into vertical thirds from midline to anterior axillary line laterally. The NAC position is confirmed at the junction of the middle and lateral third. Third, symmetry is ensured bilaterally by creating a triangle; the base lies from sternal notch to inframammary fold in the midline and the apex is adjusted to the NAC. This apex is transposed from side to side to ensure symmetry. A 24-question survey was distributed at least 6 months post-operatively to evaluate the patient's quality of life after chest masculinization. The questionnaire assessed the patient's thoughts about their chest, nipples, scar, and overall experience with the gender affirmation process using a 5-point Likert scale.

Results

Thirty-one patients were included in this study. Two cases developed a unilateral hematoma, both of which were evacuated successfully with no long-term aesthetic consequence. Two patients underwent revision surgery for dog ear excision. Eighteen patients responded to the post-mastectomy survey, all of whom were highly satisfied with the aesthetic result post-operatively (Figure 1). All patients felt comfortable with their exposed chest. Concerning nipple cosmesis parameters, nipple location was particularly highly received with 100% satisfaction rate (mean Likert score 4.72). Nipple size and shape received a mean Likert score of 4.17 and 3.89, respectively; 33% reported return of nipple sensation.

Conclusion

The location of the nipple areolar complex in transgender female to male patients is of paramount importance to create a natural male chest appearance. The triple confirmation technique is an easy, reproducible method to guide the surgeon in relocation of the nipple areolar complex.

RM24 Furosemide Use in the Postoperative Period Correlates with Decreased Urinary Complications after Transgender Free Radial Forearm Phalloplasty

The Buncke Clinic, San Francisco

Presenter: **Travis Joseph Miller, MD**

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Background

Phalloplasty with a double-tubed radial forearm free flap (RF) is commonly performed for masculinizing gender-affirmation surgery. Although prior studies have compared complication rates between various phalloplasty techniques, little investigation has been done to delineate risk factors for complications. We thus undertook a case-control study evaluating patient and perioperative risk factors for complications with prospectively collected data. We hypothesized that fluid management factors would affect phalloplasty flap and urethral complication rates, with diuretic usage acting as a surrogate for flap edema, thus predicting worse outcomes.

Methods

A single-center, prospective analysis of patients undergoing double-tubed RF phalloplasty with vaginectomy and full-length urethroplasty was performed from October 2017 to January 2018. Input variables analyzed included age, body mass index, prior childbirth, primary glansplasty, primary scrotoplasty, number of venous microanastomoses, American Society of Anesthesiologists (ASA) score, operating time, intraoperative fluid volume, and postoperative furosemide treatment. Output variables included flap-related complications (emergent reoperation, infection, flap necrosis, delayed wound healing), urethral complications (development of fistula and stricture), and scroto/perineal complications (infection, dehiscence, and necrosis).

Results

Over a period of 14 months, 46 patients underwent RF phalloplasty reconstruction. Primary glansplasty was performed in 65.2% and primary scrotoplasty was performed in 91.3% of cases. There were no incidences of partial or total flap loss. The overall complication rate was 50.0%, with a rate of 28.5% among those requiring furosemide versus 59.3% without. The use of furosemide in the acute perioperative period was associated with a decreased risk of urethral complications (OR =0.14, p = 0.03).

Conclusion

Contrary to our hypothesis, the use of furosemide during initial hospitalization after phalloplasty was associated with fewer urethral complications, potentially enabling accelerated postoperative fluid mobilization and thus decreasing flap edema. Further study is necessary to confirm this mechanism and if furosemide use should be part of routine recovery algorithms after phalloplasty, and potentially even routine management of other free flaps as well.

RM25 Free Flap Phalloplasty Using an Anatomically Ideal Pedicle: A Single Center Experience with 20 Patients

Cedars-Sinai Medical Center, Los Angeles

Presenter: **Edward Ray, MD**

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Background:

A reproducible and minimally morbid recipient vascular pedicle is vital for flap survival, exceptional aesthetics, and functional outcomes following free flap phalloplasty. With historical complication rates after phalloplasties as high as 40%¹, our group has yet to observe any flap loss or other major complications with twenty consecutive patients using our novel approach anatomically ideal pedicle.

Methods:

20 consecutive patients from 2017 to 2019 who underwent free phalloplasty, urethroplasty or phallorethroplasty with a radial forearm or anterolateral thigh flap were included in this retrospective study. Access to recipient vessels was performed through a short lower abdominal quadrant incision over the rectus sheath. All vascular anastomoses and nerve coaptations were performed under microscope magnification in a similar manner, with the recipient deep inferior epigastric arteries and venae comitantes transposed through the inguinal canal (Fig 1). Patients were admitted post-operatively and the flaps monitored on a surgical ward for 5 to 7 days.

Results:

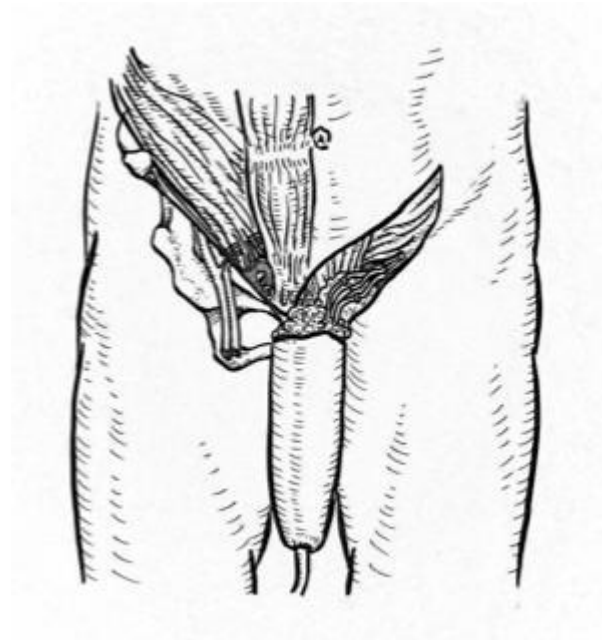
All 20 flaps survived with no microvascular complications or partial flap losses. Arterial and venous size matches were excellent, with a narrow range of vein coupler sizes used in 100% of cases. There was no need for vein grafting or supplemental venous drainage in any of these cases. Recipient site scars were limited to 10 cm right lower or left lower quadrant access incisions. One patient experienced a hematoma at the recipient site, which resolved with operative intervention. There were no other major recipient site-specific complications such as hernia, wound infection or seroma.

Conclusion:

From our experience, inferior epigastric arteries with their venae comitantes transposed through the inguinal canal provide a safe, reliable, and reproducible pedicle for free flap phallorethroplasty. The vessels used are predictable in size and length, not requiring the use of vein grafts, A-V loops or large recipient site incisions. As such, this technique has clear advantages compared to currently employed recipient vessels for gender-affirming free flap phalloplasty.

¹ Djordjevic, Miroslav L. “Novel surgical techniques in female to male gender confirming surgery.” *Translational andrology and urology* vol. 7,4 (2018): 628-638.

Figure 1. Deep inferior epigastric vessels transposed through the inguinal canal



RM26 Foreign Substance Granulomas of the Breast: An Algorithm for Surgical Excision and Breast Reconstruction in Trans Women

Cedars Sinai Medical Center, Los Angeles

Presenter: **Dhivya R Srinivasa, MD**

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Background

Breast granulomas (due to off-label injection of foreign substances) presents challenging deformities in trans females. The quantity, location, and degree of inflammation all contribute to the severity of the deformity. Here, we present our multi-institutional case series of breast silicone granulomas and our surgical algorithm for breast reconstruction.

Methods

With IRB approval, retrospective EMR review was performed to gather demographic, clinical, and surgical outcomes data on trans female patients with silicone granulomas who underwent surgical treatment at Cedars-Sinai Medical Center and Zuckerberg San Francisco General Hospital. Photographs were reviewed, descriptive analyses were performed, and a surgical algorithm was developed based on patient-specific presentation and surgical outcomes.

Results

Seven patients were treated for breast silicone granulomas since 2016. One patient underwent immediate autologous breast reconstruction (Figure 2), two patients underwent expander/implant (E/I) reconstruction (delayed or immediate), one received a reduction mammoplasty, one had staged reduction mammoplasty with planned Direct to Implant (DTI), and two patients had latissimus dorsi (LD) flaps with expanders or implants. All patients tolerated their reconstruction well, and had no major complications. Figure 1 represents our reconstructive algorithm.

Conclusion

The authors recommend excision of all symptomatic silicone granulomas, which may warrant mastectomy in patients with extensive disease. Patients with dermal involvement require resection of all affected skin. When skin cannot be closed primarily without distortion of the breast, autologous reconstruction with either DIEP or LD flaps is recommended. The authors suggest that patients who are candidates for DIEP flaps may be better served with microsurgical reconstruction to avoid complications associated with breast prostheses. Otherwise, E/I may be used in conjunction with LD flaps. Patients without significant dermal involvement are candidates for direct-to-implant or E/I reconstruction. Patients who have silicone granulomas in a distribution conducive to reduction mammoplasty (without sacrificing the desired breast shape and size) should be considered for breast reduction alone. Reduction techniques may be used in a staged approach to preserve the nipple in patients who need a mastectomy for silicosis excision,

but have distorted nipple position(s). Chronic infections should be approached with initial debridement and delayed reconstruction. All reconstruction should be delayed in the setting of acute infection or inflammation.

Figure 1. Surgical Algorithm for Breast Reconstruction in Patients with Silicone Granulomas

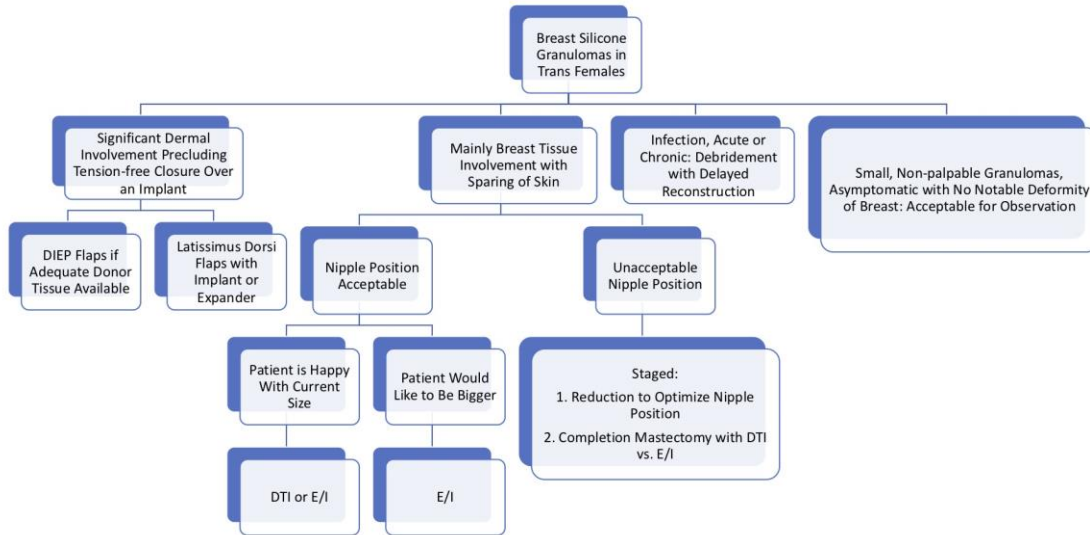


Figure 2. Pre and Post Operative Images of Silicone Granulomas with Subsequent Excision and Reconstruction

A: Patient 1, Markings for Proposed Excision B: Patient 1, Pre-Operative image showing visible deformity and scarring from free silicone injections C: Patient 2, Pre-Operative image showing significant asymmetry, deformity, and confluent dermal involvement of free silicone D: Patient 1, On-table image after bilateral LD inset. E: Patient 1, 2 week post operative image after bilateral LD with implant placement. F: Patient 2, On-table image after inset of bilateral DIEP flaps following bilateral mastectomies for excision of silicone granulomas.



RM27 Gender-Affirming Free Flap Breast Reconstruction

Cedars-Sinai Medical Center, Los Angeles

Presenter: **Solmaz Niknam-Bienia, MD, MBA, MHA**

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Background

With increasing numbers of gender non-conforming patients seeking gender-affirming procedures, demand has driven innovation. Male-to-female (MTF) patients seeking chest feminization are typically offered breast augmentation with prosthetic implants after social transition and a period of exogenous estrogen use, though a growing subset of patients request reconstructive alternatives, such as autologous reconstruction. Prior to attempting free flap breast reconstruction in transgender women, the divergent nature of natal male and female chest anatomy poses challenges that require special consideration.

Methods

We retrospectively reviewed our experience with autologous reconstruction in MTF patients. Translation of techniques used elsewhere are applied to achieve an ideal breast shape and access to recipient vessels while minimizing visible scars.

Results

At our center, two MTF patients (ages 66 and 53 with BMIs of 35.7 and 32.9 kg/m², respectively) successfully underwent bilateral free deep inferior epigastric artery perforator flap breast augmentation/reconstruction using the technique described below.

In any breast reconstruction, the nipple-areola complex (NAC) location, size and shape, coupled with the breast volume and envelope, have a significant effect on overall aesthetic appearance. In gender-affirmation surgery, these characteristics are also critical in the identification of breasts as male or female. Male NAC location is naturally positioned more lateral and closer to the IMF and is often oval in shape compared to that of the round female NAC. To achieve ideal NAC position with our MTF chest feminization, the NAC is grafted and placed centrally on the newly shaped breast mound.

As in some delayed cisgender female breast reconstructions, there is typically a deficiency of skin envelope, volume, and projection in MTF patients. To correct this, some of the lower pole skin is excised. The skin excision includes a horizontal elliptical design, incorporating the excised nipple-areola complex (NAC) and the inframammary fold. The medial portion of the ellipse curves superiorly to permit access to the recipient vessels for microanastomosis. A central superior flap incision allows for addition of superior pole skin envelope and volume. The shaped flap inset provides enhanced envelope and volume with a teardrop-conus shape.

Conclusion

Free flap breast reconstruction is safe and aesthetically pleasing in appropriately selected MTF candidates. Further study of indications, outcomes, and economic factors, such as surgeon reimbursement, are needed.

RM28 Priorities and Goals of Transgender Men and Non-Binary Patients Considering Bottom Surgery

New York University School of Medicine, New York

Presenter: **David A Daar, MD, MBA**

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Background: Most of the medical literature on bottom surgery (i.e., the creation of a neophallus) in transgender men revolves around technical outcomes as perceived by surgeons. The commonly cited sexual, urologic, and aesthetic goals of bottom surgery, which are met to differing degrees by phalloplasty and metoidioplasty, do not account for actual preferences of transgender patients. This survey sought to examine in detail the decision-making process and concerns of transgender and non-binary people with regards to bottom surgery.

Methods: This was a survey of 104 transgender men and non-binary patients assigned female at birth. The ad-hoc survey measure was developed through collaboration with several surgeons and transgender and non-binary patients and distributed to patients at a plastic surgery clinic. It measured demographics, decision-making process, and priorities regarding bottom surgery.

Results: Respondents were an average of 28.8 years (range 18-40), were assigned as female at birth, and identified as transgender men (76.9%) or gender non-binary (23.1%). None had undergone bottom surgery. Even if money/insurance were no object, only 28.4% (n=27) would pursue surgery. Transgender men considered bottom surgery at higher rates than non-binary respondents (48.7% vs 4.2%, $p<0.05$). Of those interested in bottom surgery, more preferred phalloplasty (46%) than metoidioplasty (18%). Major priorities were equally prevalent in transgender men and non-binary patients, including the ability to achieve orgasm (94.5%, n=86), satisfactory erogenous sensation (87.9%, n=80), ability to penetrate partner (85.7%, n=78), ability to urinate standing up (84.6%, n=77), satisfaction with aesthetic appearance (84.6%, n=77), long-term sexual function (78.0%, n=71), quality of orgasm (70.3%, n=64), erectile rigidity with or without a prosthesis (71.4%, n=65), and “normal” appearance of the genitals to others or in public (63.7%, n=58). Transgender men were more likely to express a number of concerns limiting their decision to undergo bottom surgery, including those relating to the ability to orgasm (73.8% vs 29.2%, $p<0.001$), surgical complications (65% vs 25%, $p=0.001$), ability to urinate, (57% vs 25%, $p=0.005$), successful penetration (52.5% vs 29.2%, $p<0.05$), ‘practical concerns’ (42.5% vs 16.7%, $p<0.05$), and donor site scarring (41.3% vs 12.5%, $p<0.01$).

Conclusion: Respondents expressed heterogeneous priorities regarding bottom surgery outcomes that varied somewhat from the “ideal” outcome traditionally invoked in the medical literature. This study informs a shared decision-making approach to bottom surgery.

RM29 An Economic Analysis of the First Publicly Funded Transgender Health Program in the United States: The San Francisco General Hospital Experience.

University of California San Francisco, San Francisco

Presenter: **Dhivya R Srinivasa, MD**

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Background

The Department of Public Health of San Francisco County received funding for a gender health program available to all city residents, regardless of citizen and insurance status, in order to address existing health disparities. Herein we present a five-year economic analysis of the Gender Health San Francisco (GHSF) program, the first of its kind in the United States. Knowledge of the costs associated with this program may aid in the development of similar programs in other parts of the US.

Methods

Funding for GHSF draws from two major sources: the city specific restaurant tax (1%) and the Mental Health Services Act. The former funds Healthy San Francisco in entirety, the parent program of GHSF. The latter imposes a one percent income tax on incomes greater than \$1,000,000, of which a variable portion is allocated annually for GHSF. All financial benchmarks (budget, total cost, in and out of network distributions) were collected prospectively and analyzed retrospectively.

Results

The 2017-2018 budget for GHSF was \$2,600,000, with \$1,200,000 allocated towards mental health services and the remainder used to fund gender affirmation surgery, primarily out-of-network costs. Since 2013, 651 surgical cases have been completed. Feminizing mammoplasties and vaginoplasty were the modal surgeries (246 and 248 cases respectively). Comprehensive facial feminization is growing most rapidly, with 12 cases in 2017, and 30 in 2018. Although 100% of feminizing mammoplasties are performed in-network, 100% of vaginoplasty is performed out-of-network, contributing to the greatest component of surgical cost (\$879,900) for the 2017-2018 fiscal year. Phalloplasty is least commonly performed, but also 100% out-of-network, with a net expense of \$135,400. Comprehensive facial feminization was 50% out-of-network, costing \$180,900 but also set to be 100% in-network for 2019. After expansion of the Affordable Care Act (ACA) to include coverage of GAS, enrollment in GHSF dropped 60%.

Conclusion

San Francisco has established the first publicly funded comprehensive transgender health program available to all constituents, a necessary step towards reducing health disparities in the transgender population. Financial support for the program was drawn from existing state-wide tax and the city-wide 1% restaurant tax. The bulk of costs associated with the program derives

from referring patients for out-of-network surgical care; thus, continued development of in-network resources to provide these services remains a high priority. This analysis demonstrates the costs associated with development of a publicly-funded gender health care program and may help guide policy as other localities pursue development of similar programs.