LASER DOPPLER IMAGING (LDI) and INDETERMINATE DEPTH BURNS WOUNDS

University Hospital Ghent (Belgium)

SURGICAL THERAPY FOR TRANSSEXUALISM:
What is new? What do we do different now?

Stan Monstrey, MD, PhD
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SURGICAL THERAPY FOR TRANSSEXUALISM

TRANSSEXUALISM is the most extreme form of Gender Identity Disorder
**Gender dysphoria**

**Gender Identity Disorder (GID)**

Dissatisfaction with how somebody experiences the sex of birth and the psychological, social and legal roles which apply to that sex

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**Gender dysphoria**

**Gender Identity Disorder**

Discomfort with how somebody experiences the sex of birth and the psychological, social and legal roles which apply to that sex

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**Etiology**

- Psychological (NURTURE)
- Organic (NATURE)
Female – Male DICHOTOMY versus Gender SPECTRUM

Spectrum Sex
• Normal penis and scrotum
• Criptorchidy (gynecomastia)
• Hypospadias
• Penile aplasia
• Clitoris hypertrophy
• Testosteron insensitivity
• Mayer-Rokitansky
• Vaginal aplasia
• Normal vagina and uterus
Spectrum Gender

• No gender
• Male-female traits
• Cross-gender behaviour
• Homosexuality
• Transvestitism

• Transgenderism
• Transsexuality
Gender queer

DISEASE
(transsexual patient)

vs.

VARIANCE
(transgender client)
DSM IV (V?) Criteria

- Persistent discomfort about own sex
- Persistent preoccupation (>2 years) to change sex characteristics
- Post puberty
- No genetic or psychiatric disease

SUFFERING!

Treatment:

Psychotherapy

versus

Gender Reassignment
Gender reassignment
STANDARDS OF CARE (WPATH)

- **Diagnostic** phase
- **Hormonal** therapy
  + *living in the desired gender role* (‘Real Life Test’)
- **Gender reassignment Surgery**

**Adolescents Children**

Standards of Care
for the Health of Transsexual, Transgender, and Gender Nonconforming People

The Boston Globe
December 11, 2011

Puberty blockers
ELIGIBILITY FOR SURGERY:
(WPATH)
- ONE mental health professional for the breast surgery
- TWO mental health professionals for the genital surgery

MTF Transformation
• Aesthetic procedures
• Breast augmentation
• Perineal transformation
• Voice operation
aesthetic  
cosmetic  
vs.  
functional  
reconstructive

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breast augmentation

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**Reconstructive or Aesthetic (R/A)**

1. Genital: 98/2
2. Breast: FTM 73/27
   MTF 42/58
3. Facial: 31/69
vaginoclitoroplasty

anteriorly pedicled penile (scrotal) inverted skin flap technique
Preoperative EPILATION
Resection of corpus spongiosum
neoclitoris
+ pedicle
corpora cavernosa
corpus spongiosum
Clitoral hood
Labia minora
Long-term follow-up (n=786)

- Length of the vagina: mean 11.5 cm (8-18.5 cm)
- Rectovaginal fistula: 2
- Orgasm: 92%
- Late corrections:
  - Repositioning urethra: 14
  - Lengthening vagina: 17
  - Esthetic correction vulva: 65
FTM Transformation
Aesthetic procedures
Subcutaneous mastectomy
Hysterectomy- Ovarectomy
Vaginectomy
Pars fixa urethrae
Phalloplasty
Testicular-Erection prosthesis

Chest wall contouring

GOALS:
• Removal of breast tissue
• Removal of extra skin
• Male nipple areola complex
• No inframammary crease
• Minimal chest wall scars
Chest wall contouring in Female-to-Male Transsexuals: A New Algorithm

Background: In female-to-male transsexuals, the first surgical procedure in chest-wall contouring is the inframammary incision. The point of emphasis on contouring is reconstruction of the inframammary, removal of excess skin, reduction and pexy, circumcising of the inframammary, and excision of breast volume. The authors present the latest series in their technique for improving inframammary reconstruction.

Methods: The study included 100 transsexual patients who had undergone inframammary reconstruction. The procedure was performed by the same surgeon, with a high rate of success and low complication rate. The technique involves incision of the inframammary, removal of excess skin, and reconstruction of the inframammary.

Results: The technique resulted in improved contouring of the inframammary, with a high rate of satisfaction among patients. Complications included seroma formation, which was managed successfully with aspiration.

Conclusions: Inframammary reconstruction is an important aspect of chest-wall contouring in female-to-male transsexuals. The technique described here is effective and safe, with excellent patient outcomes.
Algorithm

Semicircular (periareolar technique)
Concentric (periareolar) technique
Extended concentric technique
Excision + Free nipple graft technique
Chest wall contouring  
Female-to-Male

Operative technique (N=256)

- Semicircular (16%) (19%)
- Transareolar (4%) (10%)
- Concentric circular (23%) (36%)
- Extended concentric (3%) (12%)
- Free nipple graft (53%) (23%)

Complications:

- hematoma!!!
- infection
- impaired healing

Complications:

- nipple areola deformity
- loss of nipple
- contour irregularities
- infra-mammary crease
- scars
- skin redundancy
LASER DOPPLER IMAGING (LDI) and INDETERMINATE DEPTH BURNS WOUNDS


University Hospital Ghent (Belgium)

PENILE RECONSTRUCTION: FREE FLAP vs. PEDICLED FLAP

Stan Monstrey, MD, PhD

with a pedicled flap
Ideal requirements

1. One-stage procedure
2. Aesthetic phallus
3. Normal scrotum
4. Voiding while standing
5. Protective and erogenous sensation
6. Minimal mortality and morbidity
7. Sexual intercourse

562 radial forearm flaps
Penile Reconstruction: Is the Radial Forearm Flap Really the Standard Technique?

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Rae Morbeck, M.D., Ph.D.
Gerrit Roobol, M.D.
Peter Crofts, M.D.
Luc Van Leeuwen, M.D., Ph.D.
Philipp Bischoff, M.D., Ph.D.
Maurizio Hamel, M.D.
Nathalie Roche, M.D.
Sewery Wrotny, M.D.
Gert De Cocker, M.D.

Background: The ideal goals in penile reconstruction are well described, but the multiple of repair options that each one demonstrates the range of choices that are available. This technique is considered ideal. Still, the radial forearm flap is the most frequently used method and is universally considered as the standard technique.

Methods: In this article, the authors describe the latest series of 287 radial forearm flaps, performed by the same surgical team. Many different outcome parameters have been described separately in previously published articles, but the main purpose of this review is to critically evaluate in what degree this proposed standard technique has been able to meet the ideal goals in penile reconstruction.

Conclusions: In the absence of prospective randomized studies, it is not possible to prove whether the radial forearm flap is the standard technique in penile reconstruction. However, the large number of cases demonstrates that the radial forearm flap is a reliable technique for the creation, mostly in two stages, of a normal appearing penis and scrotum, allowing the patient to void while standing and in most cases also to experience sexual satisfaction. This technique is also associated with a lower incidence of complications, such as partial or complete flap loss, detrusor leak, and sexual function, and sexual intercourse are restored.

1. one-stage procedure??

1. Subcutaneous mastectomy
   Hysterectomy/ovarectomy

2. Vaginectomy
   Pars fixa urethrae
   Scrotoplasty
   Phalloplasty

3. Testicular/erection prosthesis

one-stage procedure ??
Ideal requirements

1. One-stage procedure

2. Aesthetic phallus

3. Normal scrotum
4. Voiding while standing
5. Protective and erogenous sensation
6. Minimal mortality and morbidity
7. Sexual intercourse

urethral lengthening + vaginectomy
Ideal requirements

1. One-stage procedure
2. Aesthetic phallus

3. Normal scrotum

4. Voiding while standing
5. Protective and erogenous sensation
6. Minimal mortality and morbidity
7. Sexual intercourse

scrotoplasty

RECONSTRUCTIVE

Scrotal Reconstruction in Female-to-Male Transsexuals: A Novel Scrotoplasty

Background: The goal of genital reassignment in female-to-male transsexuals is the creation of an anatomically acceptable male, both for physical and social identity, ensuring normal mobility and increasing function. In the last 15 years, transsexuals have become more demanding, and scrotoplasty has received more attention than before. Traditional flaps for scrotoplasty in a biological male does not apply in transsexuals, the labia majora serves as a later the best quality cell, they are not possible enough tissue and can be turned into a useful role.

Methods: Since November of 1995, more than 300 scrotal reconstructions (and related techniques) have been performed in female-to-male transsexuals in the authors' gender center. Based on the authors' large experience, they modified two cases to develop a novel technique consisting of a U-shaped incision of the scrotal flap, together with a creation of a flap made of labial skin. The flaps were used in the lower part of the flap, creating a scrotal skin flap. They were dismembered after the original operation, one onto the implant and one onto the scrotoplasty.

Results: The patients were followed up to 12 months postoperatively. The outcome was encouraging, with no complications.

Conclusion: The authors' novel reconstruction can become the ultimate surgical technique in the reconstruction of the scrotum in female-to-male transsexuals, improving the final cosmetic result with the possibility of enhanced erogenous sensation.
Ideal requirements

1. One-stage procedure
2. Aesthetic phallus
3. Normal scrotum

4. Voiding while standing

5. Protective and erogenous sensation
6. Minimal mortality and morbidity
7. Sexual intercourse
COMPLICATIONS

- Flap failure:
  - complete (5/562)
  - partial (43/562)
- Compression syndrome (4/562)
- Delayed wound healing (58/562)

**Urinary fistula**
(197*/562)

**Urinary stricture**
(78*/562)

- Transient ischemia (15/412)

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Urethral fistulae

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voiding while standing: 100%
COMPLICATIONS (n=562)

• Flap failure:
  - complete (5/562)
  - partial (43/562)
• Compression syndrome (4/562)
• Delayed wound healing (58/562)
• Urinary fistula (197*/562)
• Urinary stricture (78*/562)
• Transient ischemia (15/562)

"The flap failure rate in phalloplasty is the double of any other free flap surgery."

Prof. Dr. Jacques BAUDET
(Arraba 1997)

4-8 free flaps/week
failure rate: 1.8%
reexploration (75/562)

AV fistula in phalloplasty
Ideal requirements

1. One-stage procedure
2. Aesthetic phallus
3. Normal scrotum
4. Voiding while standing
5. Protective and erogenous sensation
6. Minimal mortality and morbidity
7. Sexual intercourse

Nerve anastomoses

- ilio-inguinal nerve
- dorsal clitoral nerve
- clitoris buried

The Sensitivity Tests in FTM

Orgasm in practicing patients: 100%
Ideal requirements

1. One-stage procedure
2. Aesthetic phallus
3. Normal scrotum
4. Voiding while standing
5. Protective and erogenous sensation

6. Minimal mortality and morbidity

7. Sexual intercourse

Donorsite morbidity

Donor-Site Morbidity of the Radial Forearm Free Flap after 125 Phalloplasties in Gender Identity Disorder

The ideal phalloplasty should include all of the following: a one-stage procedure that is predictable and reproducible, minimal morbidity and functional loss, and an aesthetically acceptable phallus, including a component necessary that allows for Voiding while standing, with tactile and erogenous sensations, and enough bulk to induce the function of an erecible phallus for sexual intercourse. Moreover, these goals can be met with a large radial forearm free flap, which has become the pinnsearing closure1, split-thickness skin graft2, full-thickness skin graft3, free expansion4 closure with local flaps2,3,4, coronal5,6, the use of abdominal tissues7,8, and the mobilization and approximation of adjacent muscles9,10. In most cases, however, the repaired techniques applies to small flap used matched for breast and neck reconstruction. Similarly, long-term follow-up studies of donorsite morbidity following a radial forearm flap...
Ideal requirements

1. One-stage procedure
2. Aesthetic phallus
3. Normal scrotum
4. Voiding while standing
5. Protective and erogenous sensation
6. Minimal mortality and morbidity
7. Sexual intercourse
Phalloplasty: alternatives?

- Fibula OC flap
- Metaidoioplasty?
- Pedicled flaps (ALT)

Fibula OC flap
Metaiodioplasty??

Pedicled ALT flap
Antero Lateral Thigh flap (n=61)
Options for the neourethra

1. Tube within tube
   - Defatting
   - Tissue-expansion
2. Prefabricated skin graft
3. Separate flap
   - Peritoneal flap
   - Previous phalloplasty
   - RFF flap
   - Groin/SCIP flap

Option 1: Tube within a tube

Option 1: Tube within a tube ± Defatting
Option 1: **Tube within a tube**

TISSUE EXPANSION
Option 2: Prefabricated skin graft

Tunneling of a Full Thickness Skin graft

Lift up flap medially + Split Thickness Skin graft

Option 2: Prefabricated skin graft
Option 3: Two flaps

urethral flap=
Previous phalloplasty
RFAF flap
Groin/SCIP flap

shaft = ALT
Peritoneal flap + ALT

Previous phalloplasty + ALT

Previous phalloplasty + ALT
ALT + Groin flap

• F-M transsexual
• Double pediculed flap
• Neourethra: groin flap
• Shaft: ALT flap
• Single procedure

Groin/SCIP flap + ALT
Groin/SCIP flap + ALT

SCIP Flap urethra

ALT: wrap around
ALT flap
Antero Lateral Thigh Flap

• Advantage
  – No scar on the arm
  – Enough skin
  – Good pedicle
  – Good sensibility
  – Firm
  – Pedicled

• Disadvantage
  – Scar on the leg!
  – Flap thickness!
  – Urethra
“Hi Doc, I just wanted to mail you that I am very happy with my new penis……”
Pre-operative planning of a pedicled antero-lateral thigh (ALT) flap phalloplasty using 3D-CT scanning

Sinove Y
Ceulemans P
Houtmeyers P
Lumen N
Hoebbeke P
Van Hedent E
Monstrey S

CASE
Male
41 year old
Squamous cell carcinoma
Penis amputation
Skin expansion
FRFA urethra
ALT wraparound
MDCT application

• Patient selection
• Leg selection
• Perforator selection: supra/infrafascial
• Flap dimensions

Gender Team UZ Gent

• Psychiatrist
• Psychologist
• Endocrinologist
• Plastic Surgeon
• Urologist
• Gynecologist
• Otorhinolaringologist

Thank you
Gender Team
- Psychiatrist
- Psychologist
- Endocrinologist
- Plastic Surgeon
- Urologist
- Gynecologist
- Otorhinolaringologist