NATIONAL LGBT HEALTH EDUCATION CENTER
A PROGRAM OF THE FENWAY INSTITUTE

Project ECHO®
The National LGBT Health Education Center - Fenway Health
Boston, MA

TRANSECHO

Surgical Options for Gender Affirmation

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Fenway Health
10/14/2020

Disclosures

- NONE

Learning Objectives

1. Participants will be able to identify and broadly define surgical options available to gender diverse identified individuals

2. Participants will be able to identify potential surgical complications for major gender affirming surgeries

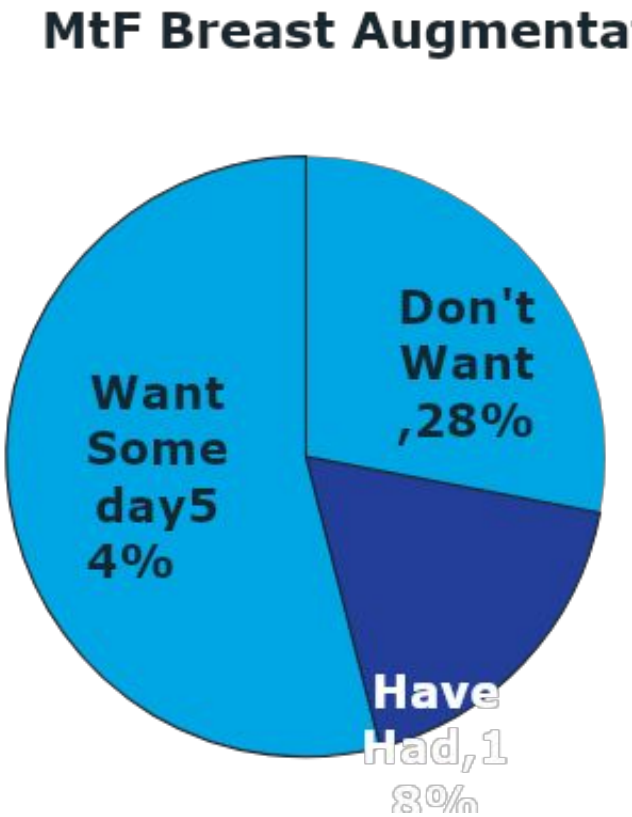
3. Participants will be able to discuss consequences of or alternatives when surgery is not available or desired

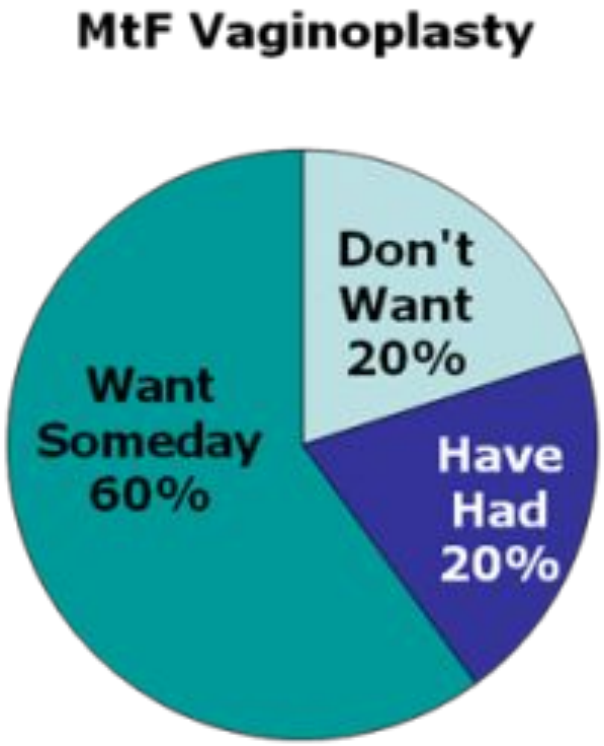
Gender Affirming Surgery

- AKA:
  - SRS= Sexual reassignment surgery
  - GRS= Gender Reassignment surgery
  - GAS= Gender Affirming surgery
- Benefits
  - Effective in decrease of gender dysphoria
  - Decreased gender dysphoria improves social and psychological well being
  - High patient satisfaction
- Keep in mind:
  - Not in a bubble- needs good before, during and after surgery care
  - Not for everyone!
  - Insurance coverage historically has been difficult to obtain.

Lawrence, A. A. (2003). Factors Associated With Satisfaction or Regret Following Male-to-Female Sex Reassignment Surgery. *Archives of Sexual Behavior*, *32*(4), 299–315.

Utilization of Surgery

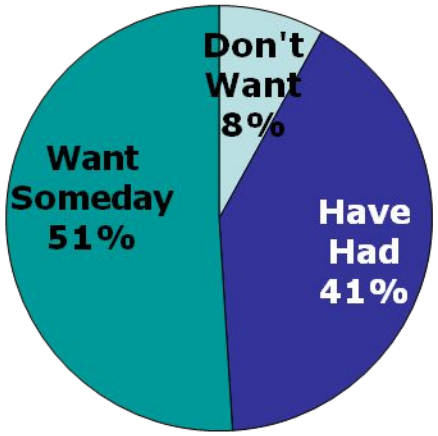




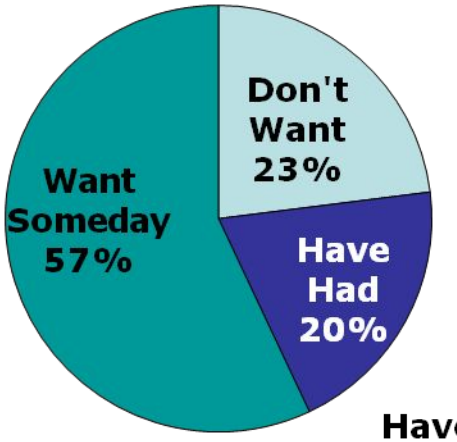
Grant, J. M., Mottet, L. A., Tanis, J., Harrison, J., Herman, J. L., & Keisling, M. (2011). *Injustice at every turn: A report of the National Transgender Discrimination Survey.* Washington, DC: National Center for Transgender Equality and National Gay and Lesbian Task Force.

Utilization of Surgery

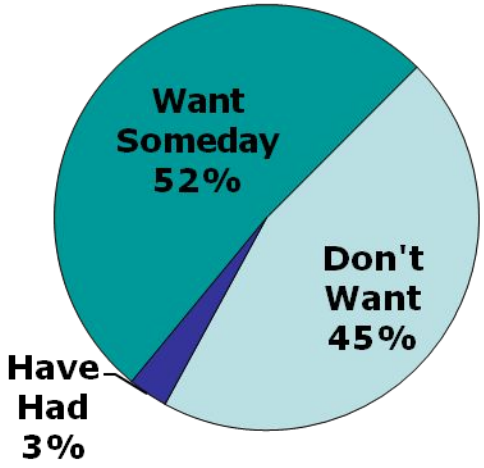
FtM Chest Surgery



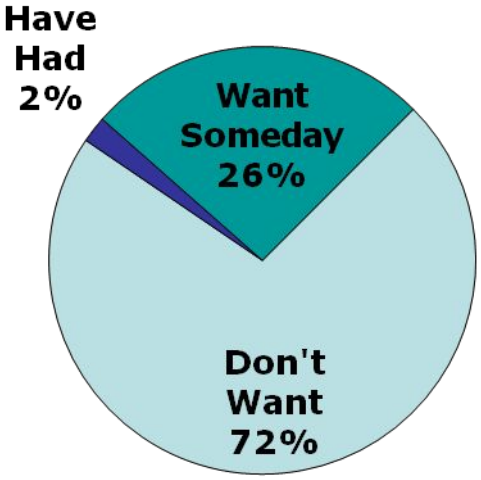
FtM Hysterectomy



FtM Metoidioplasty



FtM Phalloplasty



Psychotherapy is not an absolute requirement for hormone therapy and surgery

WPATH, *SOC, v.7*, 2011

Criteria for Surgical Referrals (WPATH)

Genital Reconstruction (two referrals)

1. Persistent, well-documented gender dysphoria
2. Capacity to make fully informed decision and to give consent for treatment
3. Age of majority
4. If significant medical or mental health concerns are present, they must be reasonably well controlled
5. 12 continuous months hormone treatment (unless not clinically indicated for the patient)
6. 12 continuous months of living in a gender role that is congruent with the person's identity

Additional Recommendations (WPATH)

-It is recommended that GRS patients have regular visits with a mental health or other medical professional.

-GRS criteria of 12 continuous months of living in a gender role congruent with one's identity is based on expert clinical consensus that this provides the person an opportunity to experience and socially adjust to the cultural gender role expectations before irreversible surgery.

Feminizing surgical options

- Breast Augmentation
- Orchiectomy
- Vaginoplasty/ Labiaplasty
- Facial feminization surgery (FFS)
- Vocal Cord Surgery
- Liposuction/ fat implants

Breast Augmentation

- Procedure- place breast implants
- Goals- match breast size to body shape
- Day Surgery
- Methods:
  - Subpectoral - under the muscle in the chest
    - Pros- more stable
    - Cons- may flatten somewhat with pectoralis muscle contraction
  - Submammary – under the breast tissue but above the muscle
    - Pros
    - Cons- smaller aerola for the periareola incision

Breast Augmentation

- Preoperative needs
  - Usually wait 2 years to see what growth will occur
  - Nonsmoker
  - Body mass Index
  - Occasionally pause estrogen
- Post operative considerations
  - Subpectoral recovery is longer

Breast Augmentation Criteria for Surgical Referral (WPATH)

Breast augmentation in MTFs (one referral)

1. Persistent, well-documented gender dysphoria
2. Capacity to make fully informed decision and to give consent for treatment
3. Age of majority
4. If significant medical or mental health concerns are present, they must be reasonably well controlled

It is recommended that MTF patients take feminizing hormones for a minimum of 12 months, and preferably for 24 months, prior to augmentation for better results.

Orchiectomy

- Procedure- removal of testicles
- Day surgery
- Goals
  - Removal of testicles can improve dysphoria
  - Remove endogenous (self-made) testosterone
- Preparation
  - Gamate banking prior (if desired)
- Post operative considerations
  - Stop antiandrogen medications (ie spironolactone)

Orchiectomy Criteria for Surgical Referrals (WPATH)

Orchiectomy (two referrals)

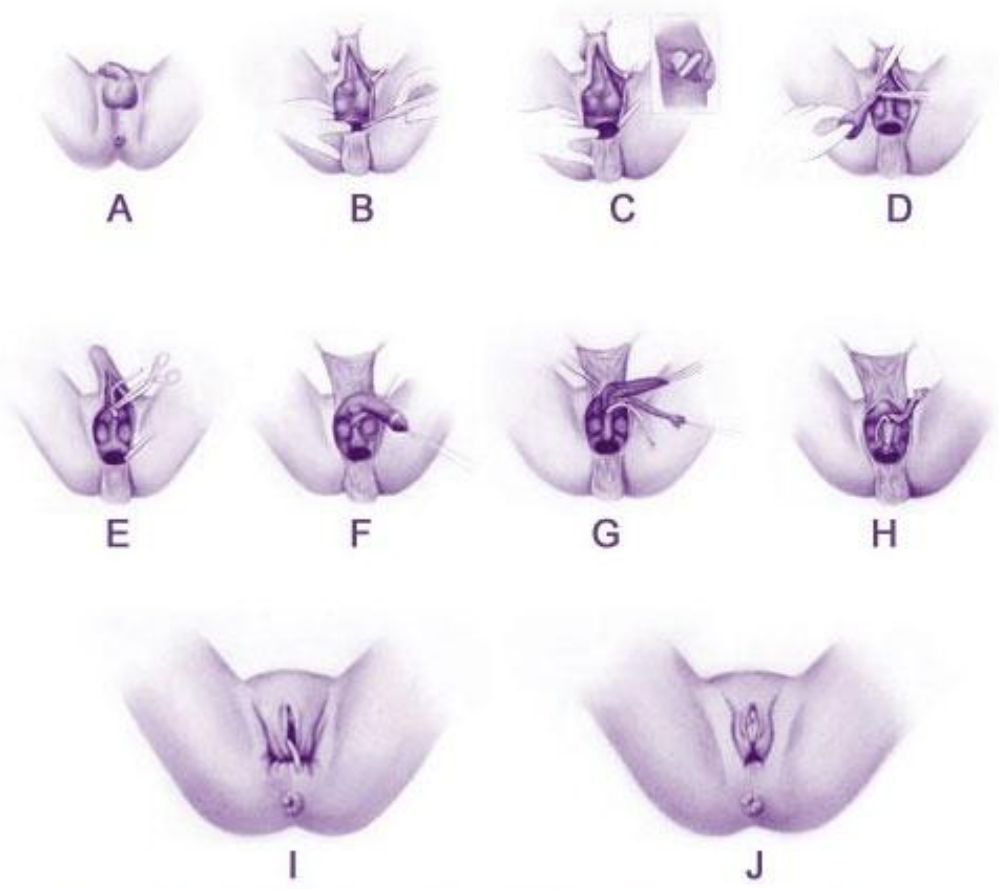
1. Persistent, well-documented gender dysphoria
2. Capacity to make fully informed decision and to give consent for treatment
3. Age of majority
4. If significant medical or mental health concerns are present, they must be reasonably well controlled
5. 12 months continuous hormone treatment (unless not clinically indicated for the patient)

The aim of prior hormone treatment before gonadectomy is to have a reversible treatment before a permanent and irreversible one.

Vaginoplasty

- Goals
  - Improve gender dysphoria
  - Orchiectomy involved in this if not already performed
- Preparation
  - Penile inversion method
    - Hair removal
  - Gamate banking if not already done
  - Weight loss (if BMI is too high)
  - Plans for recovery period (personal help, time off work etc)

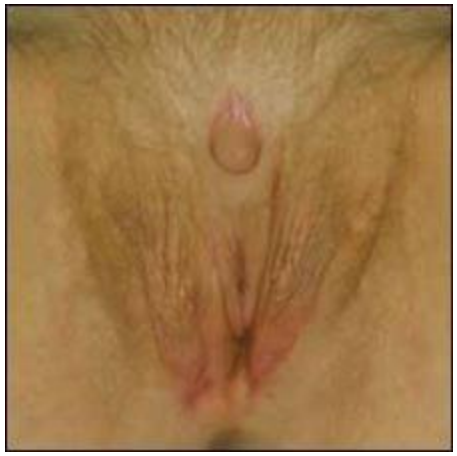
Vaginoplasty



Step-by-Step SRS Male to Female Penile Skin Inversion Procedure

Results of Vaginoplasty & Labiaplasty

Dr. Meltzer, Arizona



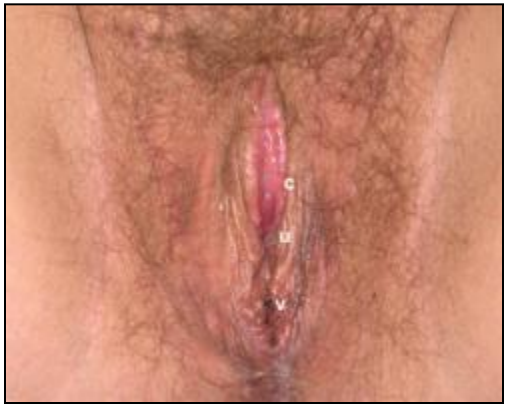
Vaginoplasty only

W/Labiaplasty 10 mos

Dr. Suporn, Thailand

5 months post op

Dr. Bowers, California



6 months post op

Dr. McGinn, Pennsylvania

Before After

Post op recovery

- Dilation

- Often requires second surgery

Complications of Vaginoplasty

- Blood loss is generally minimal (avg 150 ml)

  Bowers (2014) 0.6% needed transfusion

- Venous Thromboembolism

  Stop or reduce estrogen prior to surgery

  Early mobilization

- Bowel, bladder or urethral injury
- Surgical site infections

  Reported rates vary widely 5 – 20%

Complications of Vaginoplasty

- Tissue necrosis
  - Debridement, wet-to-dry dressings, time
- Clitoral necrosis
  - 1-3% in most series
  - Most often partial
  - Many patients may still achieve orgasm
- Labial wound dehiscence
  - Generally focal and localized
  - Local wound care and healing by secondary intention

Complications of Vaginoplasty

- Vaginal stenosis

  Introitus narrowed by fibrosis and scarring

  Due to surgical omission or, most often, failure to dilate (often related to infection, dehiscence or excess pain)

  Solutions- - Re-engage patient in dilation regimen
  - Surgical release of scar tissue
  - Topical estrogen cream may help
  - Surgical re-opening or revision

- Regrowth of erectile tissue

  Can obstruct vaginal canal or urethra

  Solution- -Surgical Excision

Complications of Vaginoplasty

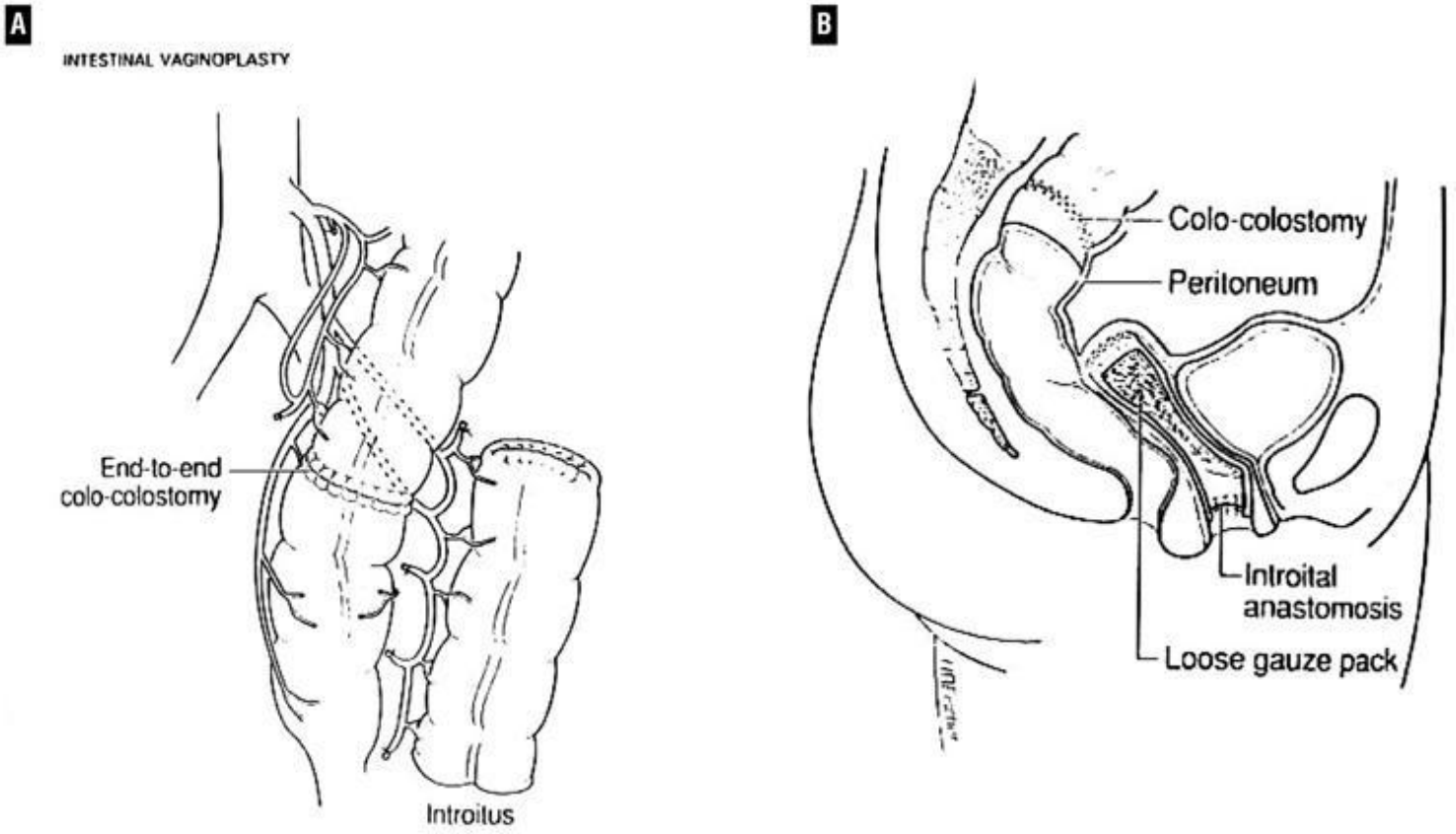
- Rectovaginal fistulas
  - Usually related to surgical injury
  - Dilation related injuries have been reported
- Urethral complications are uncommon
  - Adhesions causing deviation of urethral stream
  - Urinary incontinence is not seen
- Granulation tissue
  - Results late in healing from tissue non-union or dehiscence
  - Apply silver nitrate or excise and cauterize base

Sources of Postoperative Vulvar Swelling in MTF Vaginoplasty

- **Induration**
  - Neolabial swelling unilateral or bilateral
  - Weeks to months in duration
  - Non-tender
  - *Self-limiting*
  - *Drainage unlikely*
  - Expectant management and/or pressure
- **Hematoma**
  - Neolabial swelling unilateral or bilateral
  - Weeks to months in duration
  - Moderately tender
  - Variable size to 20 cm or more
  - Can evolve to abscess or seroma if undrained
  - Spontaneous dark bloody drainage possible
  - Aspiration or incision and drainage or time and pressure for 5 cm or less
- **Seroma**
  - Neolabial swelling, tends to be unilateral
  - Weeks to months in duration
  - Non-tender unless large
  - Variable size corresponding to preexistent hematoma
  - Spontaneous clear amber fluid drainage possible
  - Aspiration or incision and drainage
- **Abscess**
  - Neolabial swelling, almost always unilateral
  - Weeks to months in duration
  - Extremely tender \
  - Usually small 2–5 cm
  - Spontaneous purulent drainage possible
  - Incision and drainage, packing and antibiotics, +/− culture

Sigmoid vaginoplasty

Figure 2 A and B - (A) Colocolostomy has been completed and the distal end of the colonic segment has been anastomosed to the opened rudimentary vaginal pit, (B): The peritoneum was closed above the transposed bowel and the neovagina was loosely packed with Vaseline gauze.



Sigmoid vaginoplsty

- 42 transwomen, median age 19.1 years
  - Neovaginal depth at 1 year 16.3 cm
  - Similar complication rate as other elective colorectal surgery
  - Life satisfaction 8 on scale of 4 to 10
  - Functionality and aesthetics graded a median score of 8 out of 10 (WPATH 2018)

  - Diversion neovaginitis in 75% of patients at 2 years post-op, predominantly mild inflammation (WPATH 2018)

Zero Depth Vaginoplasty (Vulvoplasty alone)

- Survey of 100 transwomen
  - 73% said that removing male genitalia was more important than creating a normal vagina
  - 79% had not heard of zero-depth vaginoplasty
  - Not having to dilate reported as most important reason to choose ZDVP

(Maurice Garcia, WPATH 2018)

Consider ZDVP/vulvoplasty for patients at high risk: prior prostatectomy, prior anal surgery, s/p radiation

Criteria for Surgical Referrals (WPATH)

Genital Reconstruction (two referrals)

1. Persistent, well-documented gender dysphoria
2. Capacity to make fully informed decision and to give consent for treatment
3. Age of majority
4. If significant medical or mental health concerns are present, they must be reasonably well controlled
5. 12 continuous months hormone treatment (unless not clinically indicated for the patient)
6. 12 continuous months of living in a gender role that is congruent with the person's identity

Trans Feminine Spectrum Surgeries

Facial Feminization Surgery ($2,600-$40,000)

- Mandible Contouring
- Forehead Contouring
- Tracheal Shave
- Rhinoplasty

Before & After FFS

Before Surgery | 9 Days After Surgery | 6 Months After Surgery | After Hairline Revision

Before any treatment | 1 yr hormones & 3 yrs electrolysis | 2 months after surgery

Dr. Douglas Ousterhout – San Francisco

Before & After FFS

Trans Masculine Spectrum Surgeries

- Chest reconstruction:
  - Masculinization
  - neutralization
- Bilateral Salpingo-Oopherectomy
- Hysterectomy
- Phalloplasty/ Metoidoplasty

Criteria for Surgical Referrals (WPATH)

Mastectomy & creation of a male chest in FTMs (one referral)

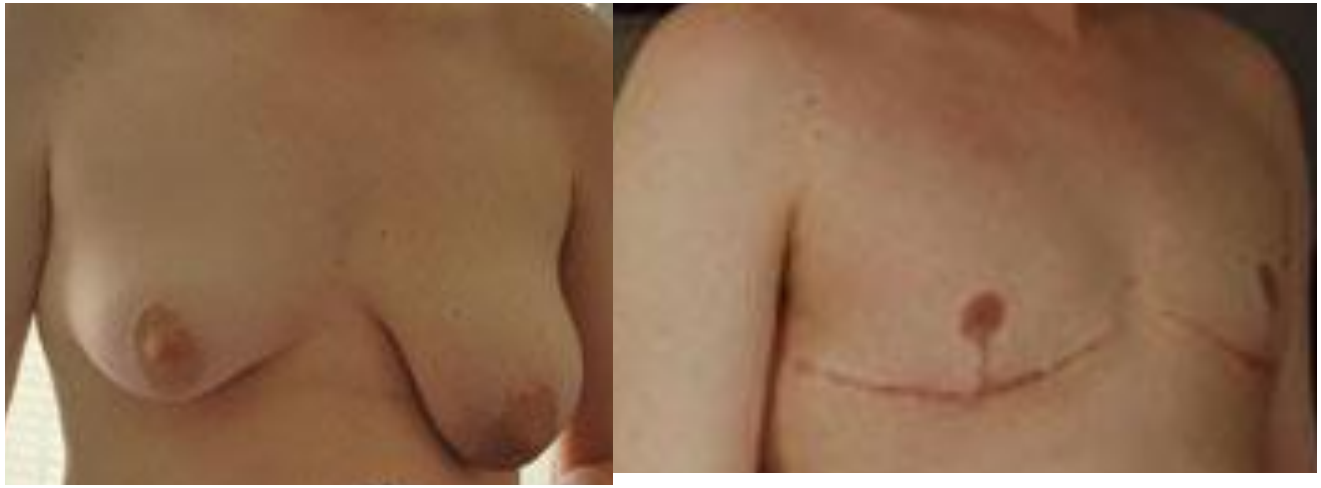
1. Persistent, well-documented gender dysphoria
2. Capacity to make a fully informed decision and give consent for treatment
3. Age of majority
4. If significant medical or mental health concerns are present, they must be reasonably well controlled

Hormone therapy is not a prerequisite per WPATH but may be required by insurance plans

Top surgery options

- Double incision
- Keyhole
- Goals-
  - Remove excess breast tissue (not all removed)
  - Decreased dysphoria associated with chest
- Day surgery
- Preoperative
  - Nonsmoker
  - BMI considerations
  - Recovery plans

Inverted-T

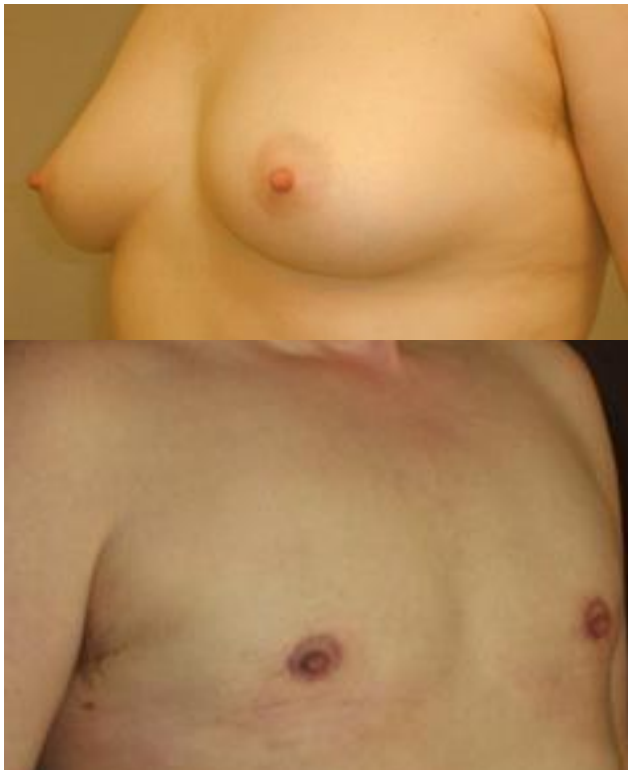


Before

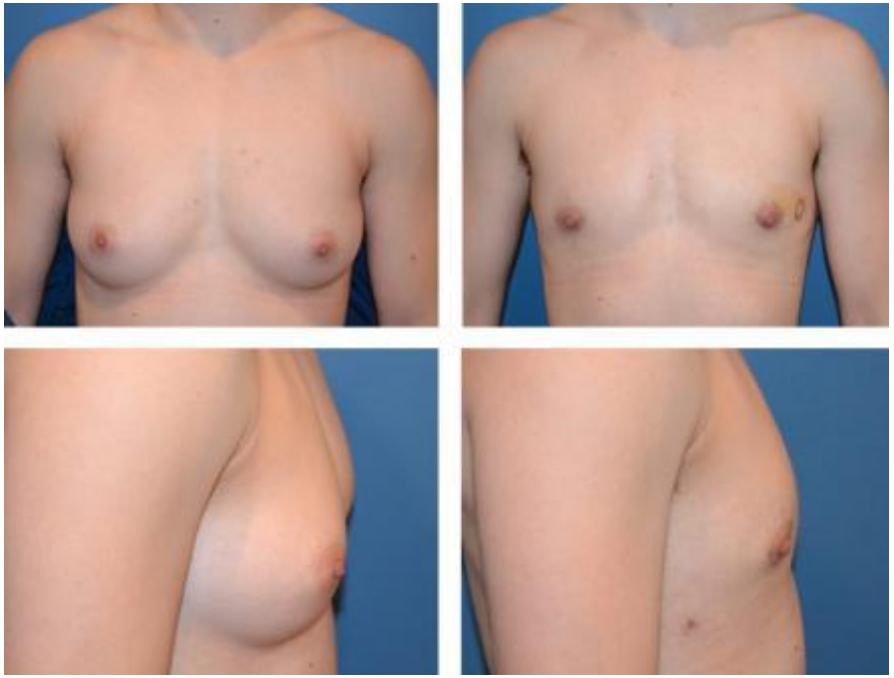
After

Keyhole/Peri-Areolar

Beverly Fischer, Maryland

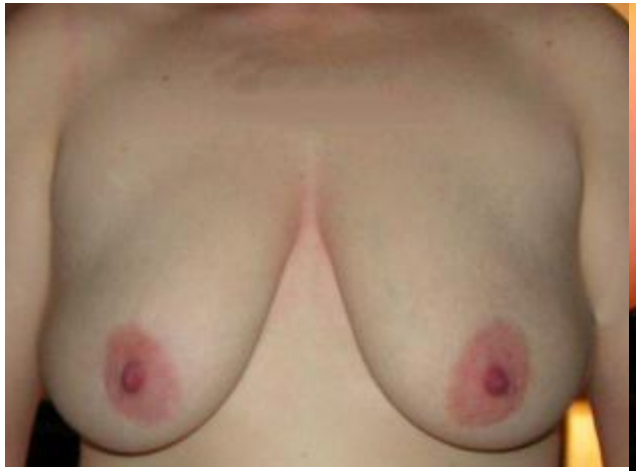


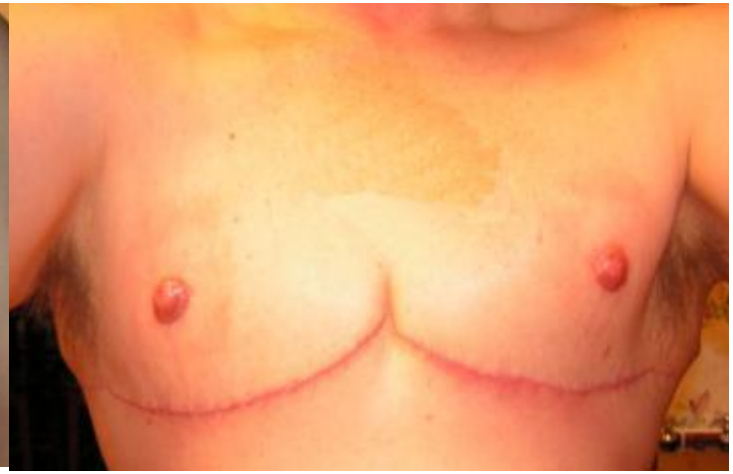
Dr. Johnson, Springfield, MA



Double Incision Nipple Grafts

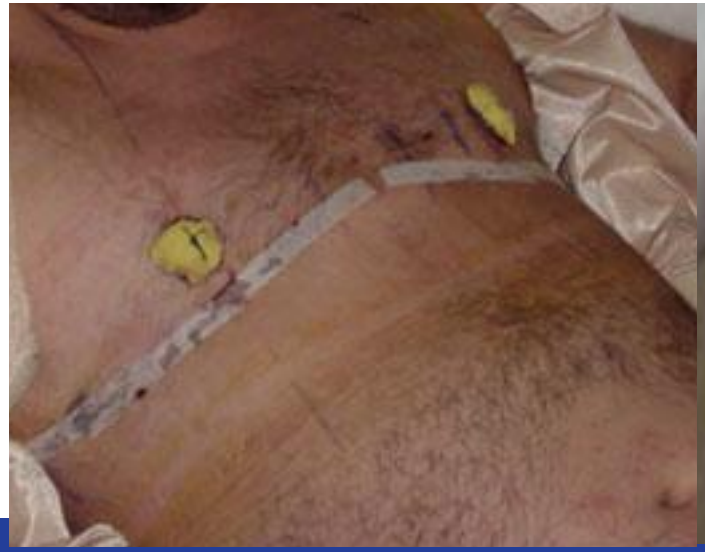
Dr. Charles Garramone, Florida

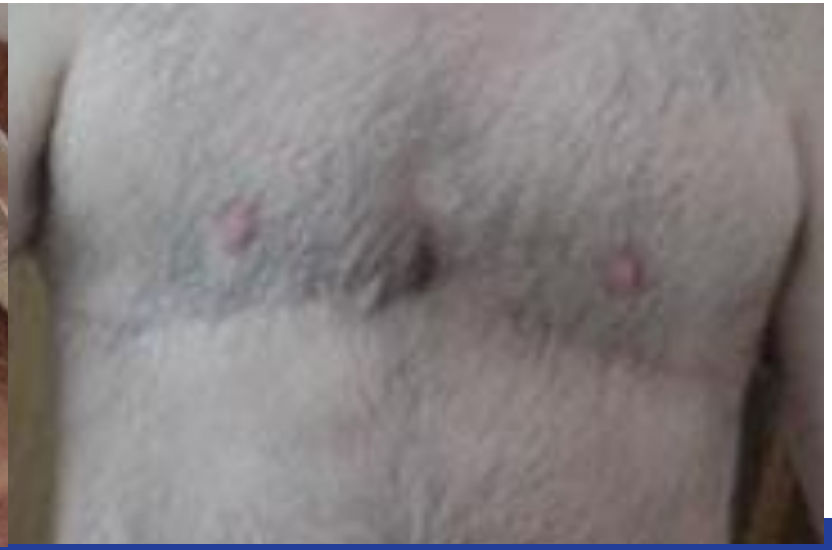




1 month post-op

Melissa Johnson, Springfield, MA

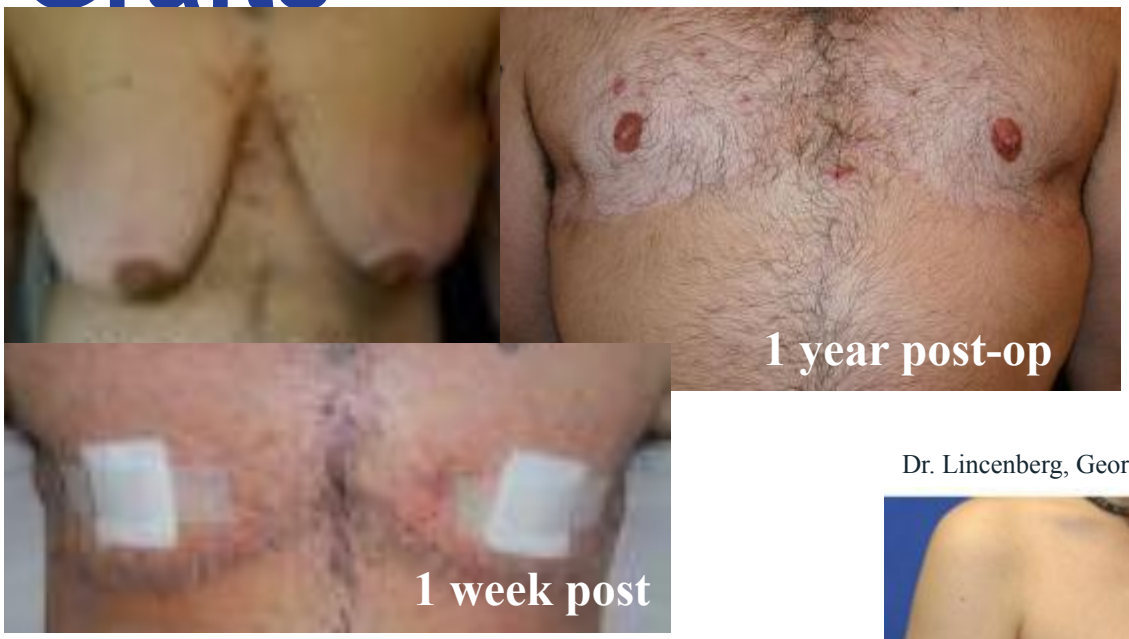




1 year post-op

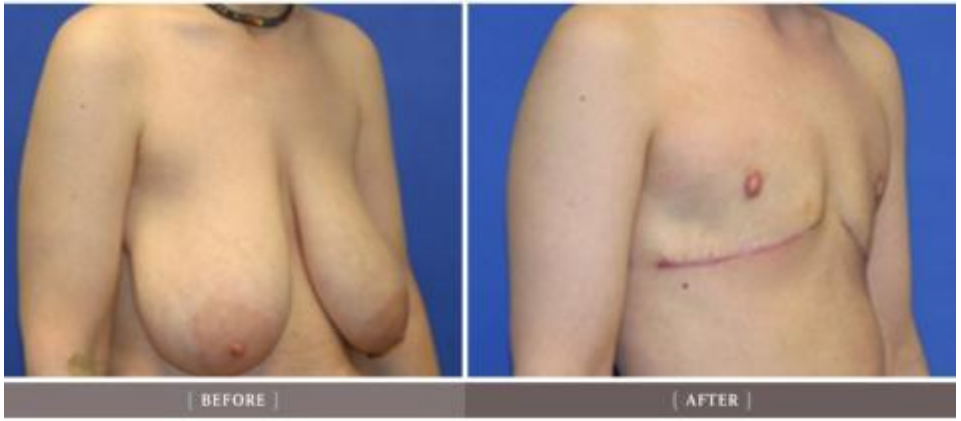
Double Incision Nipple Grafts

Brownstein, San Francisco



Brownstein, San Francisco

Dr. Lincenberg, Georgia



Chest Reconstruction

- Complications may include hypertrophic scar formation or dog ears, nipple or areolar necrosis

- In one series from 2011, 23% of patients needed at least one further operation

Hysterectomy/ TAH-BSO

- Hysterectomy- removal of the uterus (and usually the cervix)
- TAH- total abdominal Hysterectomy
- BSO- bilateral salpino-oophorectomy (removal of fallopian tubes and ovaries)
- Day surgeries
- Preparation
  - Gamate banking

Criteria for Surgical Referrals (WPATH)

TAH-BSO (two referrals)

1. Persistent, well-documented gender dysphoria
2. Capacity to make fully informed decision and to give consent for treatment
3. Age of majority
4. If significant medical or mental health concerns are present, they must be reasonably well controlled
5. 12 months continuous hormone treatment (unless not clinically indicated for the patient)

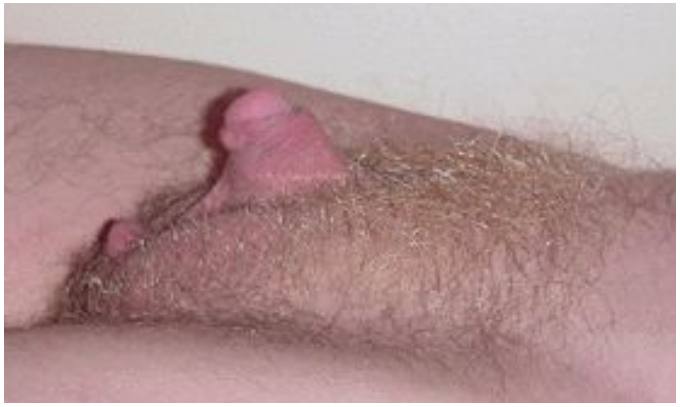
The aim of prior hormone treatment before gonadectomy is to have a reversible treatment
before a permanent and irreversible one.

Goals of FtM Genital Reconstruction

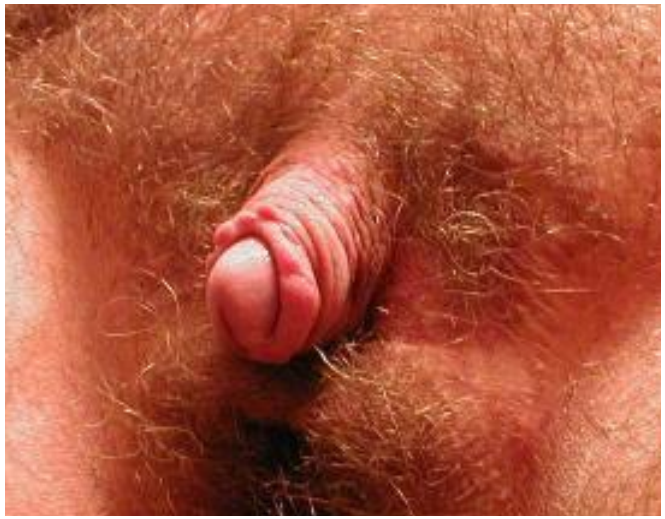
- Aesthetically pleasing phallus (and scrotum)
- Preservation or reconstruction of erogenous and tactile sensation
- Ability to urinate in a standing position
- Possibility of erectile function enabling penetrative sex

Clitoral Release/Free-Up

Dr. Brassard, Montreal

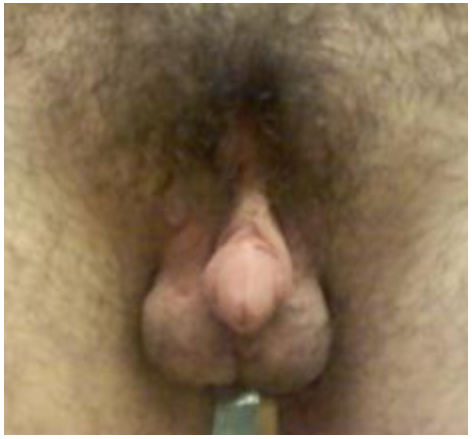


Dr. Meltzer, AZ



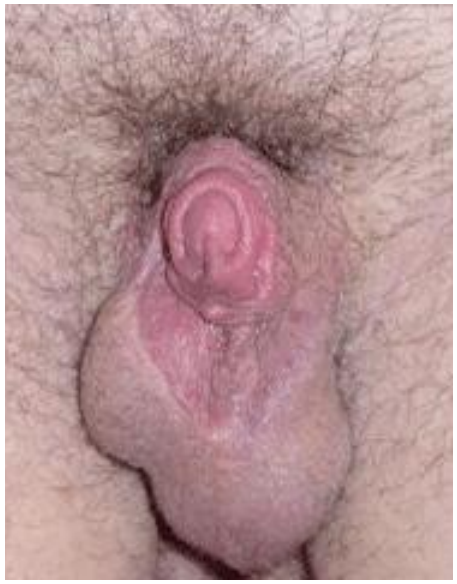
Metoidioplasty w/ Scrotoplasty & Implants

Dr. Meltzer, AZ



6 months post

Dr. Brassard, Montreal



3 years post

Dr. Perovic, Belgrade Serbia

2 months post

Metoidioplasty – Ring Flap w/o Scrotoplasty or Testicular Implants

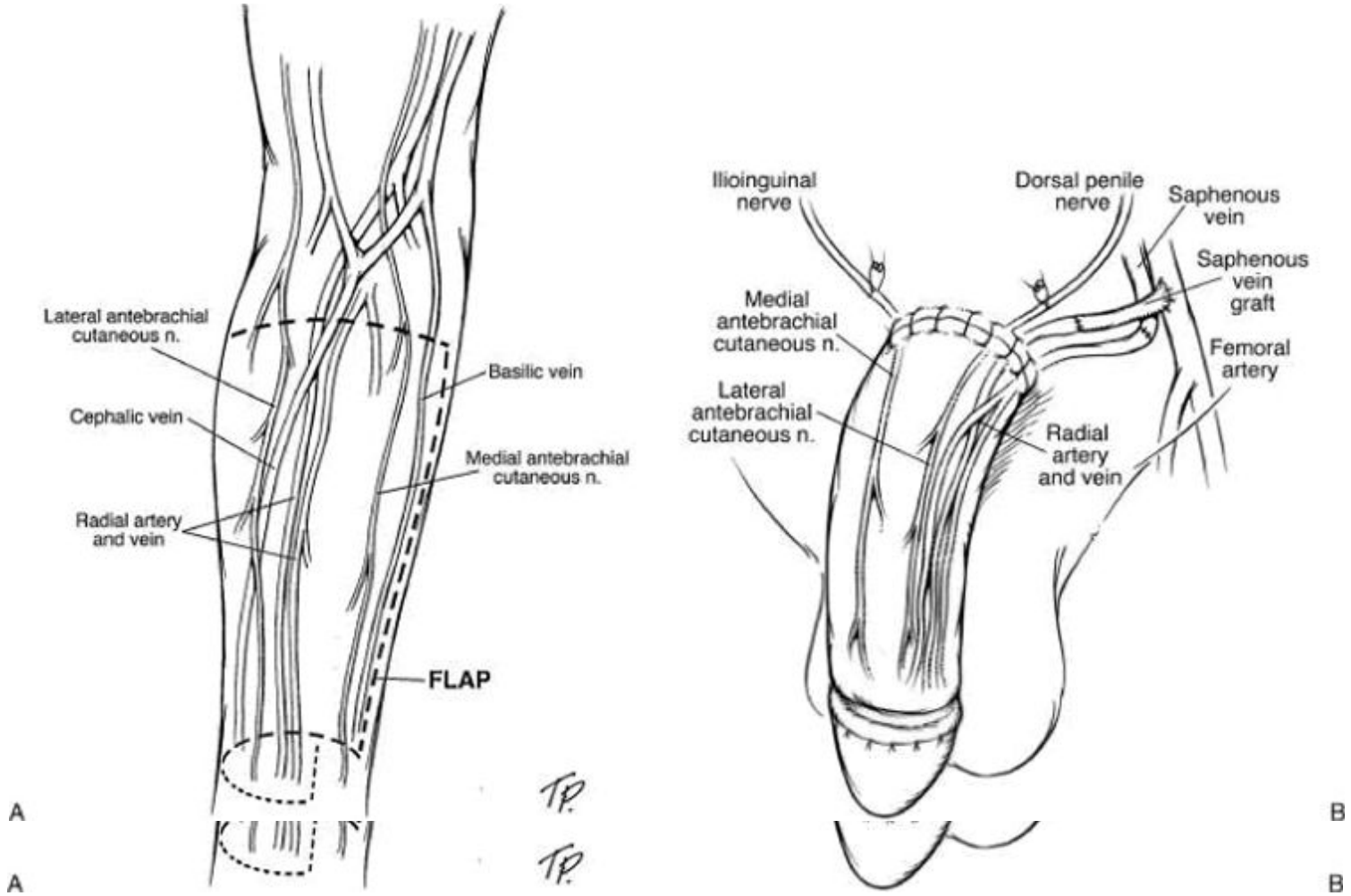
Complications of Metoidioplasty

- Urethral fistulas in 37% (Hage, 2006)
- Urethral stenosis in 35%
- Loss or dislocation of testicular prosthesis in up to 80%
- 25% of 70 patient cohort later desired phallic reconstruction
- Djordjevic and Biziz (2013) reported lower complication rate with buccal mocosal graft with labia minora flaps

Phalloplasty

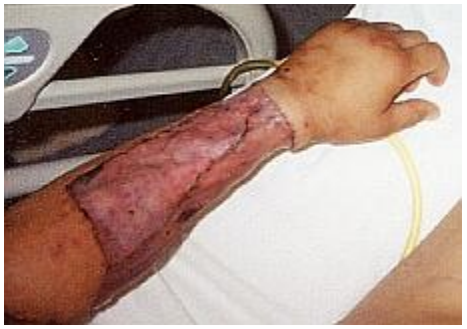
- Radial Arm Phalloplasty – Free microvascular flap
- Abdomen/leg pedicled flap
- MLD (*musculocutaneous latissimus dorsi*) Flap

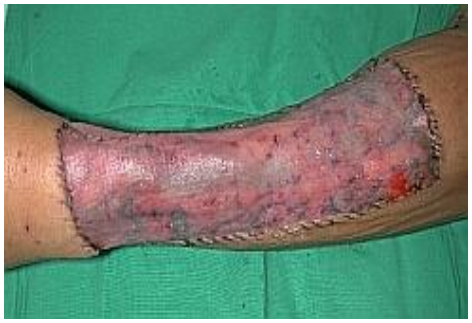
Radial Arm Phalloplasty Dissection & Transfer



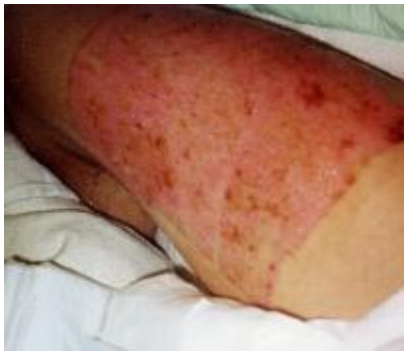
Radial Forearm Phalloplasty Donor Sites and Scarring

Dr. Monstrey - Belgium

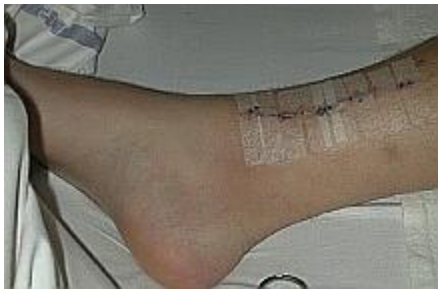




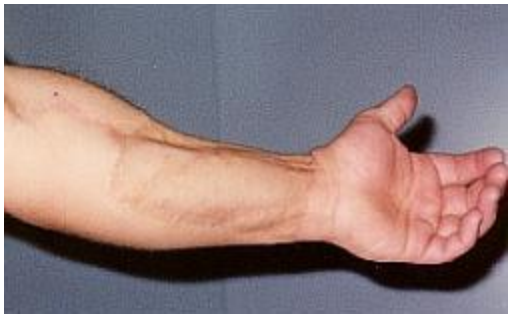
Forearm harvest Sites for graft & nerve



Inner thigh harvest Site for skin graft



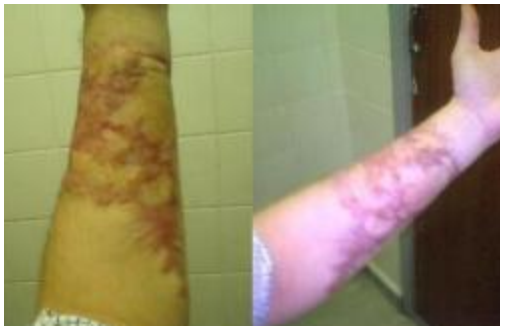
Ankle harvest Site for artery



2 years post op

Healed arm harvest Sites

Dr. Ralph, London



1 year post

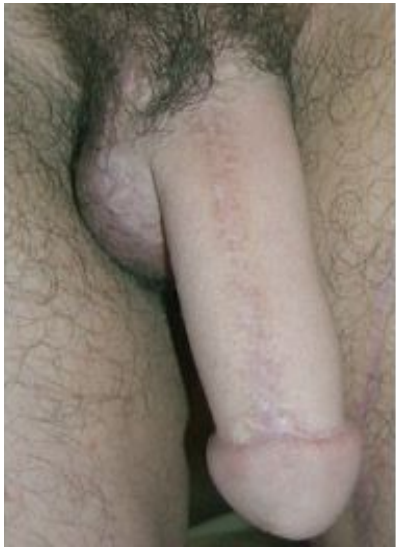
Radial Forearm Phalloplasty Results

Dr. Monstrey - Belgium

14 days post

4 months post

Dr. Gottlieb, IL



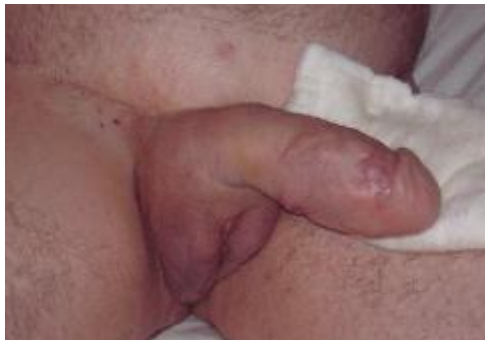
1yr post
($300K)

Dr. Daverio, Germany

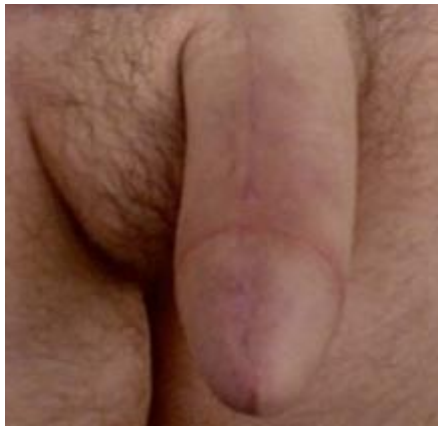
8 months post

Abdominal Flap Phalloplasty Results

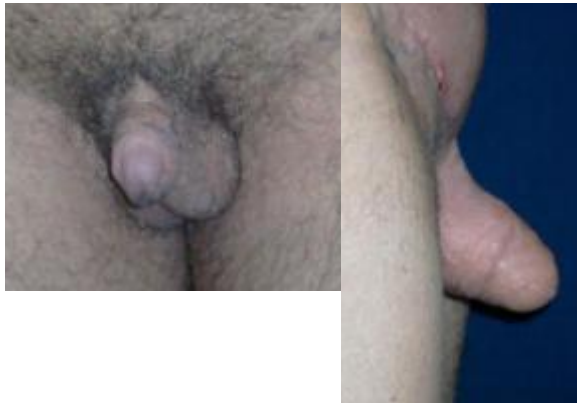
Charring Cross Hosp “Dr. C” & “Mr. R” - England



Post 2 years with internal pump

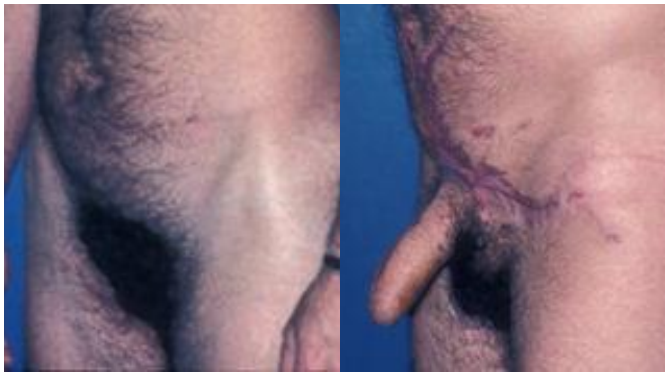


Pedicle Flap – with erectile implant – 1 yr post



Pre & Post – incorporated Meta

Dr. Sherman Leis, PA

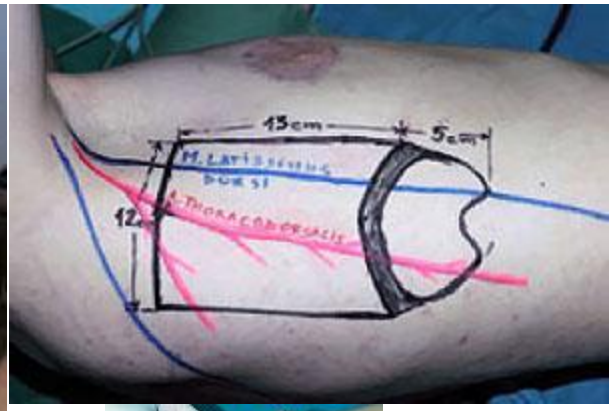


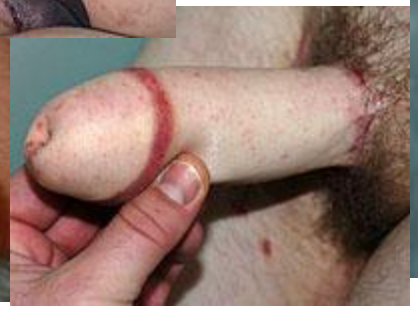
Pre & Post – Abdominal Flap

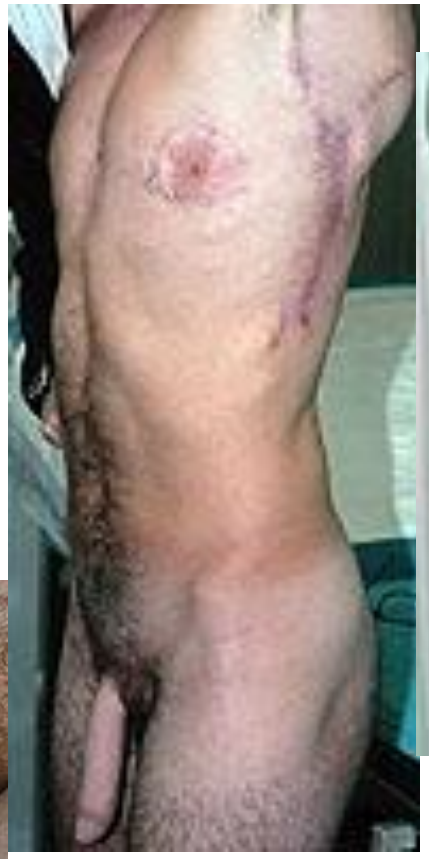
“Perovic Total Phalloplasty” (MLD flap)

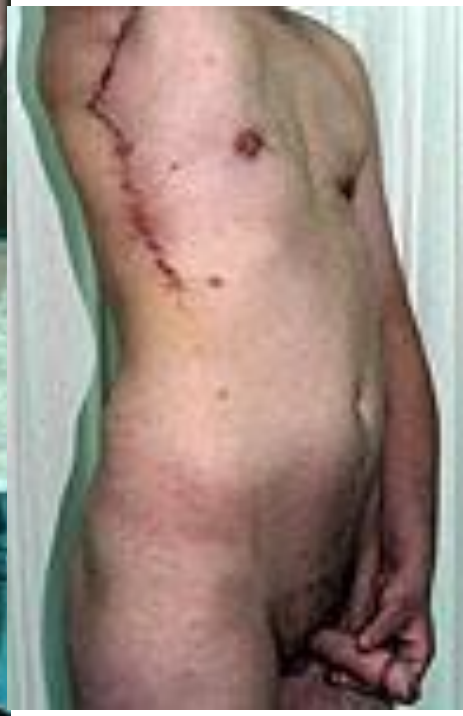
Dr Djinovic, Belgrade

Dr Perovic (deceased 2010), Belgrade









This penile reconstruction has THREE stages.
Three to six months must be allowed between the first and second stages and again between the second and third stages to allow healing and get the best possible final surgical result.

Complications of Phalloplasty

- Urethral strictures and fistulas

  Reported in 20-40%

  Some will close spontaneously after prolonged catheterization but most will require surgery

  79% ultimately with post-micturition dribbling and prolonged micturition time

- Intraurethral stones due to residual hair growth
- Prosthetic complicaitons

  Malpositioning, erosions, extrusions

  Use of tissue expanders in 2-stage process

Symptoms of strictures/fistulas

- Repeated UTIs
- Multiple streams
- Urine leakage proximal to tip
- Diminished stream or spraying
- Bladder fullness and over-flow incontinence
- Urethral urgency
- Post-void dribbling

Complications of Phalloplasty

- Partial or complete flap loss
  - Smokers and obese patients at higher risk
- Donor site scarring
  - Regrafting in up to 2.8%
  - 75% either satisfied or neutral (Van Caenegem, 2013)
- Local wound separation or endodermolysis
  - Topical antibiotics and local wound care
- Tissue congestion
  - Urgent surgical consultation
  - Topical nitroglycerine may help

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Selected Web Resources

Website with T-male GRS photos: http://www.thetransitionalmale.com/galleryindex.html

Philadelphia surgeon – Sherman Leis:
http://www.drshermanleis.com/transgender/femaletomale.htm

Loren Cameron "Man Tool" online book FTM GRS and stories: http://www.lorencameron.com/

Web site with multiple photos of FTM surgeries of all types: http://www.transster.com/

Web link site with multiple articles and papers: http://www.transgenderzone.com/library/pr.htm

Laura's Playground – an MTF website with links and info:
http://www.lauras-playground.com/mtf.htm

Gender Clinic in Australia – MTF info:
http://www.gendercentre.org.au/vaginoplasty_techniques.htm

Lynn Conway website on MTF SRS & more:
http://ai.eecs.umich.edu/people/conway/TS/SRS.html

The Transsexual roadmap – web site with MTF info: http://www.tsroadmap.com/

Toby Meltzer, MD, PC's website (GRS surgeon): http://www.tmeltzer.com

Marci Bowers, MD website (GYN & GRS surgeon): http://www.marcibowers.com/

Monstrey Phalloplasty article online: http://www.thetransitionalmale.com/monstrey

Men's Ts Resources in Australia (& others): http://www.ftmaustralia.org/

Hair Removal Journal: http://www.hairremovaljournal.org/removalcosts.htm

Facial Feminization Links: http://beginninglife.com/FFS.htm

MTF Surgery Center in Bangkok, Thailand: http://www.mtfsurgery.com/

Jeffrey Spiegel, MD – FFS Surgeon @ BMC: http://www.drspiegel.com/facial_feminization.html

Hair Facts: http://www.hairfacts.com/medpubs.html