W16: Confirmation Surgery in Gender Dysphoria: current state and future developments
Workshop Chair: Ervin Kocjancic, United States
28 August 2018 15:30 - 17:00

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**Aims of Workshop**
Gender dysphoria become a commonly treated condition in urology and gynaecology practice and the access to reconstructive surgery allows an increased number of patients to undergo a gender confirmation surgery. General recommendations concerning confirmation surgery can be obtained via www.wpath.org. The workshop specifies preoperative and postoperative care, indications for surgery, the actual surgical techniques, their outcomes including quality of life measurements, limitations and complications according to the surgical experiences of gender confirmation surgery and in the available literature. In male to female confirmation surgery the goals of building neovagina can be widely fulfilled even after failed initial surgery.

**Learning Objectives**
- Familiarise the current definitions of the WPATH.
- Learn how to properly manage individuals with gender dysphoria.
- Familiarise with the common surgical techniques used for the confirmation surgery.
- Recognise and treat the frequent voiding dysfunction associated with the gender confirmation surgery.

**Target Audience**
Urologists, OBGYN, Nursing and physical therapists

**Advanced/Basic**
Basic

**Suggested Learning before Workshop Attendance**
www.wpath.org.

**Suggested Reading**
Psychologic aspects of gender dysphoria and pre-surgical counselling
Randi Ettner, PhD
Clinical and forensic psychologist, Chicago, Illinois

I will present on the role of the mental health professional in gender confirming surgery and the WPATH Standards of Care. The mental health professional is tasked with diagnosing the patient, providing counselling prior to surgery, and then assessing the patient’s readiness and eligibility to undergo surgery, in accordance with the WPATH Standards. The mental health professional refers the patient for surgery and provides the surgeon with a written assessment, attesting that the criteria for surgery have been met and the medical necessity of surgery. Co-occurring psychiatric disorders, perioperative risk factors, and post-operative psychological issues will also be discussed, and the importance of the multi-disciplinary approach in optimizing patient care.

Suggested reading:

Metoidioplasty and Phalloplasty
Loren Schecter

There are two categories of bottom surgery for transmasculine-identified individuals. These include metoidioplasty and phalloplasty.

Metoidioplasty
This procedure refers to lengthening of the hormonally hypertrophied clitoris, often in conjunction with urethral lengthening to allow micturition while standing. Most often, this procedure is performed in two stages, with a secondary scrotoplasty and placement of testicular implants. At times, a monsplasty (“mons lift”) is also performed so as to lift and reduce prepubic skin and fat.
This presentation will include pre-operative preparation, operative techniques, and post-operative care, including management of complications.

Phalloplasty
This procedure constructs a phallus using fasciocutaneous flaps, most often from the forearm or thigh. Most often, this procedure is performed in conjunction with urethral lengthening. In general, the goals of the phalloplasty procedure include creation of a sensate, aesthetic phallus, with the ability to urinate in a standing position. Additionally, most individuals choose to undergo placement of an implantable penile prosthesis and testicular implants at a second surgical setting. The goal of IPP placement is the ability to engage in penetrative intercourse.
This presentation will include pre-operative preparation, operative techniques, and post-operative care, including management of complications.

Vaginoplasty
Ervin Kocjancic

The core surgical interventions that are applied within the context of trans women are; facial feminizing surgery, voice surgery and chondrolaryngoplasty, breast augmentation, and orchiectomy, penectomy and vaginoplasty. Vaginoplasty, which is the last step of the transition process, depicts the construction of a vagina that resembles a biological vagina in form and function. This procedure includes orchiectomy (can be performed as a first stage procedure before vaginal reconstruction), amputation of the penis, creation and lining of the neovaginal cavity, reconstruction of the urethral meatus and construction of the labia and clitoris.

In transgender vaginoplasty, surgical techniques can be divided into three main categories according to the nature and origin of the tissue(s) used for reconstruction: skin grafts; penile-scrotal skin flaps (penile skin inversion technique); and pedicled small or large bowel segments (intestinal vaginoplasty).

The main goals of vaginoplasty are to achieve an esthetically and functionally ideal perineogenital complex that will satisfy the patient. The neovagina should be moist, elastic and hairless with a depth of at least 10 cm and a diameter of 3-4 cm. The clitoris should be small, obscured and sensitive enough to enable complete arousal. Labia minora and majora should resemble the female vulva as much as possible. Innervation of the new genitalia complex should be functionally intact in order to offer a satisfactory level of erogenous stimulation during sexual intercourse. Transwomen who prefer an esthetic outcome without a functional vagina can undergo a vulvoplasty without vaginoplasty.
Penile skin inversion technique is the most investigated and therefore the most evidence-based technique for vaginoplasty. Herein; the inverted penile skin on an abdominal or more inferior pedicle is used as an outside-in skin tube for the lining of the neovagina. Preserved vascularization of the penile skin, its mobility, non-hair-bearing surface, sensate nature, thin connective tissue and relatively minimal tendency to contract represent the main advantages of using penile skin-based flaps. In cases where the penile skin is deficient (circumcision, micropenis etc.), several technical refinements can be applied such as combining the penile skin flap with scrotal and/or urethral flaps. Utilizing a perineal flap together with a scrotal graft in addition to penile skin may also serve well to lengthen the neovaginal cavity. Surgical outcome and sexual function associated with this technique are generally acceptable to good. Using additional urethral and penoscrotal flaps may provide benefit in terms neovaginal depth and lubrication.

Intestinal vaginoplasty is a viable alternative. Especially in cases where no redundant penile and/or scrotal skin is available for grafting, intestinal grafts provide a good alternative. Pedicled bowel segments can also be used when prior neovaginal reconstructive attempts with skin flaps and/or grafts failed in transgender patients. The need to elongate the vagina in transwomen requiring greater depth after a previous neovaginal construction is another indication to proceed with intestinal vaginoplasty. Overall, the outcome of vaginoplasty with pedicled bowel segments does not seem to be inferior to the penile skin inversion technique.

There is a need for prospective randomized studies with standardized surgical procedures, larger patient cohorts and longer follow-up period in order to make a valid comparison between the available vaginoplasty techniques and identify the “ideal” one.

**Take home message**

Penile skin inversion technique remains the method of choice for vaginoplasty in male to female transition.

**References:**

**Management of Urethral Complications in Gender Confirmation Surgery**

Ervin Kocjancic

Gender dysphoria can be described as a discrepancy between the gender assigned at birth and gender identity. Individuals with gender dysphoria are becoming increasingly more accepted in society and therefore the number of patients who feel confident enough to seek gender confirmation surgery has increased substantially.

Genital reconstructive surgery, which is the last step of an individual’s transition, involves labiaplasty, clitoroplasty, vaginoplasty in transgender women and vaginectomy, phalloplasty or metoidioplasty, scrotoplasty, placement of penile/testicular prostheses in transgender men.

Urethral complications are one of the most common urologic sequelae after gender confirmation surgery. Urethral fistula and stricture (including meatal stenosis) represent the most frequent urethral complications in trans patients.

**Urethral complications after phalloplasty:**

Radial forearm free flap phalloplasty (RFFP) is the current standard of care for most female to male gender confirmation surgeries. A meta-analysis of 11 forearm phalloplasty series demonstrated significantly high stricture and fistula rates, ranging from 20 to 77%. Some technical modifications, such as vascularized paravaginal tissue flaps, additionally covered by bulbospongiosus muscle proximally and non-epithelialized paravaginal tissue flaps, have been proposed to lower this high complication rate. However, it still remains a major cause of morbidity.

Urethral stricture after phalloplasty can initially be managed by endoscopic interventions; dilation and/or direct visualization internal urethrotomy. However, in patients with longer or multifocal strictures, or in whom endoscopic management fails, urethroplasty must be performed. Approach to urethroplasty depends on location of the stricture and length of the affected segment with meatotomy, Heineke-Mikulicz principle, excision and primary anastomosis, free graft urethroplasty, pedicled flap urethroplasty, 2-stage urethroplasty, and perineal urethroplasty, which may be followed by urethral reconstruction represent the available options.
Urethral fistulas may heal within three months when the urinary stream is diverted with a suprapubic urinary catheter; 17–35% of fistulas appear to heal without further surgery. Otherwise, further reconstructive surgery involving the interposition of local or extragenital tissue substitutes becomes inevitable.

**Urethral complications after vaginoplasty:**

Urethral stricture is less prevalent after vaginoplasty when compared with the probability after phalloplasty. A recent systematic review and meta-analysis reported a mean urethral stricture rate of 1%. These patients usually present 2-3 months after the primary surgery, initially with reduction in urine flow, and then overflow incontinence. Urethral dilations may not solve the problem in a durable manner. Meatoplasty is usually effective, although a few do go on to long-term intermittent catheterization.

**Take home message**

Urethral complications after gender confirmation surgery are common despite technical refinements, may necessitate further reconstructive interventions and might be the cause of chronic morbidity.

**References:**
**WIN $150 AMAZON VOUCHERS**

Please complete the in-app evaluation in the workshop before leaving.

Step 1, open app and select programme by day
Step 2, locate workshop
Step 3, scroll to find evaluation button
Step 4, complete survey – enter email at end to enter prize drawer

• A shortened version of the handout has been provided on entrance to the hall
• A full handout for all workshops is available via the ICS website.
• Please silence all mobile phones
• PDF versions of the slides (where approved) will be made available after the meeting via the ICS website so please keep taking photos and video to a minimum.

Education Opportunity
- Cadaver Classes for Phalloplasty and Vaginoplasty techniques
  @Weiss Memorial Hospital, Chicago

  - Short rotation/Observership
  - Fellowship Program

International fellowship in Genito-Urinary and transgender Surgery
For inquiry and applications:
https://chicago.medicine.uic.edu/departments/academic-departments/urology/clinical-services/pelvic-health-and-reconstructive-urology/
uroed@uic.edu

ekocjanc@uic.edu
ervkoc@gmail.com
WORKSHOP SCHEDULE
- PSYCHOLOGIC ASPECTS OF GENDER DYSPHORIA AND PRE
  SURGICAL COUNSELING R.E.
- METOIDOPLASTY L.S.
- PHALLOPLASTY L.S.
- VAGINOPLASTY E.K.
- FUNCTIONAL PROSTHETIC SURGERY E.K.
- VASCULAR COMPLICATIONS: MANAGEMENT AND
  PREVENTION L.S.
- URETHRAL COMPLICATIONS E.K.
- INTERACTIVE DISCUSSION
The Role of the Mental Health Professional in Gender Confirming Surgery

Randi Ettner

Historical assessment for surgery

- MHP viewed as gatekeeper
- Patients wanted autonomy - tension
- Binary assumption - triadic treatment; M-F; F-M
- Many "hoops"
- Few surgeons, cost-prohibitive, long waits

WPATH SOC 7

Depathologized gender incongruity

Acknowledges shared decision making and harm reduction

Flexible guidelines - health care needs are diverse and must be individual

Provides criteria to assess for hormones and surgery

Criteria: breast/chest surgery

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

Hysterectomy, salpingo-oophrectomy or orchiectomy

- Persistent, well-documented gender dysphoria
- Capacity to make a fully informed decision
- Age of majority
- If significant medical or mental health concerns, must be well controlled
- 12 continuous months of hormone therapy

Metoidoplasty, phalloplasty or vaginoplasty

- Persistent, well-documented gender dysphoria
- Capacity to make a fully informed decision
- Age of majority
- If significant medical or mental health concerns, must be well controlled
- 12 continuous months of hormone therapy
- 12 continuous months of living in a gender role consistent with gender identity (social role transition)
Role of MHP

- Diagnose gender dysphoria
- Determine readiness and eligibility
- Assess and refer for surgery
- Prepare for surgery
- Provide information/manage expectations
- Collaborate and be a resource
- Provide perioperative support
- Consult complicated cases (eg schizophrenia, anomalous surgical requests)

Referral for surgery

- Qualified MHP provides letter
- Purpose: to document readiness and eligibility
- One referral for chest/breast surgery
- Two referrals for genital surgery: one from MHP who followed the patient another is from MHP for 2nd opinion

Contents of Referral Letter

- Identifying characteristics
- Psychosocial assessment, including diagnoses
- Criteria met, supports request for surgery
- Duration and nature of relationship with patient
- MHP is available for consultation and collaboration
- Provides relevant information that informs care (eg pt has trauma hx)

Preparation for surgery

- Understands risks, procedure, post-operative care (70% don’t know risks)
- Has realistic expectations
- Explore rationale: Why surgery now? Why this surgery? Why this surgeon?
- Plans for post-op care and support

Collaborative Care

- Gender surgery require multidisciplinary care
- Continuous care, not episodic, yields best outcomes
- Trained providers join as a team, literally or virtually, to collaborate for optimal care
- Empowers patients by creating support network and advocates
- Care is customized to reflect individual needs
- Each provider has deep but specific knowledge

Mental Health Issues and Post-op Concerns

- Surgery is stressful-stress can trigger pre-existing psych issues
- Pts with anxiety dx - more post-op pain
- Pts with schizophrenia - higher post-op mortality
- Pts with hx of PTSD - tend to have poorer outcomes
Post-op psychiatric disorders

- PTSD from complications
- Depression due to disappointment, disfigurement, catheters, etc.
- POCD post-op cognitive decline - rare more common in pts over 60 - (not due to anesthesia)
- Destabilization from prolonged convalescence
- SSRI's may be helpful if adjustment dx during 1st year
Alice came to a fork in the road and saw a Cheshire cat in a tree. "Which road do I take?" she asked. "Where do you want to go?" was his response. "I don't know," Alice answered. "Then," said the cat, "it doesn't matter."

Alice in Wonderland, Lewis Carroll, 1865

Gender Dysphoria: Varying degrees of dissatisfaction with anatomic gender & desire to possess secondary sexual characteristics of opposite sex

Goal of Therapy: Lasting personal comfort with gendered self in order to maximize psychological well-being & self-fulfillment

Gender confirmation surgery provides appropriate physical morphology & alleviates extreme psychological discomfort

Standards of Care for the Health of Transsexual, Transgender, and Gender-Nonconforming People, Version 7

- Intended to provide flexible direction for the treatment of transgender individuals
- Individual centers may vary (hormonal therapy & real-life test)
- Not intended as barrier to surgery...identify patients who would benefit from surgery

First version published in 1979
Beginning version 8

wpath.org

Physicians: primary care providers, endocrinologists, surgeons (plastic, urology, ENT, colorectal, gynecology), psychiatrist
Mental health professionals
Physical/occupational therapy, physician assistant, nurse practitioner
Administrative staff
Case managers
Surgical Training

Metoidioplasty v. Phalloplasty

- Lengthen clitoris
- Urination while standing
- Minimize donor site
- No penetrative intercourse
- Maintain sensitive glans

- Urination while standing
  - Urethral morbidity
- Penetrative intercourse
- Donor site & surgical risks

Conversion of metoidioplasty to phalloplasty

Male

Feminization: absence of androgens

Female

Masculinization: androgens produced by fetal testes

Indifferent stage: 4th week
Distinguishing characteristics: 9th week
Differentiation complete: 12th week

Perineal hypospadias & cryptorchidism

Radial forearm phalloplasty

Abnormally small phallus: 2 std deviations below mean
< 6 cm flaccid
< 9.5 cm on stretch

Microphallus: 2.5 std deviations below mean
<5.2 cm flaccid
< 8.5 cm on stretch

Maximum growth of penis between 12-16 yrs

Radial forearm phalloplasty

Mesodermal origin of the phallus: a key to understanding gender development

The Journal of Sexual Medicine

Sexual定格Surgery: Guiding Principles

Length Dimensions

Conversion of metoidioplasty to phalloplasty

Conversion of metoidioplasty to phalloplasty

- Lengthen clitoris
- Urination while standing
- Minimize donor site
- No penetrative intercourse
- Maintain sensitive glans

- Urination while standing
  - Urethral morbidity
- Penetrative intercourse
- Donor site & surgical risks

Conversion of metoidioplasty to phalloplasty

Metoidioplasty: clitoral virilization

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<th>Preoperative</th>
<th>Postoperative</th>
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<td>Metoidioplasty</td>
<td>Clitoral</td>
<td>Clitoral</td>
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<tr>
<td>Phalloplasty</td>
<td>Clitoral</td>
<td>Penile</td>
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Length Dimensions

- 6 cm flaccid
- 9.5 cm on stretch

Maximum growth of penis between 12-16 yrs
Secondary scrotoplasty with mons lift

Release suspensory ligament of clitoris
Release ventral chordae (urethral plate)
Urethral tubularization
Skin closure
Scrotoplasty

Metoidioplasty:
Outcomes/Techniques
Long-term outcome of metaidoioplasty in 70 female-to-male transsexuals
Hage, et. al.
Ann Plast Surge 2006; 57 312-316

Complications:
Immediate
Fistula
Stricture
Prosthesis
• Loss
• Dislocation

33%
37%
36%
31%
49%

Length of stay: 10 days

Outcomes:
Average of 2.6 procedures per patient
11.4% "uneventful"
17% subsequent phalloplasty

Table 1: Distribution of the Number of Events per Patient

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<th>No. Events per Patient</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>Total</th>
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<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
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<tr>
<td>Secondary scrotoplasty</td>
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<td>5</td>
<td>7</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>7</td>
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<tr>
<td>No scrotoplasty</td>
<td>1</td>
<td>6</td>
<td>8</td>
<td>0</td>
<td>1</td>
<td>0</td>
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<tr>
<td>All</td>
<td>8</td>
<td>17</td>
<td>10</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>47</td>
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Number of events per patient is after metoidioplasty in our series of 70 patients (AE), in the subgroup of 47 patients in whom scrotoplasty was performed primarily in combination with metoidioplasty, in the subgroup of 20 patients in whom scrotoplasty was performed secondarily, and in the subgroup of 3 patients to whom no scrotoplasty was performed in combination or after metoidioplasty. The reported events consisted of immediate postoperative complications, genital donor site, genital recipient site, loss of scrotoplasty, and event-free survival.

Bilateral labia minora flaps, rectangular vestibular lining flap, & vaginal flap

Clitoral degloving incision

Placement of buccal mucosa

Release of Chordae
Buccal mucosa harvest

Placement of buccal mucosa, tubularization of urethra (creation of perineal urethra)

Skin closure

Secondary Scrotoplasty

Medium testicular implant: 15 cc saline (2.7 x 4 cm)
Staged procedure performed 3 months following metoidioplasty
Removal of skin and fatty tissue overlying pubis

Mons Lift/Resection:
Retrodisplacement of labia majora for secondary scrotoplasty

Secondary Scrotoplasty:
Secondary scrotoplasty & placement of testicular implants

Metoidioplasty with second stage scrotoplasty, mons lift, and placement of testicular implants

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Gender Confirmation Surgery
ICS
Philadelphia, PA
August 28, 2018

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The Center for Gender Confirmation Surgery

Phalloplasty Goals
- Aesthetic phallus
- Tactile & erogenous sensation
- Void while standing
- Minimal morbidity (including donor site)
- Aesthetic scrotum
- Ability to experience sexual satisfaction

Phalloplasty

Goals

- Aesthetic phallus
- Tactile & erogenous sensation
- Void while standing
- Minimal morbidity (including donor site)
- Aesthetic scrotum
- Ability to experience sexual satisfaction

Radial forearm phalloplasty: placement of 3 piece, 2 cylinder hydraulic penile prosthesis

Penile reconstruction: is the radial forearm flap really the standard technique, Monstrey, PRS 124: 510, 2009

Radial Forearm Phalloplasty

RFF Phalloplasty

Urologic

- Urologic complications 41%
- Other series up to 80%
- All patients ultimately able to void
- Most complications at "neo-urethra and native urethra," not ating flap urethra

Radial Forearm Phalloplasty: Outcomes/Techniques

Urologic

- Anastomotic revision 11.3%
- Partial flap necrosis 7.2%
- Larger flaps
- No longer operate on smokers

Penile reconstruction with the radial forearm flap: an update
Doornaert, Handchir Mikrochir Plast Chir 2011; 43: 208-214

56 patients who had radial forearm phalloplasty

Mean number of surgical procedures: 6

3 flap failures (5%)
- 1 flap failure at 7 weeks post-op

19 (34%) patients had urethroplasty
7 patients (37%) required perineal urethrostomy a mean of 72 months after surgery


RFF Phalloplasty

Tactile sensation: 100%
Postoperative patients who were sexually active: 100% achieve orgasm

Ultimately, all patients able to void (52 patients required 97 procedures)

Penile reconstruction: is the radial forearm flap really the standard technique, Monstrey, PRS 124: 510, 2009

Radial Forearm Phalloplasty

Flap

- Anastomotic revision 11.3%
- Partial flap necrosis 7.2%
- Larger flaps
- No longer operate on smokers

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Radial Forearm Phalloplasty

Average Male Dimensions:

- Flaccid: 8.6-9.3 cm (3.4-3.7 in)
- Erect: 12.9-14.5 cm (5.1-5.7 in)
- Circumference: 8.8-10 cm (3.5-3.9 in)

Recipient site (pubis) to femoral vessels approximately 9 cm

"Issue: arterial pedicle length"
Design of phallic: tube-within-a-tube

Marking of membranous urethra & vaginal flap

Proximal urethra constructed with vaginal flap and vestibulum

Clitoris de-epithelialized

Clitoral-urethral construct transferred subcutaneously into position at pubic symphysis

Layered closure of superficial muscles over urethra

Excision of labia minora & colpoceleisis

Scrotoplasty with medial transposition of labia majora

Urethral inset, vascular anastomoses, neurorrhaphies
Testicular implants and revision glansplasty

Placement of bilayer wound matrix topical silver and NPWT

ALT donor site markings
Update in Vaginoplasty Technique

Surgical Interventions for MTF Gender Confirmation
- Facial feminizing surgery
- Voice surgery and chondrolaryngoplasty
- Breast augmentation
- Vaginoplasty

Vaginoplasty
- Orchietomy
- Radical Penectomy
- Perineal Prostatectomy
- Reconstruction of the urethral meatus
- Labiaplasty & clitoroplasty
Moist, elastic and hairless neovagina with optimal depth and width
Small and obscured clitoris sensitive enough to enable arousal
Labia minora and majora resembling the female vulva
Functionally intact innervation to offer erogenous stimulation

Vaginoplasty techniques
(according to the nature and origin of the tissue used for reconstruction)

- Skin grafts
- Penile-scrotal skin flaps (Penile inversion technique)
- Pedicled small or large bowel segments (Intestinal vaginoplasty)
- Experimental options

Skin Grafts
- Hage and Karim;
  - FTG from the lower abdomen (n= 7)
  - No postop. complications (fu 7 months)
  - Pleasant cosmetic and functional outcome
  - Mean neovaginal depth of 12 cm

- Siemssen and Matzen;
  - FTG of penile skin, STG or a combination of both (n= 11)
  - Vaginal stenosis (45%)

Penile Inversion Technique
- The most frequently performed
- Inverted penile skin on a pedicle used as an outside-in skin tube

- Advantages of penile skin;
  ➢ Vascularization
  ➢ Mobility
  ➢ Non-hair bearing surface
  ➢ Sensate nature
  ➢ Thin connective tissue
  ➢ Minimal tendency to contract

On the Origin of Pedicled Skin Inversion Vaginoplasty
Life and Work of Dr Georges Buroy of Casablanca

J. Jants, Hage, MD, PhD; Robert K. Karim, MD, PhD; and Donald E. Lash, MD

After ligation and section of both c. cavernosa and transection of the spongious bulb and urethra, all erectile bodies were being dissected off and the distal, coronal edge of the penile skin was closed. This yielded the skin tube that was inserted as neovaginal lining.

Ann Plast Surg. 2007;59:723–729
Need for Technical Refinements

- Achieve the largest possible vaginal depth and width
  - Especially when penile skin is deficient (<12 cm)
- Increase the moisture and lubrication level of the neovagina
  - Decrease the incidence of vaginal stenosis
  - Improve sexual satisfaction
- Provide a more aesthetic mons pubis by decreasing the abdominal tension

Penile skin can be combined with...

- Scrotal (Selvaggi et al.) and/or urethral flaps (Perovic et al.)
- Spatulated urethral flap + scrotal skin graft (Papadopoulos et al.)
- Scrotal FTG and/or posteriorly based scrotal skin flap (Van Noort et al.)
- Spatulated urethral flap (Perovic and Djordjevic)
- Perineal flap + scrotal graft (Kocjancic and Schecter)
Direct Visual Dissection of Rectoprostatic Space

• Denonvillier’s fascia opened;
  • Extended rectoprostatic dissection
    ➢ Omission of sacrospinal fixation
    ➢ Preventing damage to the pudendal neurovascular bundle

• Inadvertent rectal injuries;
  • Rectovaginal fistula:
  • Prompt recognition...!
The Chicago Experience

- > 2015, n= 46, vaginoplasty for gender confirmation surgery
- Median age: 38 years
- Median surgical time: 360 mins
- Median surgical vaginal length: 15 cm
- Median hospital stay: 7 days
- No intraoperative complications
- Neovaginal prolapse (n= 1, morbidly obese patient)
- Median follow-up: 12 mos

Intestinal Vaginoplasty

- No redundant penile and/or scrotal skin is available for grafting;
  - Penile skin length <7cm
- Failed neovaginal reconstructive attempts with penile skin-based options
- Elongate the vagina after a previous neovaginal construction

**PROS**
- Sufficient tissue for optimal vaginal depth and width
- Self-lubrication
- Similar to vaginal mucosa in texture and appearance
- Little tendency to shrink, no need for lifelong vaginal dilatation
- Risk of ileus, anastomosis leak, peritonitis etc.
- Excess mucus production
- Intestinal stenosis
- Bleeding after intercourse
- Malodour
- Diversion colitis, ulcerative colitis and cancer

**CONS**
- Preservation of the vascular pedicle of the intestinal segment
- Harvested segments: 7.5 - 20 cm
- Creation of the neovaginal pouch
- Transfer of the graft to the perineum while minimizing vascular tension
- Rectoprostatic dissection
- Neovaginal fixation to prevent prolapse
Complications & Results of Intestinal Vaginoplasty

- Low prevalence and severity of periprocedural complications;
  - Sigmoid-derived: 6.4%
  - Ileum-derived: 8.3%

- Introital stenosis (necessitating revision surgery)
  - Sigmoid-derived: 4.1%
  - Ileum-derived: 1.2%

- Sexual satisfaction: 85.7%
  - Subjective assessment...

Vaginoplasty in genital malformations

Peritoneal incision

Flap transposition and suturing

Measurement of neovaginal depth
The Use of Cultured Autologous Oral Epithelial Cells for Vaginoplasty in Male-to-Female Transsexuals: A Feasibility, Safety, and Advantageousness Clinical Pilot Study

Conclusions - I

- Wider acceptance of gender dysphoria
- Standardized and integrated multidisciplinary approach
- Vaginoplasty: the last step of the MTF transition process
- Relevant evidence with drawbacks;
  - Small sample size
  - Insufficient description of the surgical technique
  - Variable outcome parameters usually lacking QoL issues
  - Subjective outcome assessment, no PROs or validated questionnaires
  - Short f/u duration

Conclusions - II

- Penile skin inversion: the most investigated technique for vaginoplasty;
  - Acceptable-good cosmetic & functional outcome
  - Additional urethral and penoscutal flaps for neovaginal depth and lubrication
- Intestinal vaginoplasty: a viable, noninferior alternative, especially for 2º cases.
- Tissue-engineering based solutions deserve further clarification
- Higher level of evidence needed to identify the "ideal" vaginoplasty technique
INFLATABLE PENILE PROSTHESIS IMPLANTATION POST PHALLOPLASTY: SURGICAL TECHNIQUE, CHALLENGES, AND OUTCOMES

INTRODUCTION

- Phalloplasty for Gender Confirmation
- Favor radial forearm free flap technique
- Staged placement of erectile prosthesis
- Typical Complications
  - Infection: 4.2 - 11.9%
  - Exposure: 4.2 - 8.1%
  - Malposition: 12.6 - 14.6%
  - Mechanical Dysfunction: 10.5 - 15.4% (5-10 year lifetime for device)

ERECTILE PROSTHESIS

- Prostheses available
  - Designed for placement within corpora cavernosa
- Phalloplasty – no corpora
- Challenges
  - Prevent exposure
  - Anterior projection
    - Well-anchored prosthesis

34 Y/O 1 YEAR S/P RFFF PHALLO

ERECTILE PROSTHESIS

- Malleable
  - Semi-rigid rod
  - Metal fatigue
  - Constant pressure against flap
- Inflatable
  - Single or paired inflatable rods
  - Pump placed within scrotum to activate
  - Can be deflated when not in use
  - Component failure

PROSTHESIS
Intraoperative inflation of prosthesis

**Anchor Placement**

**Anchor Placement**

**Anchor Placement**

**Placement of Pump**

**Result**
COMPLICATIONS OF PENILE PROSTHESIS

- Infection
  - Antimicrobial coating
- Erosion
  - Glans
  - Urethra
- Migration
- Mechanical failure
- Capsular contracture

PENILE PROSTHESIS PLACEMENT

- Last 18 months
  - 1/10 patients required explantation of prosthesis for infection
  - Others with satisfactory intercourse
- Optimizations
  - Use of ADM sleeve
    - Reduce risk of exposure
    - Cortical tunnel and anchoring of tip extender
    - Reduce risk of malposition
    - Improve projection/position of erection
- Room for greater improvement
- Future – an FDA-approved prosthesis for phalloplasty

REFERENCES


Radial forearm phalloplasty: implant failure
Tunnel created between urethra and skin of shaft
Allen’s test:
- Utility is questionable
- No direct correlation with ischemic complications

Construction of AV loop between great saphenous vein and femoral artery

ALT donor site markings
Conclusions

• Surgery is a proven therapy for patients with gender dysphoria
• Optimal outcomes occur in multi-disciplinary clinics
• Additional outcomes research to identify potential risk factors and objective grading method for post-operative results

Loren S. Schechter, MD, FACS
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Urethral Complications

ERVIN KOCJANCIC
Lawrence S. Ross Professor Urology
Vice Chair of Department of Urology
Director of Pelvic Health and
Reconstructive Urology
University of Illinois at Chicago

58% of patients with a newly constructed urethra develops fistulae and/or stricture

Urethral Fistulae

• Suprapubic abdominal flaps: 55% fistula rate
• Local Flaps: 15 – 22% fistula rate
• Pedicled flaps (ALTF): < 10%

Typical location: Junction of the neo-urethra and Native Urethra

Urethral Stricture

• Suprapubic abdominal flap 64%
• RFFF 31%
• Mean stricture length 3.5cm
• Stricture location:
  – Anastomosis (most common)
  – Meatus
  – Multiple sites
  – Phallic urethra

Location Fistulae

• Anastomosis phallic and bulbar urethra (majority)
• Between the bulbar and the female urethra

Location Stricture

• Anastomosis phallic and bulbar urethra (majority)
• Between the bulbar and the female urethra
1986 – 2002:
56 phalloplasty with Radial forearm
Tube in tube distally; tabularized vaginal urethral lengthening prox. 68% received an IPP
1 Plastic surgeon 1 Urologist

<table>
<thead>
<tr>
<th>Complication</th>
<th>N (%)</th>
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<tbody>
<tr>
<td>Flap</td>
<td></td>
</tr>
<tr>
<td>Loss</td>
<td>3</td>
</tr>
<tr>
<td>Duphalic vein thrombosis</td>
<td>1</td>
</tr>
<tr>
<td>Arterial ischaemia</td>
<td>1</td>
</tr>
<tr>
<td>Infections</td>
<td>5</td>
</tr>
<tr>
<td>Distal limited necrosis</td>
<td>2</td>
</tr>
<tr>
<td>Hernias</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>14 (51)</td>
</tr>
<tr>
<td>Prosthesis and urethra</td>
<td></td>
</tr>
<tr>
<td>Urinary fistula requiring perineal urethrostomy</td>
<td>7</td>
</tr>
<tr>
<td>Urinary fistula with conservative treatment</td>
<td>8</td>
</tr>
<tr>
<td>Urinary retention</td>
<td>5</td>
</tr>
<tr>
<td>Prosthesis change</td>
<td>3</td>
</tr>
<tr>
<td>Prosthesis explantation</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>28 (51)</td>
</tr>
</tbody>
</table>

Conclusion ...

- Urethroplasty plays a major role in overall morbidity ...
- Half of late complications were urethral strictures and urinary fistulae
- Most common area of urethral complications at the distal anastomosis
- Perineal urethrostomy recommended
Urethral Stricture

- Suprapubic abdominal flap (64%)
- RFFF (31%)
- Mean stricture length: 3.5 cm
- Stricture location:
  - Anastomosis (most common)
  - Meatus
  - Multiple sites
  - Phallic urethra

Stricture recurrence rate after various treatment is up to 61.9%


Fasciocutaneous flap reinforcement of ventral onlay buccal mucosa grafts enables neophallus revision urethroplasty

Siettos C. Wilson, John T. Siranka*, Kirangpreet Khurana, Shane D. Morrison, Jamie P. Levine and Lee C. Zhao

Urethral lengthening

100% success rate in 13 patients, 6-18 month follow up

Urethral Reconstruction

Single or staged approach

I. Pendulous urethra
- Prelamination
- Prefabrication
- Tube – in Tube
- Separate flaps

II. Fixed urethra:
- Local Vagina
- Labial flap

- Extension of the urethra to the clitoris using vaginal mucosa reduces greatly the risk of Urethral Fistula formation
- Colpolcaisis offers a great vascular support for the anastomosis site
- Could be performed as a stage procedure
Vestibular neo-urethra

Perineal exposure:
Vestibulum and vagina will form proximal urethra

Marking of membranous urethra & vaginal flap

Vaginectomy entails removal of epithelium with preservation of muscular layer

Vestibular incisions extend on to ventral clitoris

Elevation of vaginal flap & tubularization of vestibulum

Extension of incision on to ventral clitoris
Vestibulum remains attached dorsally to corporal bodies
Tubularization of vestibulum

Vestibular neo-urethra

Construction of membranous urethra

Relationship of clitoral nerve, urethra, and glans clitoris

Vaginal flap
Surgery for Urethral Stricture Disease after Radial Forearm Flap Phalloplasty – Management Options in Gender Confirmation Surgery

Introduction
- Increasing requests for phalloplasty
- Urethral complications are not uncommon, including stricture or fistula
- Ongoing need for assessment of techniques and outcomes
- Study design: Retrospective cohort study of urethral complications following radial forearm flap phalloplasty
- Two institutions
- January 2015 to July 2016
- Multidisciplinary team: Plastic Surgeon and Reconstructive Urologist

Methods

Results
- Urethral reconstruction may require additional procedures
- Results suggest traditional techniques are viable treatment options
- Single versus two stage urethroplasty with buccal mucosa may be helpful in the management of urethral strictures and fistulas after phalloplasty

Figure 1. Native-urethral stricture identified

Figure 2. Buccal mucosa on-lay graft

Figure 3. Distribution of urethroplasties by type

Three month follow-up
- Three recurrent strictures (37.5%)
- 2 treated with laser incision
- 1 repeat urethroplasty

I am a UROLOGIST to save time, let's just assume that I am NEVER WRONG!
Single stage urethroplasty 37%

Two stage urethroplasty with Buccal 50%

Two stage urethroplasty no Buccal 13%

<table>
<thead>
<tr>
<th>Location of Urethral Stricture</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Urethra-Neourethral Anastomosis</td>
<td>6</td>
<td>75%</td>
</tr>
<tr>
<td>Neourethra only</td>
<td>2</td>
<td>25%</td>
</tr>
<tr>
<td>Inflammatory Polyp</td>
<td>1</td>
<td>12.5%</td>
</tr>
<tr>
<td>Hair bearing</td>
<td>1</td>
<td>12.5%</td>
</tr>
</tbody>
</table>

Dorsal Buccal mucosa graft

Ventral buccal mucosa graft, & layered closure

Fistula repair

Repair of fistula
Harvest & placement of buccal mucosa

Insert of buccal mucosa

Urethral fistula/stricture
Anastomosis of penile and membranous urethra

Repair of urethral stricture/fistula with buccal mucosa

Urethral fistula/meatal stenosis

Buccal mucosa graft
Conclusion

• Urethral reconstruction may require additional procedures

• Results suggest traditional techniques are viable treatment options

• Single and two stage urethroplasty with buccal mucosa are both viable options in the management of urethral strictures and fistulas after phalloplasty