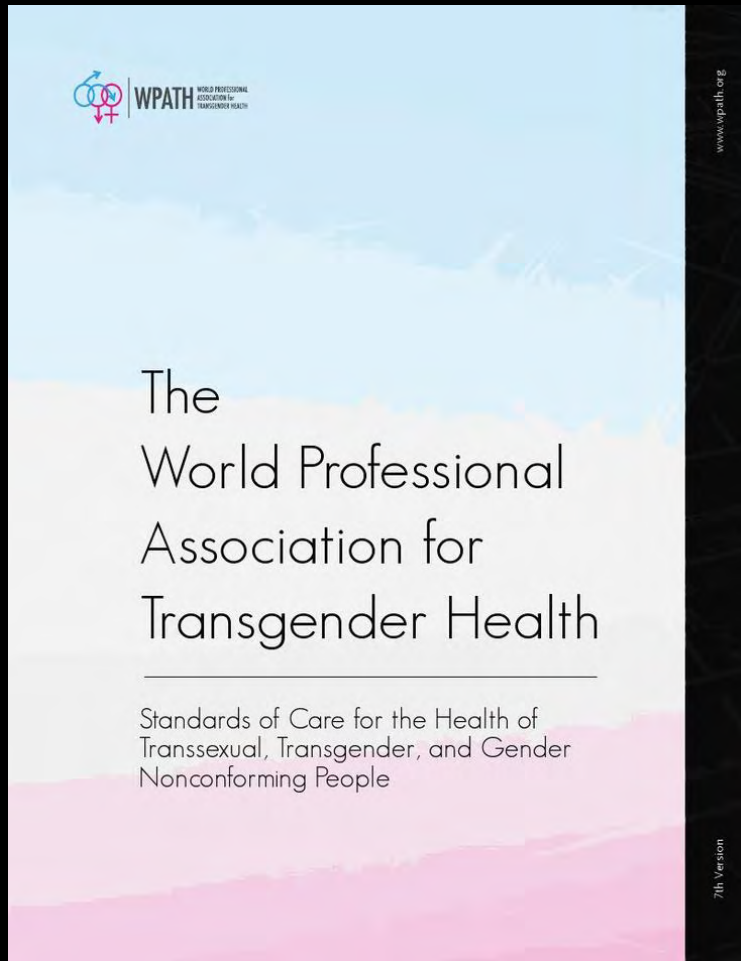


Medical & Surgical Transition for Transgender People

Daniel Dugi, MD FACS
Amy Penkin LCSW

Further reading



- WPATH Standards of Care
 - http://www.wpath.org/uploaded_files/140/files/IJT%20SOC,%20V7.pdf
- *International Review of Psychiatry*, Vol 28 (1), 2016
 - Special issue: Gender Dysphoria and Incongruence
- Gender reassignment surgery: an overview.
Selvaggi & Belringer, *Nat Rev Urol* Vol 8, 274-81, 2011. PMID: 21487386

Biologic basis of Transgenderism



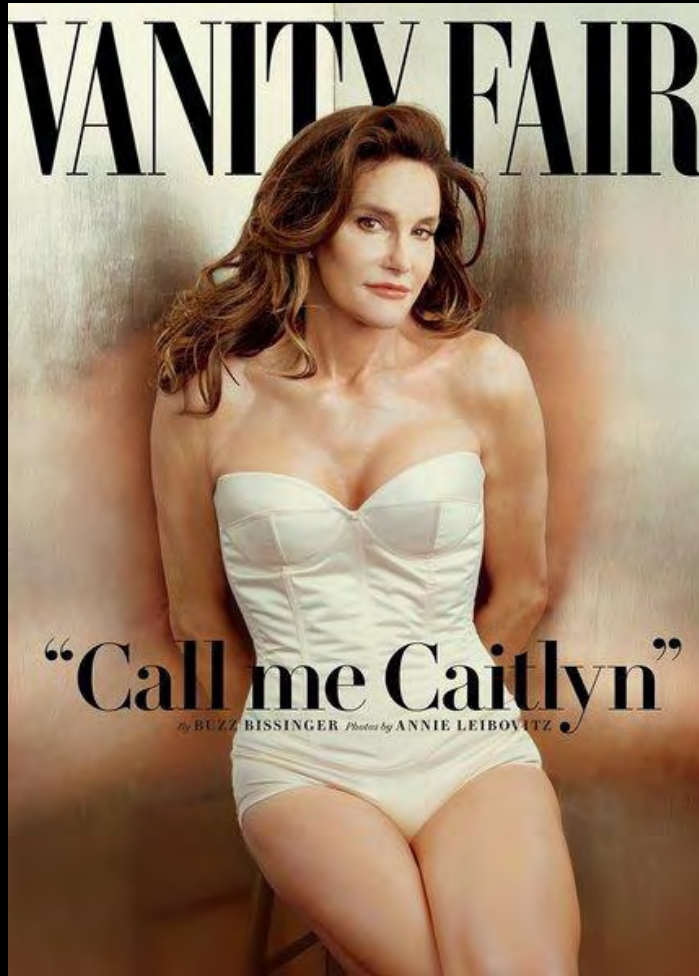
- ???
- Different timing of differentiation of brain structures and genitals?

Gender dysphoria

- Distress and unease experienced if gender and sex are incongruent



Choices in transition



- Social
 - Name, pronouns, legal documents
- Presentation
 - Dress, hair, makeup, binding/forms, packing/tucking
- Medical/Physical alteration
 - Hormones
 - Surgery

Evidence of Benefit

- Symptom Checklist-90 n=57
 - Significantly higher vs control most categories pre-treatment
 - Nearly all NS difference after CSHT
- Greatest subjective progress:
 - Start of CSHT 57.9%
 - After SRS 31.6%
 - During diagnostic phase 10.5%

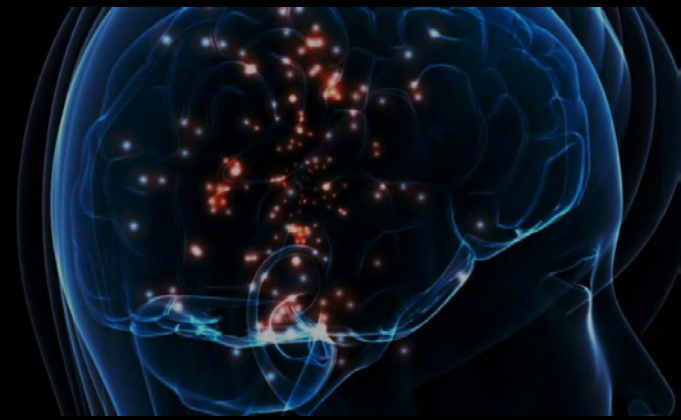
Satisfaction after surgery

- >87% satisfaction
- Regret 1-3.8%*



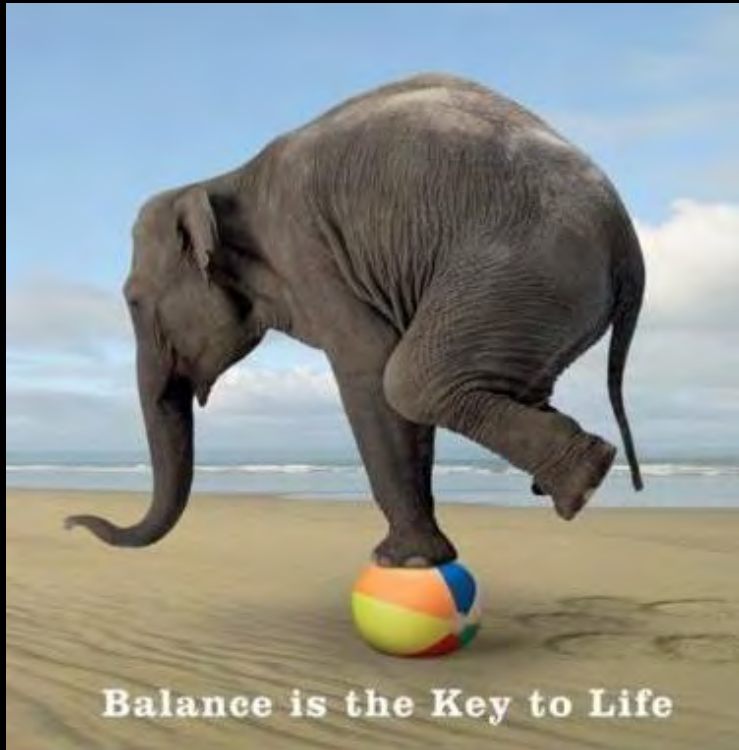
*Landen et al, Act Psych Scand 1998 PMID:9570489

Hormones



- Cross-sex hormone therapy (CSHT)
- Hormone replacement therapy
- Goals
 - Suppress endogenous hormones
 - Achieve normal hormone levels of target sex
- Gonadectomy

Cross-sex hormone therapy



- Transmen
 - Testosterone
- Transwomen
 - Estrogen
 - Testosterone suppression
 - Spironolactone
 - Finasteride/Dutasteride
 - (Progestins)

CSHT: Transmen

- Physical effects
 - Greater muscle:fat
 - Facial bone changes
 - Change in hair patterns
 - Male-pattern hair loss
 - Beard and body hair growth
 - Vocal changes
 - Clitoral enlargement
 - Vaginal atrophy



Jamie Raines--Buzzfeed

CSHT: Transmen

- Adverse effects
 - Acne
 - Hair loss
 - Erythrocytosis
 - Cardiac?



Cross-sex hormones: Transwomen

- Physical effects
 - Greater fat:muscle ratio
 - Skin and body hair changes
 - Breast growth
 - Testicular atrophy and disruption of spermatogenesis
 - Decreased erections and semen

Cross-sex hormones: Transwomen

- Adverse effects¹
 - Loss of fertility
 - Bone mineral density loss
 - Decreased libido
 - Prolactinoma
 - VTE/Cardiac?²
 - Oral ethinyl estradiol associated with VTE

1. Hembree et al, J Clin Endocrinol Metab 2009 PMID: 19509099

2. Gooren et al, Eur J Endocrinol 2014 PMID: 24616414

Pubertal suppression

- Dutch protocol
 - Majority of children with GD desist
 - GnRH analogues prevent secondary sexual characteristic development at puberty
 - 12-16y
 - Improvement in behavioral, emotional, depressive problems
 - Start CSHT at 16y

Pubertal suppression



Nicole and Jonas Maines



Surgical therapies

- Top (chest) surgery
- Facial Feminization Surgery
- Genital Surgeries

Chest Surgery (top surgery)

- Trans-masculine

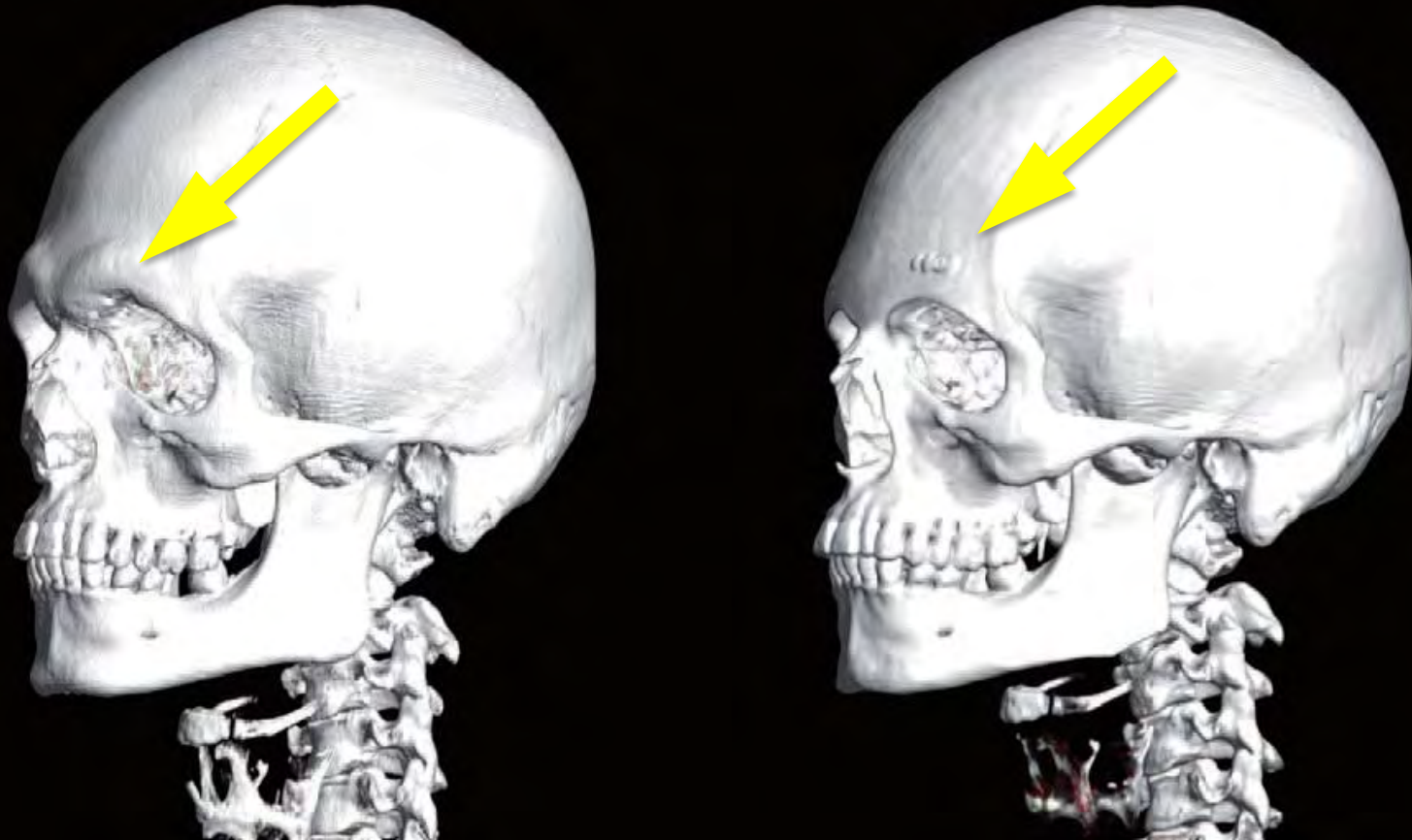


Chest Surgery (top surgery)

- Transwomen breast augmentation



Facial Feminization Surgery (FFS)



Facial Feminization Surgery (FFS)



Facial Feminization Surgery (FFS)



Further feminization

- Facial hair removal
- Tracheal shave (thyroid cartilage reduction)
- Vocal surgery

Gender-affirming genital surgery

- Transwomen
 - Orchiectomy
 - Vaginoplasty
- Transmen
 - Metoidioplasty
 - Phalloplasty

Eligibility

- WPATH guidelines
 - Stable mental health
 - 2 letters of support needed for genital surgery
 - 1 year of hormone therapy
 - 1 year living in gender role

Orchiectomy

- Outpatient surgery
- Treat dysphoria
- Simplify medical therapy

Vaginoplasty Overview

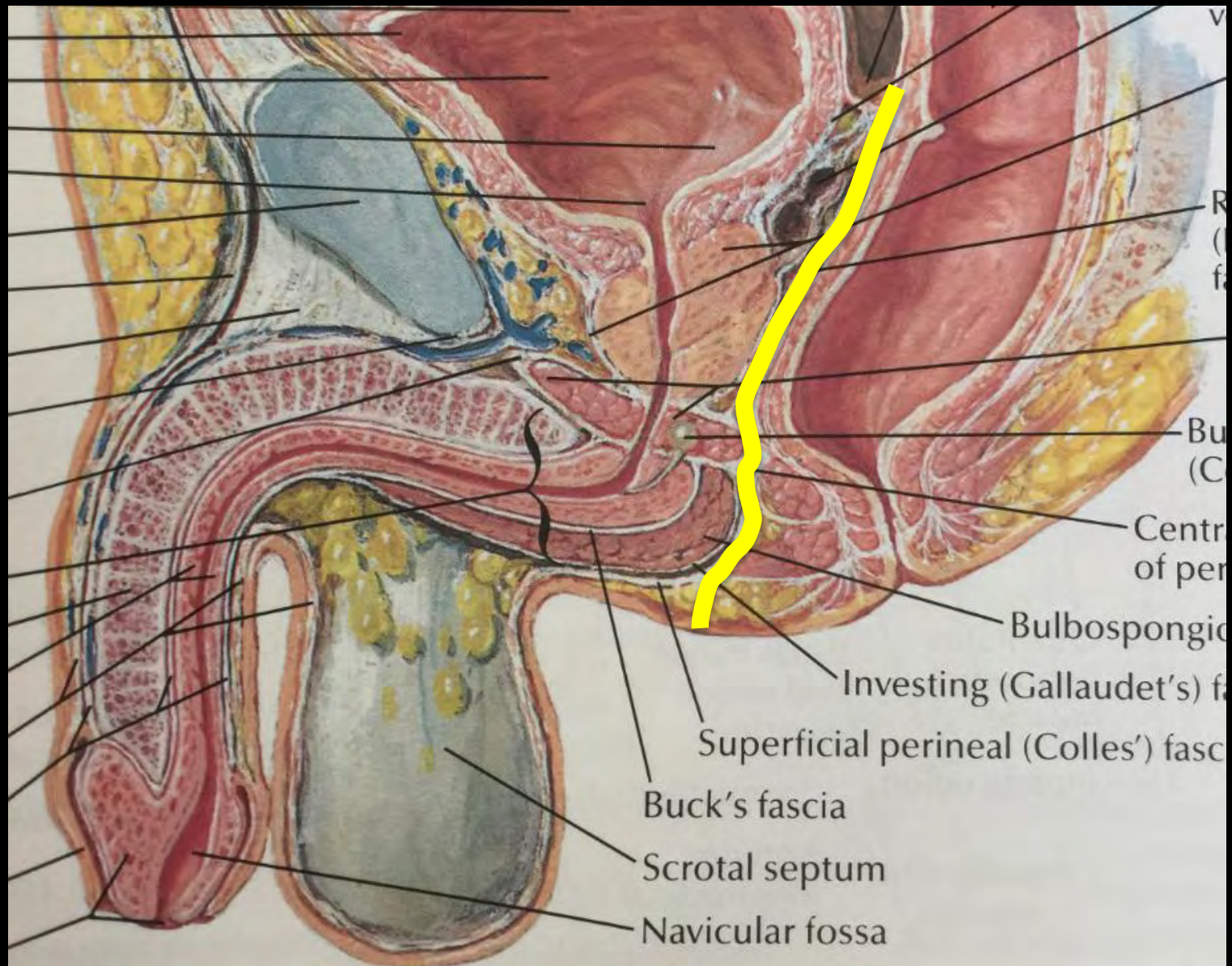
- Goals
 - Removal of penis/testicles/scrotum
 - Natural-appearing external female genitalia
 - Sensate clitoris
 - Vagina for receptive intercourse*
- Does not remove prostate

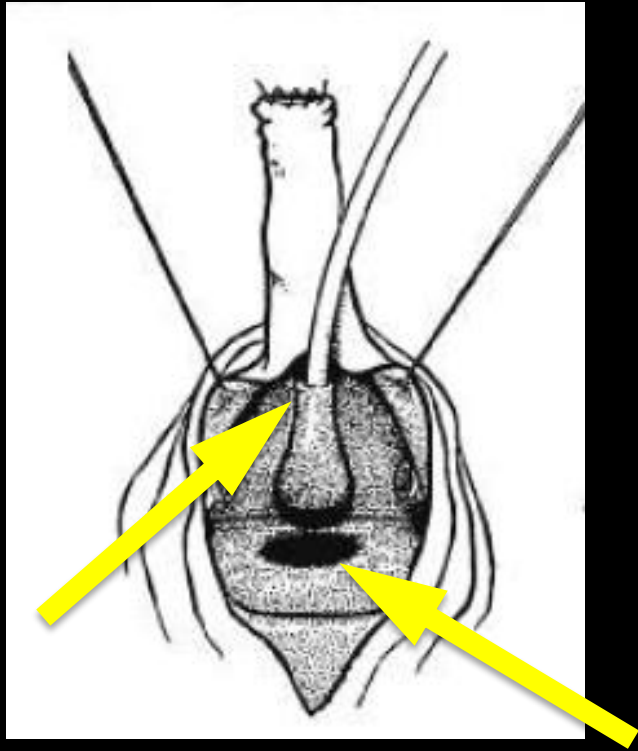
Vaginoplasty

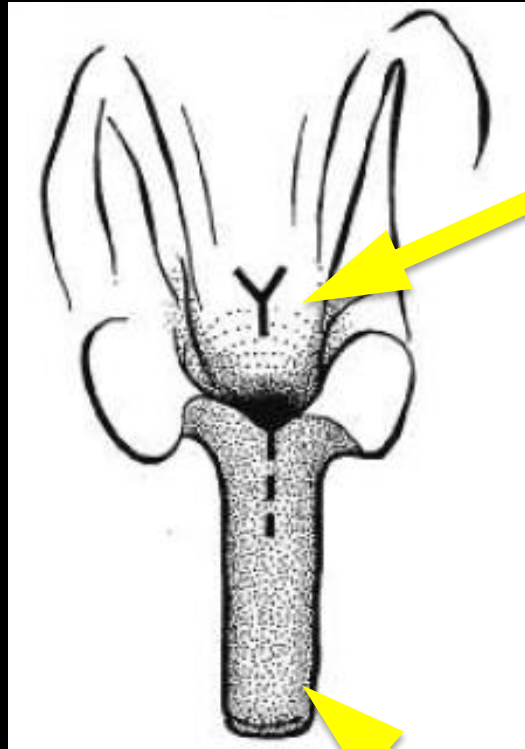
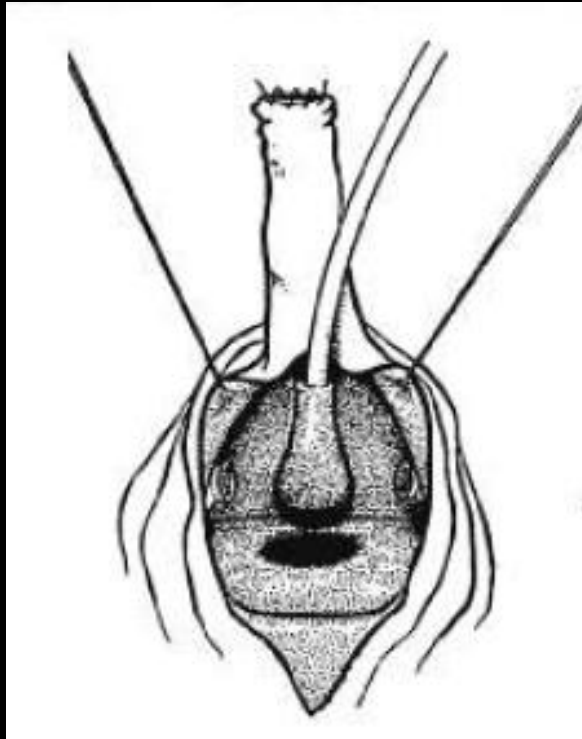
- Penile inversion
 - Use of penile, scrotal, and perineal skin to create vagina, clitoris, and vulva
- Sigmoid vaginoplasty
 - Most commonly revision surgery

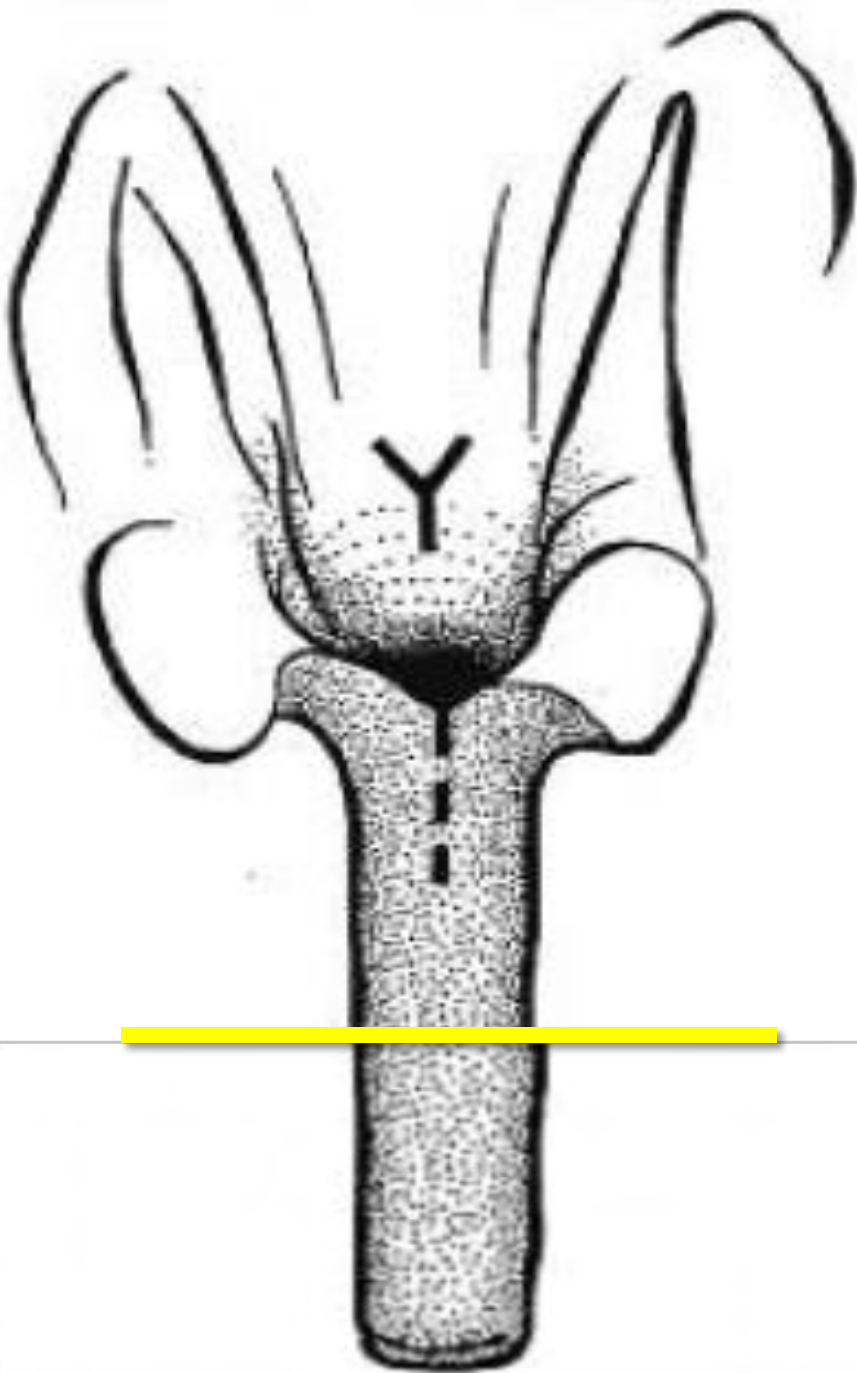
Penile Inversion Vaginoplasty

Was	Will be
Glans (head) of penis	Clitoris
Penile skin	Vagina, Inner labia, Clitoral hood
Urethra	Space between clitoris and Urethra, Inner labia
Scrotum/Perineal skin	Outer labia, Vagina
Abdominal/Groin skin	Extra graft for vaginal depth, if needed

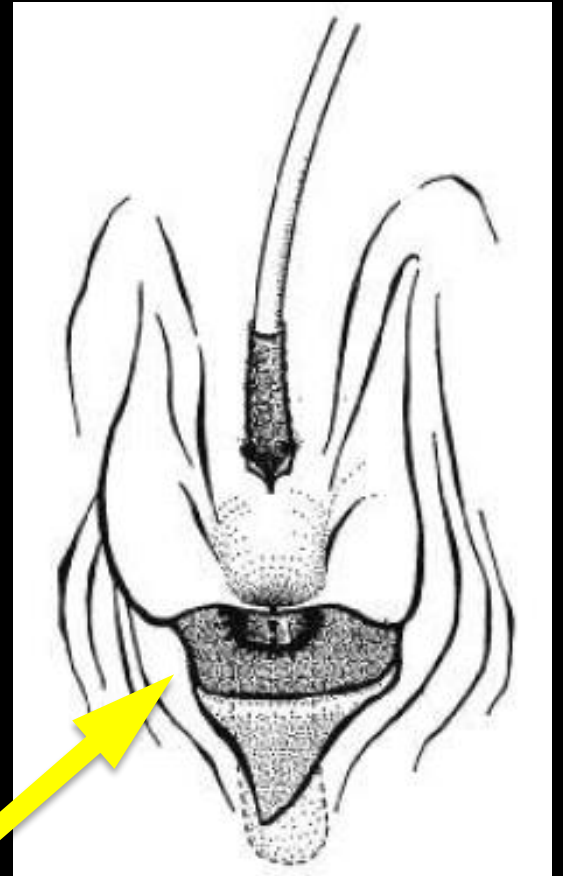
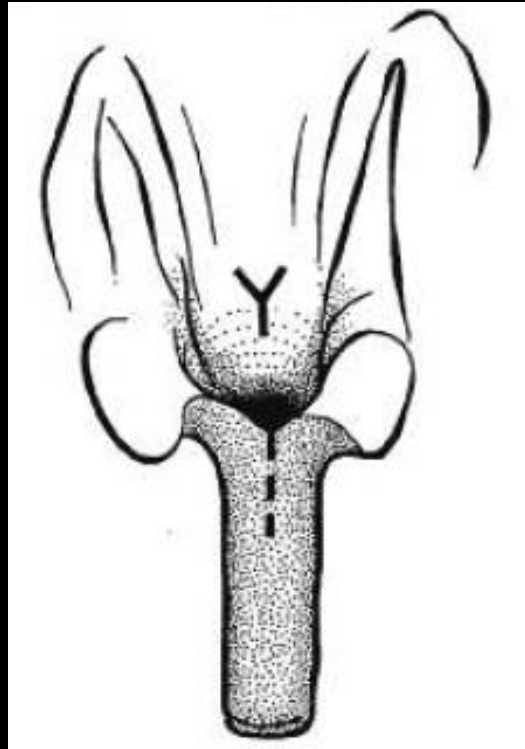
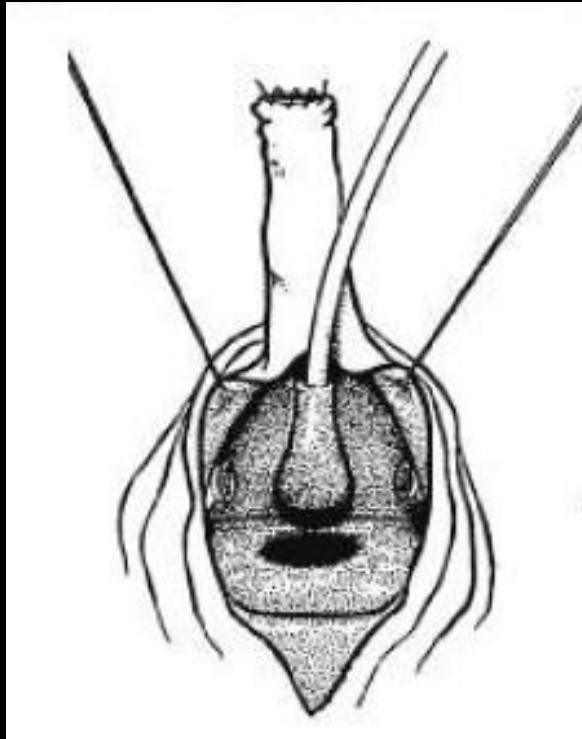


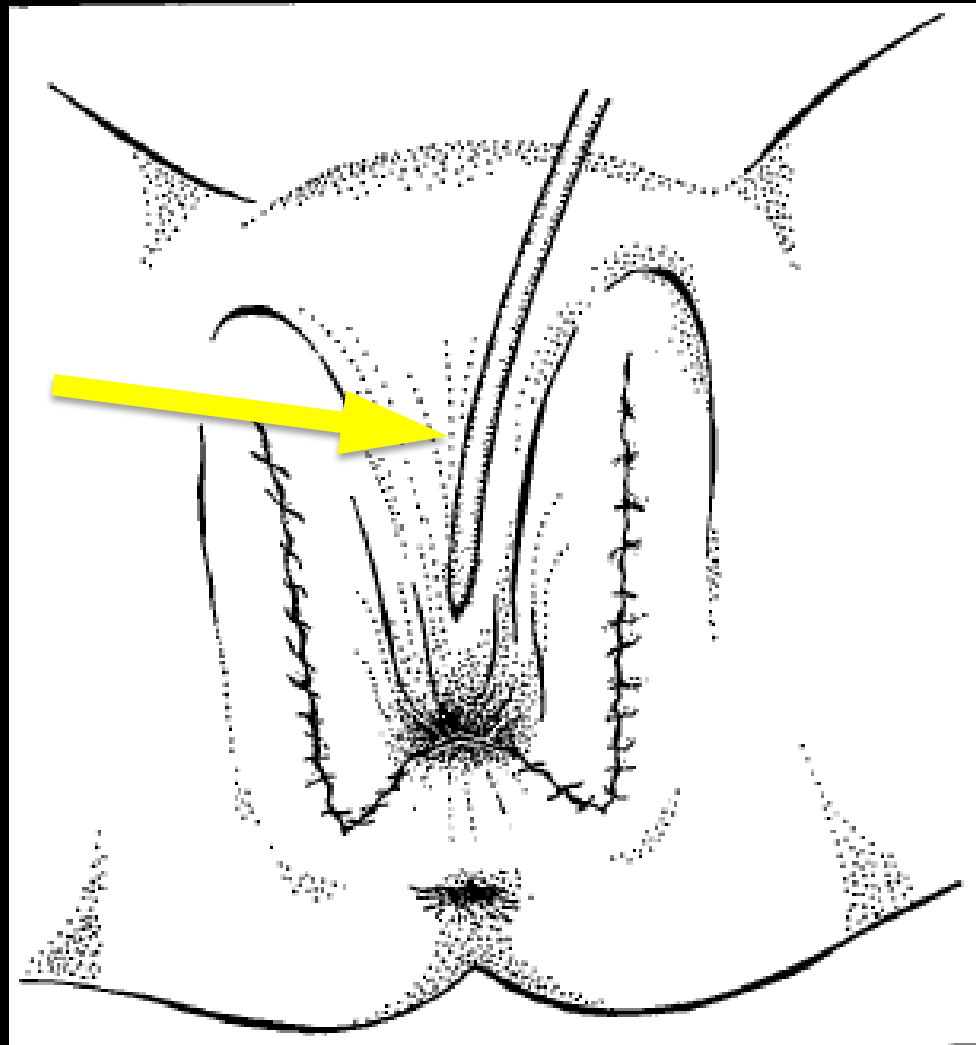




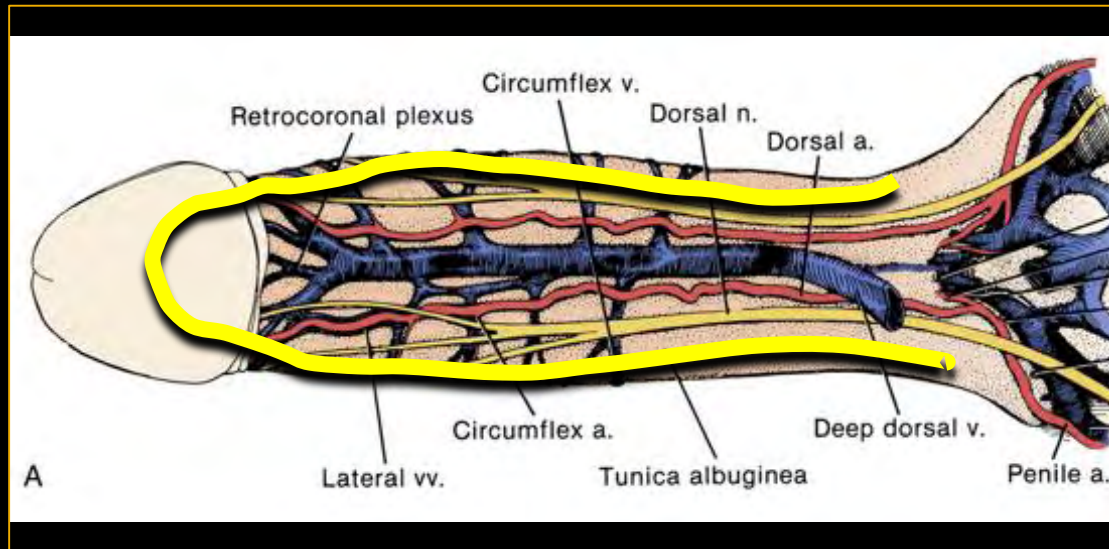


Graft
extension





Sensate Clitoris



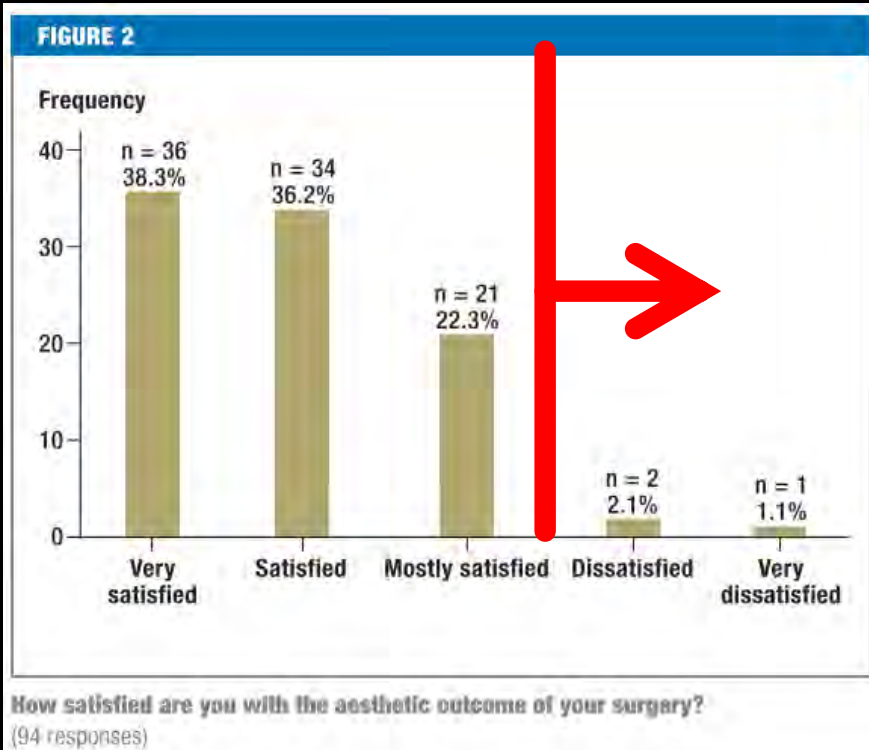
Variations

- Vulvoplasty
 - External genitalia without vagina

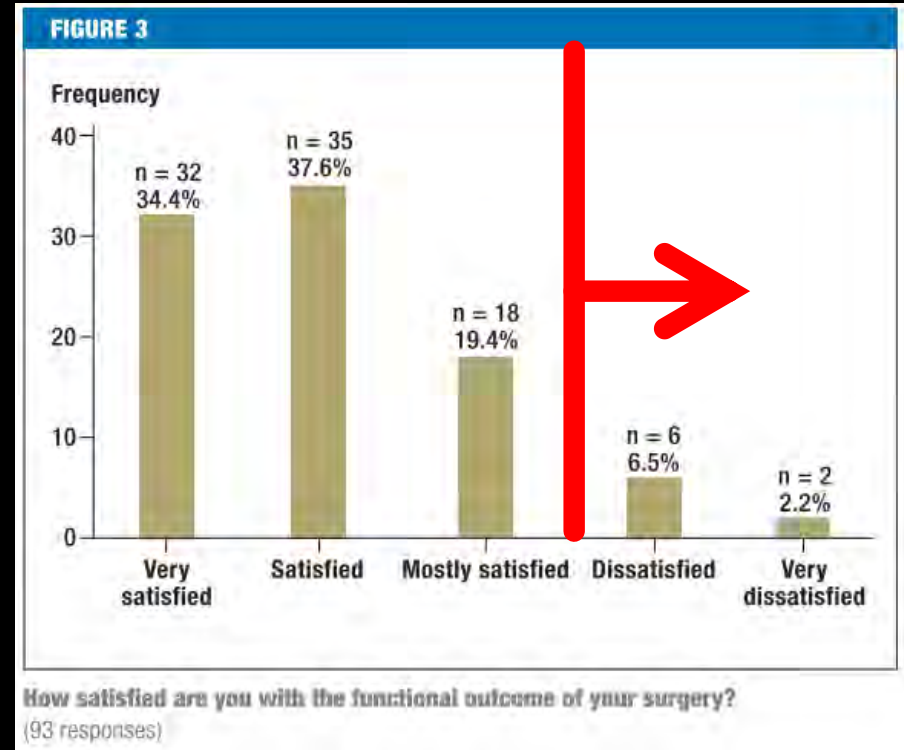
Complications

- Vaginal stenosis 8%
- Misdirected urine stream 33%
- Urethral stenosis 4%
- Clitoral necrosis 3%
- Genital pain 9%
- Other 12%
- Rectourethral fistula

Satisfaction after Vaginoplasty



Aesthetics



Function

Female-to-Male

- Hysterectomy/Oophorectomy
- Metoidioplasty
 - Greek
 - Meta—toward (μετα)
 - Oidion—male genitalia (ωιδίων)
 - --plasty—surgical molding
- Phalloplasty

Metoidioplasty

- Clitoris as analog of penis
 - Grows with testosterone exposure
- Release of suspensory ligament of clitoris and mobilization of clitoris
- Lengthening of urethra

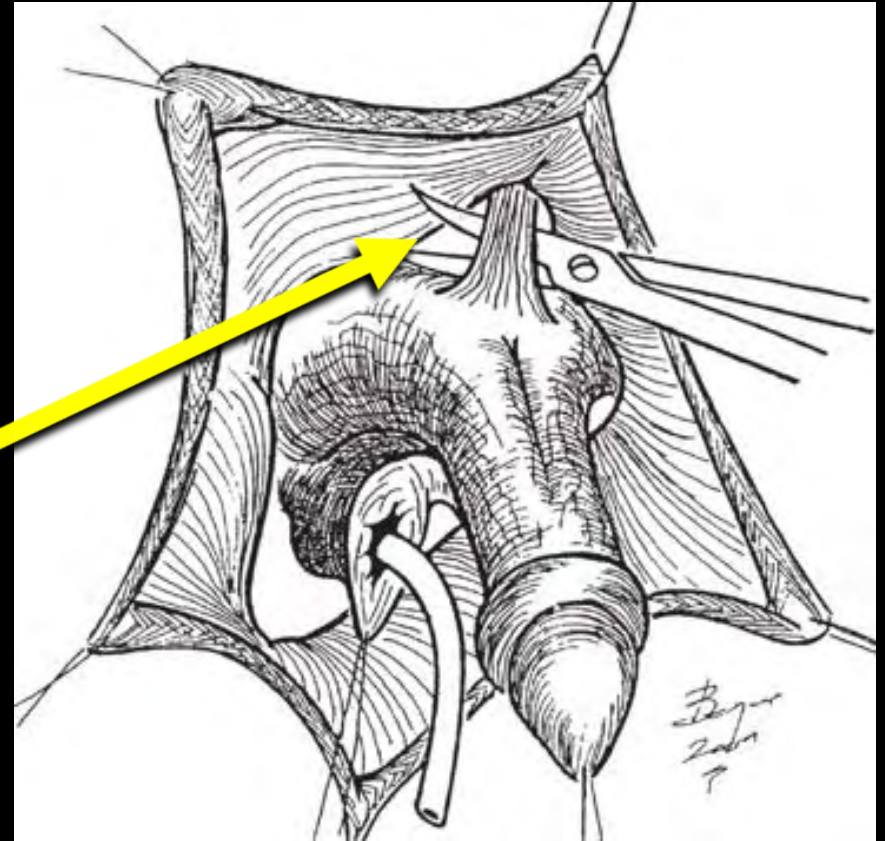
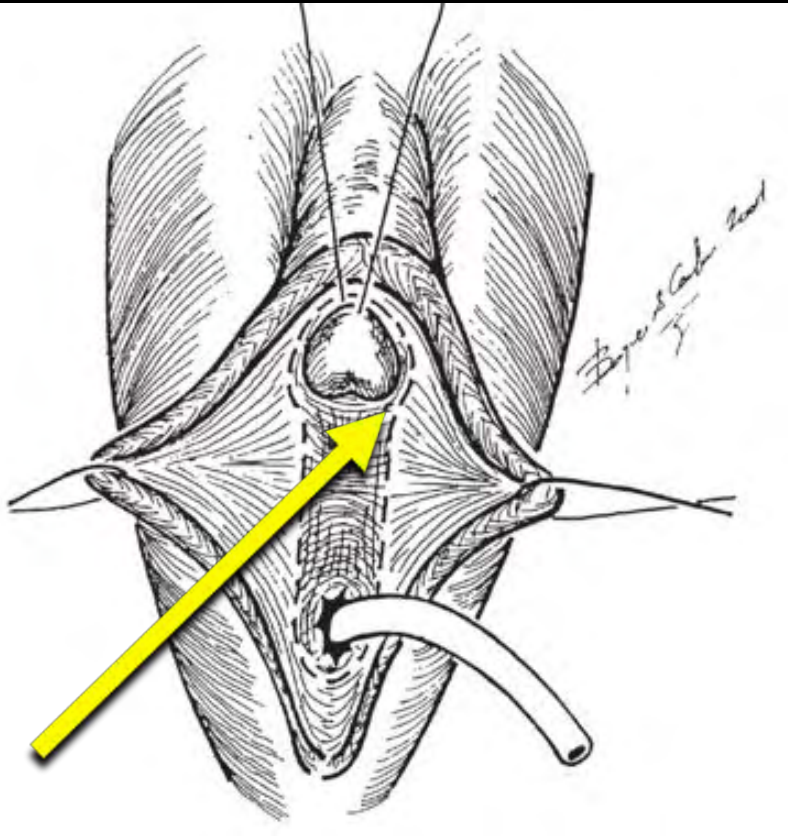
Metoidioplasty

- Goals
 - Stand to void
 - Male genital appearance
 - Not likely to allow penetrative intercourse
- No change in clitoral sensation
- May be followed by phalloplasty

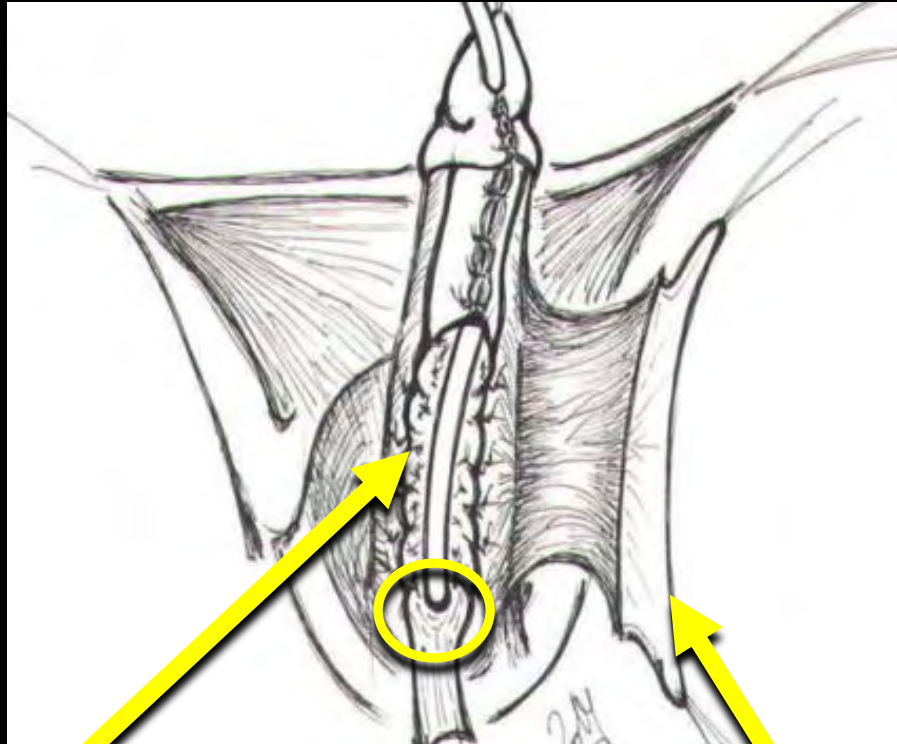
Metoidioplasty

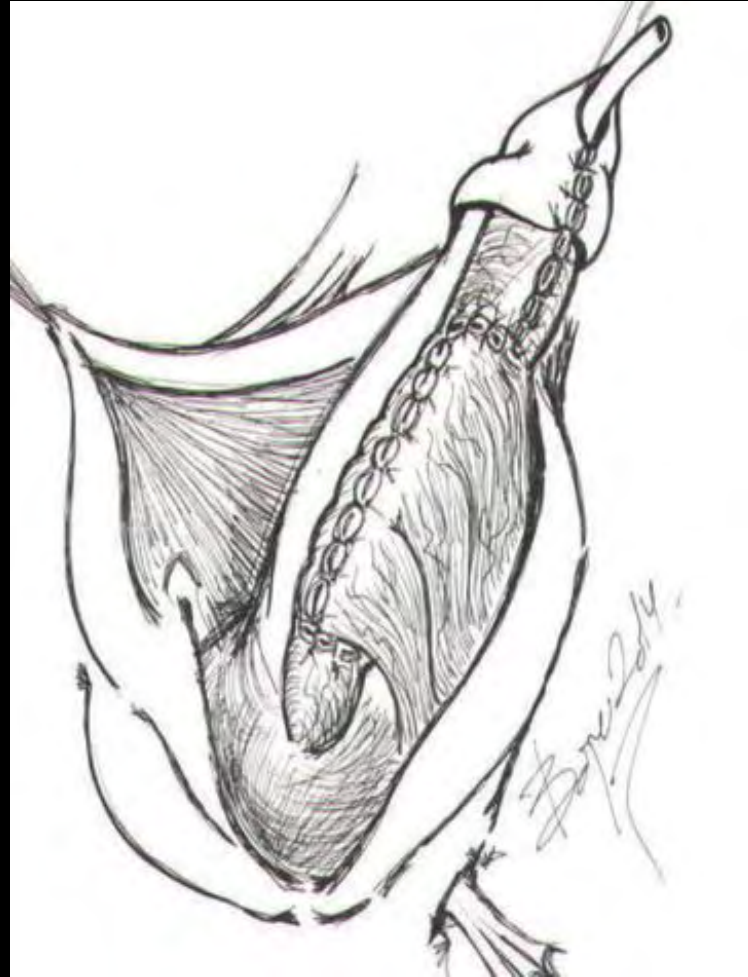
- Slender / near-ideal body weight
 - Mean length after release 5.6cm
- Vaginal mucosectomy (lining of vagina)
- Hysterectomy/BSO

Metoidioplasty

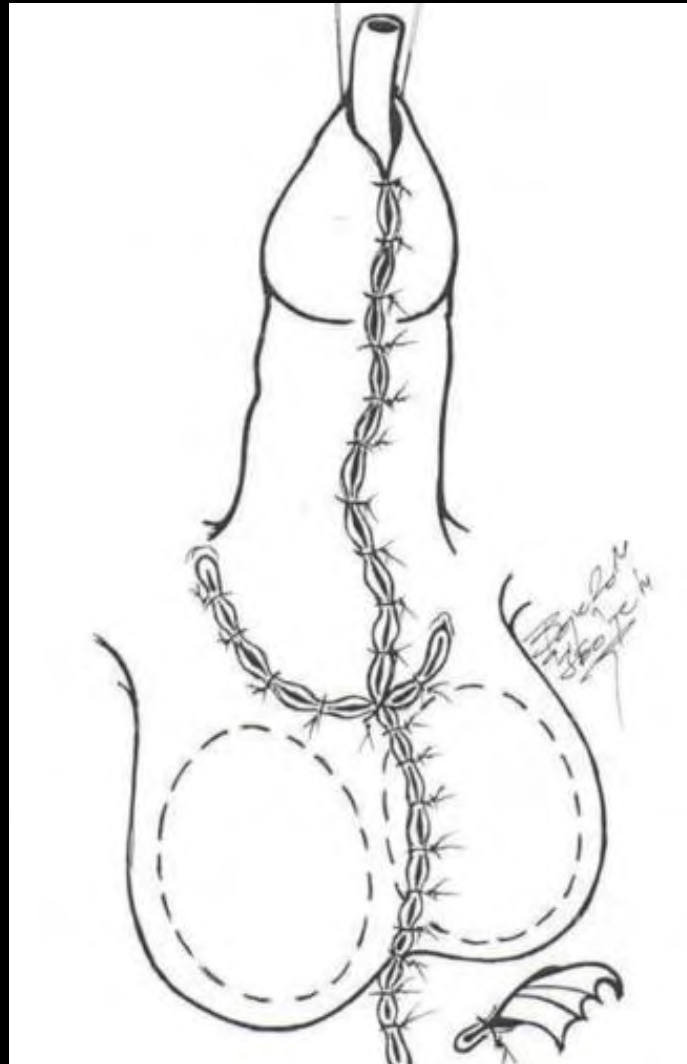


Metoidioplasty





Metoidioplasty



Metoidioplasty

- Hospital stay ~2-3 days
- Suprapubic catheter 3 weeks
- Stricture 6%
- Fistula 6%

Phalloplasty



- Multiple techniques
- Goals:
 - Appearance of normal penis
 - Ability to stand to urinate*
 - Protective and erogenous sensation*
 - Penetrative intercourse*
- Multiple stages

Local flaps

- Local skin
 - Groin flap
 - Suprapubic flap
- Advantages
 - No microsurgery
 - Hidden donor site

Microvascular tissue transfer (free flap)



- Forearm (skin)
- Latissimus dorsi (skin and muscle)
- Anterolateral thigh (skin)
- Fibula (skin and bone)

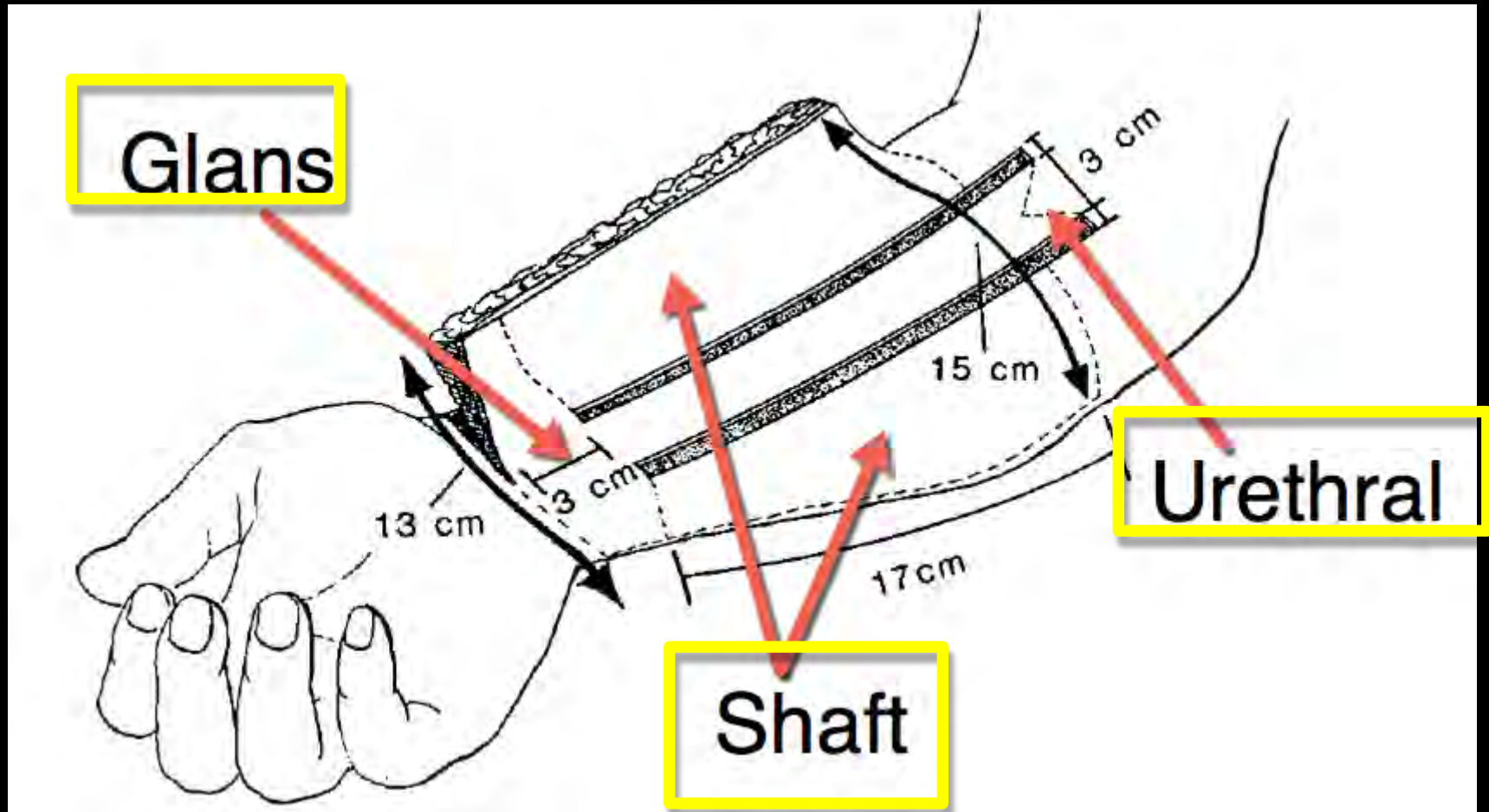
Radial forearm free flap phalloplasty

- Benefits
 - 1 stage phallus/urethral construction
 - Thin, supple skin
 - Potentially sensate
- Disadvantages
 - Donor site scar

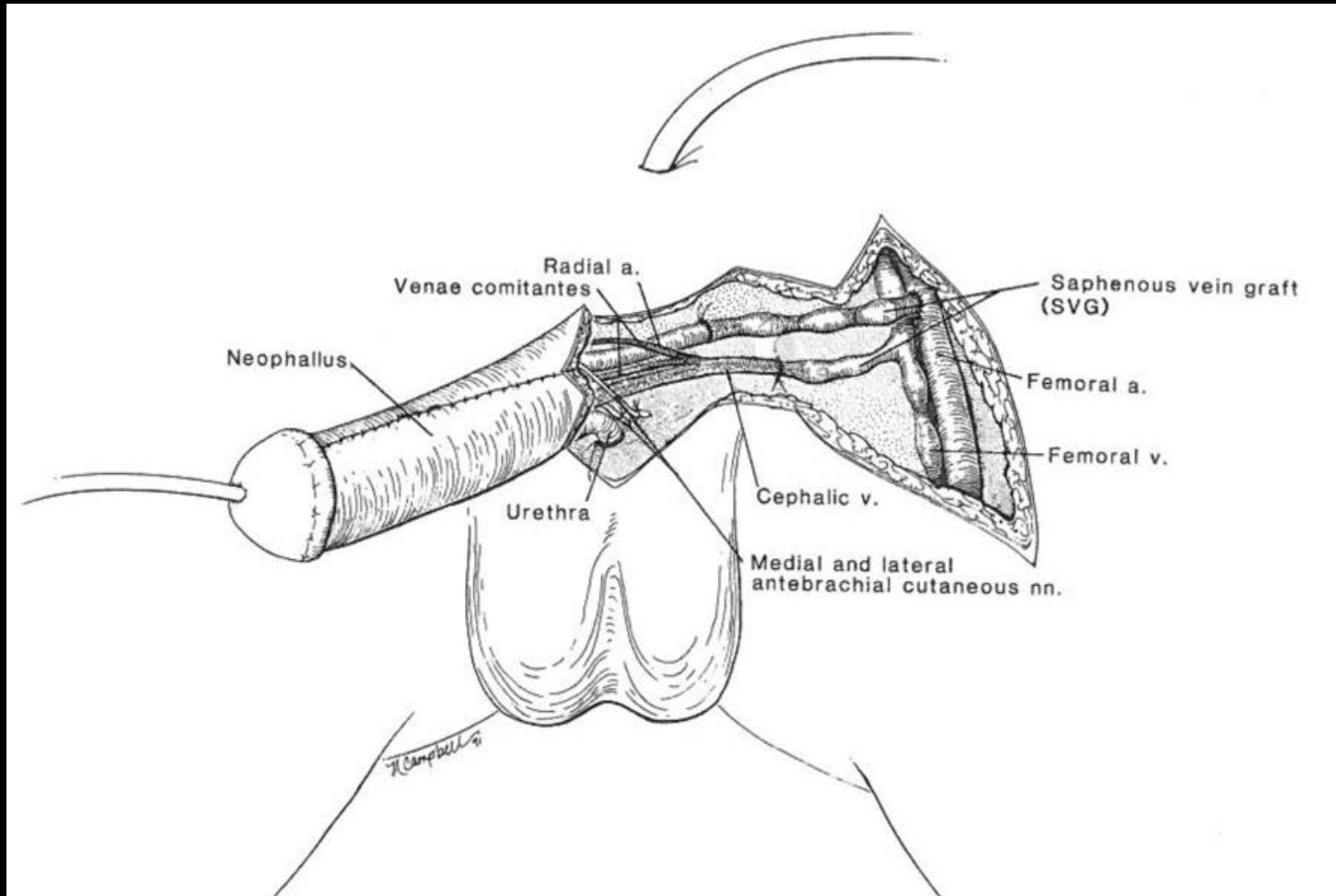
Radial forearm free flap phalloplasty

- Urethral lengthening similar to metoidioplasty

Radial forearm free flap phalloplasty



Radial forearm free flap phalloplasty



Radial forearm free flap phalloplasty

- Groin nerve to forearm nerve (protective)
- 1 clitoral nerve to 2nd forearm nerve (erogenous)

Radial forearm free flap phalloplasty

- Hospital stay ~5-7 days
- Suprapubic catheter ~3 weeks

Radial forearm free flap phalloplasty

- Implant for stiffening
- 1 year after primary surgery

Long-term



Donor site



Radial forearm free flap phalloplasty

- Complications
 - Flap loss (<5%)
 - Wound, minor (common)
 - Urethral (40-80%)
 - Implant (40-60%)
- Ultimate satisfaction (aesthetic/sexual) high

Current debates

- Surgery for Genderqueer persons
 - May chose less than all available options
 - Non-binary request
 - Genital nullification
 - Vaginoplasty without penectomy
- Surgery before age of majority



- 24th Biennial Symposium
- Amsterdam
- June 17th-21st

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