

Transmale Genital Surgery

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Disclosures:

- Dmitriy Nikolavsky- none

Outline

- 1) Background
- 2) Patient preparation prior to affirmation surgery
- 3) GU Anatomy after phalloplasty
- 4) Post-operative care and complications
- 5) Long-term care
 - Need for catheterizations, endoscopic procedures
 - Surgical considerations (thromboembolism)

Background

- Gender Dysphoria: discomfort felt by people whose innate gender identity, the sense of being a man or woman, conflicts with their visible sex characteristics¹
- Not a lifestyle choice

1) Reed, B et al, Gender Variance in the UK *GIRES*. 2009

Background

- Observed incidence (UK): 8-45 per 100,000¹
- Up to 600 per 100,000
- Male to Female 80%
- Female to Male 20%

Background

- SSA Data: 135,367 gender changes 1936-2010¹
- Estimated 1.4 million in the US (0.6%)²
- 1981 – DHHS issued National Coverage Determination denying Medicare coverage for “experimental treatment”
- 2014- Appeal and reversal of NCD

1) Harris B, US Census Bureau, 2015

2) Flores AR et al, The Williams Institute 2016.

Background

- Medicare is covering transgender surgery
(May 2014)
- Increase in pts undergoing confirmatory surgery
 - ASPS reports 1,700 transmasculine Sx in 2016 (↑20%)¹
 - Increase in genital surgery among TG patients²

1) American Society of Plastic Surgery

2) Canner, KJ et al, *JAMA* 2018

Steps of Treatment (FtM)

- Documented gender dysphoria¹
- Hormonal treatment >12 months
- Live in new gender >12 months
- Two letters of recommendation from MHP
- Mastectomy
- Hysterectomy, oophorectomy
- Vaginectomy, phalloplasty

1) Selvaggi G, et al, WPATH Standards of Care, *Adv Urol*. 2012

Surgical Anatomy

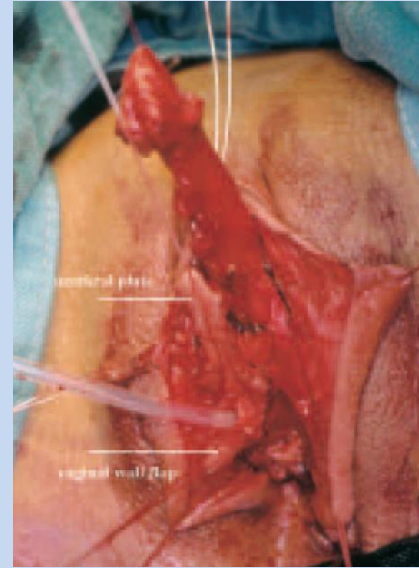
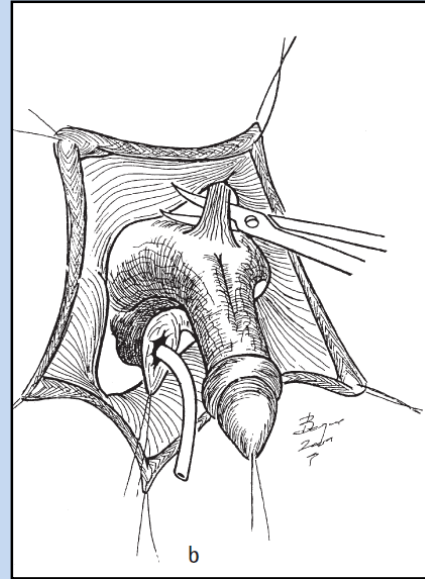
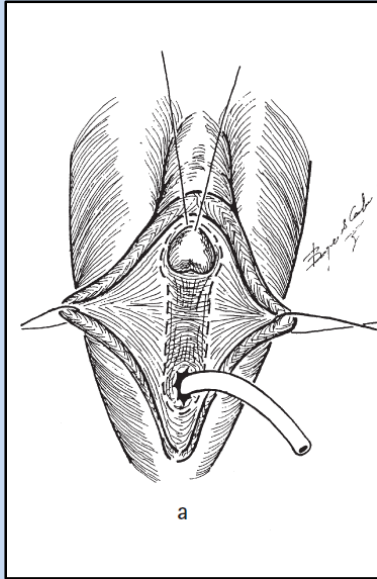
Types of Surgery

- Metoidioplasty
 - Suitable for voiding upright
 - Clitoral dissection, elongation
 - Local flaps only

- Phalloplasty
 - Suitable for sexual and voiding functions
 - Local flaps for “bulbar urethra”, *pars fixa*
 - Free flaps for “penile urethra”, *pars pendulans*



Metoidioplasty



Metoidioplasty

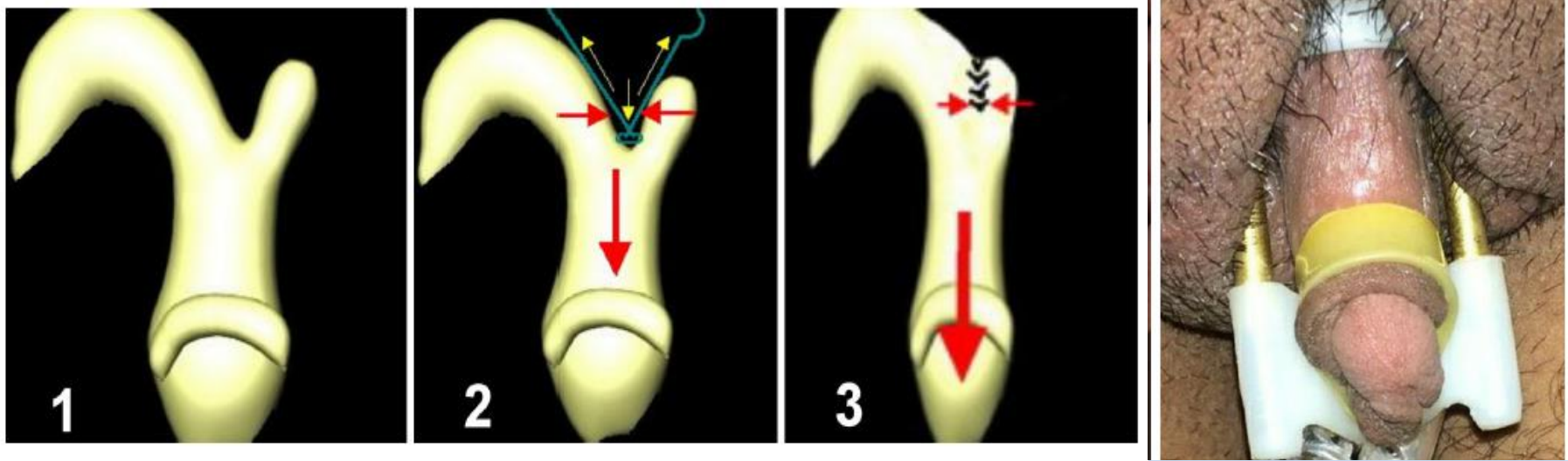


Perovic S. and Djordjevic M, *BJUI* 92. 2003

Extensive Metoidioplasty as a Technique Capable of Creating a Compatible Analogue to a Natural Penis in Female Transsexuals

Shahryar Cohanad¹

Aesth Plast Surg (2016) 40:130–138
DOI 10.1007/s00266-015-0607-4

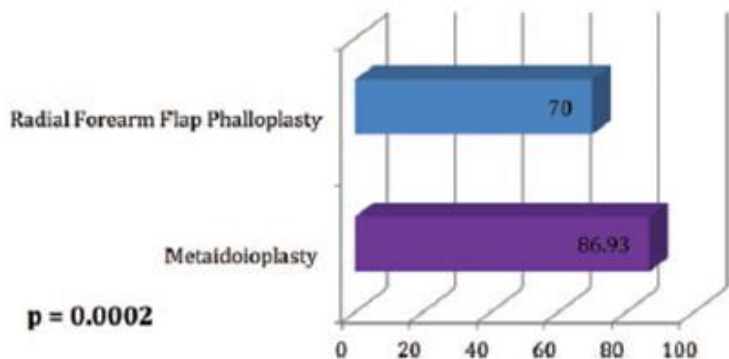


10 patients, 8.7 cm (6-12)
7/10 reported erection

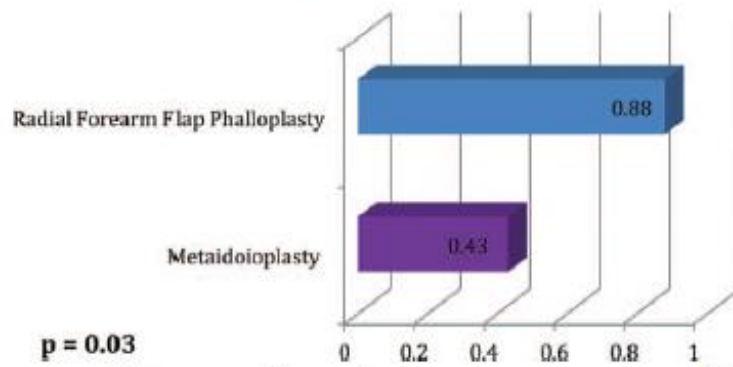
Jordan D. Frey, MD
Grace Poudrier, BA
Michael V. Chiodo, MD
Alexes Hazen, MD

A Systematic Review of Metoidioplasty and Radial Forearm Flap Phalloplasty in Female-to-male Transgender Genital Reconstruction: Is the “Ideal” Neophallus an Achievable Goal?

Aesthetic Satisfaction (%)



Overall Complications per Patient

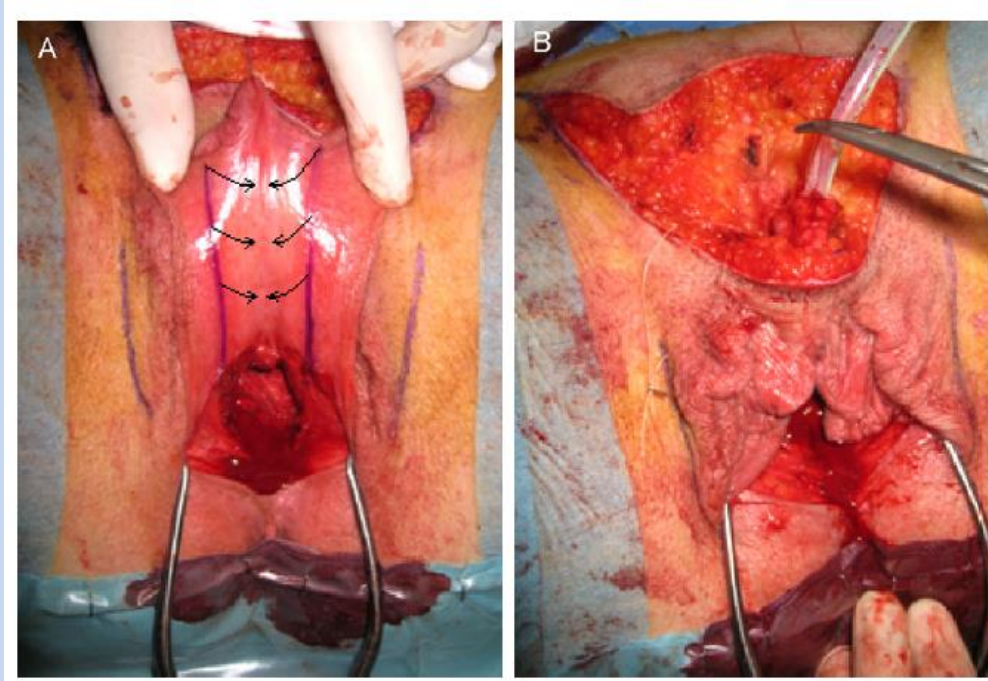


17 studies

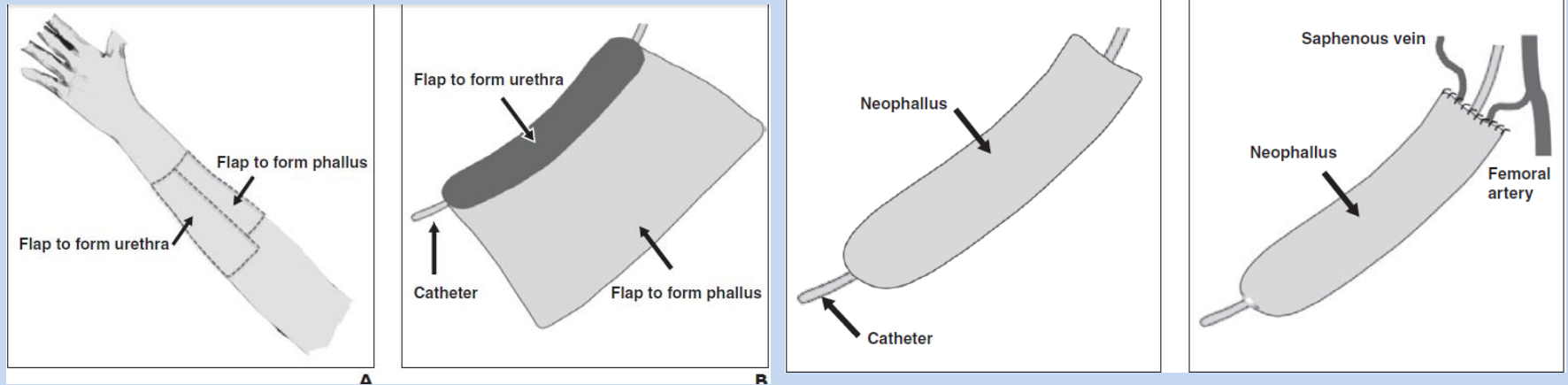
Meta: 324 pts: 87% success, 100% sensation, 51% intercourse, 89% upright voiding

Phallo: 665 pts: 70% success, 69% sensation, 43% intercourse, 89% upright voiding

Phalloplasty: Start with “bulbar urethra”



Add Neophallus: tube within a tube



Example: Thigh Flap



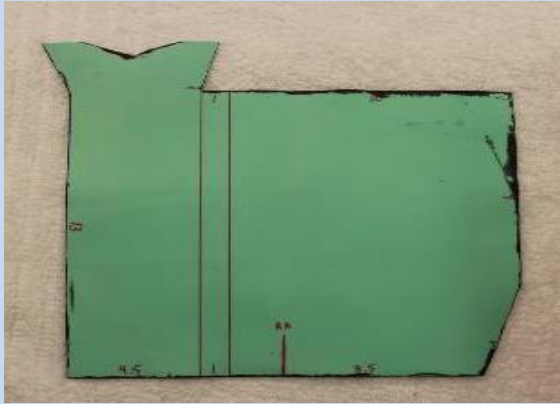
Photo by Dr. Curtis Crane

Flap in Final Position



Photo by Dr. Curtis Crane

Example: Radial Forearm Flap



Template

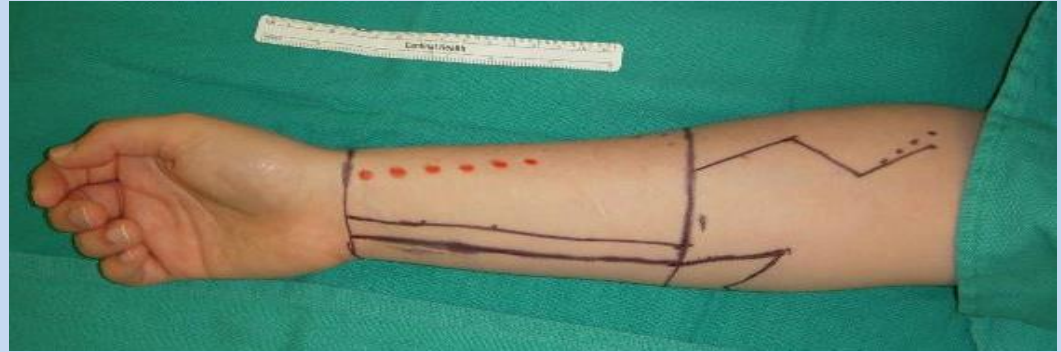
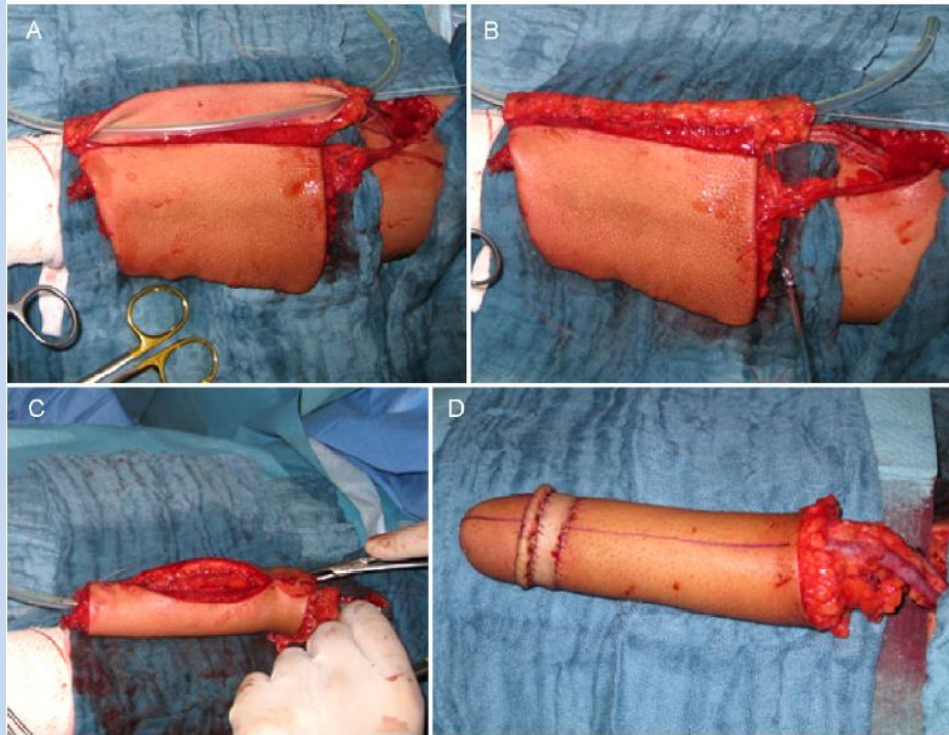


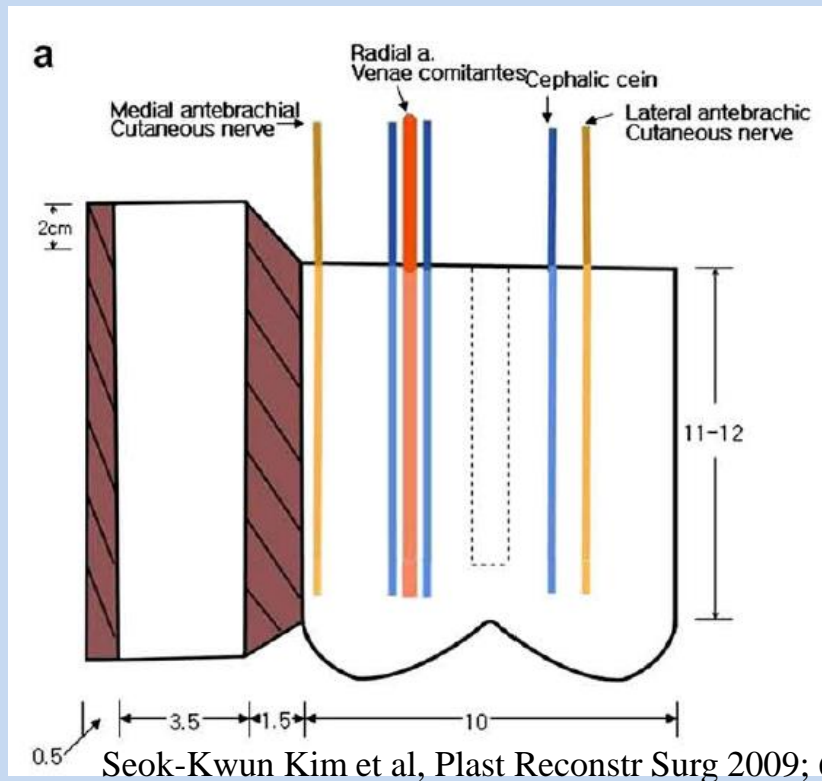
Photo by Dr. Curtis Crane

Phalloplasty: penile urethra



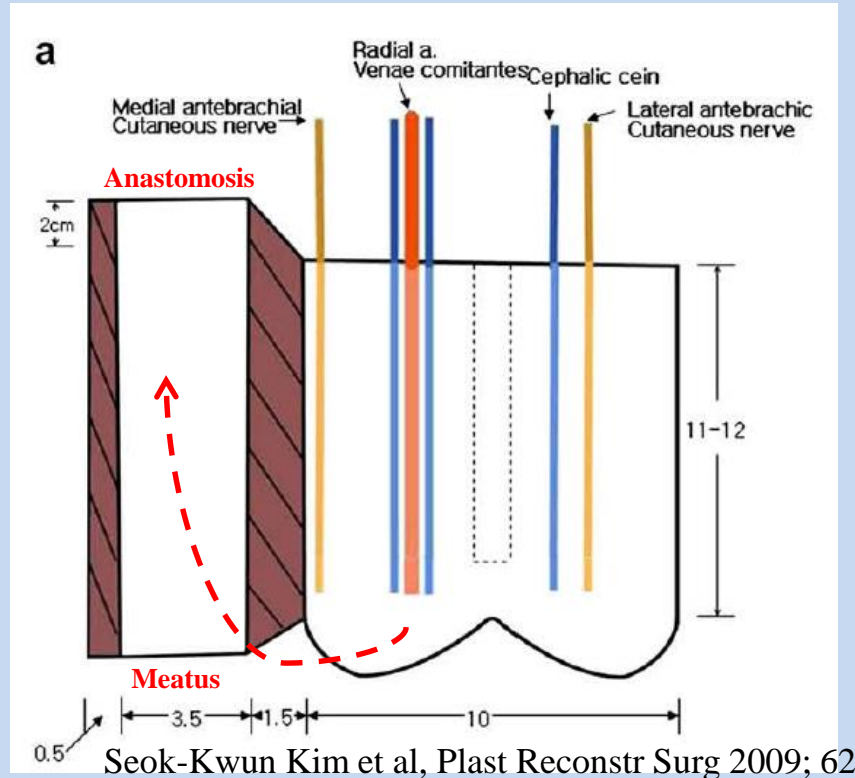
Radial Flap Anatomy

- Radial Artery
- Cephalic Vein
- Medial A.C.N.
- Lateral A.C.N.

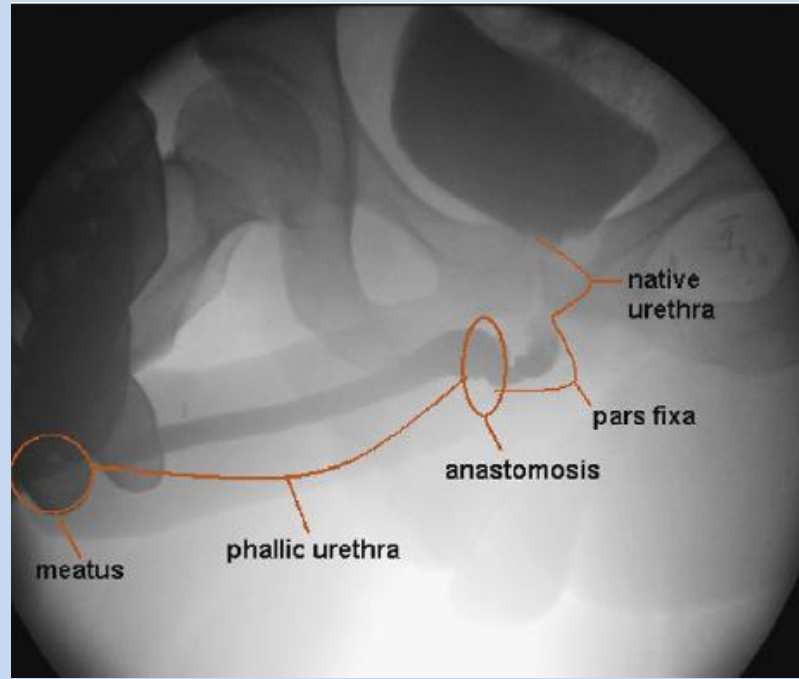


Radial Flap Anatomy

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Phalloplasty: Expected Anatomy



Lumen N et al, *European Urology* 2010

Complications of Neophallic Urethra

287 patients, 119 (47%) had urological complications

Urologic	
Early fistula (closing spontaneously)	51 (17.7)
Stricture treated conservatively	21 (7.3)
Fistula/stricture requiring urethroplasty (97 additional operations)	52 (18.1)

A New Kind of Consult:

Pt with neophallus complications

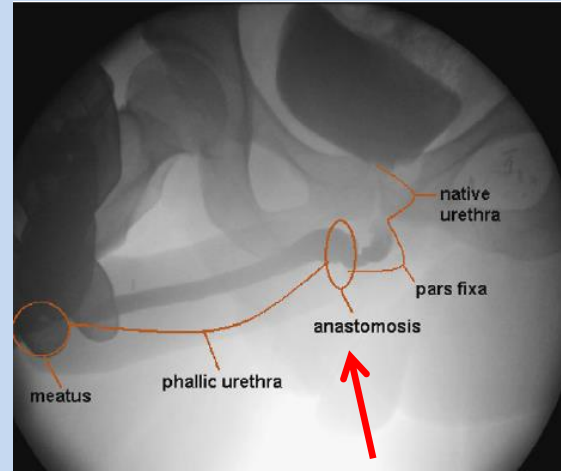
- What was the original operation?
- What is the expected new anatomy?
- What are the problems?

Problem #1- Urinary Retention

- Be safe- endoscopic catheter or SPT
- Imaging- RUG/VCUG

Observed GU Complications:

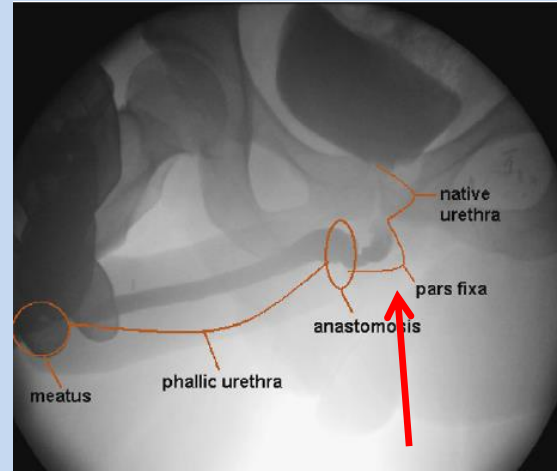
- 1) Anastomotic stricture
- 2) Proximal UC fistula
- 3) Pelvic cavity (remnant)
- 4) Meatal stenosis
- 5) Distal UC fistula
- 6) Obliteration of Phallic Urethra



Lumen N et al, *European Urology* 2010

Observed GU Complications:

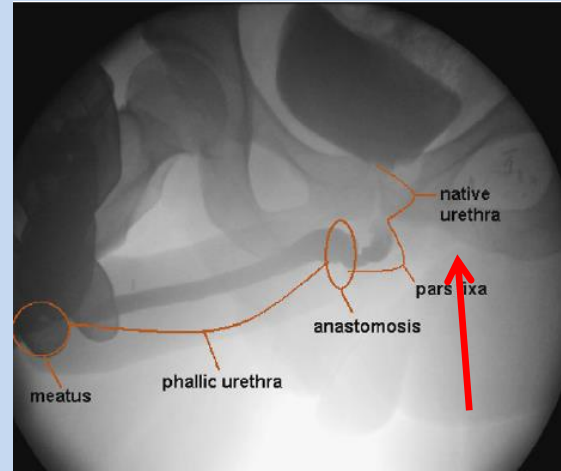
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Lumen N et al, *European Urology* 2010

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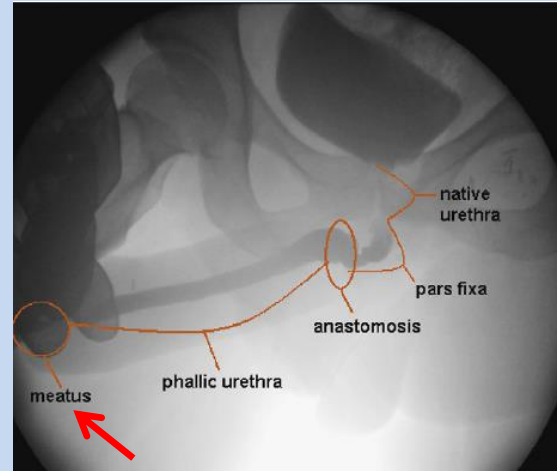
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Lumen N et al, *European Urology* 2010

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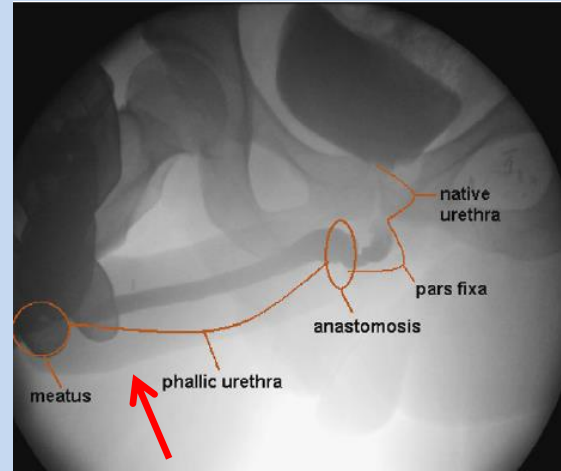
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Lumen N et al, *European Urology* 2010

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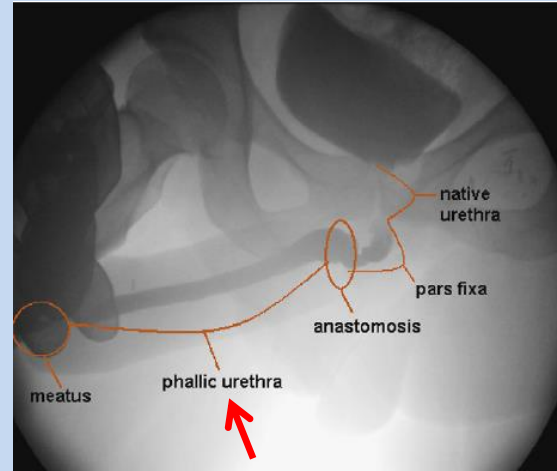
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Lumen N et al, *European Urology* 2010

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Lumen N et al, *European Urology* 2010

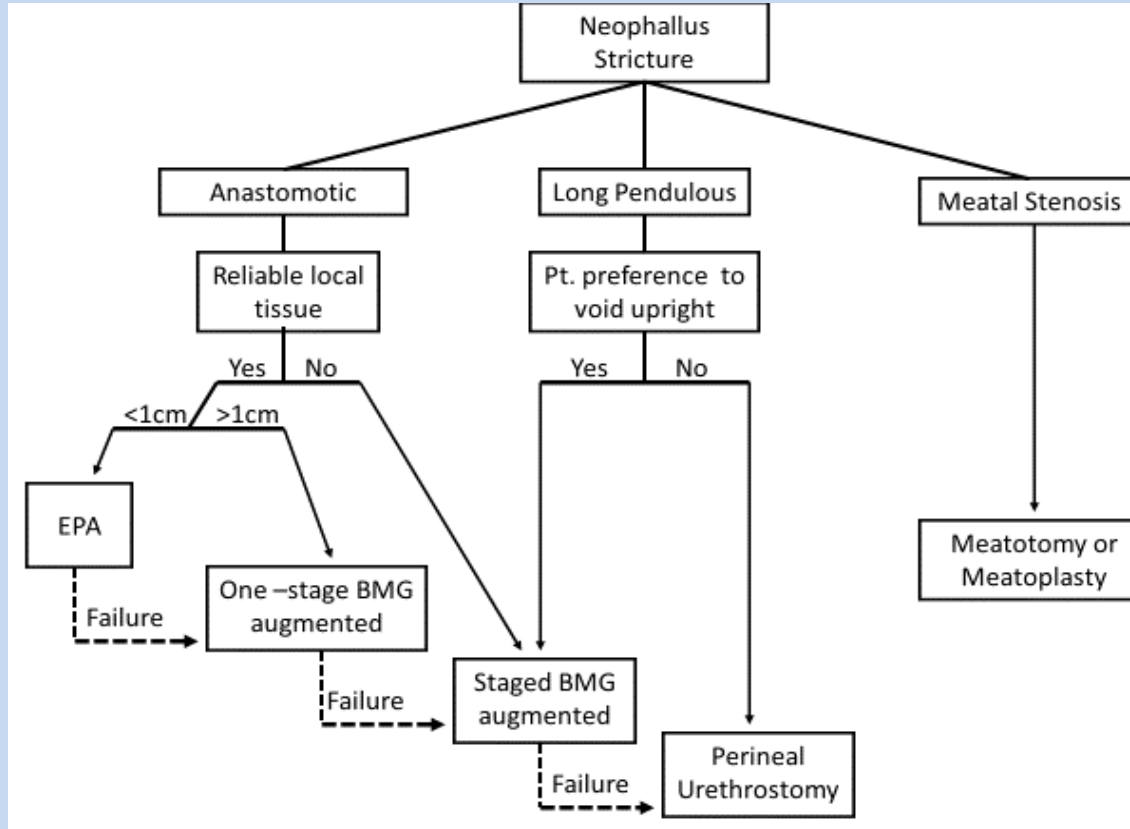
Observed GU Complications:

Expect Numerous Simultaneous
Complications!

Reconstructive techniques

- Meatoplasty
- Excision and primary anastomosis
- Heinecke-Mikulicz
- Oral mucosa graft (one-stage or staged)
- Pedicle flap

Proposed Algorithm:

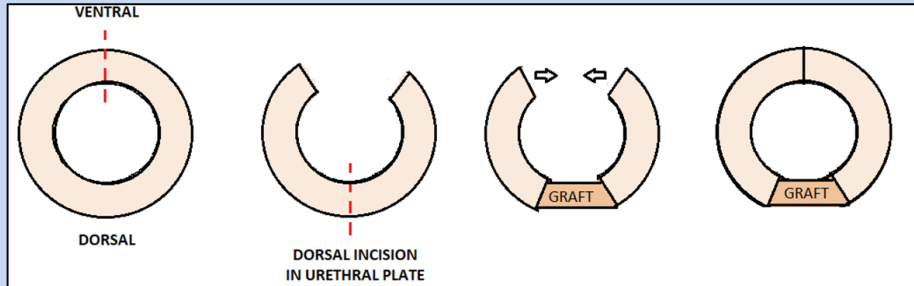
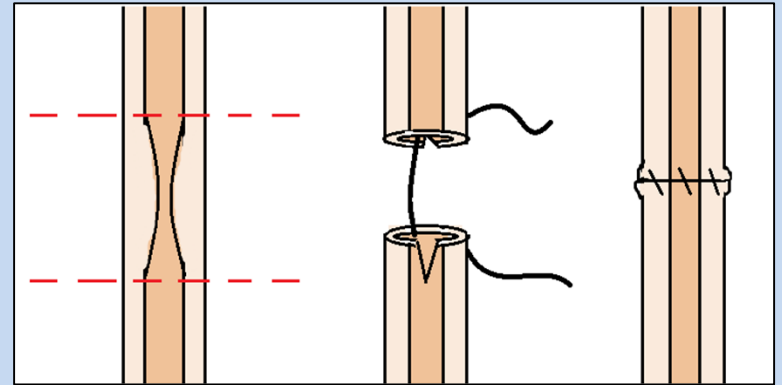
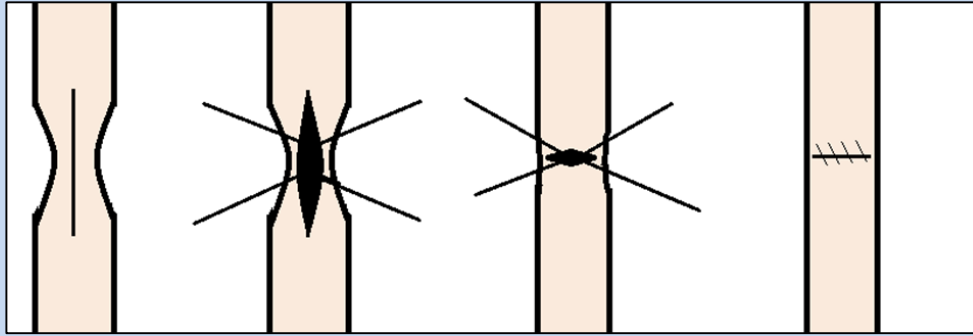


Anastomotic Stricture



Stricture

Urethroplasty Techniques



Problem #2- Incontinence

- Post-void or continuous
- Suspect vaginal remnant/fistula
- Imaging/cystoscopy

Reported Outcomes

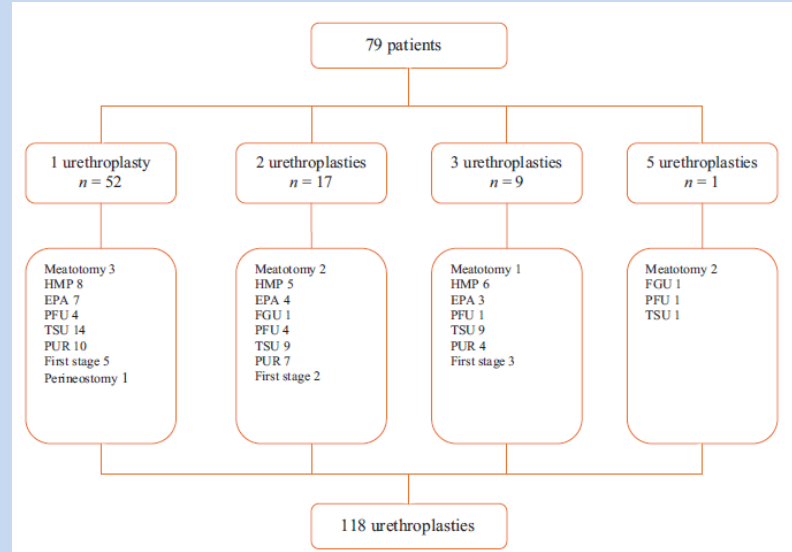
- Levine, *J. Urol* 1995
 - **9 pts**, various techniques, **67% failure**
 - Only BMG urethroplasty (3 pts) succeeded

- Pariser et al, *Urology* 2015
 - **10 pts**, BMG ventral onlay, **50% failure**

- Lumen et al, *Eur Urol* 2010
 - **79 pts**, various techniques, **41% failure**

Most strictures are at anastomoses

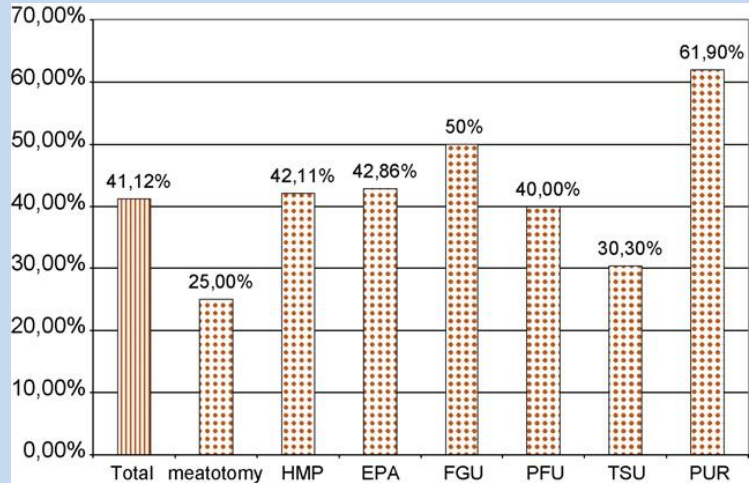
Stricture Location	n (%)
Meatus	18 (15.3)
Phallic part	28 (23.7)
Anastomosis	48 (40.7)
Fixed part	15 (12.7)
Multifocal	9 (7.6)



34% required >1 urethroplasty

Failure Rates: higher than cisgender

- Meatotomy- 25%
- Two stage- 30%
- Pedicle flap- 40%
- ***EPA***- 43%
- Free graft- 50%
- Urethroostomy- 62%
- **Overall- 41%**



Reconstructive Considerations

- Understanding of the anatomy after prior surgery is key for success
- Creative techniques are necessary
- New technology allows for innovative approaches to pelvic surgery
- Recurrent problems remain very common

Surgical Considerations

- Avoid blind placement of Foley catheters
 - Use flexible cystoscopy and placement over a wire
 - Suprapubic tube

Surgical Considerations

- Avoid large caliber and rigid scopes in neo-urethra
 - Use flexible cysto/ureteroscopes, pediatric scopes
 - Consider percutaneous procedures

Surgical Considerations

- Avoid compromising vascular pedicle to the flap
 - Careful positioning to avoid compression
 - Avoid dissection near the pedicle (read surgeons note)
 - Use Doppler

Surgical Considerations

- Incontinence:

suspect #1 remnant vaginal cavity

#2 fistula

- Solutions for true SUI?

autologous sling?

TVT/TOT? (how to avoid pedicle?)

Bladder neck AUS?

Conclusions

- Expect pts post gender affirmation + GU complications
- Complications are common
- Simultaneous problems
- Anatomy is different from cis-gender patients
- High reported failure rate

Conclusions

- Patients need GU follow up
- Routine GU procedures tailored with respect to new anatomy

Thank you!