PHALLOPLASTY

Dr Hans Goossen

10th & 11th February 2018

Best Practice in Transgender Health: A Workshop for GPs, Health Care Providers, Trans Individuals and Parents

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ANDROLOGY & UROLOGY

- Male genital reconstruction / Peyronie's disease / Erectile dysfunction and Penile implants / Urethral strictures and reconstruction / Scrotal problems
- Penile / Testicular / Urethral cancers, including sarcomas
- Gender Reassignment Surgery
- Vasectomy & Microsurgical Vas Reversal / Male infertility / Varicocele / Denervation
- Stones / male & female outflow obstruction / Laparoscopy of the upper urinary tract / Urological malignancies

PHALLOPLASTY - INDICATIONS

Gender Reassignment

Penile cancer

Trauma

Self amputation

Penile implant

External trauma

Micropenis ———————>

Robinow
Exstrophy
5α Red def
Testis tumour

FTM SURGERY - OVERVIEW

- Chest Surgery
  - Limited incision
  - Circumareolar
  - Double incision

- Hysterectomy + BSO
  - Preferably prior to phalloplasty (unless pubic phalloplasty)

- Phallus
  - Metoidioplasty
  - Pubic Phalloplasty
  - Radial Artery Forearm Flap
  - AnteroLateral Thigh Flap
  - (Musculocutaneous Latissimus Dorsi Flap)

FTM SURGERY - OVERVIEW

- Prior to surgery
  - Gender Dysphoria Diagnosis
  - Gender Role
  - Endocrine Management
- MDT approach
  - GP
  - Psychologist / Psychiatrist
  - Social worker
  - Nurse
  - Endocrinologist
  - Surgical Team

FTM SURGERY - OVERVIEW

- Prior to surgery

- BMI < 30
- Non - smoker

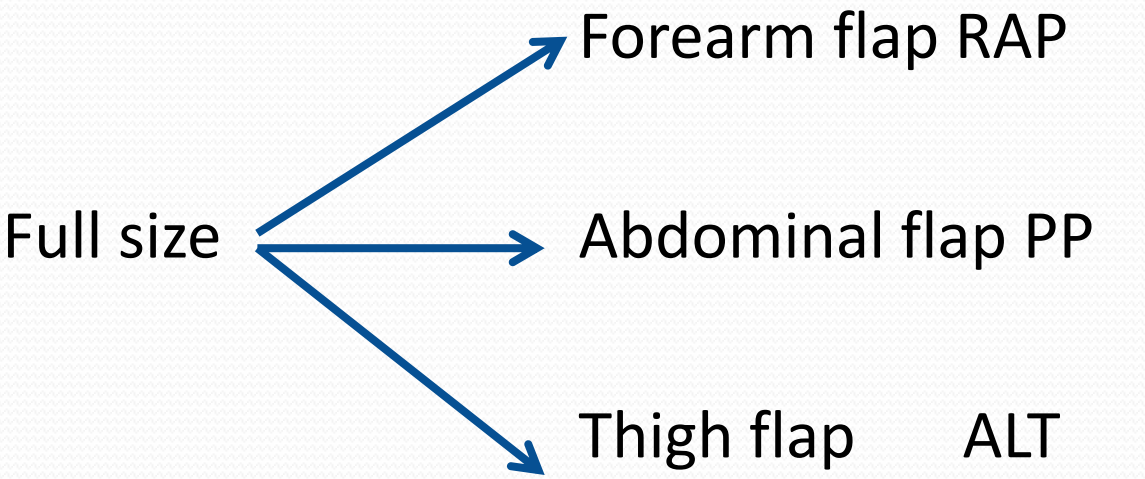
- Healthy

- 2 “referrals” from psychiatrist / psychologist
  - stating diagnosis + full support, and
  - recommending surgery, and
  - discussing other possible mental health issues

- Other supporting documentation
  - Endocrinologist
  - Previous surgery and recovery
  - Changed Birth Certificate / Driver Licence / Passport

PHALLOPLASTY - OVERVIEW

Mini → Metoidioplasty



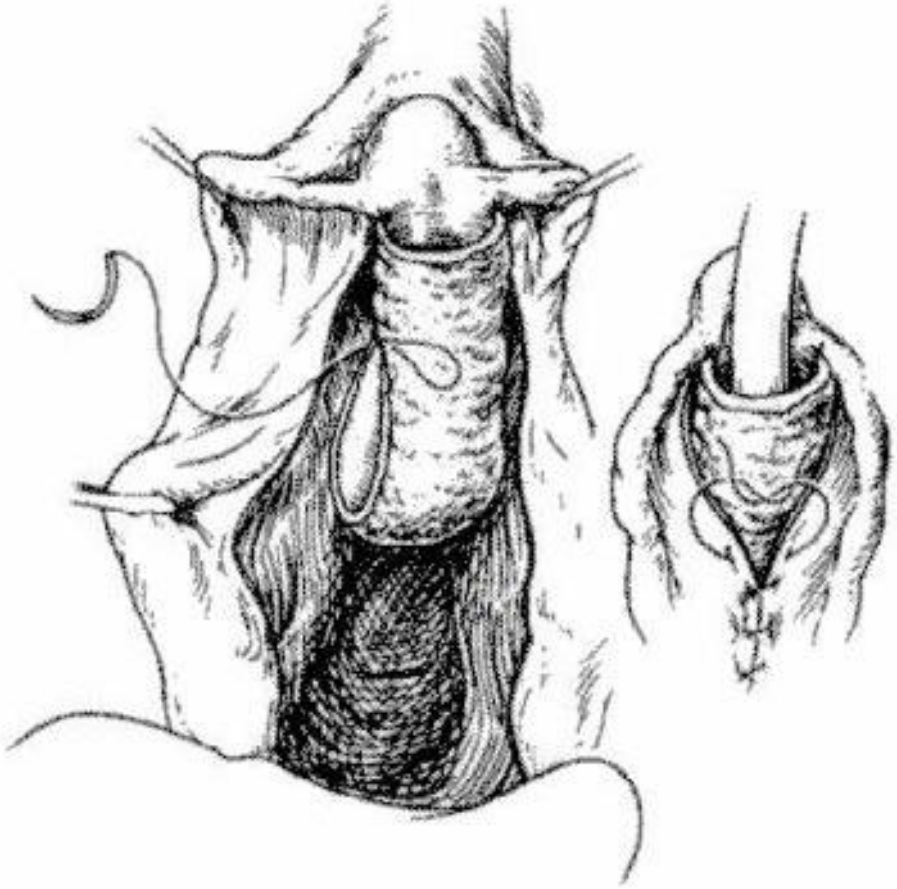
METOIDIOPLASTY

- Lengthening of the virilised clitoris
- With / without urethral lengthening (stand / sit to void)
- With / without vaginectomy
- With / without scrotum

METOIDIOPLASTY

- 2 - 3 stage operation
  - 4 - 6 months between stages
- Minimal phallus loss / complications
- Sensation usually preserved
  - Urethral lengthening
  - Urethral stricture / fistula
  - Stand to void

METOIDIOPLASTY



METOIDIOPLASTY - ADVANTAGES

- Cheaper than phalloplasty / No major grafts
- Sexual function
  - Erection 94% —> NO PENETRATION!
  - Masturbation 100%
  - Orgasm 100%
- Cosmesis satisfaction
  - Appearance 77%
  - Length 71%
- Voiding
  - Standing 47%
  - Confidence using public urinal 12%
  - Satisfaction 71%

PHALLOPLASTY

- Cosmesis
  - Phallus
  - Scrotum
- Tactile / Erogenous sensation
- Stand to void
- Sexual function
- Minimal morbidity of the surgical intervention and donor site

PHALLOPLASTY

- Options
  - Pubic Phalloplasty
  - Radial Artery Phalloplasty
  - Antero-Lateral Thigh Flap
  - (Musculocutaneous Lattisimus Dorsi Flap)

PUBIC PHALLOPLASTY

- Cheaper option
- Cosmesis OKAY
  - Phallus
  - Scrotum
- Tactile / Erogenous sensation
  - AVERAGE TO POOR
- Stand to void
  - ONLY AFTER RADIAL ARTERY URETHROPLASTY
- Sexual function
  - IMPLANT

RADIAL ARTERY PHALLOPLASTY

Forearm Flap in One-Stage Reconstruction of the Penis

Ti-Sheng Chang, M.D., and Wen-Yi Hwang, M.D.

Shanghai, People's Republic of China

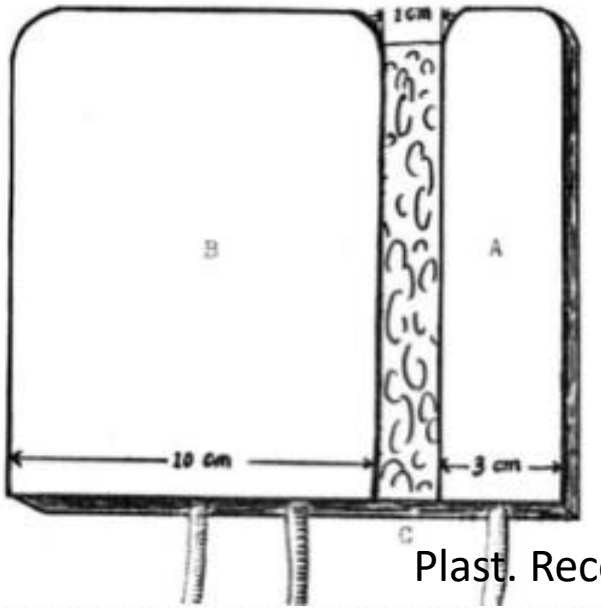
Traumatic or surgical amputation of the penis, congenital penile absence, microphallus, and male pseudohermaphrodism are physiologically and psychologically intolerable to patients. Consequently, reconstruction becomes mandatory.

In classical phalloplasty, the long period of reconstruction (6 to 12 months) and multiple procedures (3 to 5 stages) are physically and economically difficult for patients, even though a penis thus reconstructed is physiologically, cosmetically, and psychologically acceptable, permitting both marriage and sexual activity.

Since the introduction of microsurgical technique, one-stage penile reconstruction has become possible by making use of an immediately vascularized skin flap. With this technique, the forearm free skin flap, which is soft, uniformly thin in subcutaneous tissue, and has a long vascular pedicle, seems to be an ideal donor.

We have so far performed 7 cases of penile reconstruction utilizing the radial skin flap to immediately reconstruct the urethra and the penis in a single stage with complete success.

flap 11 to 12 cm in length and 14 to 15 cm in width is designed (Fig. 1). Three portions are divided on the flap in order to allow simultaneous

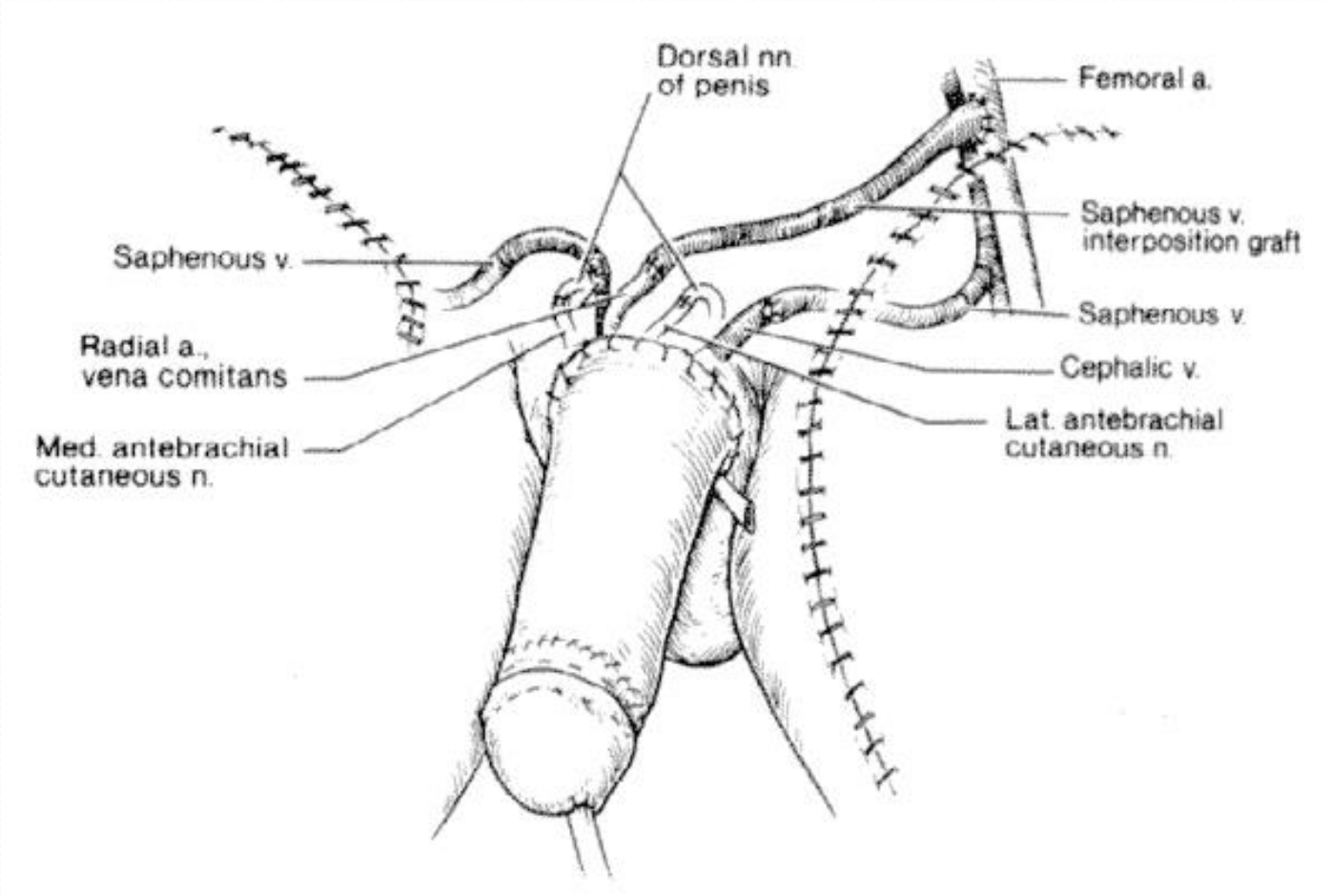


Plast. Reconstr. Surg. 74; 251, 1984

RADIAL ARTERY PHALLOPLASTY

- 3 STAGES
  - 1st stage
    - formation of the phallus
  - 2nd stage
    - hook-up urethra
    - vaginectomy
    - scrotoplasty
    - glans sculpting
      - +/- minor revision phallus / urethra
  - 3rd stage
    - Penile + Testis Implant
      - +/- minor revision phallus / urethra

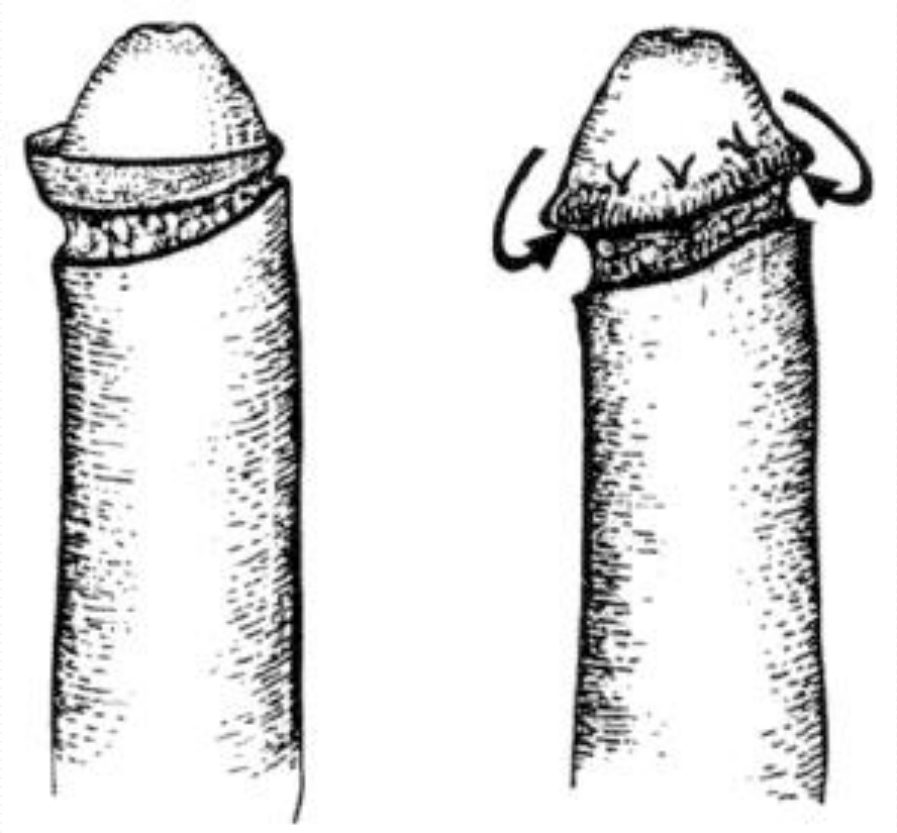
RAP - 1st stage



RAP - 2nd stage

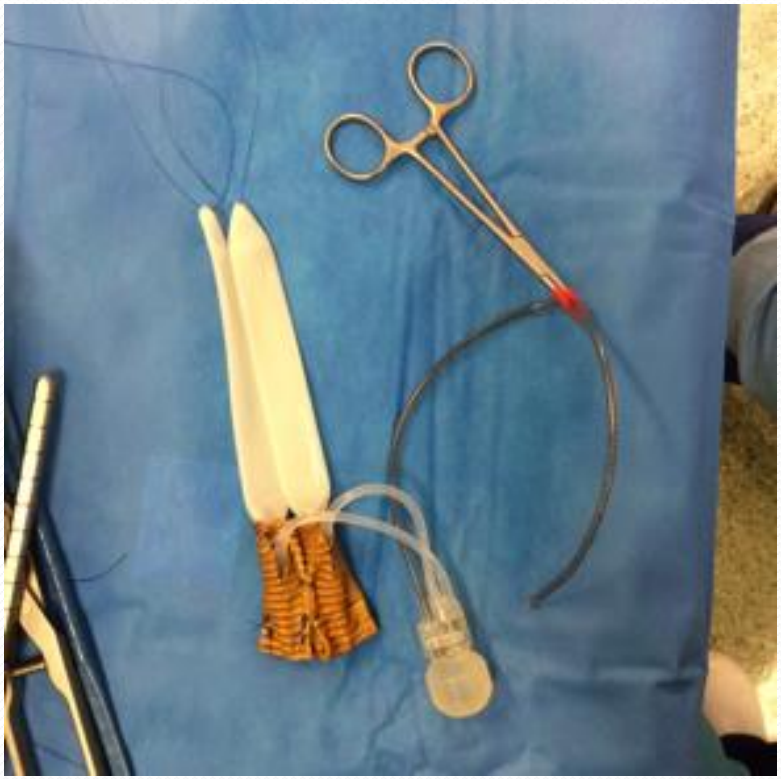
- Steps:
  - hook-up urethra
  - vaginectomy
  - scrotoplasty
  - glans sculpting
    - +/- minor revision phallus / urethra
- Issues
  - Avoid hairy skin
  - Clitoris - Bury ???

RAP - 2nd stage



RAP - 3rd stage

- 3rd stage
  - Penile + Testis Implant
    - +/- minor revision phallus / urethra



RAP Complications

	N	Phallus loss %	Urethral fistula/ stricture %	Prosthesis loss %
Monstrey	*81*	*4*	*42*	*20*
Monstrey	*280*	*2*	*41*	*44*
Leriche	*56*	*5*	*37*	*29*
Ralph	*129*	*3*	*35*	*25*

- Fistula rate much lower when combined with vaginectomy
- Overall Satisfaction Rate 80 - 95%

Garaffa. Eur Urol 2010;57;715
Monstrey . Plast Recon Surg 2009; 124;510
Leriche. BJUI 2008. 101;1297

RAP Complications - Vaginectomy

	Mucosal excision	Ablation
• Blood loss	1000ml	<100ml
• Transfusion	18%	0
• Bladder injury	2-3%	0
• Rectal injury	1%	0
• Bladder dysfunction	5%	0
• Reoperation	10%	0

RAP Complications - Implant

- Infection risk 10 %
- Revision rate high 31%
- Mechanical failure 24% - 6 yrs
- Patients using device 50%

RAP Complications - Arm

- Graft loss +/- revision graft
  - No longterm consequences
- Cosmetic changes
  - Tattoo
- Sensory loss
  - Partial, not significant
- Ischaemic changes to hand
  - (Pre-op Allen Test +/- USS)
- Functional loss
  - Extremely rare

RAP - UCLH SURVEY

Cosmesis	Excellent	68	
	Good	41	TOTAL= 111
	Poor	2	
Satisfaction (size)	Complete	65	
	Partial	7	TOTAL = 74
	No	2	
Satisfaction (cosmesis)	Complete	66	
	Partial	6	TOTAL = 74
	No	2	
Sensation * (83%)	Complete	43	
	Partial	9	TOTAL = 63
	No	11 (included 2 lost phallus)	

ALT - PHALLOPLASTY

- Cosmesis
  - Phallus
    - MAY NEED DEBULKING
  - Scrotum
- Tactile / Erogenous sensation
  - LESS THAN RAP - USUALLY ONLY 1 NERVE
- Stand to void
  - MORE URETHRAL ISSUES
- Sexual function
  - OKAY WITH IMPLANT
- DONOR SITE
    - Concealed
    - Usually covered with Skin Graft from other leg
    - Usually no functional issues
    - Graft loss +/- re-grafting

SUMMARY - PATIENT

- FTM GENDER REASSIGMENT SURGERY - WPATH SOC
- PATIENT
  - Healthy, Non - smoker, BMI < 30
- IDEALLY
  - 2 “referrals” from psychiatrist / psychologist
    - stating diagnosis + full support, and
    - recommending surgery, and
    - discussing other possible mental health issues
  - Other supporting documentation
    - Endocrinologist / GP
    - Previous surgery and recovery - issues?
    - Changed Birth Certificate / Driver Licence / Passport

SUMMARY

- Consent is extremely important
- Patient's Expectations have to be realistic

  - Metoidioplasty
    - Cheaper (10 - 20k —> surgical costs)
    - Preserved sensation
    - Void standing
    - No penetration
    - Micro-penis appearance

- Phalloplasty
  - Great cosmesis / function
  - Void standing (mostly)
  - Penetration / sexual function
  - Variable sensation (50% complete)
  - Costly (10 - 70k —> surgical costs)
  - More involving with longer recovery time
  - More obvious scarring

SUMMARY

- Issues to be addressed:
  - Multi-disciplinary approach
  - Consider patient geographics and local care
  - Multiple stages of surgery
    - choice of surgery
    - timing of surgery
    - time to completion all stages
    - recovery time / loss of income
    - access to primary care in recovery phase

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