

Principle & Evolution of Suporn Technique MtF Gender Confirmation Surgery

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MALE TO FEMALE GENDER CONFIRMATION SURGERY

- Is complex genital surgery.
- The outcome has enormous psychological effect on the trans woman individual.

Patients' Expectation

Which is the patients' highest expectation of gender confirmation surgical outcome?

1. Sexual sensation,
2. Aesthetic appearance, or
3. Neovaginal depth ?

Patients' Expectation

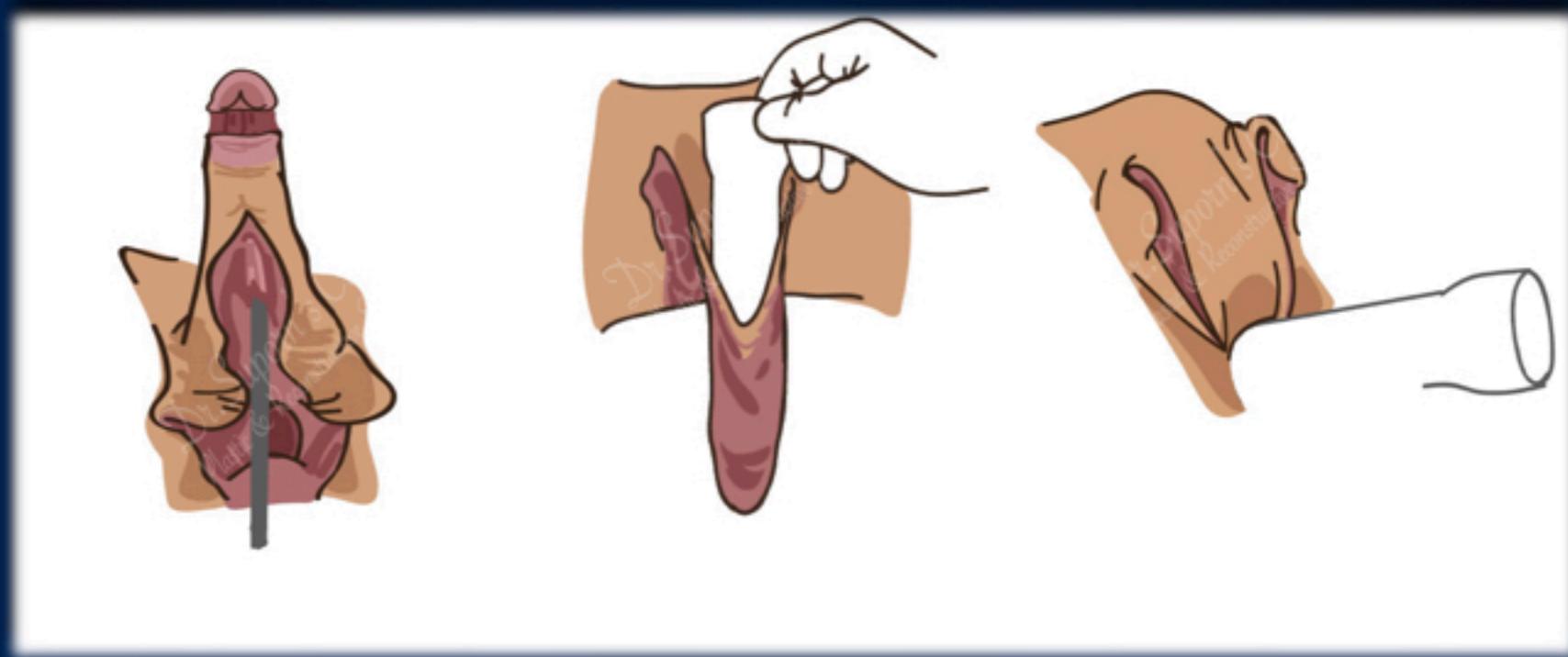
From the preoperative questionnaire in 590 cases between 2013-2016 , I found that:

- Sexual sensation and aesthetic appearance are the primary and secondary priority expectation of GCS results.
- Neovaginal depth is the least expectation in most cases.

The ideal GCS technique should consider sexual sensation and aesthetic appearance prior to neovaginal depth.

Penile Skin Inversion Vaginoplasty Technique

- Penile skin inversion vaginoplasty technique has been the standard technique in MtF gender confirmation surgery since the late 1950s.

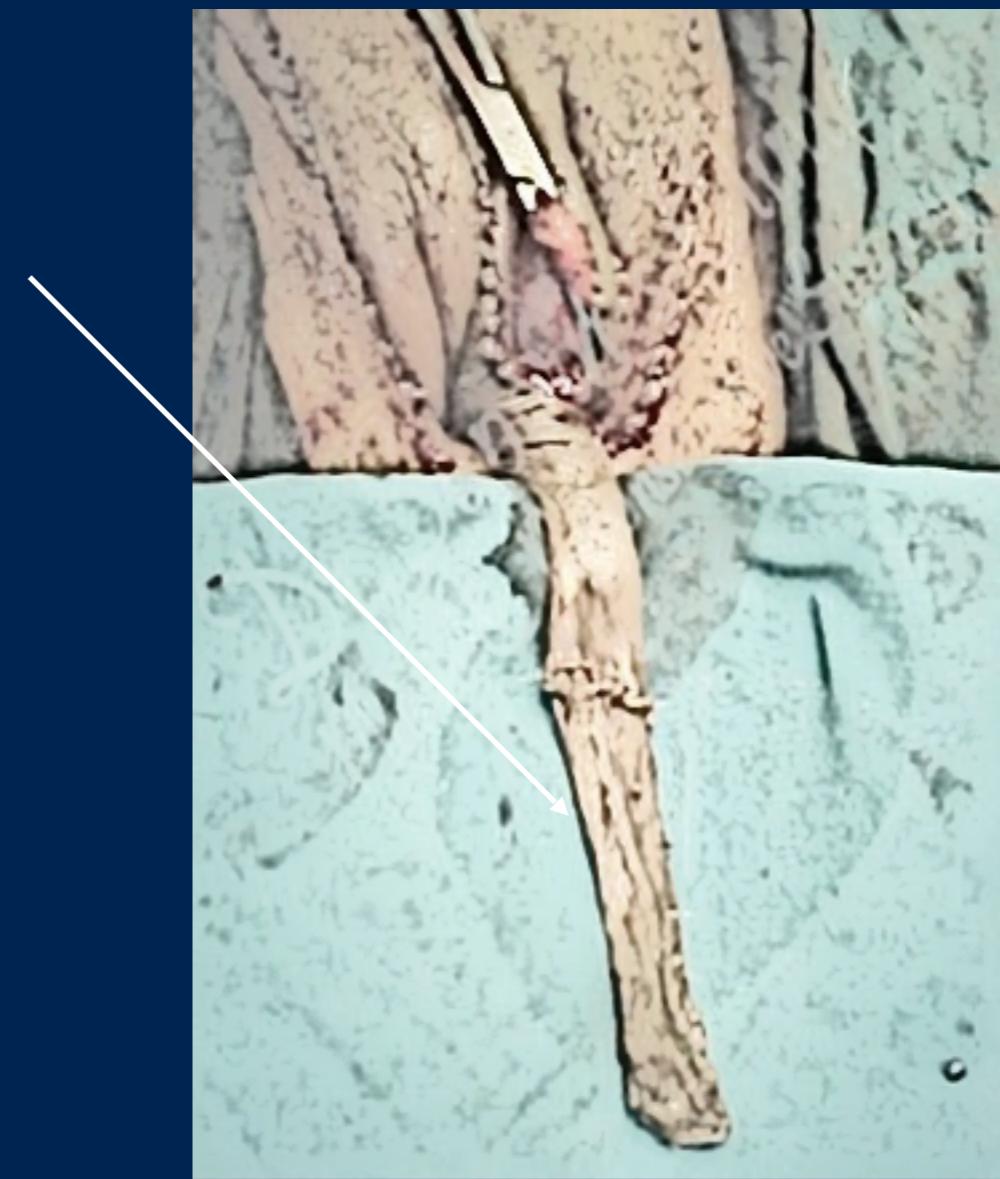


My Experiences with Penile Skin Inversion Vaginoplasty Technique (1992-2000)

- Between 1992-2000
- Personal experience in some 450 transwomen using penile inversion technique
- The dorsal neurovascular glans penis clitoroplasty was used for the sexual sensation result.

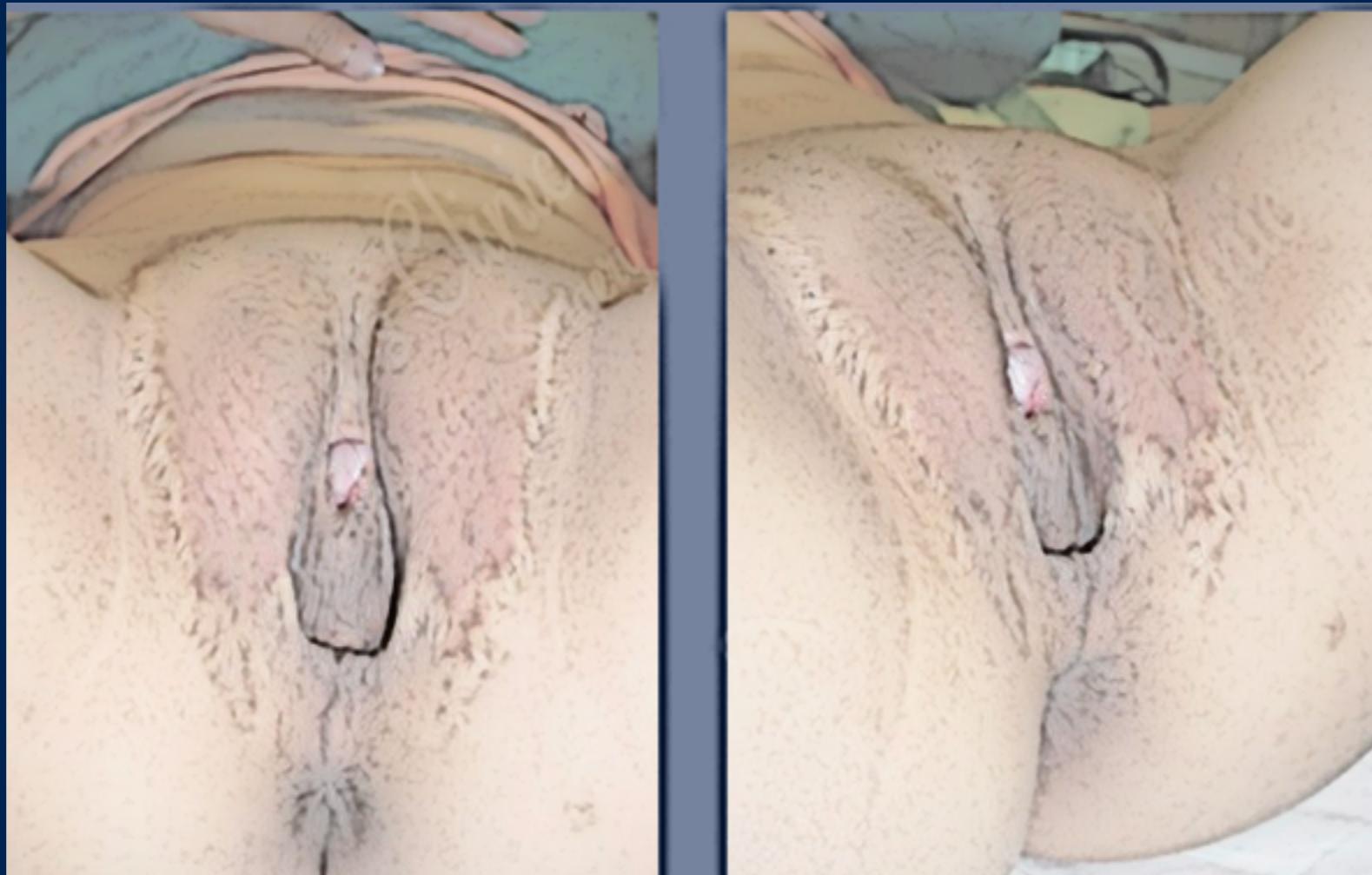
My Experiences with Penile Skin Inversion Vaginoplasty Technique (1992-2000)

- To obtain 6 inches neovaginal depth in cases of inadequate penile skin, addition with scrotal skin graft vaginoplasty were required in most case.



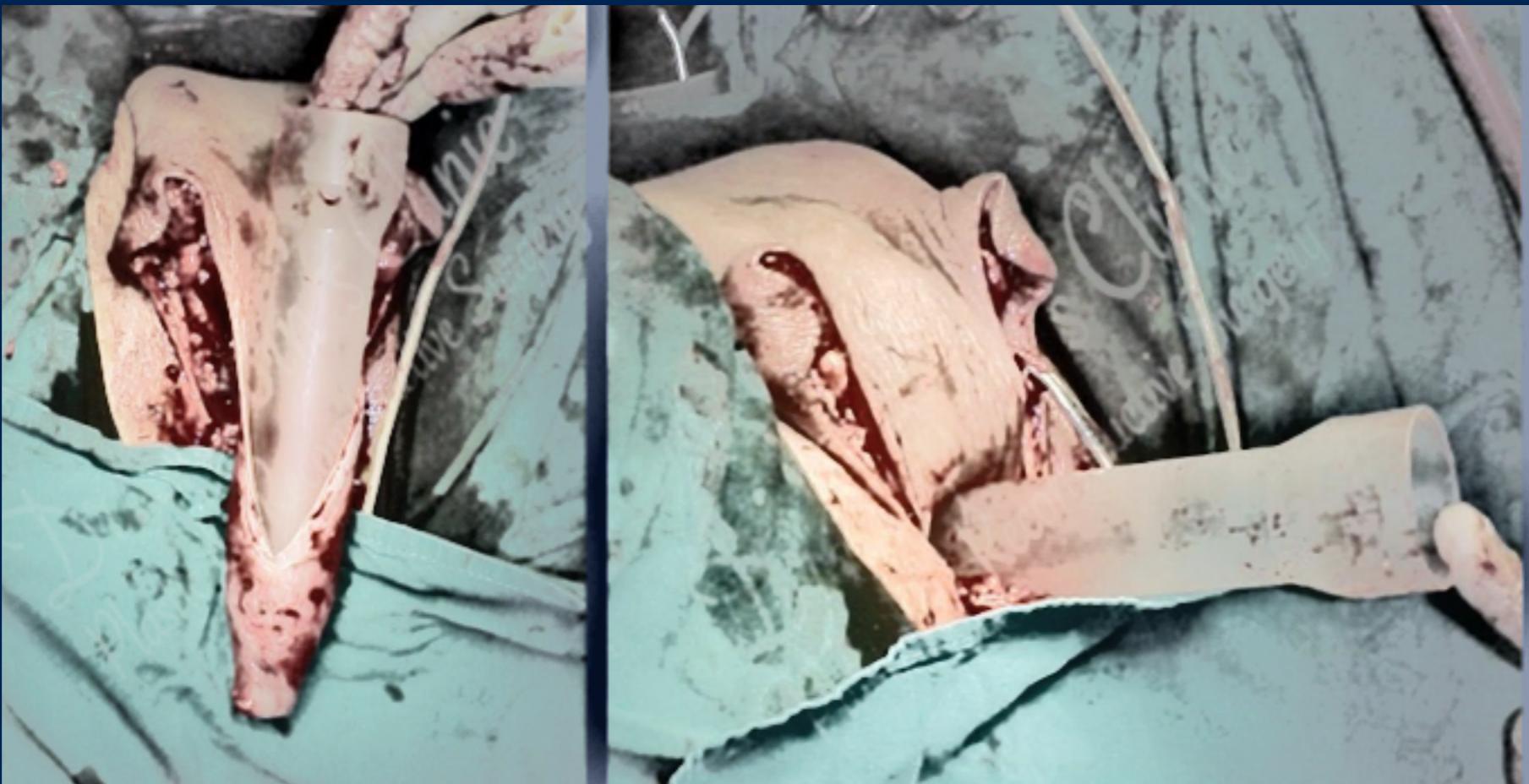
My Experiences with Penile Skin Inversion Vaginoplasty Technique (1992-2000)

Generally, PIV with the dorsal neurovascular clitoroplasty gave satisfactory neovaginal depth and sexual sensation results but good vulvar aesthetic results were mostly not achieved



My Experiences with Penile Skin Inversion Vaginoplasty Technique (1992-2000)

- Because most penile tissue is consumed within the vaginal cavity in PIV.
- This leaves very little to no surplus material to create a realistic vulvar appearance.



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Goals of Vulvar Aesthetic Appearance



- Round and Projection shape of clitoris
- covered with the clitoral hood dorsally which splits into a clitoral frenulum connecting with the upper one third part of labia minora on either side.

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Goals of Vulvar Aesthetic Appearance



- lip-like shape of labia minora with the length running each side posteriorly from the clitoral region toward the bottom of the vagina.
- Clearly differentiated from labia majora by the interlabial sulcus.

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Goals of Vulvar Aesthetic Appearance



- The labia minora should combine with two surfaces, the external and internal surface.
- The internal surface of each labia minora should consist of thin and hairless skin, with the typical pink color.

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Accomplishing Goals of Suporn Technique

To achieve the most possibly satisfactory outcome of sexual sensation, vulvar aesthetic and neovaginal depth.

The most appropriate donor tissues of male genitalia were considered to be chosen to reconstruct each structure of female genitalia.



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Glans Penis

Homology to the clitoris:

Size: Ten times size of clitoris in genetic female.

Sensitivity: The glans penis is estimated to have about 4,000 sensory nerve endings whereas the clitoris has about 8,000.



Glans penis is the best donor tissue for sensate clitoris reconstruction but to reduce the glans penis to be the same size as clitoris in women, the reconstructed sensate clitoris will decrease post-operative sexual sensation.

Suporn technique uses whole glans penis to reconstruct sensate clitoris and secondary sensate organ for preserving the sexual sensation as much as possible.

Prepuce

The prepuce consists of two layers of skin in different color that are extremely thin.

It is hairless and contains no subcutaneous fat.



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Prepuce

The inner layer of prepuce in men has the same texture, color, and quality as the inner surface of labia minora in women.



The prepuce is also rich of innervated, specific erogenous tissue with specialized encapsulated sensory receptors.

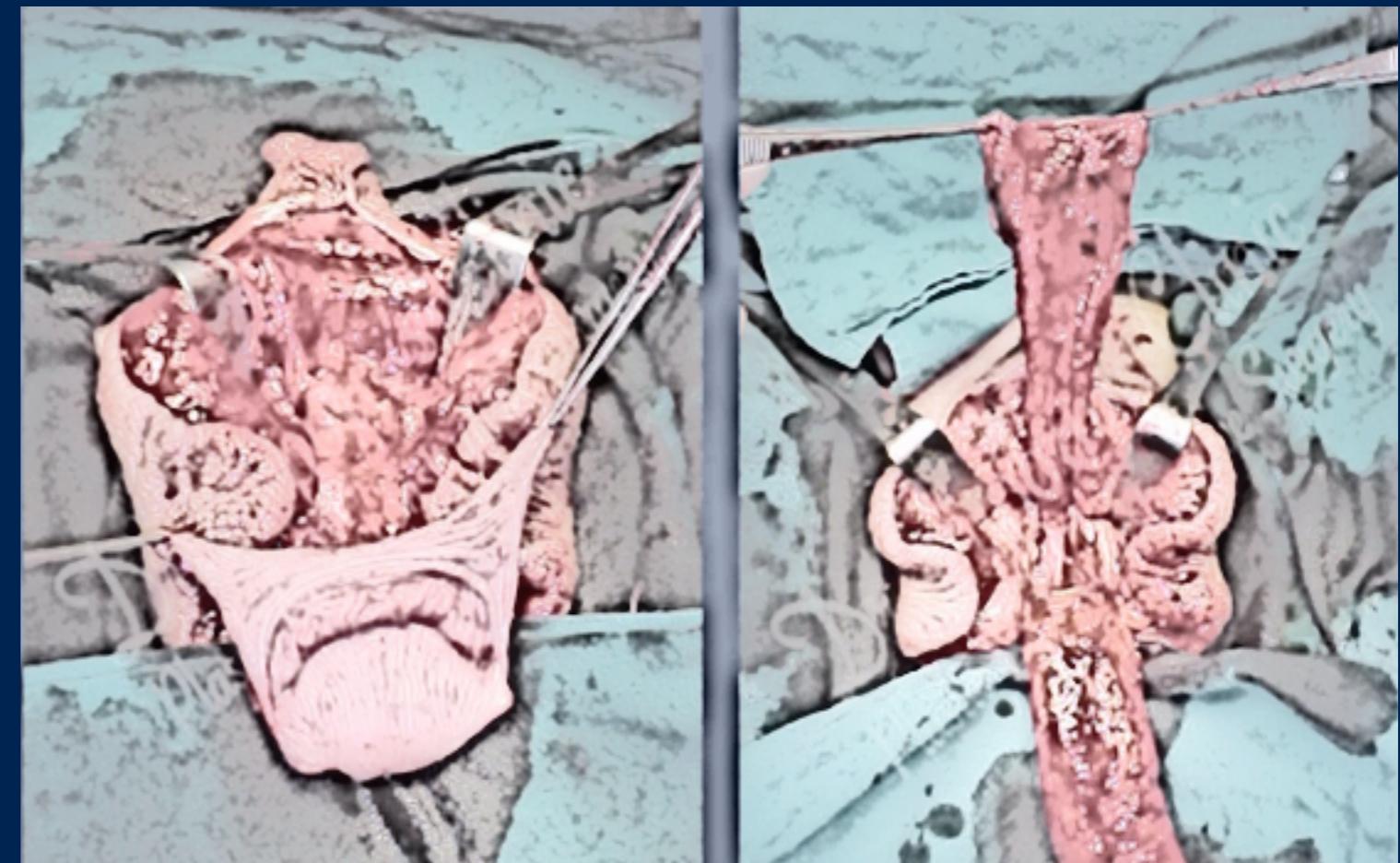
Prepuce is the most appropriate donor tissue for inner surface of labia minora reconstruction in GCS to achieve not only the satisfactory aesthetic result but also enhance the sexual sensation.

The Dorsal Neurovascular Whole Glans Penis Preputial Island Flap

- Based on the author's personal experience of gaining satisfactory neovaginal depth results by the scrotal skin graft vaginoplasty addition with the traditional PIV,
- A modified non-penile skin inversion vaginoplasty technique - the "Suporn technique" for MTF GCS was originated in September 2000 to provide enhanced vulvar aesthetics purpose without detriment to neovaginal depth.

The Dorsal Neurovascular Whole Glans Penis Preputial Island Flap

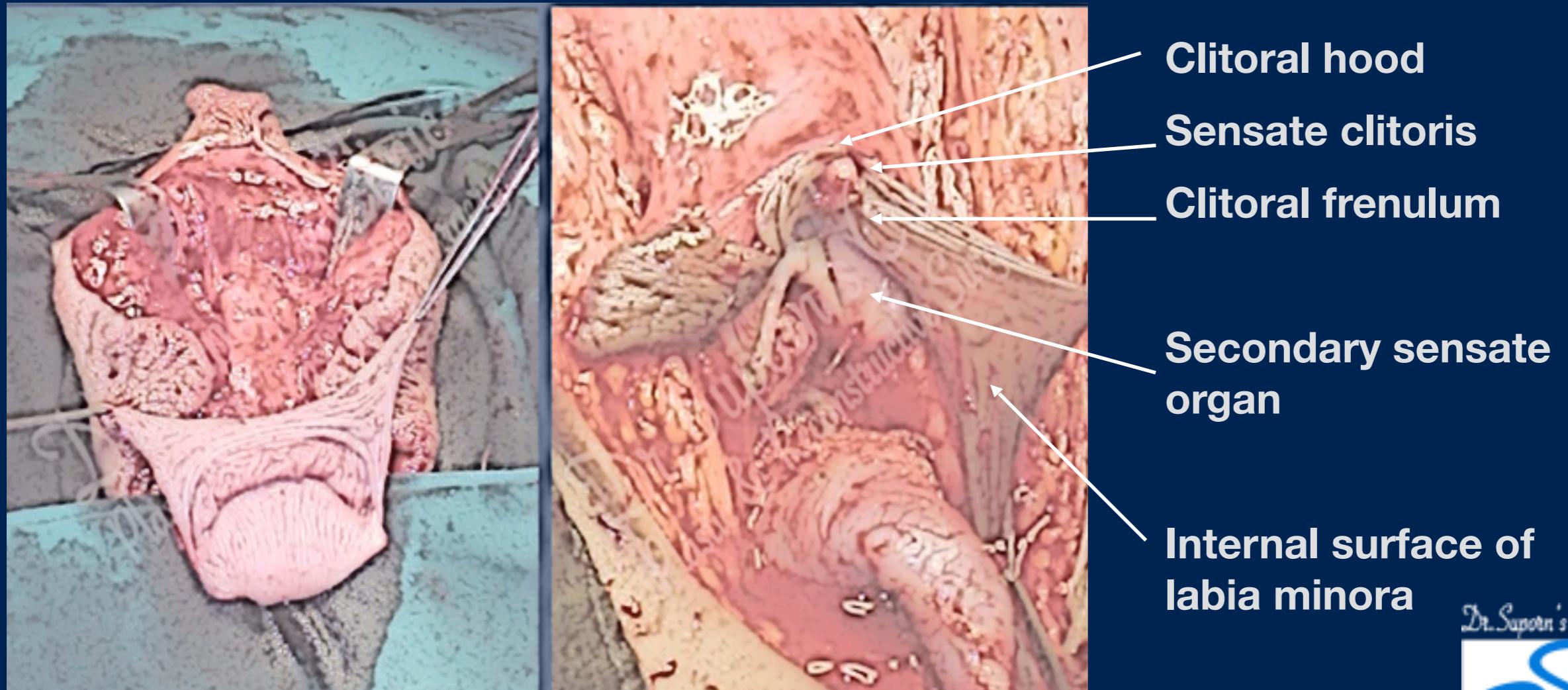
In September 2000, I originated “Suporn technique” using the dorsal neurovascular whole glans penis preputial island flap for sensate clitoris and labia minora reconstruction in MtF gender confirmation surgery.



- The Suporn technique has been used in more than 3,000 transwomen since then.

The Dorsal Neurovascular Whole Glans Penis Preputial Island Flap

for sensate clitoris, clitoral hood, clitoral frenulum, secondary sensate organ and internal surface of labia minora reconstruction.



Suporn Technique

The basic steps of the procedure as follows:

- 1. Vaginal cavity dissection.
- 2. Orchiectomy and penectomy.
- 3. Preparation of glans penis preputial island flap.
- 4. Sensate clitoris, clitoral hood, clitoral frenulum and secondary sensate organ reconstruction.
- 5. Labia minora reconstruction.
- 6. Labia majora reconstruction.
- 7. Urethroplasty.
- 8. Full thickness scrotal skin, penile skin and urethral mucosal grafts vaginoplasty.

Two Types of Labia Minora Reconstruction

- Type A: Classical technique using in the case of adequate penile skin.
- Type B: Modified technique using in the case of limited penile skin from over-circumcision or micro-penis.

Labia Minora Reconstruction (Type A)

Using prepuce to reconstruct internal surface of labia minora.

Using the skin of penile shaft to reconstruct external surface of labia minora.

Labia Minora Reconstruction (Type A)

The aesthetic result of the reconstructed labia minora is very natural because skin of the internal surface of the reconstructed labia minora is thin, pink colour and hairless - which closely simulates the characteristics found in genetic female.



Adequate penile skin
Prepuce + Penile skin

Labia Minora Reconstruction (Type B)

Using the existed prepuce and penile skin to reconstruct internal surface of labia minora.

Using medial part of scrotal skin flap to reconstruct external surface of labia minora.

Labia Minora Reconstruction (Type B)

The aesthetic result of the reconstructed labia minora in type B may be less natural.



Inadequate penile skin

Penile skin + Scrotal skin

Genital Skin-Mucosal Grafts

Vaginoplasty Technique

All or almost of penile skin is used for vulvar aesthetic purpose.

The penile skin remaining after the labia minora reconstruction is not adequate in both quality and quantity for neovaginal wall lining.

Genital Skin-Mucosal Grafts Vaginoplasty Technique

Full thickness genital skin-mucosal grafts harvested from the excess scrotal skin, penile skin, urethral mucosa are used for neovaginal wall lining in every case.

This enables adequate neovaginal depth in all cases.

Primary colon vaginoplasty has never been necessary.

Immediate Postoperative Care

- Operative time: 4-5 hours
- Hospital stay: one night before surgery and 7 nights after surgery.
- Stay in bed 5 days. Day 5 removes the bandage and allow to walk and shower.
- The urethral catheter and vaginal packing are removed on Day 7, and start to dilate the neovagina immediately.

Postoperative Vaginal Dilation

- The patient is scheduled to dilate the neovagina for 1/2 hour, 2-3 times a day, every day for 6 months then once a day until one year.
- Dilation is the key to maintain vaginal depth and gaining vaginal width.



Principle of Suporn Technique

utilizes

Dorsal neurovascular whole glans penis preputial island flap
for sensate clitoris, clitoral hood, clitoral frenulum,
secondary sensate organ and internal surface of labia minora reconstruction.



Penile skin flap or scrotal skin flap

for external surface of labia minora reconstruction.



**Full thickness scrotal skin, penile skin, urethral mucosal
and/or groin skin grafts**

for neovaginal wall lining.

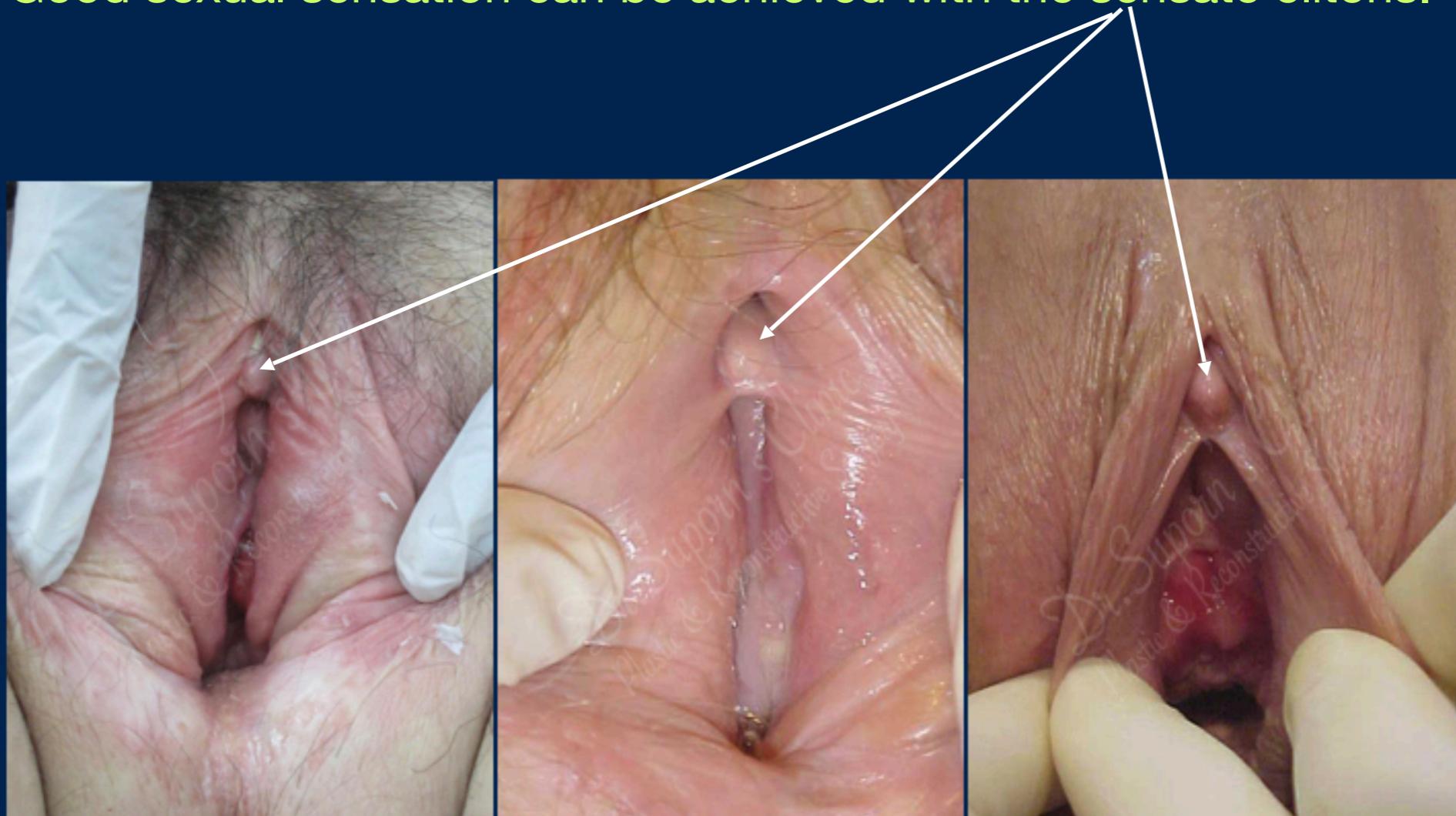
Review Goals of Suporn Technique

To achieve:

- Good sexual sensation.
- Good aesthetic appearance.
- Good neovaginal depth.

Good Sexual Sensation

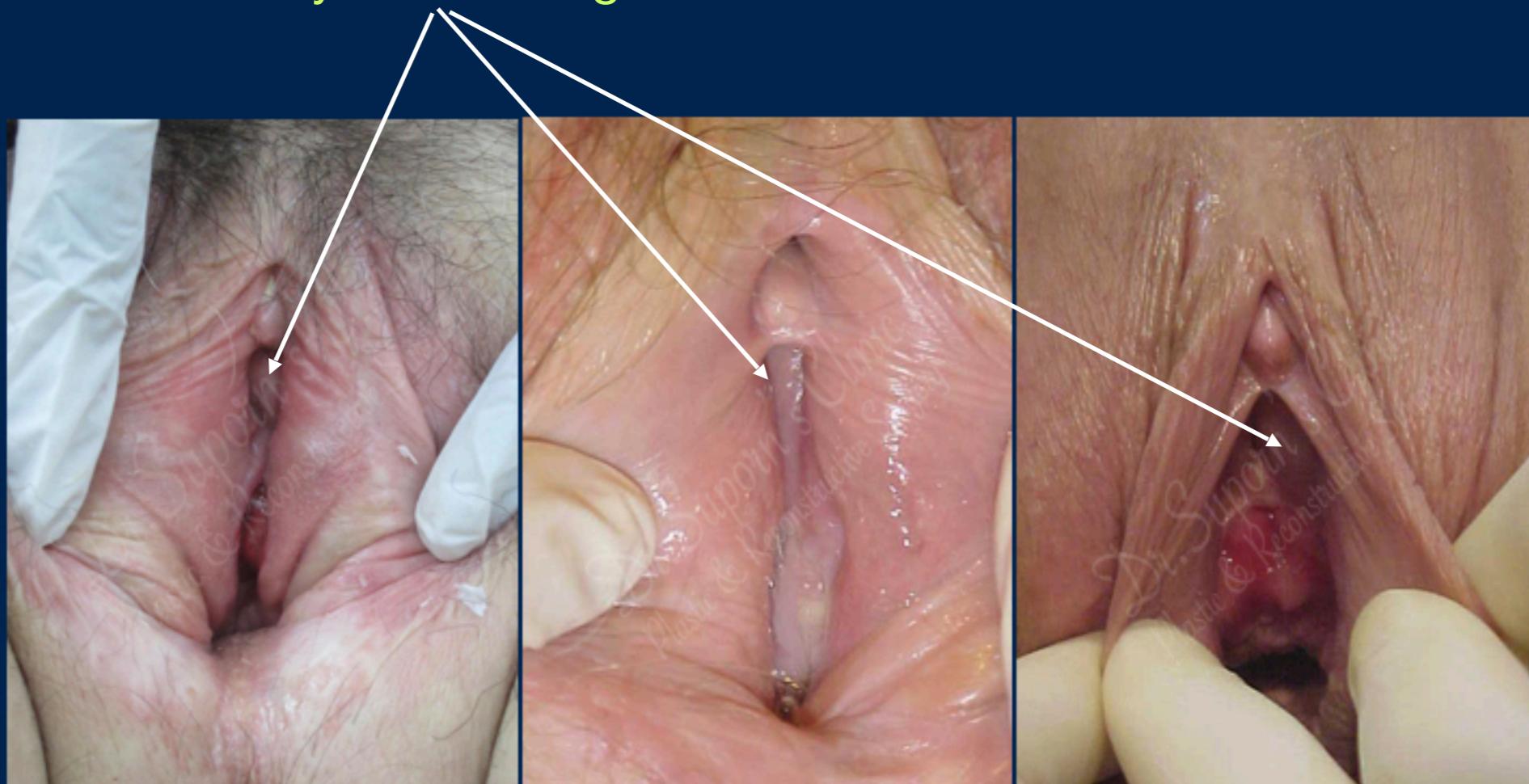
- Good sexual sensation can be achieved with the sensate clitoris.



*Aesthetic outcomes varies depending on preoperative donor material in individual

Good Sexual Sensation

- Good sexual sensation can be achieved with the sensate clitoris, the secondary sensate organ.



*Aesthetic outcomes varies depending on preoperative donor material in individual

Good Sexual Sensation

- Good sexual sensation can be achieved with the sensate clitoris, the secondary sensate organ and also internal surface of labia minora.



*Aesthetic outcomes varies depending on preoperative donor material in individual

Enhanced Aesthetic Appearance

Create lip-like shape of labia minora that clearly differentiated from labia majora.



Genetic female



Suporn technique of GCS

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Enhanced Aesthetic Appearance

Create lip-like shape of labia minora that clearly differentiated from labia majora.



Genetic female

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Suporn technique of GCS

Enhanced Aesthetic Appearance

The reconstructed labia minora has natural color and texture in both internal and external surface.



Genetic female



Suporn technique of GCS

*Aesthetic outcomes varies depending on preoperative donor material in individual

Enhanced Aesthetic Appearance

Thin, hairless and pink color skin of internal surface of labia minora



Genetic female

*Aesthetic outcomes varies depending on preoperative donor material in individual



Suporn technique of GCS

Enhanced Aesthetic Appearance

Every effort is made to delicately reconstruct the clitoris, clitoral hood, clitoral frenulum and labia minora.



Genetic female



Suporn technique of GCS

*Aesthetic outcomes varies depending on preoperative donor material in individual

Enhanced Aesthetic Appearance

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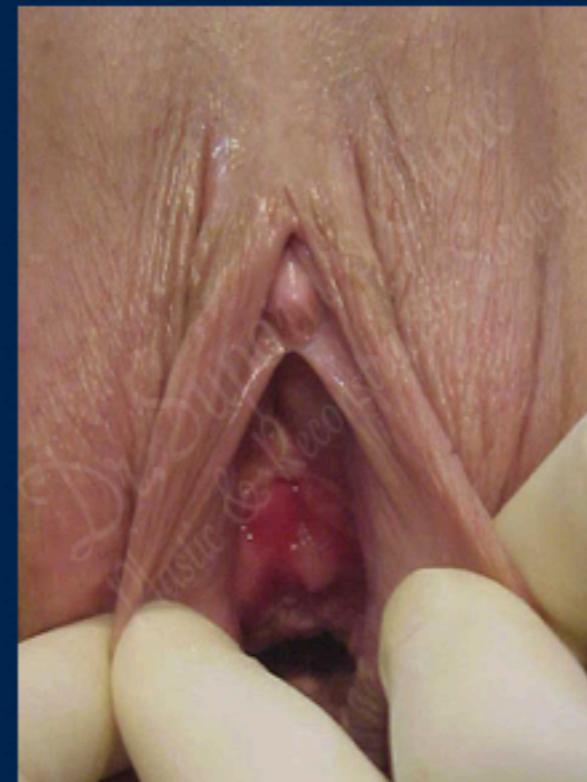
Enhanced Aesthetic Appearance

Clitoris, labia minora, labia majora, urethra, and vaginal opening are all placed in the natural position in all dimensions.



Genetic female

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Suporn technique of GCS

Enhanced Aesthetic Appearance

Clitoris, labia minora, labia majora, urethra, and vaginal opening are all placed in the natural position in all dimensions.



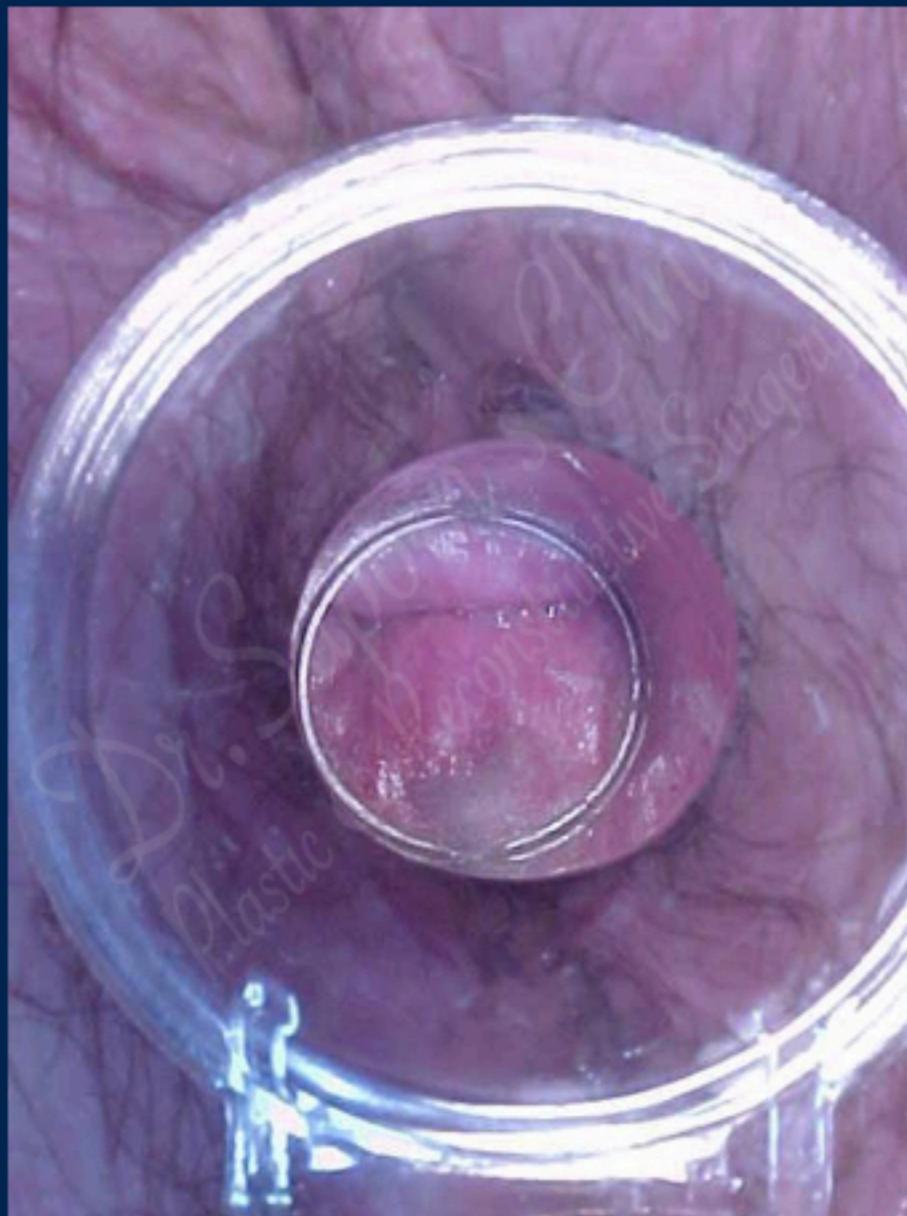
Genetic female



Suporn technique of GCS

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Hair-free Vaginal Cavity

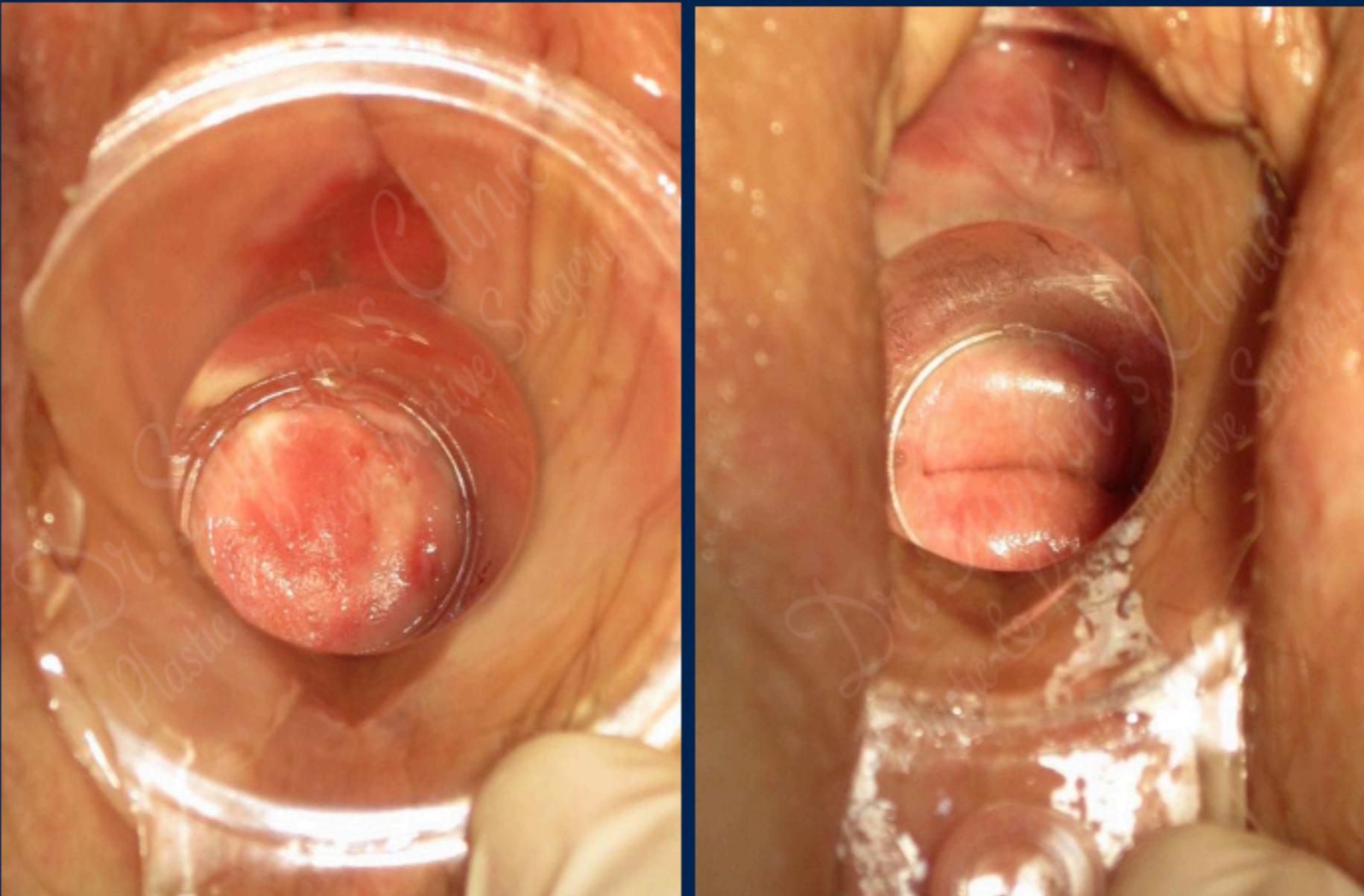


There is a few hair on the small posterior perineal flap.

Thin & Pink Color Neovaginal Wall



Zero Risk of Vaginal Wall Prolapse



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Good Neovaginal Depth

Good neovaginal depth results can be achieved by:

1. Adequate neovaginal cavity dissection.
2. Adequate skin grafts for neovaginal wall lining.
3. Adequate post-operative neovaginal dilation.

Must not fail even one step to obtain a good result of neo-vaginal depth.

Result with Limited Donor Tissue



Very short and small circumcised penis.

Result with Limited Donor Tissue



Aesthetic results 6 years after GCS

Result with Limited Donor Tissue



6 years after GCS with 7 inches neovaginal depth.

Colon vaginoplasty was not necessary.

Early Post-operative Complications

As follow:

- Bleeding from urethra or neovaginal wall
- Wound dehiscence
- Partial tissue necrosis
- Urinary obstruction
- Partial labia minora detachment
- Hematoma
- Infection

Late Post-operative Complications

As follow :

- Chronic bleeding from intravaginal granulation
- Urinary tract infection
- Neovagina narrowing
- Urethral orifice stricture
- Rectovaginal fistula (2 out of 3,000 cases)

Unsatisfactory Cosmetic Results

As follow, most to least:

- Prominent of the clitoral pedicle.
- Unnatural shape of the constructed structures.
- Excess urethral tissue.
- Partial detachment or asymmetry of labia minora.
- Exposed vaginal entrance.

THANK YOU

