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Gender Reassignment Surgery - Male To Female

The successful transition from one gender to another involves the development of characteristics that are as close as possible to those of the desired gender. Hence, in addition to surgery, many supplemental procedures are required.

The MtF GRS procedure itself deals primarily with the surgical procedures involved in the transition, such as the removal of the penis and scrotum and the creation of a vagina. Subsequently, complementary procedures are necessary in order to achieve a successful transition.

Penile Inversion Vaginoplasty
This is the preferred method of MtF GRS. It is widely performed and when performed by an accomplished surgeon, can produce very satisfactory results. In some cases where the penile skin is very short, the surgeon may need to perform 'Colon-Vaginoplasty' in a second step after 6 months.

The basic method involves turning the penile skin 'outside in' and using it to line a vaginal cavity created by blunt dissection through the muscles of the perineal area. The shaft of the penis and testes are removed.

Many surgeons use variants of the technique: a pure penile inversion limits the size of the vagina that can be created, depending on the amount of penile skin available. In many patients, it is necessary to supplement this material with scrotal skin or by means of a skin graft, often taken from the thigh or abdomen.

Early vaginoplasty techniques often used split skin grafts; these were invariably unsatisfactory and very prone to scar tissue formation and shrinkage, leading in many cases to vaginal stenosis (narrowing of the vagina), often with accompanying tissue changes such as dryness, loss of elasticity and resilience and scar tissue. Some surgeons still use free, full thickness skin grafts to supplement penile skin but the disadvantages of these include visible scarring of the donor site, lack of sensation in the grafted tissue and difficulty in obtaining enough material in very slim patients.

A more modern method involves the use of scrotal tissue and is sometimes termed 'peno-scrotal inversion'. In this technique, the penile skin is usually divided, part being used to form the floor of the vulva and part being used to form the anterior wall of the vagina, with a flap of scrotal tissue being used to form the posterior wall and apex of the vagina. This has the considerable advantage that a satisfactory vagina can usually be formed even in circumcised or mildly intersexed patients where penile tissue may be very limited. The corresponding disadvantage is that the risk of vaginal prolapse increases with the proportion of scrotal tissue used, as scrotal tissue adheres less well to the muscles than penile tissue.

Labia are constructed from scrotal tissue and the urethra is shortened and everted to correspond to normal female anatomy. A good surgeon will relocate the urethral meatus to an appropriate female position and will ensure that the erectile material of the penis is removed to the maximum possible extent, so as not to leave an unsightly and possibly painful 'stump'. The remnant of the prostate gland (long term hormone therapy causes it to atrophy and shrink) is left in place and provides sexual sensation through the anterior wall of the vagina, analogous to the so-called 'G spot' of natural born females.

In the meantime, the surgeon constructs a clitoris by retaining a small section of the glans penis with its blood supply and nerves intact and positions this into an appropriate location above the urethral meatus. This is since the nerves of the glans in phenotypic male are analogous to the nerves of the clitoris in a female. The surgeon also constructs labia majora and labia minora so that patients can have natural feelings of erotic sensation like a normal female. This is a special technique which provides patients with the most natural looking and aesthetically pleasing female genitalia with very good functional and cosmetic appearance and satisfies them very highly.

After this operation, the patient will have a pack (usually of surgical gauze) placed in the vagina, to retain the tissues in their proper locations for about five days while healing proceeds. During this time, she will be on bed rest and a clear-fluid-only diet, to avoid the possibility of a bowel movement which could damage

the vagina or disturb the pack. The patient is also catheterised, typically for seven days, to allow the urethra to heal.

Colon Vaginoplasty

The second procedure quite often employed is the newer and somewhat more invasive technique called recto-sigmoid colon vaginoplasty where a section of the sigmoid colon is used to create the neo vagina (i.e. the sigmoid or 'S' shaped part of the large intestine above the rectum which terminates at one end with the anus) as opposed to a skin-graft.

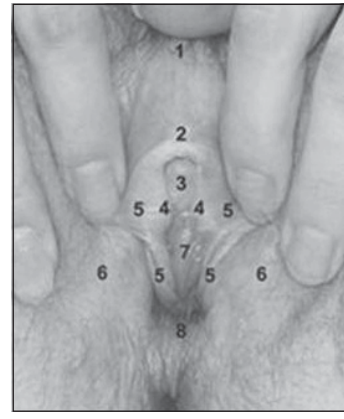
Apart from this important difference, the actual surgical procedure itself is in many respects the same as that of the skin-graft i.e. penile inversion vaginoplasty.

However, it is much more complex operation usually involving full access into the abdomen. This will result in relatively extensive lateral scarring, although some would argue that such scars are less disfiguring than those resulting from an extensive skin-graft having been taken.

Reported benefits of recto-sigmoid colon vaginoplasty include self-lubrication, lower risk of shrinkage and a deep neo vagina (as much as 8" or 20 cm, is not uncommon). A possible surgical complication arising specifically from colon vaginoplasty is diversion colitis which is an inflammation of the colon which can occur following a colostomy i.e. the need for a stoma to be put in position or a temporary redirection of excrement from the body to allow the colon to heal.

Vaginoplasty

Vaginoplasty is any surgical procedure, the purpose of which is to address vaginal structural defects or aesthetic considerations or to partially or totally construct or reconstruct a vagina. This is the final step in the MtF transition. It involves a surgical procedure to remove phallic tissue and fashion a vagina in its place.



Expected structure of genitalia after MtF corrective surgery

Vaginoplasty consists of the following important steps:

1. **Mon Veneris/Mon Pubic**
   Characteristic: The mons is sexually sensitive fatty tissue that covers the pubic bone.
   Technique: The mound tissue is created from the neurovasucular bundle of neo-clitoris which carries a special sensation to the raised skin.

2. **Clitoral Hood**
   Characteristic: Prepuce of the clitoris covers the clitoral body.
   Technique: The clitoral hood is made from dorsal neurovascular prepuce flap attached to the neo-clitoris.

3. **Clitoris**
   Characteristic: The glans of the clitoris has many nerve endings which result in the clitoris being extremely sensitive.

Technique: This complex and specialised organ is made from dorsal part of glans penis with intact sensory nerves and vessels.

4. **Clitoral Frenulum**
   Characteristic: Each labia minora attaches to the base of the clitoral glans. The point at which they attach is called the frenum or frenulum.
   Technique: This is junctional area at which the dorsal prepuce flap (clitoral hood) and the ventral prepuce flap (labia minora) merge with the lower part of neo clitoris.

5. **Labia Minora**
   Characteristic: The labia minora (inner labia) are the inner lips of the vulva, thin stretches of tissue within the labia majora that fold and protect the vagina, urethra and clitoris.
   Technique: The innner surface of labia minora is made from originally pink coloured tissue from the neurovasculised ventral prepuce flap while the outer surface of labia minora is made from the penile skin flaps. Entire surface of labia minora is hairless and sensitive to sexual stimulation.

6. **Labia Majora**
   Characteristic: The labia majora (outer labia) are the outer lips of the vulva, pads of fatty tissue that wrap around the vulva from the mons to the perineum.
   Technique: The labia majora is made from scrotal skin flaps.The copora cavernosa (shaft of penis) are removed up to their attachments to the pubic

bones. Vaseline gauze is used to secure the skin graft inside the neo vagina for 4-5 days.

7. **Vestibule of the Vulva**
   Characteristic: The vestibule is the triangle shaped area below the clitoris and above the vagina.
   Technique: This special sensate area is made from a combination of the two originally pink coloured tissues which are the glans neurovascular island flap and the vascularised urethral flap.

8. **Vaginal Introitus**
   Characteristic: The entrance of vagina or vaginal opening.
   Technique: This area is made from the combination of perineal flap and two sliding distal penile flaps.

9. **Vagina**
   Characteristic: The internal genital female space extends from the vaginal opening.
   Technique: The wall of vagina is made from scrotal skin graft and/or abdominal skin graft. Entire surface of neo vagina is hairless. The labia minora form the sides of the triangle. The urethral meatus is located within this area of the vulva.

Abbe-McIndoe Method

This is the most common surgical technique used. A newly created (neo vaginal) cavity is lined with split thickness skin graft held in place with mould (stent). The main problem is the strong tendency of the graft to contract, thus closing up the cavity, prevention of which requires the conscientious use of dilators post-operatively.

Post-Operative Care Following Vaginoplasty

During the immediate post-operation period, the woman will be under the good care of her surgeon, support staff and hospital recovery environment. During this time, she will learn whether her surgery was fully successful or whether any complications have occurred and have to be dealt with. Later, after leaving the hospital, she will have to take a lot of responsibility for long term ongoing aftercare and the outcome of the surgery will depend on how consistently she performs that aftercare.

The main concern facing the newly post-operative woman is to ensure that her neo vagina heals properly, maintains its size and remains functional. In order to do this, she must dilate frequently using a vaginal stent for an extended period following surgery.

The neo vagina is an artificially created opening into the body. The tissues, including the pubococcygeus (PC) muscle, that surround the neo vagina, need to be pushed aside during the dissection of neo vaginal cavity. Because their genetic code has no plan for an opening there, the MtF transitioner's body will simply heal what it considers to be a gaping wound and close the neo vagina completely and permanently. So in order to keep it open, something must be inserted into the neo vagina on a regular and frequent basis. Such a device is called a stent or dilator.

The neo vagina should be dilated by initially using small size vaginal dilator 3-4 times a day and gradually increasing its width and length.

Vaginal Stent or Dilator

Vaginal stents typically range in size from about 1-1/8 to 1-1/2 inches or more in diameter (28 to 38 mm) and must be inserted to full depth (4 to 6 inches or more) into the woman's vagina for 30-40 minutes, 3-4 times every day for many months after the surgery. Increasing sizes are used to gradually widen and maintain the vaginal opening during the post-operation recovery period.

Later on, especially during any prolonged periods of sexual inactivity, basic dilation must be done at least once or twice a week to ensure the maintenance of vaginal width and depth. Even after many years, if the woman notices any tightening or constrictions from one week to the next, the frequency of dilation must be increased until that discomforting episode has passed.

Many of the cases where surgical outcomes seem to be poor are actually the result of women not rigorously dilating, especially during the critical months immediately following GRS.

Modern Dilator

In around 1997, dilator appliances that are designed to be used in a seated position but on an ordinary chair were developed. They have a design that allows adjustment of their lengths in very small increments, which helps make the process less uncomfortable. There are two versions of the dilator kit, one for use after surgery, to maintain vaginal length and one for use when starting from scratch to form a vagina by pressure dilation alone.

Pressure Dilation Techniques

These techniques are preferred by girls having small vaginas and do not wish to go for surgical corrective measures. The effort required to create a vaginal cavity by dilation may seem daunting. She should be aware that the inconvenience and discomfort imposed are usually far less than that experienced after conventional surgical vaginoplasty. Some who have been leaning towards preferring surgical vaginoplasty change their minds after speaking with adult AIS women who have undergone surgery.

Intermittent Pressure (Frank Method)

This procedure is carried out by the girl herself at home. Rounded rod-shaped appliances are placed at the vaginal introitus (vulva) and gentle pressure (enough to cause mild discomfort) is applied. This is typically done once or twice per day for 20 to 30 minutes. The time to completion of treatment can vary from less than one month to over a year. An adequate dosage of oral oestrogen, plus local application of vaginal oestrogen cream may be helpful.

Gradient Pressure using Sola Stem

Another method, practiced in India since ancient times, is to insert a piece of dry sola stem in the vagina and make the girl sit in a trough of water. As the sola stem absorbs water, it expands and dilates the vagina. In the absence of penetrative sex, this technique is useful to prevent a tightening or constriction of the vagina. This practice was primarily followed by brothel owners to force girls into prostitution at an early age.

Supplemental procedures for MtF

For the MtF transitioner, in addition to the surgical procedures carried out for the transformation into a female, there are other requirements for effecting the change, in order to achieve the desired effect. A prime supplemental procedure necessary to complete the procedure is mentioned below.

Voice training for MtF

The key test of success is whether the transitioners can always pass as female with strangers on the telephone (i.e. whether they are always called 'ma'am' by those who cannot see them and only hear their voices). If that always happens, then the voice is passable. For this, MtF transitioners need to gradually raise their voices until the fundamental tone is up to around 180 Hz, making it 'breathy' or 'smoky'. This is achieved through regular voice training.

Voice training methods

There are two steps to developing a female voice:

1. Learn the techniques and
2. Practice

To learn the techniques, the transsexual should find a voice coach in her area. Someone who teaches singing can assist with voice range in the upper register.

Warm ups

Actors are taught warm-ups to get them ready to read scripts and they are applicable to learning a female voice as well, such as saying the vowels (a-e-i-o-u) and over emphasising them by making exaggerated mouth movements. This will help relax the transitioner's

mouth and jaw muscles and achieve the clear enunciation and modulation of a female voice.

Pitch

The main difference between a male and female voice is pitch and this is the technique a transsexual should work on the most. Males have deeper voices due to longer and thicker vocal cords. Transitioners need to move the resonance out of the chest and lower throat and up into the nasal passages and head. This is accomplished by tightening the vocal cords in the throat.

Breathiness

Breathiness begins by whispering. In other words, the transitioner pretends she is a girl whispering something into her best girlfriend's ear. She can speak with enough volume and still keep a whispering quality.

Enunciation

Men tend to slur words and not speak as clearly as women. Probably due to their having louder voices, they do not have to enunciate as clearly. However, for a woman, her voice should be clear, so as to be audible and this can be achieved only through enunciation. A good way to learn to enunciate is to read something and over 'e-nun-ci-ate' each word.

Phrasing and Modulation

Men tend to speak in a flat-footed or monotone way, not varying their tone much, saying as much as they can in one breath. Women modulate or vary their tone more. In other words, their pitch will go up and down during a sentence. Men have larger lungs and can

speak longer without taking a breath, whereas women have less breath capacity and tend to take more breaths when speaking.

Pronunciation

Men and women pronounce words differently. The main differences are women often pronounce one syllable words as two and sometimes their voices go up at the end of sentences, like when asking a question.

Similarly, transsexual women must remember to make sentences according to their new gender, at least when they are speaking an Indian language. For example, while going somewhere, she must say, "*Main jaa rahi hoon*", not "*Main jaa raha hoon*" and so on. That means, when the transitioner thinks of herself, she has to do so in the female gender. Also, friends and family have to start referring to the transitioner as 'she' instead of 'he', as they have been accustomed to.

MtF and Sex

It is now possible for many post-operative women to feel totally gender congruent in their transformed bodies and to be able to very comfortably and passionately enter into loving relationships (either heterosexual or lesbian, as the case may be) as sensual, sexually responsive women.

However, regardless of their sexual orientation, some of these women will overcome their fears and go on to find partners, often by seeking someone interested in a love relationship involving deep emotional sharing and intimacy, instead of focusing simply on

sexual relationships (as younger couples so often do). Such partners exist and their own quest for a life partner may be as long and as uncertain as the one of transsexual women. However, in order to be successful in finding love, the transsexual woman must have found enough peace, joy and self esteem in herself so as to be able to function properly as a partner in a loving relationship.