

## Neovagina Procedures and Care

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**Abstract** – Neovaginal procedures are surgical or non-surgical methods used to eliminate enlargement and sagging of the vagina caused by childbirth, menopause or other factors. These practices can help improve quality of life, such as sexual function, hygiene, and self-confidence. Nonsurgical neovaginal procedures are designed to strengthen the muscles and tissue of the vagina. It can be done in a variety of ways, such as laser treatment, radiofrequency therapy, or non-surgical vaginal tightening surgery. Surgical neovaginal procedures are performed to remove or reduce enlarged or sagging parts of the vagina. There are various types such as vaginoplasty, labiaplasty and hymenoplasty. After neovaginal procedures, some care measures can be taken to support the healing of the vagina. Precautions such as cleaning with plenty of water, avoiding soap and detergents, avoiding synthetic underwear, avoiding tight clothing and avoiding smoking are important. Neovaginal procedures are an effective method that can help improve the appearance and function of the vagina. Before these practices, it is important to consult a professional and evaluate the risks and benefits.

**Keywords** – Neovagina, Transgender, Treatment Methods, Midwifery, Care

### I. INTRODUCTION

The creation of a new vagina in vitro due to the absence of a vagina due to a congenital defect, disease, injury or gender reassignment is called neovagina.

After Realdous Columbus first described vaginal agenesis in the 16th century, vaginal reconstruction began to attract the attention of urologists, plastic surgeons, and gynecologists. The use of extravaginal tissue in history began in 1898 with Dr. It was realized thanks to Abbe's description of the neovagina using skin grafts. Neovaginal construction; Treatment of congenital diseases ranges from surgery to restoration of normal sexual functions and elective gender reassignment surgeries [1].

Nowadays, it is very rare for gynecologists to encounter congenital vaginal agenesis during their professional careers. If left untreated, it can lead to personality problems, impaired body image, and self-confidence problems [1], [2].

#### Congenital Anomaly

In the congenital period, the uterus, tubes and the upper 2/3 of the vagina develop from the müllerian duct. The lower 1/3 of the vagina develops from the urogenital sinus. The anomaly resulting from a deterioration in the differentiation of müllerian ducts during congenital organogenesis is called vaginal agenesis or Mayer-Rokitansky-Küster-Hauser Syndrome [3].

The incidence of vaginal agenesis varies between 1/4000 and 1/10000. Firstly, when amenorrhea is

not observed at puberty, vaginal agenesis is diagnosed by genital examination and imaging methods. In the physical examination performed in vaginal agenesis, height, external genital organs, body and breast development are normal. A vagina is present, but vaginal and uterine anomalies such as imperforate hymen, transverse vaginal septum or cervical atresia are generally observed [3], [4].

The condition in which vaginal agenesis is accompanied by the absence of a uterus is called Mayer-Rokitansky-Küster-Hauser Syndrome. This syndrome was named after the scientists who diagnosed it because the findings were diagnosed from various angles by different scientists at different times. It was first diagnosed by Mayer in 1829 and was later clarified when Hauser and his colleagues determined the differential diagnosis of other urogenital problems [5]. It has an incidence of 1/4000-5000 in live female baby births. Although it is not clear, it is thought to cause this syndrome; Although maternal gestational diabetes, high galactose levels, teratogens such as thalidomide, many different recessive inheritance and spontaneous mutation have been suggested as etiological causes, sufficient evidence has not been found. While it can exist alone (Type 1), it can also be found together with spinal cord-related skeletal anomalies, auditory, renal, urinary and congenital heart anomalies (Type 2). In a study including 53 MRKH cases, it was determined that 47% (25 cases) were Type 1. Although it is not known exactly whether it is hereditary or not, the increasing number of cases within families is suggestive of genetic inheritance. It constitutes 15-20% of all primary amenorrhea causes. Today, it is not possible for MRKH patients to become mothers other than a surrogate mother [4].

## II. TREATMENT METHODS

There are surgical and non-surgical methods in the literature for the treatment of congenital vaginal absence and MRKH. Although many surgeons consider it appropriate to perform surgical intervention before the adolescence period, ACOG attaches importance to the timing of the surgical procedure being appropriate for the patient. Depending on the type of surgical procedure, it is recommended that it be performed in late adolescence or when the patient has reached

enough psychological maturity to adapt to dilation in the postoperative period. The most important factor in the success of the treatment procedure, whether it is surgical or not, is the patient's compliance with the process [6], [7].

### A. Non-Surgical Methods

ACOG recommends that the method of lengthening the vagina under patient control, along with good psychological preparation and consultation, should be preferred first, as it is more successful than surgical methods [4].

#### *Frank Method*

Frank described the method of creating an artificial vagina without surgery in 1938. It is an active dilation technique. Successful results were obtained with this method in 8 cases in 1940. In the Frank method, the patient creates the vagina in the lithotomy position by applying pressure to the vaginal area with the dilator at the rate of her own strength. During the follow-up of the cases, it was observed that the depth and diameter of the vagina were preserved even in those who neglected to use the dilation method for more than a year. In some patients, creating a vagina only through sexual intercourse or intermittent pressure techniques is based on the same principle. The Frank method is practical and usually the first approach for psychologically motivated women [8].

#### *Ingram Method*

It is a passive dilation technique to create a new vagina. With this technique, the patient sits on the bicycle saddle chair using his/her own body weight, approximately 60 cm above the ground, slightly leaning forward on the dilator for at least 2 hours a day with intervals of 15-30 minutes. A larger size dilator is used at each monthly check-up. Coitus is recommended after use on the largest dilator.

Both the Frank method and the Ingram method are advantageous because they have low morbidity, create a physiological vagina, and do not create a surgical scar. Functional success rates are approximately 80%. Although using dilation techniques is a disadvantage for women as it constantly reminds them of the anomaly and the

process takes months, it is the first choice method in creating a vagina in many studies. In cases where dilation fails, operative vaginoplasty should be preferred [6], [8].

## B. Surgical Methods

First, in 1907, Baldwin created a vagina by using the double ring of the ileum, leaving the mesentery attached to the intestine. In 1910, Popaw created a vagina using a piece of the rectum. However, it has lost its validity because there was an increase in morbidity and mortality rates in both operations.

Today, sigmoid segments are used to create pouches in patients with pelvic malignancy and loss of vaginal function [8], [9].

### *Operation Abbe-Wharton-McIndoe*

In this operation, a space is tried to be created between the rectum and the bladder, and the vagina is created by dilation until the healing phase is completed. It is preferred for comfortable sexual intercourse in patients whose dilation process is not successful or in patients with a flat perineum without a vaginal pouch [10].

Postoperative infection, fistula, hemorrhage and graft rejection are common complications. The success of the operation is 80-90% and it is extremely important that the first operation is successful. If the surrounding tissues are damaged or the wrong mold is used during the operation, the chance of success of subsequent operations will decrease [11].

### *Williams Vulvovaginoplasty*

McIndoe operation may be preferred if it is not sufficient or if the dilation is insufficient. In this method, a perineal bridge is created to create a vaginal pouch, and the labia majora are sutured to the pouch [12].

It is an advantageous method due to its simplicity, absence of serious complications, absence of postoperative pain, rapid recovery and ease of postoperative care.

In the study of Jassoni et al. in which they examined 104 cases, the McIndoe method was applied in 49 patients and the Williams method was applied in 14 patients due to failure of dilatation. No complications developed except for

a rectovaginal fistula in one patient who underwent the McIndoe procedure. According to this research, first the dilation method, the McIndoe method in case of failure, and the Williams method in case of complete failure were created [12], [13].

### *Vecchiotti Method*

The acrylic material placed in the vaginal cavity is attached to the traction ropes, and the ropes are passed through the abdominal cavity and connected to the traction device located on the abdominal wall. Traction is provided at a rate of 1 cm per day and the application is continued for a week. There is a 98% success rate in anatomical understanding. No dilators or coitus are required to maintain vaginal length [14].

### *Intestinal Vaginoplasty*

It is applied by placing an average 10-15 cm vascular pedicle into the space created between the rectum and bladder in the pelvis. It is advantageous compared to other techniques as it does not require long-term molding and dilation and provides early coitus by creating sufficient vaginal length. Although various intestinal segments are used in this method, the sigmoid colon is most commonly preferred due to its proximity to the perineum. Especially pediatric surgeons use distal sigmoid. Because the intestines have a natural lubricating structure by their secretions, long-term dilatation is not required. The sigmoid neovagen grows with the patient, there is no need for long-term stents or dilatation, and it can even minimize the physiological and social trauma caused by reconstructive surgery [15].

### *Davydov Procedure*

In order to create a vaginal cavity, the vesicorectal area and the perineal path are separated and the lining for the neovagina is created using laparoscopic methods. The peritoneum obtained by the dissection process is delivered to the perineum. While this procedure is preferred because it has a low risk of complications and does not leave any aesthetic scars, the disadvantage of the method is that in some cases, postoperative vaginal dilatation is required intermittently [16].

### III. MIDWIFE APPROACH IN NEOVAGINA PROCEDURES

#### *Psychological Preparation*

Every patient who requires a neovagina needs more information and support than other pre-op patients regarding their congenital anatomical disorder that will affect their reproduction and sexuality. Treating these anatomical disorders with surgical or non-surgical methods does not mean that the woman's problems will be completely solved. In addition to ensuring the sexual life of women through physiological methods, the treatment process as a whole should be progressed without ignoring psychiatric conditions. In this context, it is extremely important that the midwife not only informs the patient about the treatment process but also supports him psychologically [17].

The midwife should evaluate the woman in terms of many parameters such as the idea of becoming a family, fear of loneliness, depression, fertility, acceptance of the situation, concerns about her first coitus and fear of rejection, and take initiatives accordingly. In this regard, ACOG states that women who join support groups with people with similar experiences may benefit from overcoming their psychological distress and anxiety about the treatment process [4], [18].

#### *Informed Consent*

Giving information to the patient about all procedures to be performed during the communication between the healthcare personnel and the patient, including the patient in the process, and knowing the risks and complications of the operation are important in neovagina applications, as in all treatment procedures. It is important for the patient to know the risks of the procedure to be performed and the practices that the patient should follow in the postoperative period in the preoperative period in order to ensure the patient's trust in the healthcare team and to ensure cooperation [6].

#### *Preparing the Patient for the Operation*

In the preoperative period, in addition to meeting the patient's psychosocial support needs, education needs and informed consent, surgical preparation is

also required. During the pre-operative diagnostic examination, clinical examination, chromosomal anomaly and renal evaluation should be performed. Bowel cleansing is important before the surgical procedure. A low fiber diet should be followed for 3-4 days before the operation. It should be used to prevent intraoperative and postoperative contamination with enemas. On the day of the operation, it should be ensured that informed consent is obtained and the patient's questions, if any, should be answered [18].

#### *Postoperative Care*

Postoperative care in neovaginal operations is the same as in other gynecological operations. Patients should be evaluated in all aspects, such as vital signs, daily routine monitoring, pain severity assessment, and level of consciousness. In addition to the known postoperative care, the type of care is shaped according to the operation the patient has undergone. In patients undergoing the McIndoe procedure, the vaginal mold and Foley catheter placed during the operation must remain in place for seven days. In fact, a low-fiber diet is applied in case the mold dislodges due to defecation. At the end of seven days, the vaginal mold is removed under anesthesia and the dilator procedure is continued. This procedure continues in the hospital and observation is made for the risk of infection and bleeding that may be caused by the dilator. The dilator applied to the patient is not removed except for defecation for the first 6 weeks, and is worn only at night for the next week. At the end of this 12-week period, the woman is advised to continue having sexual intercourse twice a week or using the dilator at night. The most important issue in dilator application is hygiene. It is important to inform the patient, as paying attention to hand hygiene and cleaning of the dilator before application is important in terms of infection risk [17], [19].

In the Davydov operation, the applied mold is removed after 48 hours. The patient should use the dilator 6-8 hours a day for 3 months after the operation. Coitus can be allowed 3-6 months after the operation, once epithelialization is achieved [20].

In the Vecchietti operation, there is a vaginal mold, Foley catheter and an abdominal retractor. The strings attached to the retractor should be tightened to increase the vaginal depth for 5-7

days. At the end of 5-7 days, the traction ropes are cut and the retractor, vaginal mold and Foley catheter are removed. Coitus is not recommended for 4-6 weeks. After this process, the procedures applied after the McIndoe operation are continued the same [21].

Patients and their partners, if any, should be informed about general hygiene, signs of infection and danger signs when discharged after neovagina procedures.

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