OPEN ACCESS
Scholars International Journal of Obstetrics and Gynecology
Abbreviated Key Title: Sch Int J Obstet Gynec
ISSN 2616-8235 (Print) |ISSN 2617-3492 (Online)
Scholars Middle East Publishers, Dubai, United Arab Emirates
Journal homepage: https://saudijournals.com

Original Research Article

Sexual Function in Women with Mullerian Agenesis Following the Novel Method of Non Surgical Management with Saline Injection and Digital Pressure

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DOI: 10.36348/sijog.2021.v04i08.005 | **Received:** 20.07.2021 | **Accepted:** 25.08.2021 | **Published:** 30.08.2021

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Abstract

***Background*:** Mullerian agenesis also known as Mayer- Rokitansky- Kuster- Hauser Syndrome is a congenital disorder characterized by agenesis of the uterus and upper part of vagina. Vagina is created or lengthened by non-surgical vaginal dilatation or surgical vaginoplasty to allow sexual function.We have been doing non-surgical vaginal dilatation facilitated initially by saline injection and sustained digital pressure in women with Mullerian agenesis for a few years. This was a follow up study with the purpose to evaluate the sexual function of these women. ***Method*:** We practiced a novel approach to quicken non- surgical dilatation of vagina. We interviewed women who received this treatment over cell phone after two months to four years. ***Result*:** A total fifteen women who had nonsurgical vaginal dilatation in our department were called over cellphone. Total 10 women could be reached.The age range of women was between 16 and 35 years. The frequency of intercourse was 3 to 5 times per week in couples living together. All eight women admitted of the experience of full genital performance during sexual intercourse and said they could provide pleasure to their partners. When asked about the presence of stable relationships and a good communication with the partners only five out of eight agreed. The reason behind strained relationship with husband was not sexual dysfunction but inability to conceive. ***Conclusion*:** Short term procedure of saline injection and sustained digital pressure under supervision can augment vaginal dilatation with vaginal dilators and lead to adequate sexual activity.

Keywords: Mullerian agenesis; Vaginal dilatation, Sexual function.

INTRODUCTION

Mullerian agenesis also known as Mayer-Rokitansky- Kuster- Hauser Syndrome is a congenital disorder characterized by agenesis of the uterus and upper part of vagina in females with well-developed secondary sexual characteristics (breasts, axillary and pubic hair) and 46XX karyotype. The estimated prevalence is 1 in 5000 live female births. The women usually presents during adolescence with primary amenorrhea, short blind ending vagina (0-3 cm), no or rudimentary uterus on physical or radiological examinations. There may be associated extra genital problems like renal or skeletal abnormalities in some women. The diagnosis has profound adverse psychological impact on the adolescent girl with issues of identity, sexuality and fertility. So careful counselling and education is mandatory. Vagina is created or lengthened by non-surgical vaginal dilatation or surgical vaginoplasty to facilitate sexual function. Fertility issues are addressed by gestational surrogacy or uterine transplantation [1]. These fertility options are not feasible for our patients with low socioeconomic and low education, majority Sunni Muslim background.

Functional neovagina is created by various vaginoplasty procedures. A pouch is dissected between

the rectum and bladder and subsequently lined by different autografts e.g. split skin graft (Mc Indoe vaginoplasty), bowel graft or peritoneal graft (Davydovs vaginoplasty). Laparoscopic Vecchietti vaginoplasty uses a surgical traction device on anterior abdominal wall with sub peritoneal threads attached to an olive shaped mold in the vagina. The noninvasive methods include Frank's method where self-dilatation is achieved with progressive dilators manually pushed towards vaginal apex for 10-30 minutes one to three times a day. The patient needs to be educated and followed closely with adequate support and guidance [1]. Ingram method uses the pressure of body weight by dilators fixed to a bicycle seat [2]. Another noninvasive option is dilatation by intercourse requiring regular coital activity with the partner [3]. These methods of dilatation of vaginal dimple provide the vagina with a physiological mucosal lining. Dilatation therapy is a noninvasive low cost therapy with low complication rate. Vaginal dilatation is recommended as first line management because of relatively noninvasive nature and high (75%) success rate [4]. Those who fail can go for surgery. The patient education in the initial sessions can be carried out in healthcare settings by clinical nurses [5]. Treatment centers usually prefer one procedure in which they develop expertise. The available literature about outcome and follow up variably reports functional outcome about sexual satisfaction or anatomical outcome (the length and width of vagina).

A systematic review [6] of 45 articles reports sexual and functional outcomes of various surgical and non-surgical procedures in women with Mullerian agenesis. Only three studies assessed the non-surgical procedure of Frank's simple pressure. The procedure needed around four months on average to create a vagina suitable for intercourse. Several unwanted factors related to vaginal dilatation have been reported. Daily repetition of dilator use is an unpleasant reminder of the unfortunate genital defect. There is fatigue and fear of damage to sensitive genital area, requirement of private space and possible social and cultural inhibition. Vaginal dilatation is necessary after surgery as well at least up to the time regular sexual activity is established. Previous studies used FSFI (female sexual function index) [7] as well as informal questions [8] for outcome assessment. Sexual function score (FSFI) was 30 for Frank's method compared to 30.1 for Vechietti modified, 25.6--30.4 for various surgical methods with different grafts [5].

With our method of saline injection combined with digital pressure the long time need for vaginal dilatation is reduced: around 5 cm length of vagina is achieved within two weeks. We have been doing non-surgical vaginal dilatation facilitated by saline injection and sustained digital pressure in women with Mullerian agenesis for a few years. This was a follow up study with the purpose to evaluate the sexual function of these women.

METHODS

Following diagnosis of Mullerian agenesis the girls were advised to come for vaginal dilatation when they are about to get married. We practiced a novel approach to quicken non- surgical dilatation of vagina. Normal saline was injected into the potential vaginal space between urethra and bladder in front and anus and rectum behind to loosen the areolar tissue. Sustained digital pressure was applied to the area injected with normal saline for as long as possible. The process was repeated daily for 14 -15 days. This procedure created a space of around 5 cm which was then dilated and lengthened with vaginal dilators and coitus. Analgesics and anxiolytics were given 1 hour before the procedure. Vaginal dilatation was attempted with metal or wooden dilators under supervision by the patients until they could do it properly. Local application of adjuvants with the dilators included lidocaine cream in early days and estrogen cream later.

The women were called over cell phone to explore how they are doing after they have left us. They were interviewed to fill up a questionnaire having both closed and open ended questions.

RESULTS

A total fifteen women who had nonsurgical vaginal dilatation in our department were called over cellphone. Total 10 women could be reached and interviewed over cellphone. One of them is to be married in a few weeks and another woman, an 18 year old student had the treatment but did not get married ultimately.

All the women were from rural areas and from low socio economic background. Two were students, one employed, the rest unemployed. The husbands of two women lived abroad. One of them divorced his wife, the other one is currently unemployed and living with his wife at home.

The age range of women was between 16 and 35 years. The intervention of vaginal dilatation happened from two months to four years back. The frequency of intercourse was 3 to 5 times per week in couples living together. All eight women admitted of the experience of full genital performance during sexual intercourse. All eight women said they were able to provide pleasure to their partners. When asked about the presence of stable relationships and a good communication with the partners only five out of eight agreed. Of the remaining three women, two were divorced, one was separated.

A sixteen year old girl had vaginal dilatation 10 months back, lived with her husband for two months. She did not have any coital difficulty at that time. But she began to have strained relationship with her husband and in laws as she would never have a child. Now she lives with her parents, separated from her husband for many months and feels as if her vagina is losing patency. The other two women had no coital problem, but inability to ever get pregnant was the issue behind their divorce.

DISCUSSION

Our follow up study suggests that vaginal dilatation initiated and augmented by saline injection and sustained digital pressure is successful when the women are motivated and engaged in regular sexual intercourse. The objective of the study was to explore the condition of those women who had received this non-surgical management of Mullerian agenesis. Though all women were not available for interview, those who could be reached agreed to the efficacy of the treatment. Their relation was strained with their husband on issue of childlessness, but not for sexual dysfunction.

There are studies evaluating the sexual and psychosocial function of women with Mullerian agenesis following creation of neovagina by surgical or non-surgical means. Morcel *et al.*, [9] assessed 91 cases of Mullerian agenesis with female sexual function index (FSFI) questionnaire following a mean interval of 7 years after neovagina formation either with surgical or non-surgical means. Good and similar results were reported in surgical and nonsurgical groups. Ismail-Pratt *et al*., [10] studied 18 women with Mullerian agenesis having vaginal dilatation program involving clinical nurse specialist and clinical psychologist. Five women failed to complete the program. Those who completed the program had their vaginal length increased to normal range. Vaginal dilatation by mechanical means was successful in motivated women [9, 11].

Surgical vaginoplasty involves creating a perineal pouch between bladder and rectum. The pouch is lined with peritoneum, uterine anlage, skin graft or sigmoid colon. Sometimes just a soft mold is left and changed several times,expecting spontaneous reepithelization. The surgery may have intra operative and post-operative complications. There may be rectal, urethral and bladder injuries, infection, hematoma and anastomotic leak. Long term complications that have been reported include prolapse, stenosis, stricture or contracture, scarring, vaginal discharge, granulation tissue, rectovaginal or vescicovaginal fistula. These complications are minimal or absent with vaginal dilatation [4]. There is often the need to maintain patency of neovagina following surgery by vaginal dilatation or frequent coitus. Compared to surgery vaginal dilatation is more cost effective. The maintenance of vaginal patency needs regular intercourse with the partner. The same is true when neovagina is created by surgery. Vaginal dilatation by patient herself and regular coitus are needed whether she has surgery or not. So why not try it first line? Our method shortened the time needed for self vaginal dilatation. The procedure should be recommended to all women with Mullerian agenesis prior to surgical vaginoplasty.

There are limitations of the study. Small sample size may go against generalization of findings. Husbands' views should have been included.

CONCLUSION AND RECOMMENDATION

Short term procedure of saline injection and sustained digital pressure under supervision on outpatient or inpatient basis can augment and ease the procedure of vaginal dilatation with vaginal dilators. Those having treatment of vaginal agenesis in this way maintain adequate sexual activity if they are in a stable relationship.

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