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Case Reports

Nonsurgical Management of Mullerian Agenesis with Saline Injection and Sustained Digital Pressure: A Case Series

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Abstract:

When a woman with mullerian agenesis presents with blind or absent vagina, management options include surgical vaginoplasty or non surgical self dilatation. Vaginal dilation should be the first line management of mullerian agenesis. Because of the need for motivated, mature patients and long term dilatation and follow up, gynecologists usually go for surgical vaginoplasty. We tried a novel approach to nonsurgical dilation of vagina in the cases of mullerian agenesis. We injected normal saline into the potential space of vagina between urethra and rectum and applied digital pressure daily for 14-15 days. This procedure created a vaginal space which was to be further dilated by regular coitus and/ or vaginal dilators.

We are presenting here a series of three cases of mullerian agenesis managed by non surgical vaginal dilatation, facilitated by prior saline injection and sustained digital pressure.

Key words: *mullerian agenesis, vaginal dilatation*

Introduction

When a woman with mullerian agenesis presents with absent or blind vagina, management options include surgical vaginoplasty or non surgical self dilatation. The purpose is to lengthen the vagina and facilitate sexual intercourse. Because of the less invasive nature and relatively high (75%) success rate, vaginal dilatation has been recommended as a first line treatment.[1,2]

Vaginal dilation has been done by Frank's method and Ingrams method.[3] Franks method consists of self application of rigid dilators daily for 30-120 minutes for a few months. Probably because of the need for motivated and mature patients and long term dilatation and follow up, surgical vaginoplasty is usually done. This involves creating a perineal pouch between the bladder and rectum with transverse incision and blunt dissection, then packing the cavity with soft mould (a foam cut to appropriate shape) covered with a rubber sheath, to hold the perineal pouch open, which allows spontaneous epithelization to take place.[4] The mould is changed at weekly intervals under short anaesthesia for two to three weeks.

We tried a novel approach to nonsurgical dilation of vagina in a few cases of vaginal hypoplasia. We injected normal saline into the potential space of vagina between urethra and rectum and applied digital pressure daily for 14 days. This procedure created a vaginal space which was to be further

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dilated by regular coitus and/ or vaginal dilators. We prescribed analgesic and anxiolytic drugs I hour before the procedure. The women did dilatation with dilators under our supervision and used local application of lidocaine cream in earlier days and estriol cream later.

Case series:

Case 1

A 18 year old woman from Madaripur had non establishment of menstruation. She was of normal height with well developed secondary sex characteristics. On vaginal examination, vulva and perineum were normal. Vagina was absent and presented as dimples at introitus. Uterus was found absent on digital rectal examination and ultrasonogrm. Diagnosis was primary amenorrhoea due to mullerian agenesis.

The patient was counseled about the options of surgical and non surgical creation of neovagina since she was to be married in one month. She agreed for non surgical option. With her permission, 10 cc of normal saline was injected into the potential vaginal space through the dimple in front of forchette. This was followed by simple firm digital pressure at first and then digital dilatation. An oral analgesic was given 1 hour before the procedure. The procedure was repeated everyday. After 14 days when the vaginal length was about 5 cm, the patient was discharged with demonstration and instruction to dilate the vagina by herself with wooden dilators (Fig 1) covered with sheath daily till her marriage. We contacted one of her relatives but could not reach her. She did not need surgery.

Fig.-1: *Wooden dilators ranging ½ -1 inch in diameter (We have tried alternatively the anal dilators which are more easily available)*

Case 2:

A 20 year old woman from Magura was admitted with the complaint of non-establishment of menstruation, and was diagnosed as a case of primary amenorrhea due to mullerian agenesis. Her vaginal length was 1 cm. Injection of normal saline and digital pressure with dilatation was applied for 14 days as above. There was a single episode of slight vaginal bleeding during the procedure. Final length of vagina was 5 cm when she was discharged with advice for self dilatation till marriage. We tried to contact with her after 6 weeks but failed.

Case 3:

A 20 year old married woman from Bhaluka , Mymensingh had complaints of non-establishment of menstruation and difficulty in intercourse. She was of normal height, with well -developed secondary sex characters. On examination vulva and perineum was normal, vaginal length 3 cm. Uterus was found absent on digital rectal exam. Diagnosis was primary amenorroea due to mullerian agenesis. After adequate counseling, daily injection of 5-10 cc normal saline was given into the potential space for vagina daily for 14 days along with daily digital pressure and dilatation. She was then discharged with advice for dilatation with vaginal dilators and regular intercourse. The patient did digital dilatation and regular intercourse and came for follow up after 12 weeks. On examination, her vagina now admits 2 fingers whole length.

Discussion:

The observations of the above three cases indicate that long term self dilatation with vaginal dilatators can be replaced by short term non surgical procedure of saline injection and sustained digital pressure applied under supervision after inpatient admission or on outdoor basis.

Non surgical method of vaginal dilatation has been recommended as first line in creation of neovagina in women with mullerian agenesis since 2002 by the American College of Obstetricians and Gynaecologist.[1] The method is highly effective, less expensive, non invasive without the complications of surgery. The women can resort to surgical creation of neovagina when the non surgical methods fail.

The most common methods described for vaginal dilatation include Franks method and Ingrams method.[3] The Franks method consists of self application in dorsal position of rigid dilators of progressively increasing diameter, for 30- 120 minutes daily for months. The Ingrams method consists of sitting on a bicycle seat mounted with dilators, the body weight aiding dilatation.[3] Both these methods take months to be effective. Compared to these methods, saline injection into the potential space of vagina followed by sustained digital pressure for 5 minutes daily creates a space around five cm long in two weeks. This is done under supervision on inpatient or outpatient basis. Further dilatation and maintenance of vaginal length can be achieved with regular use of dilators or coitus. The only complication reported was slight vaginal bleeding during the procedure in one case. The final vaginal length 5 cm in unmarried women and almost full length vagina in married women can be regarded as anatomical success. Coital dilatation is as effective as vaginal dilators in creating neovgaina.[5] Compared to the surgical vaginoplasty, the method is relatively non invasive in nature, cost effective and inexpensive with minimal morbidity and complication. Furthermore there is absence of complications like vaginal contracture or scar formation. The neovagina is lined with natural vaginal tissue.[3,7] After failed treatment, the option still exists to proceed to surgical neovaginal creation.

Surgical methods of creating neovagina include Vecchietti procedure , McIndoe vaginoplasty, sigmoid vaginoplasty and Davydovs procedure.[3] Vecchietti procedure is a laparoscopy assisted maneuver in which an olive like bead is placed on the vaginal dimple at perineum and a thread from the olive is pulled through the pelvis, out through the abdominal wall to a traction device. The tension on the thread is gradually increased to pull the olive by 1-1.5 cm daily, creating a vagina 7-8 cm long in a week. Then the device is removed and vaginal dilatation is continued manually or by coitus. In other vaginoplasty surgeries, an H shaped incision is made on vaginal dimple and a vaginal space is created by blunt dissection until it accommodates two fingers. The space is lined with skin graft (McIndoe procedure), sigmoid colon, uterine remnants or peritoneum (Davydovs procedure). Davydovs procedure is laparoscopy assisted to create a U shaped incision and raise a peritoneal flap to line the neovagina. Surgical procedures should be followed by vaginal dilatation and/or coitus to prevent stenosis.[3]

Intra-treatment complications (rectal, urethral or bladder injuries, hemorrhage), short term complications (infection including urinary tract infections, hematoma, anastomotic leak) and long term complications (prolapse, stenosis, stricture or contracture, scarring, vaginal discharge, granulation tissue , recto-vaginal or vesico-vaginal fistula) were significantly lower within vaginal dilatation series compared to the published surgical series.[6]

Contrary to the common assumption, initial vaginal length is not associated with anatomical success. Success can also be achieved in women with an existing vaginal length less than 2-3 cm.[6] Adjuvant treatments such as estriol cream, lidocaine ointment, diazepam, paracetamol or naproxen can be used during vaginal dilatation. With adjuvants there are more dilatation sessions per day and higher median increase in vaginal length.[7] The findings of our cases suggest that non-surgical management is more successful when motivation is high and the woman is engaged in regular sexual activity. This is supported by studies and reviews[8-10]. A cross sectional study of 91 cases of MRKH syndrome with female sexual functional index questionnaire (FSFI) a mean time of 7 years after neovagina creation reported good and similar functional results in the two groups , non surgical and surgical.[9]

Conclusion:

Non surgical vaginal dilatation has been put forward as a first choice treatment because it is easy to perform, cost effective and safe. The novel method of injection of normal saline and digital pressure and dilatation is meant to make the nonsurgical management easier and quicker. This method can be tried in patients prior to surgical vaginoplasty.

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